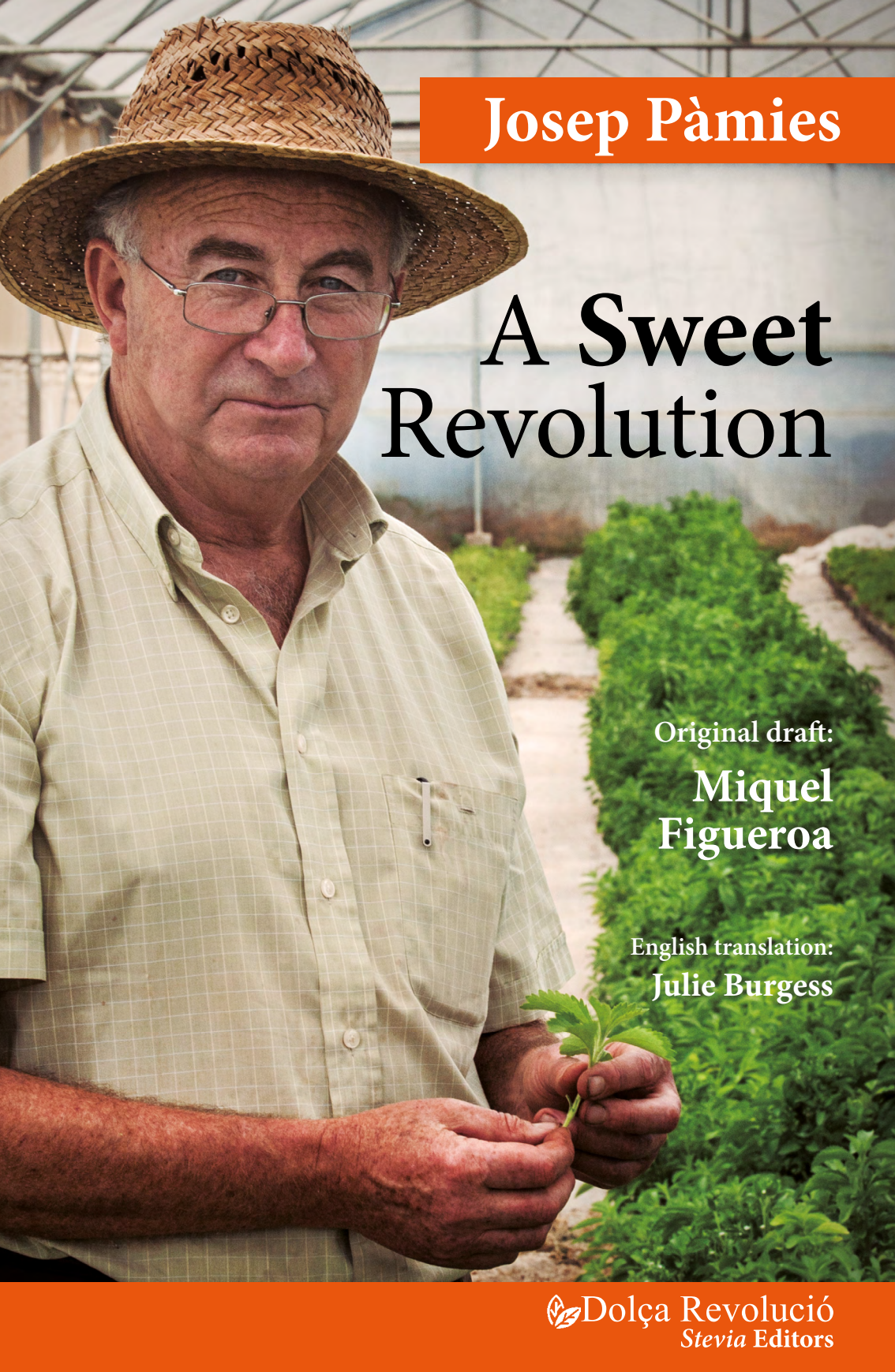


Josep Pàmies

A **Sweet** Revolution

Original draft:
Miquel Figueroa

English translation:
Julie Burgess

Dolça Revolució
Stevia Editors

A Sweet Revolution

Josep Pàmies

A Sweet Revolution

Original draft:
Miquel Figueroa

English translation:
Julie Burgess

Dolça Revolució
Stevia **Editors**

Associació Dolça Revolució de les plantes medicinals
Carrer Barcelona, 72 - 25600 Balaguer - Catalunya - Spain
info@dolcarevolucio.cat
www.dolcarevolucio.cat

First edition: September 2017
ISBN: 978-84-946105-4-7
DL: L 1290-2017

Photographic compilation: Judith Sanleandro Pla
Front cover and photographic section design: Jordi Farrés Sabater
Layout: Miracle Solà Figueres
Print: Arts Gràfiques Bobalà, S L
www.bobala.cat

imprès a **lleida**

Acknowledgements

This book has been made possible thanks to Joan Lloret, José Ramón Olarieta, Sonia Figueroa, Anna Artigas, Montserrat Esquerda, Judith Sanleandro, Miracle Solà, Verònica Miró, Miquel Vallmitjana, Alejandra García, Leonardo Anselmi, Assumpta Codinachs, Gerard Batalla, Artur Novell, Marc Estévez, Esther Vivas, Eulàlia Tort, Mercè Camins, Jordi Farrés, Vicenç Lloret, Rosa Mari Gràcia, Marta Pàmies, Pau Pàmies, Julia Martínez, Miguel Figueroa, and all the people who have shared with us their knowledge and experiences.

Many thanks to you all.

Index

preface

I came to know Josep through his talks, his blogs, reports, and interviews. It was because of him I became aware of the situation with genetically modified organisms (GMOs) in Catalonia, and also discovered the wonderful world of medicinal plants and how they were being criminalised. I was impressed by what he said and how he said it; he is a very driven man, unafraid to speak his mind and to stand up for what he believes in.

I did not hesitate to get in touch with him to do an interview for my programme on *Radio Arenys de Munt*. One of the many benefits of running your own radio show is that you get to talk to interesting people and at the same time help to spread their message.

A while after doing the radio interview, I travelled to Balaguer with a group of friends to meet Josep in person, and to buy some medicinal plants. I was surprised to discover he had a calm and patient disposition, in stark contrast to when he speaking of matters he is passionate about.

A year later, I returned to visit Josep, this time to record a video in which he details his experiences with medicinal plants. This short report is called *Plantas que curan, plants prohibidas* (Healing Herbs, Prohibited Plants), and can be easily found on the Internet.

I visited him several times over the years, and would often say to him, "Josep, you should write a book, you have so many stories." He would say that yes, he had thought about it but that he didn't have the time. Then one day, almost without thinking, I surprised myself by suggesting that I help him write his book. Equally surprisingly, he accepted and so began this incredible experience.

Josep and his family welcomed me into their home, and I have had the privilege of getting to know them better. Over these last few months, I have learnt a lot from Josep, and obtained a good insight into his most human side. He is a man full of virtue and contradictions. He is not some kind of superman, nor does he claim to be. He does not have all the answers, but he asks himself questions and he is willing to learn and to share. For that reason, I believe the world needs more people like him.

Miquel Figueroa

Foreword

Here I have a book, a book by Josep Pàmies. He had been asked to do it for some time, but he was always busy, too busy…! A health scare - angina - and encroaching old age have brought their timely challenges, and served as a pretext for him to slow down somewhat and reflect upon all the stages, facets, experiences, and deeds that have made up his life and the lives of those around him.

This book is a compendium of the facts that have defined his hectic lifestyle, a life in constant evolution, of questioning and investigating… always with the same thread running through – agriculture and social activism, hand in hand. His farming business, which he shares with his brother, has been in a constant state of evolution. You could say that every ten years there has been a turning point. From farmers growing all kinds of fruit and vegetables and rearing animals, they became just horticulturists; then they went on to specialise in just one type of lettuce that they had created themselves. After that, they channelled their farm towards growing various varieties of different coloured lettuce, destined mainly for the restaurant market. Gradually, cultivation of so-called "weeds" and of controversial edible flowers emerged; and then - the final phase (arguably that which has inspired the most passion), the breakthrough into medicinal plants.

He has lived and breathed each professional stage, every trade union aspect, and every single recognition "one hundred percent". His life has always been fast-paced. Those of us who live with him know that the angina from which he suffered could have occurred at any moment in his hectic life. He was never aware of it. It is possible that he never really knew if he was stressed or not; he has never asked himself whether

he needed a rest. He has got so much going on that he has never really been a fan of what we call "switching off".

He is not one for parties; nor does he like travel. If he has to go, he will, protesting, "to keep the wife company." He complains it just makes him more tired!

He has always had a challenge to beat. He is a lawyer of impossible rights, a defender of lost causes… Facing up to the often absurd government, to sold-out politicians resting on their laurels, to the big corporations, to corruption in general: it was always his final objective.

Government advisers, delegates, secretaries, deputy secretaries and anyone in a position of power responsible for any kind of injustice or negligence have all suffered in his line of fire, certainly Pàmies has been a thorny barb firmly planted in their professional dealings.

He loves to go against the established order. There exists no cause he regards as lost. He has always fought against the powers-that-be – politicians, trade unionists, company executives. He has never held a position of authority, but he has always been at the front line of his causes.

It is his fight against the great and the powerful, against consummate facts: a non-stop struggle for professional perfectionism.

Being self-employed along with his brother has allowed him certain independence and flexibility.

He has never felt comforted by his scarce incursions into politics. He has never liked to accept what leaders or the majority demand; he defends minority causes and thus many times he has fought alone; it is enough for him to believe that the cause has merit.

Those of us closest to him have both enjoyed and suffered him. His extraordinarily long working days, his causes, meetings, conferences, calls, trips, and protests have many times upset the normal scale of family life, social, and friendship values.

I have here a book, a compendium of his desires, his interests, and vocation. It is not a biography, nor is it a professional exposé. It is not

just a list of his experiences and vindications; it is a whole. As he rightly says, "for each chapter we could write a book."

Perhaps starting out with my jumbled rhetoric is the best way to begin this story. And when you have finished reading, you will see clearly how the main character has been forged, and how the main themes and turning points of his constant battles have played out.

Farmer, activist, fighter for lost causes, and tireless social agitator would appear on the covering letter of his curriculum vitae.

His revolutionary disposition has brought him before the courts on more than one occasion, however either by force of reason or because of his guardian angel, there have never been any serious consequences.

It is true that the so-called powers-that-be have him banged to rights, and maybe one day they will catch him out, but he always pushes back; it is what has given him the strength to keep going forward.

He likes good food, and healthy good-quality products; he prefers fresh food to processed food. That is why in his professional life he always opts for quality rather than quantity. Rigorous in his cultivation methods, meticulous in his presentation: he is proud to have his produce stand out in the market.

They say that he was timid as a child, but as an adult, I can assure you that he is merciless with anyone who tries to block his way.

He puts his heart and soul into every activity whether it is a meeting, interview, conference, or professional task.

I have nothing else to say except to invite you to read, to savour the story, and if you can, to go investigate more thoroughly the matters on which he touches.

Enjoy the read!

Rosa Mari Gràcia

Foreword by Translator

I first saw Josep Pàmies at a talk he gave during his "tour" of southern Spain in January 2016. I was pleasantly surprised to discover that I agreed with virtually everything he said, and found his no-holds-barred discourse very entertaining. He imparts his knowledge and life experiences with humility and a sturdy strength of purpose. His delivery is forthright, colourful, and humorous; he is a man who speaks straight from the heart.

Josep will constantly remind you he is "retired" whilst doing a hundred things at once. In spite of his busy schedule, he will always find the time to take you on a guided tour of his beloved greenhouses, or take a phone call from a distressed stranger with a health issue.

I thought I would offer him and *La Dulce Revolución* a hand by translating their website into English. Then I thought I would go the whole hog and just do the book. It has taken some time, and it probably still won't be perfect – but here it is. I hope you enjoy this fascinating story. I hope we can all encourage change into our lives, ask questions, and take action before we do any more untold damage to ourselves and the planet we inhabit.

Julie Burgess

Introduction

My story is about a conventional farmer who one day, discovered by chance that he was being deceived. As he pulled back the curtains, he shuddered when he realised the deception was much greater than he could have possibly imagined.

In the face of that situation, I decided to follow a path that is probably not the one we would be expected to take. It is why many factions of the status quo consider me a bothersome fly, but it is not my intention to annoy them for annoyance's sake, but rather to do my bit to try to change things for the better.

It is difficult to discern what is good for us and what is not in today's world, when we are being bombarded with so many contradictory messages. I work with information that often clashes with the widely accepted "official" versions, but I can confirm at this stage of the game that there are a good many valid reasons to doubt the official line. I believe that we can, and must, question all the so-called experts, as many times they are simply answering to vested interests. Thus, I propose intellectual independence. I believe people should be responsible for themselves. We should dare to ask questions and carry out our own research. We must not let ourselves be force fed; if they are going to force feed us then it's only because it is in their interests to do so. Asking questions is very healthy for us; maybe if we ask more questions then we will discover that some of the thoughts in our minds are not our own, but have been put there by others.

Before we go any further, I must clarify that I am not an expert in anything. Well, maybe I know a bit about farming, after all it is my profession and my life's work. Over the last few years, I have become more

interested in everything related to food, health, and our emotions – and that is what this book is basically about.

The following pages are a compilation of some of my experiences and opinions, along with other information that may be useful to the reader. We could say that this book is an autobiography as well as being a practical reference manual. Over the course of the chapters, I talk about my return to organic farming, the fight against GMOs, medicinal plants, the business of illness, and other matters close to my heart. At the end of the book, you will find several appendices with more specific information concerning the food additive, aspartame. There is also more information on GMOs that affect our health and environment.

Several volumes could be written about every matter dealt with in this book. However, this book is my humble offering and I urge you, the reader, to embark upon your own investigations. As I said, I am no expert in any of the matters I talk about, and you must understand I am no scientist or doctor, so my words should not be taken as a medical guide. I am not trying to indoctrinate anyone. I am a human being like anyone else, one who is following his own process of discovery and evolution, and the only information I can offer is the fruit of my findings and personal research.

Only time will tell if it is of any value. If this book serves to inspire someone or to awaken their curiosity then I will be satisfied.

I do touch on several uncomfortable truths, but I also want to express my message of hope, because I believe that all is not lost. On the contrary, I think we are destined to discover the truth.

I would like to add that this book has been made possible thanks to the investigative work of Miquel Figueroa, who has had the patience to transcribe the many long hours of our conversations and in doing so has reinforced the veracity of my beliefs. This book has proved very useful to me, as it has reaffirmed my true beliefs in the subjects of food and health, both matters of importance and fragility that have often fallen victim to criminal speculation.

Josep Pàmies

1

A quick look back

My name is Josep Pàmies and I am a farmer by profession and vocation. I have lived all my life in Balaguer - a town in the province of Lleida, Catalonia - where I was born in 1948, and where I still live with my wife Rosa Mari.

The Balaguer of my childhood was, as with the majority of rural towns, a place of great beauty, nearly always peaceful, and full of pleasant people. The bell ringer Bruno knew how to ring the bells in a thousand different ways depending on what he wanted to announce. He had a special gift of being able to smell storms. When one was approaching, he would ring the bells in a certain way so we all knew we would well to take cover.

Then there was Pellaira, who would go from house to house collecting rabbit skins in exchange for sewing needles and thread. After the rabbits were killed, their skins would be thrown against the wall and there they would remain drying out until the day Pellaira passed by to "recycle" them.

I still remember Perecuca, an elderly man who knew how to put your broken or dislocated bones back in place. Many a time I was taken to see him; he would always put a bit of oil on his hands and could fix any problem, large or small.

In those days, Balaguer was a place where children could play in the streets and squares and the worst thing you had to look out for was an animal-drawn cart that might run you over. When you didn't have to do school work or help out at home or on the land, you would meet up with your friends and scrape your knees playing ball games or fighting with rival gangs. In the town, we all had our own group of friends.

We would stick together according to our interests, the most common being place of origin. Back then, there was already a lot of immigration within Spain, especially families from Andalusia and Murcia so you would get the Catalans on one side, kids from Andalusia on the other, and those from Murcia in the farthest corner. Even today, when we bump into each other we sometimes recall those old battles.

I was a very shy boy and always tried to go unnoticed. The situation got exponentially worse when it came to talking to girls. I used to run away from them! In those days, education was not mixed and you would get groups of girls and groups of boys who normally did not mingle. Luckily, things have changed from that time for the better, and relationships between the two sexes have become a bit easier. However, back then I had a terrible time getting to know girls, what with my shyness and the general mentality of that era.

They were not easy times, but in spite of the hardships, I did have a happy childhood. The truth is that in those days we were happy with very little. It was later on when they began to mess with our heads, trying to make us believe that we needed lots of things to make us feel good. We never had computers, game consoles, or mobile phones, but we would enjoy ourselves with what little we had. We might have even had a better time than the modern generations. Our grandparents and uncles would make us toys out of wood, or whatever they could find, and the rest would be up to our imaginations.

Maybe I didn't notice how difficult things were because I was lucky enough to be brought up in a family who loved me. There were loads of us in the house; we all lived together – my father's father, my parents, the children, plus the aunts and uncles who stayed with us for a few years. We all shared the home and the work on the land - that was our daily bread.

My mother and father were extraordinary people, and my mother still is. I could not have wished for better parents. Unfortunately, my father died very young. He was only sixty-three years old, and I had just turned thirty-two. He dropped dead early one morning whilst he was at Lleida market selling lettuces with my mother and brother. His sudden

death left me with a deep wound inside. I was a proud young man and thought I knew it all - I would get angry at the slightest thing. I really regret not telling him how much I cared for him. It is true what they say, you have to make the most of this life and say things when they should be said because you might not get the chance to do so later on.

I have a younger brother, Miquel, three years my junior. I must admit I was not the best big brother a child could have; I was always giving him a hard time. It went on like that until one fine day he had enough and punched me in the stomach; funnily enough from that day on, I had much more respect for him. We are all a bit like animals. Miquel and I were not in the same gang; we had very different personalities, and that is still the case. However, now that we share the family farming business we have come to realise that our personalities complement one another. He is the brains of the business, in charge of finances and management, and any repairs that need to be done. His work is highly commendable, as out of necessity he had to drop his studies - everything he now knows about finances he has had to teach himself.

We spent our summers at the farmhouse where we still have our land, on the outskirts of Balaguer. In wintertime, we would move to our house in the old part of town. The house was at the top of a very steep hill, and I remember how difficult it was getting the mule-drawn carts uphill, laden with wheat, oats, and corn. It was a sight to see the sparks fly off the mules' shoes as they struck the cobblestones, with my parents and uncles shouting and pulling the mules along, the poor beasts working as hard as they could. Then, using a pulley, we would hoist the cereals up on to the top floor where we kept the hens who provided us with eggs and also served as our alarm clock.

The smell of freshly baked bread permeates all these memories - a special aroma that filled our home. I also remember the smell of the apples under the stairs where they remained all throughout winter, and the warmth given off by the mules as they went into their stable to rest.

I don't think these memories will ever be erased from my mind.

School days

Much has been said about what school was like during Franco's day, so I am sure that the reader will already have an idea of the prevailing disciplines and rigours of that time. In spite of all that, I was never the victim of nor witnessed any serious abuse worth mentioning. The problems of the education system were similar to those of today, more in the background than on show.

I went to *Los Escolapios* religious primary school in Balaguer old town. Of course, classes were held in Castilian but we children usually spoke Catalan at break time.

Later on, I moved up to the Balaguer secondary school, where I studied a vocational course called the *Bachillerato Laboral*. It was a mixture of further education and professional training which was popular at that time – a combination of theory and practical. You could learn many different skills including carpentry, electrics, mechanics etc.

You could say that I was a good student - I got good grades but had to put in a lot of effort. During my time at secondary school, my main aim was to the get the better of the number one student, Emilio Elizalde, my classmate who was almost two years my junior. He did not make it easy for me. Emilio was very gifted, one of those students who can read a book and have a better grasp of it than the teacher. It is not surprising that he has ended up as a well-known quantum scientist.[1] Therefore, dear reader, you can imagine the challenges that lay ahead of me. I spent hours and hours studying so I could reach the same level as my rival, but I have to admit I never quite got there. Now and again, if I tried extra hard in an exam, I might get second place, and would have to be content with that.

My favorite subjects were biology and agronomy. Mr. Arnilles, whom I remember with great affection, taught biology. That subject fascinated me, because it was a way for me to know the secrets of living things. I was particularly attracted to the plant world, which I have always found fascinating. In his classes, I discovered the secrets of hybridisation and cross-pollination that lead to the creation of new plant varieties.

Mr. Pío, the agronomy teacher, was also a pleasant man and everything he taught me about working the land served to complement what I was learning from my grandfather, and especially from my father. I remember it was very exciting for me once during the practical classes when I was allowed to climb up into a tractor for the first time. Accustomed as I was to working with mules, that invention seemed prodigious to me. However, it would be a while before we could get one at home.

My vocational secondary studies would be my last official training. After that, something happened which left us in a very fragile financial situation, and both my thirteen-year old brother and myself, sixteen, had to start working on the family's land. When my grandfather died, he left a will stating that his estate should be shared more or less equally amongst his children. To the girls he left 400,000 pesetas, which was a fortune in those days. My parents had to accept the condition that if they wanted to keep the house and surrounding land, they had to find a way to pay this high sum of money to my aunts. We made a promise to do so and after two years of much austerity and hard work, we did it. We even had to resort to using the modest grant money Miquel and I had been getting on the back of our good grades, which we had been putting into a savings account.

Of course, the situation provoked some tension within the family but my father (who had a heart of gold) did everything he could to prevent the family from falling apart.

The truth is that leaving school was no big deal, as I was already anxious to get to work and become a full-time farmer. My school days ended there, but I embarked on a career as a farmer. Even today, I am still learning about the natural world and our place in it.

A family of farmers

As far as I know, it was my great-grandfather Mariano, who started the family agriculture tradition at the beginning of the last century. That means four generations of farmers in our family, including my son.

When I was around 8-10 years old, I was already combining school with a few hours working on the land. That would be considered child labour in today's world, but back then, it was completely normal to help with the family chores.

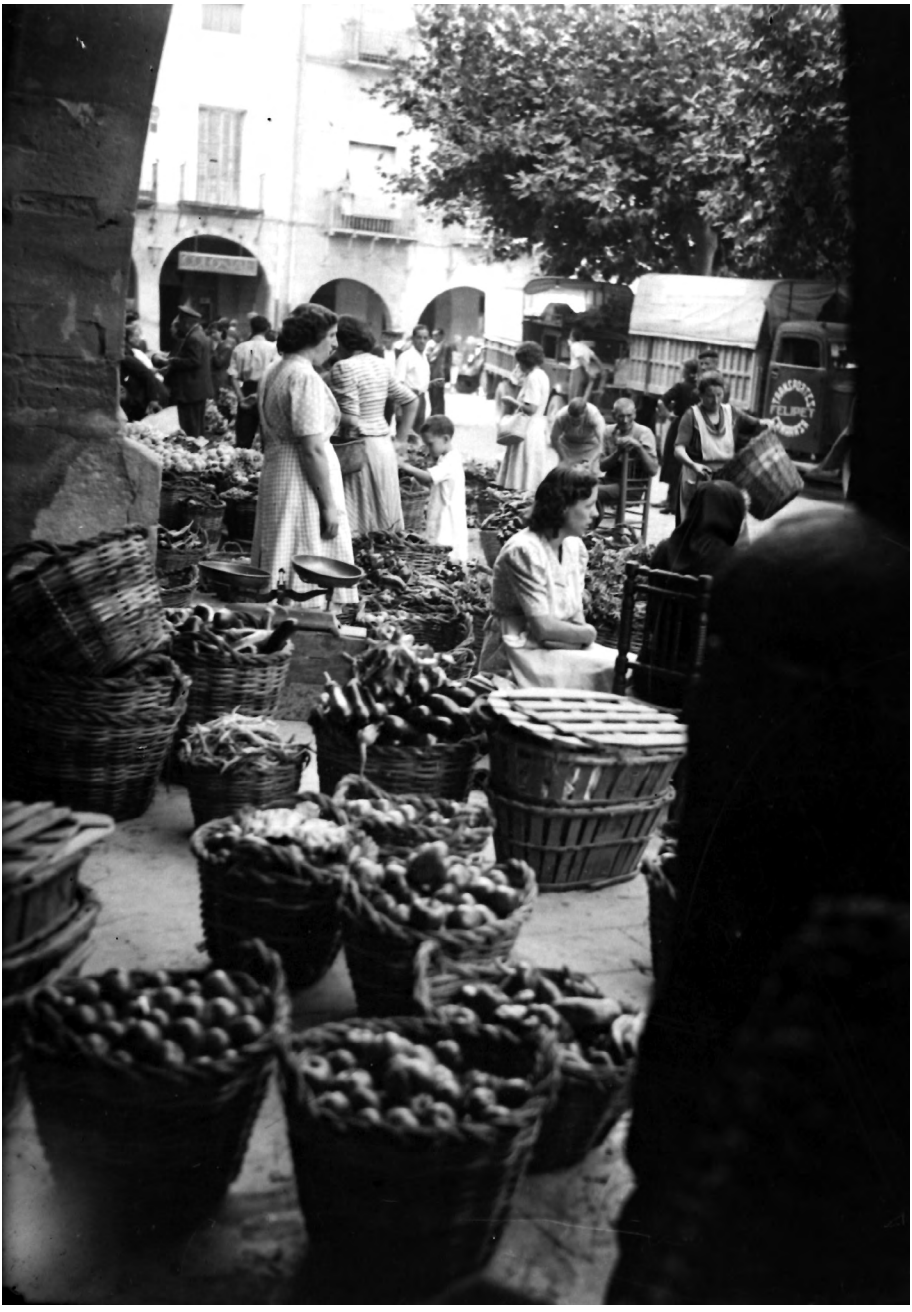
Some of my friends did not like working on the land, but I loved it. From an early age, I knew I wanted to be a farmer and so I tried to learn as much as I could from my father and grandfather. Nevertheless, I must confess that sometimes I did slip off to play or to climb the pear trees, seeking their shade. Hidden in the branches, I would hear my father calling my name, shouting angrily:

"Josep! Josep! Where can he have got to?"

We have never had a lot of land, so right from the start we focused on growing vegetables rather than cereal crops, as the latter require much more space. We grew a bit of everything: tomatoes, aubergines, peppers, potatoes, sweet potatoes, etc. We also grew seedling plants to sell to private clients and other growers.

Being in direct contact with all these types of plant made me think about the importance of diversity in cultivation, something that is gradually being lost with today's increasingly commonplace mass production where large-scale plantations are dedicated to just one type of food. A mono-crop plantation does offer certain advantages. It allows farmers to hone their growing processes, but I myself am not a fan of industrialised farming methods as they come with many disadvantages.

Every week we would go to sell our harvest at Reng market in Balaguer town square, famous for its stone arches buttressing the façades of the buildings that line the plaza. The market dates back to 1211 or earlier, and is where produce from local farms and land was sold. Every Saturday, we would load a cart with seasonal crops and head off to Reng. All around the square, farmers would set up side by side, laying out their fruit and vegetables. If it was raining, we would shelter under the stone arches, but if the weather was fine we would set our baskets outside in an array of colours that glimmered in the sunlight.



Reng Market, Balaguer.

I was still a young child then, happy to help in any way I could. My father would say, "We've run out of tomatoes, take the mules and go and get some from the farm, hurry!" or "Take this to the woman over there!" I did as I was told, proud to feel useful.

I have fond memories of working with our two mules and donkey. It is because of them I discovered that animals do not differ greatly to humans when it comes to feelings. Once, when I was playing outside on the farm, one of the mules accidentally stood on my foot. I do not need to say how much that hurt! I shouted and cried out, but the creature didn't get the hint and stayed where she was. Finally, my father had to come to my rescue and strike the mule on her leg until she lifted it. I think she knew she had hurt me as my father said that for the remainder of the day she refused to rest her foot on the ground,

Our other mule was blind. I would travel the two kilometres down to the town from our farm, sat astride her back, navigating the many twists and turns in the road. It always surprised me that in spite of her blindness, the mule could find her way with no instruction from me.

When tractors appeared on the scene, we no longer had use for those animals to get the job done. We could not afford to keep them, and so after much deliberation, we had no choice but to sell them for slaughter. That was a difficult day for us all. After everything they had done for us, watching them leave was almost too much to bear.

It wasn't the only traumatic experience we had with animals. For many years, we had fattened pigs to sell their meat. We looked after them from when they were small, and it was usual to have them castrated to avoid obvious problems. In the beginning, the vet would carry out the operation, but when we were no longer able to pay for his services, it was up to us to do it. My father learned how and then he taught me. I won't go into details, but I can assure you that it was not a pleasant experience. Such a cruel practice made us think about what we were doing and we decided to cease participating in animal exploitation.

From the moment I left school, I was completely committed to the family business. I was happy doing what I wanted to do; I felt a yearn-

ing to find out about how to cultivate crops and make improvements in farming. I threw myself into my work, observing, experimenting, and attempting to understand it all.

It was precisely because of my commitment I discovered that a natural mutation had emerged amongst our lettuces, a crunchy-leafed plant which did not go to seed in summer, and which was better in both flavour and size. We couldn't leave it out on the land, so we decided to transplant it in the hope that we could obtain some seeds. It was not an easy operation, as it was an adult plant, but miraculously we managed to get about a hundred seeds from it (a normal plant can produce thousands). Of these seeds, only twenty percent were from the transplanted lettuce, the rest were new varieties of different types and colours. At that time we did not consider the possibility of conserving all those different varieties (a mistake we would not repeat), and we only kept those lettuces similar to the adult plant.

The new variety turned out to be a raging success, and would always sell out quickly at the weekly market, in turn bringing us some measured prosperity. Some farmers criticised us saying that the lettuces' greater size was because we applied hormones during cultivation; others gradually began to produce our lettuce variety, which we named *Conca*. We registered it with that name and made it available to anyone who wanted to grow it - thus ensuring that no opportunistic multinational could patent it and keep it for themselves. At that time, we used to receive visits from seed-collection companies, asking for our seeds so they could "improve" them, but both my mother and father were firm believers in producing and preserving their own seeds. Unfortunately, I forgot about that later on and like many farmers, I stopped producing my own seeds and started buying them from different companies. Some of them were already multinational corporations who were in the business of reproducing hybrid seeds – a mistake which the agricultural collective is still paying for dearly. I shall talk more about that later on.

Working on the land is hard, especially if you have to earn your living from it, but I have always had the satisfaction of being where I wanted to be. It is lovely to go outside in the mornings, breathe in the

fresh air, and listen to the birds singing. It is a luxury to be in permanent contact with the sun, the earth, and the plants. I cannot imagine living in a city - just thinking about it makes me feel stressed.

A window on the unknown

Another constant through my life has been a curiosity for the hidden and invisible side of things. I am fascinated by mysteries and enigmas; in fact, I believe that life itself is a deep mystery. I still have some issues of *La Enciclopedia de la Magia y del Misterio (*The Encyclopaedia of Magic and Mystery*)* around the house, a magazine all about alchemy, magic, and witchcraft that I collected when I was young.

We were never very religious at home, and despite my family's left-wing tendencies, no one ever tried to impose their anticlerical thoughts on me. I suppose that from my own observations I began to see strange things in so-called religion, and made up my own mind. I have always found it weird how the Catholic institution contradicts itself by not always practising what it preaches. Even as a child, I was shocked that those who spoke of goodness and goodwill could be capable of the abuses the Church has carried out over the course of history.

It surprised me to catch a priest having intimate relations with a woman, considering that at that time sex was regarded as something sinful.

I do not have fond memories of our religious lessons at secondary school. The priest who was our teacher was very strict, and forced us to be altar boys under threat of failing the class. All this made me end up abhorring religion.

But even though I felt a definite repulsion towards organised religion, the biggest questions about life still nagged at me, waiting for an answer. What are we doing here? Is there something beyond this brief adventure in the physical world?

These existential questions have been with me all my life, and because of a critical situation that I have recently been through (on which I will expand forthwith), I have reopened the door on such matters.

Looking back now, I can see I have reasons to believe that incredible things do happen in this world.

I was very young when I had my first encounters with "supernatural" matters. I used to accompany my maternal grandmother to a healer's house -he was very famous in Lleida. They called him Jordana and people said he had the power to resolve all types of problems, health or otherwise. There was always a queue of people outside his door. He lived in a very modest apartment, and going there was almost a mystical experience for a small boy like me… It was like entering into a world of magic, the kind I had heard about in fairy tales.

I remember my grandmother and I visited him quite a few times, and he always helped us. One time he dismissed the idea that our pigs had the plague. Jordana closed his eyes and remained silent for a while, until he finally came back into himself.

"Don't worry," he said, "whatever your pigs have, it's not the plague."

Within a few days, they were well again.

The fact is he always got it right.

I recall another time when Jordana was called upon to help someone with cancer. Sadly, he had to admit that the illness had reached an advanced stage and that he could not do anything, but he insisted that the person would not suffer during the time they had left. And that's how it was; the sick person did pass away, after seemingly enjoying some quality of life in spite of everything.

I know that these two instances may not overly impress the reader, and that there might be any number of rational explanations to explain what happened. That is why I have left the best until last. One day, the daughter of one of my cousins began to feel ill and had to be admitted to hospital in Barcelona with a very serious intestinal perforation. There was a big commotion at home and I was given the task of going to visit Jordana, to see if he could help us out on that particular occasion. I got there early to avoid the usual queues. He ushered me in straight

away and after I explained the situation to him, he did his usual thing: he closed his eyes and went to that special place to connect with who-knows-what. Fascinated and expectant, I didn't take my eyes off him.

Finally, after a few minutes, he looked at me and gave me his verdict.

"This child has a safety pin inside her."

"What? A safety pin?" I could scarcely believe what I was hearing.

"Yes, I can see a metallic object of that shape sticking into her intestines. But don't worry, they will get it out and she will be fine. There is no infection."

A few hours later, they found the safety pin inside her and everything turned out well.

The mystery surrounding Jordana had me captivated. He was a sensitive and affable person, but you could see there was something deep within him that was not of this world. Because of him, I learned there are things outside of our realm of understanding, and the clever thing to do is to stay humble and realise that we don't know it all, not even the half of it.

I would always ask him to tell me how he could see and hear those things, but he could never explain it. So I never knew… and then he died. Or maybe you could say that he moved on to a different plane of existence?

The subtle world of plants

My fascination for the invisible has also influenced my understanding of Nature, especially the plant world.

There are several books that have helped me greatly in this matter. One of them is called *La vida secreta de las plantas*[2] (The Secret Life of Plants). In its pages a series of scientific studies prove that plants are living beings with a sensitivity and intelligence far more developed than commonly thought.

I recall one experiment in particular that gives a very good example of what I mean. A scientist went into a room where there were several plants, and destroyed one of them. After that incident, whenever that same person entered the room, scientific apparatus could pick up certain alert impulses emitted by the plants that had been present during the aggressive act. Somehow, they remembered that that person presented a danger, and warned the other plants. To further corroborate their theory, the scientists introduced a new plant to the group, one that had not witnessed the violence, and they verified it did not give off any warning signals. All of this has surprising implications: plants are capable of remembering and communicating amongst themselves!

The communicative ability of plants has recently been reaffirmed by a group of scientists from the University of Exeter, England. They noticed that when a leaf was picked from a hybrid plant of the variety *Arabidopsis thaliana,* it gave off a special gas to alert nearby plants of the danger. As a result, the other plants underwent a change in their biochemical make-up, and started to produce repellent toxic substances.

We are discovering something in the western world that our ancient ancestors already knew: plants are sensitive, conscious, intelligent, and they deserve our consideration and respect. We are still in the process of finding out exactly how intelligent they are.

La vida secreta de las plantas is a book replete with studies and observations to challenge our understanding: it certainly gave me a lot to think about. Many of the theories in this book have unsurprisingly been subject to much criticism, and even today, scientists continue to reject them.

"Photonic energy" is one concept dealt with in the book, which attempts to explain the connection between a photographic image of a subject and the subject itself. I shall use an example: according to researchers, a crop affected by disease can be cured by applying pesticide to a photograph of the same crop, instead of the crop itself. It seems to work as if the photograph is connected to the photographed object in some invisible way, reminiscent of voodoo and other kinds of magic.

It reminds me of how Jordana would only need the photograph of a person to be able to connect with them and do whatever was necessary. Could photonic energy be real?

I have been able to experiment other concepts I discovered in that book and I can assure you that they do work. The thing I have experimented most with has been the power of intention. As strange as it may seem, there was a time many years ago when not a day would pass without me walking around the plants and talking to them, in an effort to transmit my presence and love to them. I somehow knew that they were aware of this and that it affected their growth, so I was only half-surprised when I saw how beneficial the results were.

It seems that plants are very sensitive to vibrations in their surroundings and they can even pick up on the emotions and thoughts of the people around them. It could explain why some people are green-fingered and have thriving plants, whilst others end up with dead plants.

I was keen to find out if plants were also sensitive to musical vibrations and so I adopted a simple experiment: I put on classical music for plants in one area, and in another, I played heavy rock music. In theory, classical music, being lighter and more harmonious, would increase plant growth in the first group, while the more aggressive heavy rock would not affect the second group as positively. It is not a question of taste, rather of the quality of the vibrations.

Unfortunately, the volume of work I had at that time prevented me from closely monitoring my experiment, and so after a while I ended it. I feel bad for subjecting those plants to rock music, and for no good reason in the end.

I realise some of my peers might think I'm a bit weird. I have never really been able to share this kind of thing with them, as they usually don't take it seriously. I am sure more than one of them thinks I am crazy. Nowadays, I don't talk about these matters unless I am asked: I don't see the point – it's like trying to plant a seed in infertile ground.

This inability of understanding one another has been frustrating for me at times, especially regarding GMOs and agricultural chemicals.

My half lemon

I remember perfectly the first time I saw Rosa Mari. I had just turned nineteen and she was about fifteen. That afternoon I was on my way home, sat on the blind mule, returning from my uncle's farm where I had been working. Passing through the village, just as we were about to cross the new bridge, I saw a girl who caught my attention. I don't know why, and I can assure you I'm not saying this just to make the story sound more interesting, but as soon as I saw her I thought, "She's the one."

She says she doesn't remember, but for me it was love at first sight.

I really wanted to see her again after that but it was difficult for us to meet. Nowadays, the weekend for young people begins on Friday, but in my day, we were only free on Sundays to go out and socialise. Things were done differently back then. On Sundays the dance hall would open where young people could go to meet up, where we boys could approach the girls to chat for a while, and if we were daring enough, ask them to dance. She didn't go dancing much as she belonged to a group who often had outings and activities on Sundays. But every time I saw her I would go up to her and we would talk.

I eventually managed to get her to notice me and we began to go out. In those days, relationships were not like they are today; holding hands was a resounding success and if I managed to steal a kiss from her, well then nothing could wipe the smile off my face for the rest of the week.

I don't think many people would be satisfied with that in today's world…

Rosa Mari says that I am her half lemon, because being her half orange* would be less bitter. The truth is I cannot blame her for thinking and feeling like that, as our relationship has not always been easy. One of the constant themes in my life has been the search for balance between my social responsibilities and my family obligations… and I have to admit I haven't always made a good job of the latter. When I

* mi media naranja (my half orange), translates to "my other half" in English.

wasn't working, I would spend hours doing things for the trade union and this meant that Rosa Mari had to bring up the children more or less on her own, at the same time as training to become a teacher.

Rosa Mari does not really like the public image I have acquired over the last few years. People stop me in the street, and they come to see me at home… it makes her uncomfortable. She says it always makes her feel like she takes second place.

Jordana used to say that certain beings exist whom we cannot see, but who inspire us, guide us, and protect us. Some people call them angels: I have one here on this earth.

We began our relationship when she was sixteen and I had just turned twenty. A short time after, "duty" called: I was conscripted, and had to march off to do my obligatory military service.

Not born to be a soldier

It used to be said that military service marked the end of your boyhood and the start of your manhood. Forgive me for saying so, but my experience was very different.

As all young men did, when I turned twenty I received a letter calling me to do my obligatory military service. It did not appeal to me at all, but back then I was not brave enough to declare myself a conscientious objector. Objectors were brought before the military courts, and faced many years in prison, and I was needed at home to help on the land. And so, I marched off to Zaragoza, hoping that the year and a half would pass as quickly as possible.

After a few days, I met Eleuterio, a boy who should not have been doing national service as he suffered from mental disability. One day, during military manoeuvres, we found ourselves in a situation that miraculously did not end in tragedy. We were land troopers, and our exercise on that day was to advance on the "enemy" whilst cannons were being fired over our heads in the same direction. The problem occurred because one of the cannons was badly positioned, and started to bombard us. We were all rightly terrified; the bombs were exploding just a few me-

tres away from where we stood, and the sheer force from the explosions was lifting us off the ground. The manual states that in these situations, soldiers should lie flat to the ground to minimise the possibility of being hit by shrapnel, but Eleuterio was so terrified that he started to run away. Without thinking, I threw myself on top of him to keep him still. Every second that passed seemed like a century – we could hear metal whizzing by all around us. Being slightly more elevated I was terrified that at any moment I would get a lump of shrapnel stuck in my body.

In the end, no one was hurt, but that terrible experience was an omen that my stay there would not be an easy one.

Like all boys doing military service, I was desperate to go on leave. I was keen to get the maximum amount of weekend leave so I could go home to help my family on the land, and visit Rosa Mari. Sometimes I took the train from Zaragoza to Tarragona where she was training to be a teacher. There we would spend just a few hours together, but it was enough to keep our romance alive and make the days pass more quickly. I discovered a way to obtain more weekend leave, and that was studying to be a corporal. Without stopping to think about what that might entail I signed up and passed the exam. Being of higher rank to the others had its advantages, but problems occurred when I had to start acting according to my new position as corporal: I was expected to give orders to my companions and make sure they carried them out. That's when I realised I had put my foot in it in a major way. I was incapable of forcing the soldiers to do anything I wouldn't do myself, therefore I disobeyed.

I shall give you an example. We all know the rigorous training drills, the kind we have seen in army films: there is always an officer shouting loudly and forcing the soldiers to carry on running when they have had enough. I was expected to behave like that officer.

One of the punishments given to recruits who made mistakes or failed to complete a task they were supposed to carry out, was to make them run laps around a field until they were told to stop. There was one day in particular when the sun was scorching hot, and my orders were to ensure a soldier completed his punishment. After running quite

a few laps, the lad in question started to slow down and show signs of being disorientated, so I thought that the correct thing to do was to tell him to stop, which I did.

Immediately I heard the captain shouting out from the window of the building behind me.

"Why have you let him stop?" he cried.

"This man is exhausted and I'm worried he'll have a heart attack," I replied.

"Don't you worry about that, there are some good hospitals around here where we can take him."

I kept my mouth shut and had to accept those unfair orders, although really I just wanted to damn it all to hell. In the end, my "bad behaviour" meant I hardly got any time off at all, and I spent a good deal of my military service in camp, unable to leave.

They were so angry at my excessive disobedience that on the day of our discharge, the captain came up to me and said,

"You are not going to be discharged. You are going to stay here to make up for all the times you have disobeyed."

I couldn't imagine a worse punishment than having to stay there any longer. Fortunately, they were just trying to scare me, as a few days later I was allowed to go home.

Obligatory service did not make me into a man; on the contrary, I felt that it had more to do with degrading me until I became someone with no will of their own, a robot.

As it turned out, I was able to go home and return to my life as a farmer together with Rosa Mari and my family.

Co-operatives and trade unions

Recently, people have begun to hear about me on the Internet because of my defence of organic farming and medicinal plants, and because of my involvement in the fight against GMOs in Catalonia. The truth

is that my involvement in social activism began many years ago, firstly with workers' co-operatives and later on with farming trade unions.

I was able to get involved with these types of activities largely thanks to my wife and brother, who relieved me of certain responsibilities so I could dedicate my time to going to meetings, demonstrations, and conferences. Rosa Mari looked after the home and our children, and Miquel was in charge of the business when I was away. I could not have done it without them; they played a key role in enabling me to do the work for which I am known today. If it wasn't for them, I probably wouldn't be writing these lines right now.

When I was eighteen, I became part of the Balaguer Farmers' Co-operative; my father gave me his membership card and sent me to the meetings on his behalf. Once I was there, I had to get over my shyness as I found myself forced to speak in public - you could say it was shock therapy. I don't exactly know why, but Josep Roca, the co-operative's president at the time, asked me to accompany him to Lleida to speak at one of the meetings which the various regional co-operatives held from time to time. Presiding over that meeting was a Francoist sent from Madrid - Blas Mora Pinto, an undiplomatic man of harsh disposition. We went to that meeting with some sensible proposals, knowing full well they would not be well received, as they were not matters Blas Mora Pinto wanted to discuss. I was extremely nervous knowing that I had to present our proposals to him, but I could not pass up the opportunity given to me by the president of my co-operative.

Sweating profusely and with my heart palpitating, I found the courage to address the attendees and present the proposals from our co-operative. As was expected, when Blas Mora Pinto heard what I had to say, he didn't even let me finish… he ordered me to sit down, firing off a string of insults.

Although it was a fairly unpleasant experience, I am grateful to Josep Roca for that baptism of fire which helped me overcome my fear of speaking in public. You could say that from that point forward, I've

gradually got to like it, and now it's something I do with total normalcy at my conferences and public events, as the reader will know.

As I got into the swing of talking in public, my speeches gradually became angrier and more acerbic, something that constantly caused problems with my audiences. They would interrupt and rebuke me – they didn't like the way I spoke or the fact I would always say what I thought, no holds barred. I now realise Rosa Mari was right when she said that people would listen to me more if I wasn't so aggressive with my words and tone of speech. She always says that she prefers the old Josep, the Josep who was a shy boy.

Co-operative societies were set up in many places, but never really took off, and it was no different in Balaguer. The situation was complicated because of the various different farming methods employed by co-op members, who all had different ideas about how things should be done.

The adoption of mass production and continuous cultivation methods was a big mistake in my opinion. These directives meant that, as co-operatives and their secondary associations (co-operatives with other co-operatives as members) got bigger and bigger, participation from local growers diminished, and the job of running the co-operatives ended up in the hands of financial consultants.

It meant the end of the Balaguer co-operative, which disappeared and left many of its members sequestered due to the financial losses incurred.

During my time in co-operatives, namely as a member of the farmers' syndicate *Unió de Pagesos,* I opposed setting up a sole co-operative group in Lleida, favouring instead the diversity of the smaller secondary co-operatives. However, the majority did not share my opinion, and I believe it led the co-operative world down a dead end street.

With the *Unió de Pagesos*, I was involved at regional level in promoting an association for the welfare of famers in Catalonia. Eventually, it was absorbed into the *Federación de Mutualidades de Cataluña*

(Federation of Friendly Societies of Catalonia) due to the lack of involvement of its members.

After that, I found myself at the helm of setting up a farming insurance scheme, but the attempt was aborted by political and financial interests.

I have come to the conclusion that only small-scale co-operatives really work, whether self-run or formed by members with the same aims and objectives. Otherwise, I know from experience that instead of being run by the members themselves, matters are passed on to be dealt with by third parties.

My experience with the farming trade unions has also been one of frustration and despair. We fought for fair prices, for a fair tax system, for social security and health care, etc., but were met with the same resistance as in the co-operative world, and it was difficult to make any progress at all.

I could see that syndicalism had fallen into vertical-structure unionism and had landed itself in absolute conformity. We eventually adopted the vertical unionism of Franco's day so greatly criticised at the time, and now we have local and provincial organisations spread across the county, who don't know one another and send delegates to represent them at higher levels. These delegates then make the decisions that the rank-and-file members should be making. The same thing happens in Spanish politics – you delegate a person who you believe has greater abilities than you do, and you end up not participating and not having any say in the final decisions. Countless times I have heard delegates say, "We can't do anything at this point because of so-and-so or such-and-such."

What do you mean you can't do anything? So what exactly is your job then?

I reached the conclusion that if you have an idea, no matter how good, you won't get anywhere with it whilst you are in a union. There is usually a certain degree of conformism within unions and they only serve to try to bring about minimum achievements through negotiations.

The first trade union where I was politically active was the *Unió de Pagesos,* which I joined at the age of 26 in 1974, the year of its foundation. I was delighted to be in a union based on self-finance that did not discriminate against political ideals; unfortunately, the *Unió* increased in size structurally, and began to depend on subventions from the government, who had an obvious interest in controlling such a powerful political and social tool. The maths is easy: the more votes there are, the more subventions are handed out; therefore, there is more dependence from union members on government handouts. During union congresses, the political parties would all attempt to steer the *Unió de Pagesos* towards using it for their own purposes.

Faced with this political offensive, some members from the Noguera area created our own independent group, to try to slow down the weight of the political parties operating within the union. This small group had a much more radical way of going about things, and sometimes our methods did not meet with the approval of the rest of our colleagues. We believed that it was the only way to achieve real reform. They were times of high profile struggles against the Church, the State and the big businesses like the Telefónica phone company and the electricity providers.

The now famous battle of Montagut comes to mind. A hundred or so tenant farmers grew their crops there, and it was out-and-out war to try to avoid them losing the land. It turned out the land belonged to the clergy of Lleida cathedral. The government was supposed to expropriate the land from the Church because of wrong usage (in accordance with the *Ley de Reforma Agraria y Interés General* - Law of Agrarian Reform and General Interests), and were supposed to give the existing tenant farmers good conditions. But the law was not correctly enforced and the land was not expropriated. They falsified the land qualification and declared it uncultivable, allowing the canons to sell it to a landowner from Lleida, and in so doing expelling the tenant farmers from the land where they had farmed for generations.

The amalgamation of land in the hands of landowners is happening because of the farming crisis, and signifies a return to how things

were in the Middle Ages. Land that was once progressively passed on to farming generations is again returning to the hands of big companies and capital assets who are becoming the new feudal lords of our day.

When news of this dirty trick reached our ears, the small independent group we had formed within the *Unió de Pagesos* decided to take direct and decisive action. We went off to Montagut with the intention of helping the expelled tenant farmers by occupying the land; the government responded by sending out hundreds of civil guards in helicopters and armoured personnel carriers. Faced with this great display of force, we organised ourselves and counterattacked in any way we could: we closed off roads with trees; we lit bonfires, and anything else we could think of. It was guerrilla warfare. Someone came up with the great idea of closing off the roads by burying empty butane gas cylinders under huge piles of earth and connecting cables between them so it looked like a bomb had been set. It wasn't real of course, as we had no idea how to blow it up, but they were forced to send out the Bomb Squad to try to deactivate it.

On another occasion, a court official who had come to expel the tenant famers ended up in the canal, still sat inside his car.

All this happened before the stupefied eyes of the *Unió de Pagesos* who did not want to be held responsible for our actions, and tried to stop us.

I don't need to tell you how much Rosa Mari suffered when we were doing those kinds of things. I know it's because of her that I am able to relate these tales to you now, as many times she stopped me from going too far and she has always been critical of my methods. If it wasn't for her advice and criticism, I probably would have done something I regretted. As it was, I nearly received a serious court sentence for what happened at Montagut. One of the actions we carried out was burning a huge tractor they were using to destroy the tenant farmers' homes. My task consisted of stopping the tractor by removing one of the tyre valves. My companion then threw a bottle of petrol in to the tractor and set fire to it… this all happened in front of the media! We had

asked them not to film us or take photographs whilst we were carrying out illegal actions, but they did not take much notice of our request. Although they didn't publish the pictures of my companion setting fire to the petrol, I appeared three times on TV3 bashing the valve out of the tractor wheel. A few days after the event, I did what I always did whenever I had a problem – I went to see Jordana, the healer in Lleida. He had seen the News, and so he knew what had happened. As soon as he saw me, he told me off. Then he closed his eyes as and remained silent for a good while. Finally, he told me not to worry: he would influence the judge so that there would be no serious consequences for me. Whether because of his "telepathic" powers or for some other reason, I got away with it again that time.

Before he passed away, Jordana gave me a great piece of advice,

"You have to be smart; don't be so obvious – they're after you!"

Eventually the Montagut farmers had to leave, but they did manage to acquire land in another place, and were given the opportunity to claim compensation. And we proved that it was all a fiddle by the Lleida town council acting under the Francoist regime.

The independent Noguera group carried out its actions on the fringes of the *Unió de Pagesos*, and we became increasingly marginalised and silenced as union members. We were eventually expelled for disobeying some national advisory agreements, but were later readmitted thanks to the solidarity of our comrades across Catalonia. However, sanctions were put in place to ban us from having any official role within the union.

Although we were readmitted, we knew the union would not allow us to achieve the changes we wanted, so we set up a parallel association called the *Assemblea Pagesa* (Farmers' Assembly). It was a social and rural trade union movement created mainly by farmers who had broken away or been expelled from the *Unió de Pagesos,* and driven by students and consumer groups in Barcelona involved in ecological matters – *La Cooperativa Germinal de Barcelona, Entrepobles, La Xarxa de Consum Solidari* and *La Plataforma Transgènics Fora! de Barcelona* (Barcelona

Seed Co-operative, The People's Platform, Consumer Solidarity Network, and the Barcelona Platform - GMOs Out!).

Today the *Assemblea Pagesa* is thriving more than ever and we continue to fight for dignified rural and autonomous farming that respects the environment and allows consumers easy access to organic food.

Later, other autonomous organisations were formed: *Som lo que Sembrem, Slow Food Terres de Lleida* and *La Dulce Revolución* (We are what we Sow, Slow Food Lleida and Sweet Revolution) – all of them independent, self-financing and horizontally, not vertically, structured.

One thing is clear to me: if I was born again, I would not be as involved in the world of co-operatives and trade unionism. It has been a learning process I have had to experience, but I would in all probability behave very differently if given the chance.

We have many changes to make; firstly, we must make big changes within ourselves.

Marta and Pau

Both Rosa Mari and I would have liked to have been married in a civil ceremony, but in seventies Spain it was not the done thing. Therefore, we were married by some Franciscan monks of the Santo Domingo monastery in Balaguer. We thought that if we had to have a church wedding, then at least it seemed fitting to marry under that austere religious order.

The year after we got married, Marta was born. She always stood out as an intelligent girl and applied herself well in her studies. She was the child every parent wishes for: one that did not cause us too many problems.

Years later, Marta told us that she felt she had missed out on that time of conflict with one's parents which most of us go through in life. Although she has always had a strong personality (in that way she takes after me), she said she missed going through that adolescent phase where one tries to find one's own identity, standing up to society's

norms, and in particular to one's parents. I think we have actually been going through that phase over the last few years, ever since I started to become critical of her specialist subject: medicine. She is a doctor by profession and highly thought of by her patients; she just needed to open her mind a little, which she has been doing over the last few years.

Three years after Marta, Pau was born, the baby of the family. Right from the start, his mother and I knew he was a special child; so much so, that we were not really equipped to deal with his needs.

He was very different to his sister; he was more of a dreamer and more extrovert, but didn't take to his studies as his sister had done. This caused some tension at home, as Rosa Mari and I thought that he wasn't doing as well as he should. In our opinion, he should have been studying and trying to get the best grades possible, and we told him we expected as much. It was such a big effort for him and he was not really up to the task. What's more, he could see that his sister was getting much better grades with much less effort.

We often thought Pau was a lazy child - we didn't realise he was simply on a different path. He was more emotional, you could even say he was more spiritual. The problem wasn't his, it was ours, and we tried to box him in within the social parameters we had always known.

Added to our lack of vision was the difficulty he had in expressing what he felt and needed. This meant that Pau became progressively more reclusive and retreated into his own world.

He felt a need to distance himself from our control and so he left home when he was only eighteen, immediately after he finished his farming studies. Two years later, he returned and began to work in the family business, taking charge of the edible flowers department. The tensions did not disappear however, and once again, he left home. That time he went off to live in various farming communities where he met some interesting people such as healers and shamans, and he learned how to make bread and brew beer, to use natural therapies and take on new skills that helped him to earn a living.

Now he is back with us again and we have gradually begun to understand each other in a more profound way.

I regret not having enjoyed my children as much as I would have liked. It is true that I worked out in the fields from dawn to dusk, but the days I could have spent with them, I spent occupied with union activities. What with meetings, protests, and all the other responsibilities I took on board, I neglected the biggest responsibility a person can have: family.

Pàmies Hortícoles S.L.

With the death of our father on 28th July 1980, my brother Miquel and I took charge of the family farming business. Later on in 1999, we became a limited company, under the name Pàmies Hortícoles S.L.[3]

As I said, Miquel is the brains of the business. Even though he left school at the age of thirteen, he taught himself the skills he now uses to manage the company, including the accounts, and maintenance of the land, tools, and vehicles. He is the heart of the family firm.

I am in charge of production and the crop cultivation schedule. I study the different varieties and their properties. I oversee the phytosanitary treatments, preserving, farm work, and staff co-ordination. We have from between eight and twenty workers, depending on the time of year.

After the Reng market era, we moved on to Lleida market to sell our produce, and finally we have been trying to get established throughout the rest of Spain. However, our aim is not to keep growing indefinitely as we value more the personal touch we can offer our customers, along with the chance to offer them our products with the same quality and freshness as if they themselves had grown them.

The company has evolved a lot over the last few years. All the changes we making are because of a personal process: we discovered we had been doing things wrong and that we had to take a new direction in our work.

This is the story of our slow return to organic farming.

Working on the farm.

2

The slow return to organic farming

I clearly remember the moment I began to rethink the way I farmed the land. Pau was about seven or eight years old and was fond of fishing. One day he asked me to help him find earthworms to use as bait, so we started to look for them. Earthworms are usually everywhere, and are easy to locate since they live close to the ground's surface, but on that day I discovered they had disappeared from our land. The realisation that the chemicals I had been using on my fields had killed off all the worms was a sharp slap in the face. Those tiny creatures that were so abundant in my youth were no longer there: the shock of that reality hit me hard.

Earthworms are great allies to farmers as the holes they make aerate and stir the soil, and their excrement is the best form of manure compost. There are thousands of different types of creatures living in the ground - they are all our allies, and all exterminated by the chemical products we use.

That moment was a turning point for me.

What was I doing to my crops?

In this chapter, I shall expand on my unfortunate incursion into conventional non-organic agriculture, from which I have been lucky enough to escape alive.

Looking back on it now, I feel like I was deceived. My fellow farmers and I were promised "the moon and the stars," as they say, but the reality of it is very different.

I consider farming to be one of society's major social functions; after all, we are providing people with the food they need. Farming

should encompass a commitment to provide the best products possible, but we have to understand it is no easy task. We all - farmers, consumers, politicians, and traders - need to make the effort to be involved. I personally cannot help feeling responsible for ruining my land all those years, and surely as a direct result, causing harm to the people who have trusted in the quality of our produce. I have been an unwitting collaborator in making people ill and polluting the environment. I saw how my own health was gradually declining because of handling and breathing the chemical compounds I was using. It is for these reasons I feel I have a debt to society, and why, in recent years I have devoted so much energy to sharing information about matters I will talk about in this chapter.

Failure of the Green Revolution

Seventy years ago, organic agriculture was the only viable farming method, the result of many millennia of evolution. It was cleaner and more respectful to the natural cycles and needs of the land. That was before the boom of industrial agriculture arrived.

The word *ecology* is derived from the Greek *oikos* (meaning home), and *logos* (meaning knowledge), which translates into knowledge of our home and environment. Ecology works in harmony with the environment; that which is not ecological is in direct conflict with Nature and therefore potentially harmful.

There was a time when we always used organic products and processes in our crop cultivation. Eliminating "weeds" meant spending hours on our knees, pulling them from the ground, or using the "sophisticated technology" of that time - the hoe, and suffering the subsequent backaches. There were plenty of natural insecticides, which we made by fermenting certain plants, such as nettle and rough horsetail. These processes were often very laborious and quite inconvenient, but of course, they were respectful to our environment and our health.

Everything changed in the mid forties, when new agricultural methods came into being, such as the selection of higher-yielding seeds,

mechanisation, and the intensive use of chemical products. It was the Green Revolution, a US-born movement exported throughout the world promising wealth to farmers and cheap food for everyone. At that time, Europe was an impoverished continent reeling from World War II. The Green Revolution was implemented via the US Marshall Plan in the form of large amounts of agricultural chemicals and farm machinery, which transformed local farming into industrial agriculture. The promise was that all those innovations would mean an end to tough, tiring farm work, and even to the problem of starvation.

I was at secondary school when I first heard about these new techniques. In our agronomy classes, Mr. Pío would demonstrate - with the best intention in the world - the wonders that could be achieved with weed-killers and pesticides. I invite the reader to imagine our amazement as we saw for the first time how spraying an onion or tomato with those liquids meant that the plant could grow with no trace of weeds alongside it. We were so happy to think that we would be able to produce much more with much less effort, and not have to work as many hours... a new era had arrived: the future was already here!

I did not have to insist too much to my father to convince him that we should start using pesticides, insecticides, fungicides, antibiotics, and chemical fertilizers. In those days, when it was so hard to earn a living, those miracle products seemed to be the solution to all the ills of our small family farm. As we started to implement them, we began to save time and energy, which in turn had a positive effect on our domestic economy.

However, there was one of those new inventions we never wanted to use: growth hormones. We never trusted that particular product. After all, we thought there must be a good reason for vegetables being the size they were.

Neither my family nor I knew then that this revolution was going to have a "downside". Implementing those new agricultural methods would cause us many headaches in the future (a truer word was never said), and make us become dependent on the big agrochemical companies.

Looking back now, we cannot deny that the Green Revolution had its good points. It saved us many hours toiling on our knees in the hot sun, and we saw a slight increase in production.

In Latin America and Asia, the new methods had a certain degree of success in terms of increased food production. However, these improvements only occurred where optimal conditions were in place and when large quantities of fertilizers, pesticides, irrigation, fuel for machinery, hybrid and transgenic seeds etc. were needed. The traditional varieties and techniques always proved to be more productive, and did not incur all the extra expense.[1]

The Green Revolution has also failed in its promise to end world hunger and malnutrition, but we should not be surprised by this, as the problem is not caused by lack of food. An increase in food production has no significance if, counter-productively, there is no desire to change the socio-economic causes which prevent certain societies having access to food.

Josep Pàmies, Bayer representative

Of course, the ones who never go hungry are the big pharmaceutical and chemical companies, pushing these innovations out across most of the planet with the weight of the neoliberal system behind them.

These giant industrial sectors - chemical and pharmaceutical - have been linked in a very profitable way since the beginning of the twentieth century. In just a few decades, they have gained control over the production of agrochemicals, medicines, and a large part of the seed trade.

During the early years, I would not have suspected that an industry supposedly devoted to our well-being would be capable of doing something that would cause ill health or that would harm the environment. I was so naïve back then!

In fact, I was deeply indebted to those multinationals for finding the solution to pests, poor harvests, and backaches. I was a devoted advocate of those miracle products, and recommended them fervently to all the farmers I talked to.

My passion for those products was such that a friend of my uncle's, a delegate for Bayer in Catalonia, heard about me and came to visit. I was offered the position of representative for the agrochemical section of that massive multinational company, in the Balaguer and Noguera areas. I thought the proposal more than attractive. My job would have involved visiting farmers to talk to them about the virtues of agrochemicals, and convince them they would be the solution to all their problems.

I am sure I would have been a good sales representative, as I had experience in the field and had discovered for myself the benefits of those products. What's more, I would have done the job with a clear conscience, convinced that I was helping my fellow workers.

I sat down with my parents and explained the situation. There wasn't much money at home (we were still paying off debts incurred from my grandfather's inheritance), and a position like that promised a more than decent salary. It was just the beginning of the Green Revolution, and it was already clear it was going to be a fabulous business.

Nevertheless, after giving matter much though, I did not accept the job. I decided that it was more important to stay united in the family business and to try to prosper together. Furthermore, it would have been quite difficult for me to quit working out in the fields, which was what I liked doing best.

Telling this tale makes me wonder at the twists and turns which life presents us. It is funny to think that my CV could show my previous employment as, "Josep Pàmies, Sales Representative for Bayer". In any case, I would not have considered it detrimental; rather it would have been an essential part of my learning process.

The B-side of the Green Revolution

As I see it, the industrial agriculture system has a fundamental problem: it is based on the belief (which is very widespread today) that regards the entire planet as being at our disposal. However, we cannot escape

the law of cause and effect, and, sooner or later, we are forced to pay for our excesses.

Seven or eight years after we started using chemical products, we began to notice and suffer from certain problems. One of the first things we realised was that insects had become resistant to insecticides, and consequently we were forced to start using stronger ones.

Safety standards were stipulated, but many farmers deliberately skipped them.

They would spray fields without masks, or handle chemicals without gloves, and because of that, it was common (and still is) for farmers to have damaged and ulcerated skin.

The real alarm came when some farmers I knew began to suffer from very serious disorders. More than one had to be hospitalised with uncontrollable and very violent spasms. Others were affected by problems of the nervous system, and were reduced to walking with canes at forty years of age. There were even some cases of very premature death.

Over a short period of time several incidents occurred, which pointed to something going very wrong.

We did not have the means to corroborate any of our theories, but logically we suspected that the agrochemicals might be the cause of our problems. I tried to make sense of what was happening, believing that farmers had been using the products improperly, that they had not taken sufficient precautions. Personally, I had always been careful when using chemicals products, but even so, I did not escape their side effects. I started having headaches, vomiting, dizziness, tremors, and stomach pains on a regular basis. Fortunately, I did not suffer from the acute poisoning that affected my colleagues, but my quality of life began to deteriorate considerably.

But for some reason or other, I came to the conclusion that the benefits far outweighed any drawbacks, and so I carried on as I had been doing.

Pesticides are toxic products specifically manufactured to kill living organisms. They are derived from chemical weapons developed during the World Wars. It is estimated that the pesticide market currently moves about 25,000 million euros annually, and that about 140,000 tons of chemicals are sprayed each year.

The most common health problems previously suffered by farmers were muscular, but this has changed over the years since we started spraying synthetic chemicals on our crops. Chemical compounds have been causing an increase in cancers, neurological diseases, degenerative diseases, and other types of disorders - and they are not problems associated with bad posture or physical effort.

According to the World Health Organization (WHO), every year between 500,000 and one million people (farmers and consumers), are victims of acute pesticide poisoning, and more than 220,000 of them die because of it. Seventy-five percent of those are farmers, while the remaining 25% die due to the contamination present in food products.[2]

The increase in degenerative diseases is particularly alarming among farmers. Because of studies like the one carried out by Spanish researcher, Francisco Pan-Montojo, we now know that Parkinson's disease is related to environmental toxicity. Pesticides are a part of that.[3] Evidence that the agricultural sector in France has a higher rate of Parkinson's disease than the rest of the population has served to establish a law recognising it as an occupational hazard for farmers.

Farmers are the only people who take a container with a skull-and-crossbones label on it and pour the contents of it on our food.

Here on the Iberian Peninsula, the Spanish and Catalan governments know these products are causing us harm. Let no one be mistaken: they are aware of the risks. In the nineties, studies carried out by American, Italian, and Scandinavian researchers indicated that there was a higher incidence of cancer in the agricultural sector. And I am fairly certain that the Spanish Ministry of Health possesses a study showing that farmers are more likely to die from brain, stomach, prostate, and testicular tumours, as well as leukaemia and non-Hodgkin's lymphoma,

than the rest of the population. But if you ask to see this study, they will not show it to you: they will not make it public to avoid social unrest. What I find alarming is their negligent behaviour, denying us information that could save lives, and backing agricultural practices that do just the opposite.

One of the foremost authorities in Spain for the study of health disorders caused by agricultural chemicals is Dr. Nicolás Olea, Professor of Medicine at the University of Granada. According to his studies, there is sufficient evidence to verify that environmental chemicals are bio-accumulative, i.e. they accumulate and persist in the environment and in our bodies. Constant exposure to these products will increase our toxic load over the years. Organochlorine, organobromine compounds, phosphorous, and other components are known to be toxic and remain in our bodies for decades.

Let's take an example: DDT (dichlorodiphenyltrichloroethane). It is a potentially carcinogenic insecticide (a patent of the Monsanto Company), which still, thirty years after being banned, can be found in the placentas of women and is a cause of foetal deformations.[4]

Nicolás Olea's fantastic work confirms that these environmental chemicals are also endocrine disruptors, i.e. they act in a negative way on the vital organs responsible for the secretion of hormones that regulate certain functions in our body such as mood, growth, tissue function, and metabolism. From observing effects on laboratory animals, there is proof that the chemicals cause thyroid and fertility problems, behavioural anomalies, metabolic alterations, masculinisation and feminisation, as well as certain types of tumours.

Initial findings that confirmed the effects of this type of pollution were found in bald eagles in Florida, USA. In 1952, researchers observed that the birds had lost their mating instinct, and it was subsequently discovered that 80% of them were sterile.[5]

We have a similar case closer to home in the lower Ebro River where urban, agricultural, and industrial complexes predominate. In

that area, carp are suffering from a series of endocrine disorders ranging from a decline in semen quality to gender alteration.[6]

The disappearance of otters in English rivers, the decline in the global bee population, the deformation of seagulls in Lake Ontario (USA), and the premature death of dolphins in the Mediterranean are just a few further examples.

What's more, these chemical products favour the emergence of infestations, as many natural predators have disappeared. New resistance to insecticides means there is nothing to stop abnormal proliferations of insects.

Mass use of chemical fertilizers and pesticides comes with an added problem: the deterioration of arable land. Land regenerates easily if it can lie fallow and its cycles are respected. The wisdom of generations of farmers over thousands of yeas confirms this: land needs to be well nourished with natural fertilizers and rested by practising crop rotation.

When you start to use pesticides and chemical fertilizers, the natural processes of the soil are cancelled out because the micro- and macro-organisms that aerate and nurture the soil are destroyed, causing degradation of the natural mineral composition. Constant aggression from using chemical products on the soil renders it sterile, leading to desertification. At the same time, the process initiates dependence on these chemicals, similar to when the human body comes to rely on insulin and stops producing the hormone naturally.

The deterioration in soil quality not only meant that our crops suffered, but it also had a negative effect on water filtration. Before I started spraying an arsenal of chemical compounds on the ground, it was spongy and full of organic matter, mostly because of the constant activity of micro-organisms and insects such as earthworms, which enriched and oxygenated the soil on a daily basis. After obliterating all the insects and microorganisms living in the soil, the water stopped filtering correctly and the land became waterlogged, causing the plants to die.

One of the books that made me become aware of the importance of soil quality for obtaining good food was *Suelo, Hierba y Cáncer*[7] (Soil,

Grass and Cancer) by André Voisin, a French agronomist who observed how animals became sick after grazing on pasture land lacking in magnesium and other minerals. It seems that cows fed on highly exploited land were likely to develop breast cancer. His conclusion was that a loss of health in the land can be translated into a decline in human health as well.

Could it be that, to a certain extent, the incidence of cancer in our society is due to these types of deficiencies in our food?

When we know all this information, it is more than reasonable to ask ourselves the question: how can products that cause such adverse side effects for our health and the environment pass approval? The answer is simple. The corporations that produce them are much larger and more powerful than governments. They have enough power to influence supervisory bodies to turn a blind eye, and to get their products on the market. It might be surprising for the reader to know that in order to judge whether a chemical is safe, the regulatory agencies use "scientific" studies developed by the very same marketing companies who sell the product. In the following chapters, we will see how this absurd practice is also used to approve other types of products, such as pesticides, chemical additives, and medicaments of dubious effectiveness that are dangerous to our health and to that of the planet.

The relationship between the European Food Safety Authority (EFSA) and the chemical/pharmaceutical multinationals is so closely linked that the revolving-door phenomenon is the order of the day, making it easy for the big companies to get their products legalised.

Interestingly, the *Agencia Española de Seguridad Alimentaria y Nutrición* (AESAN – the Spanish Food Safety and Nutrition Agency), states the following on its website:

"In the European Union, active substances in phytosanitary products may not be authorised without prior scientific proof that they do not produce harmful effects in consumers, farmers or third parties, and that they do not cause unacceptable effects on the environment […]".[8]

The paradox is that in recent times, a number of phytosanitary chemicals have been removed from the European market precisely because they are dangerous. How is that comprehensible?

DDT was banned thirty years ago in Europe and the USA, although it is still manufactured in Huesca to be sold to those third world countries where it is still legal. This is normal practice for products banned in the northern hemisphere: the same thing occurs with obsolete pesticides.

Take *Endosulfan*, for example - an organochlorine insecticide and pesticide that affects the human endocrine system. It is still used today in some places. Initially it was granted temporary approval, then subsequently banned in over fifty countries including those belonging to the European Union.

And *Confidor*, a pesticide manufactured by Bayer which, as I write these lines, the European Commission is considering banning because it is causing a decline in bee colonies.

These are just three examples but the list is long.

There are many instances of public pressure and environmental or health-related disasters forcing authorities to ban these types of products. It is horrifying to think these poisons used to be legal but... how many substances are we using right now which might also be dangerous to our health?

There is also another type of biodiversity loss implicit in the Green Revolution, which has nothing to do with the use of synthetic agrochemicals. I am talking about the loss of different kinds of fruits and vegetables because of the introduction of certain crop varieties specially selected for their high productivity. These are the hybrid and transgenic seeds, also known as "improved seeds", as they are the most productive in the short term. This selection process effectively means the homogenisation of seeds, and a great loss in diversity.

Not so many decades ago, there were 50,000 varieties of rice in the world, and now there are only a few dozen left. This is a loss of incalcula-

ble value for people living on this planet. Crop varieties adapted to each territory and natural weather patterns are disappearing at a high rate.

Large pharmaceutical monopolies are buying up all the small seed companies. I was greatly surprised to discover that the company from whom I bought my seeds was a branch of the US giant Monsanto. We farmers have handed over our thousand year-old legacies to a handful of companies. Now, year after year, we are forced to buy their seeds, which are the origin of life. In just a short time, we will have become dependent upon not only their chemicals but also their seeds.

This is the "B side" of the revolution - the irrational search for an increase in yield, which is ultimately detrimental to crop quality and heterogeneity; harmful to our health (causing cancer, neurological, and neurodegenerative diseases, etc.); and harmful to the environment (deforestation, pollution, desertification, biodiversity loss, etc.).

The agro-food industry methods also threaten the dignity and survival means of farming communities around the world. It all has notable social implications, which will be dealt with extensively in the next chapter, "Revolution begins on your plate".

Pesticides on our plate

I begin this section with an appeal to our responsibility as farmers, as we are the ones providing people with the food they serve at the table. The food chain starts on our land therefore I believe it is essential we keep it clean. If not, we need to be aware that with every lettuce, artichoke, and apple we sell, we will be spreading suffering and disease.

The scientific community, international agencies, and public authorities make it quite clear: synthetic agrochemicals are not harmless, and are responsible for many human diseases and for the destruction of the environment. However, it is quite another story for them to take action to prevent these diseases and destruction. But know about it they do.

I repeat the data provided by the World Health Organisation (WHO): 500,000 to one million farmers and consumers are poisoned annually with more than 220,000 deaths every year. Farmers are poi-

soned via inhalation or by chemical products penetrating the skin. Consumers are poisoned through ingesting food that has been exposed to toxic chemicals.

However, it seems that the danger these products present is not getting through to the public's awareness. Perhaps we naïvely trust that governments are protecting us from all evils, but I can assure you that is not the case.

The most basic hygiene protocol we use when we want to eat a vegetable or piece of fruit is to rinse it with tap water. By doing that all we achieve is the removal of any dust or dirt (which in fact is the least harmful thing about it), but the pesticide residue remains and is not so easy to get rid of. It is difficult to eliminate the synthetic chemicals that have been directly sprayed on the plant; nevertheless, they usually do biodegrade from solar radiation before they reach our tables. However, there are other types of agrochemicals called systemic chemicals that function in a different way, which are absorbed by the plant. The chemicals become part of the plant, killing any insects or fungi that may attack it. During this process, the plant acquires the biocidal (life-killing) properties of the chemical, which cannot be removed no matter how much you wash that vegetable or piece of fruit. Unfortunately, the systemic method is frequently used because of its effectiveness.

With the supposed aim of protecting consumers, authorities created a formula to determine the maximum dose of agricultural chemicals a person can ingest with no noticeable negative effects. It goes by the name Maximum Residue Limit (MRL) – the maximum amount of chemical residue acceptable in a vegetable or fruit. In Europe, this amount is determined by Codex Alimentarius, an EU agency advised by two committees – the Joint FAO/WHO Experts Committee on Food Additives (JECFA), and the Expert Committee on Pesticide Residue in Foods (PRiF).

The MRL is the "non-dangerous" amount of pesticide that can be tolerated by human beings proportional to the intake of food in the average diet. For example, if the average person eats one apple, a

piece of lettuce and two tomatoes per day, the amount of chemicals involved in those items is calculated to ascertain the acceptable levels of the pesticide(s) used.

But what if one day you eat more than one apple? How can these absurd and unscientific figures be used when eating habits vary significantly within the same framework?

It gets worse: MRL regulation meetings are always held in secret, far from the eyes of the public. As if this were not worrying enough, and as I mentioned a few pages ago, the toxicological studies used in pesticide regulation are funded by the industry and are also kept secret. The average person has no rights to find out about the toxicological data of products that poison the food we eat, or to be informed about what is said in meetings held by the regulatory agencies. As we shall see later, these agencies are heavily controlled by the food lobbies; the matter of revolving doors is the order of the day.

What's more, the toxicology studies are designed for each chemical compound individually, and no procedure exists to monitor possible combinations of the chemicals. We are unaware of the potential effects to our health caused by the toxic cocktails we are exposed to. Added to this unknown equation is the fact that other non-agricultural contaminants such as food additives may well be added to the mix. The whole business is very alarming indeed, and the gradual accumulation of chemicals in our bodies is already taking its toll.

We will discuss this matter further in Chapter 7, entitled "Let thy food be thy medicine".

The process towards ecology

I am now totally convinced that organic farming is the only option with any kind of future, although as wholly human endeavour, agriculture can never be considered truly ecological, because of the environmental changes it incurs. However, the severity of its impact depends on the farming methods used, so in that case organic farming is the least aggressive practice.

At Pàmies Hortícoles we are as yet unable to put organic farming into practice one hundred per cent, but that is our goal. It is a slow process, which began back in the early nineties with my son Pau and the earthworms.

In 1998, after being away for a few years, Pau came home and started working back at the Pàmies family business. He was responsible for the culinary herbs (we soon discovered they were also medicinal), and edible flowers. He was also in charge of spraying the fields with sulfates, meaning he was being directly exposed to chemical compounds. In 2000, after several bouts of chemical poisoning and showing many symptoms very similar to those I had suffered from (headaches, coughs etc.), Pau told me that we should stop using those poisons.

Deep down, I already knew we had to change our direction, but I was afraid to face up to such a massive change in our family business. When you are used to doing things in a certain manner, it is often difficult to change your ways, and even more so when you have between eight and twenty workers relying on your business to be profitable. My way of thinking was, "If I don't spray the crops I will lose the harvest and we can't afford that."

Luckily, we had some farmer friends who had already gone through the difficult process that now lay ahead of us, and who could help guide us through it: Josep Coll from Alcarràs, and farmers from Cal Valls in Vilanova de Bellpuig - all of them true pioneers. They had swum against the tide at a time when the problems with conventional agriculture were not as publicised as they are today. I had not even entertained the idea of changing my farming methods, and frankly, I must admit that at first those farmers seemed like weirdos to me! But faced with the problems we had with conventional agriculture, I realised they were leaders of a movement which sooner or later I would feel compelled to join.

Thanks to their advice, along with a great deal of patience, we embarked on the adventure of transforming Pàmies Hortícoles back into an organic enterprise.

The first step was to gradually reduce the use of agrochemicals and use products that were the least toxic and caused the least damage. At the same time, we began to introduce natural phytosanitary products made from plant extracts (there are several commercial brands as well as homemade treatments using garlic and nettles). To test their effectiveness, we sprayed one field with the usual chemical products and another with plant extract liquid. We did exactly the same thing with fertilizers: in some areas, we used organic ones and in others, chemical fertilizers.

My initial skepticism faded when I saw that our production did not diminish at all, but actually improved with those changes. In three years we dramatically reduced the use of chemicals, and reached the conclusion that plant extracts were just as effective, or more so, than the synthetic products (to which, as I said before, both the weeds and insects were already starting to become resistant).

Moreover, our health benefited from these changes. The headaches and dizzy spells became increasingly less frequent and less intense.

The only area where organic methods have not yet made serious progress is in the elimination of so-called weeds. It is difficult to stop using weedkillers without an increase in production costs. However, if science were to invest more in finding ecological solutions, we would probably already have some good organic weedkillers. Restricting the life of any species may not be the smartest way to act: we might be underestimating plants whose value is vital to the proper functioning of the ecosystem, and which may prove useful to us at some point.

Our return to organic farming is still a slow process strewn with obstacles, partly because in Spain, a farmer who elects to go through this type of transformation must do so alone, and with very little support from the universities or governments.

I have first-hand knowledge that many of our politicians know they need to invest in the organic sector, but they are mostly afraid to challenge the status quo. For them, it is fine to keep things as they are, as long as they can keep their jobs. The last thing they want is to alarm

© Família Pàmies-Gràcia

With my son, Pau.

the public and trigger a change in the current system that could destabilise the market, wiping out their careers in the process.

Politicians are afraid to speak out because they have strong links with the big companies and because it would cause conflict with conventional farmers and growers. Interestingly, when the microphones are off, some of them say things completely contrary to the government laws they openly support. It happened with Lleida's former Partido Popular (PP – Conservative Party) president during the general election campaign. At the presentation of the PP's farming agenda, she welcomed us exclaiming, "Oh - so you are the environmentalists!" and immediately confessed her love for organic food, saying she fed her entire family organic food for "preventive health reasons". When we reminded her that the healthy habit of eating organic products contradicted her party's policies - the PP supported GMOs and industrial agriculture - she seemed visibly upset!

Her attitude perfectly exemplifies the mentality of many socially and politically well-placed people who, whilst they support the industrial agro-food system as a way to feed the lower classes, ensure that they have exclusive personal access to the organic food sector.

We cannot expect the political class to make changes in this matter or in any other. Ordinary people need to be aware of the problem, and demand clean and sustainable food production. Things would be easier if we had the Swiss political system where citizens can have a say in all matters via binding referendums convened by the people themselves. But in Spain our opinion does not count for much.

I am sure that in ten years time with a political drive behind us, we could have a completely organic agricultural sector producing yields equal to or higher than the current ones.

As I have said before, farmers who want to take a different direction in their farming practices do not get any support from university academic circles. Those institutions are utilised by the big multinationals to make million dollar investments and donations. At Lleida University, for example, multinationals like Monsanto and Bayer (or the fake philanthropist Bill Gates), sponsor and subsidise studies and research to suit their own interests. They fund and train future agronomic engineers, effectively ensuring the perpetuation of their own interests, and decelerating the progress of organic farming.

I am very proud to say we have finally succeeded in using no chemicals on our crops this year. The air we breathe is very different from the one we breathed a few years ago when we were using chemicals. Now we can breathe easily! It is very reassuring to work in a clean environment and know that the produce you have just picked will not harm you or your customers. Furthermore, it is much easier and more profitable to be able to harvest every day, without worrying about safety time limits.

Pau and I have not suffered from headaches or dizziness for a very long time, something which did concern us in the past - fortunately, it was nothing too serious.

Sometimes I wonder why I did not make the change sooner: now I truly believe we really do need a complete rethink about the way we farm. Industrialisation and the Green Revolution are doomed to fail because they are not sustainable systems, and do not work in harmony with the environment where they are developed.

Human beings cannot thrive by violating the laws of Nature under which we must live. We should be aware of Nature's laws and try as far as possible to live in accordance with them. This is the notion promoted by permaculture: a concept arising from the union of the words "culture" and "permanent". It is about creating habitats and sustainable agricultural systems by observing and imitating the processes in Nature. Now I see my work as an art: the art of maintaining an ecological equilibrium with the environment.

Organic farming is not a step backwards, but seeks to move forward learning from past mistakes, drawing solely from those technologies which have proven to be efficient and which do not pose a threat to life.

The war of flowers and "weeds"

Friendships with several famous restaurateurs have meant that our horticultural offerings at Pàmies Hortícoles have multiplied and become quite varied over the past years. Responding to the demands of haute cuisine, and injecting some of our own ideas, we began to introduce unique produce to the market, such as certain varieties of fancy lettuce, edible flowers, and "weeds" - all of which have medicinal properties.

Being in contact with these great restaurateurs was a veritable revolution for us. Their helping hand has also been welcome and fortuitous in dealing with problems with the Catalan government. If they had not been on board, things would have turned out quite differently.

One of them is Quique Dacosta, the young owner of *El Poblet*, a restaurant in Dènia with two Michelin stars. He is a very amiable man whom I regard as a good friend. We have met several times at gastronomy conferences, and we have always supported each other publicly.

We have also made connections with world-class chef Ferran Adrià, ex-owner of *El Bulli*. I have not had the pleasure of meeting him in person, but his gestures of support have been of considerable help in our struggle to promote the use of stevia (which has its own chapter later on), and for that I am extremely grateful.

Last but not least, is my dear friend Santi Santamaria, who sadly passed away in 2011. He was a fierce defender of cuisine made from all-natural produce. There was a famous controversy between him and Ferran Adrià, whom he accused of using too many artificial products in his innovative gastronomic offerings. I met Santi thanks to the mediation of Martí Boada, a well-known geographer and Catalan naturist, who encouraged him to contact me, which he did. One fine day the phone rang, and it was he.

"Hello, this is Santi Santamaria, the chef," he said, "I would like for us to talk, as I find myself in the position of directing my restaurant business towards the use of natural products."

"I think we are on the same page!" I replied.

"Yes, I am aware of your work. When you were just starting out, I had already publicly defended organic farming… I believe we must get back to basics and stop using so many additives and chemicals. I am facing the same problems as you are. A lot of chefs are against me for having said that we have taken the wrong direction," he continued.

"Yes, unfortunately not everyone seems to be willing to ask themselves the same questions we are," I agreed.

Thus began a close friendship - a mutually respectful relationship that lasted until the day he died. His name will reappear in subsequent chapters, as he was a tireless ally in our fight to normalise stevia, and in our attempt to introduce the *Iniciativa de Legislación Popular* (ILP - Popular Legislation Initiative) against GMOs in Catalonia.

I am an ardent supporter of "weeds" as I said before. They now feature amongst the produce that we are introducing. Plants growing in all sorts of places are called "weeds" - whether on the roadside, in our

backyards or between cracks in the pavement, as we believe they are of no use. But we are very wrong: the majority of those plants are just as good as the kinds of greens which we are accustomed to eating. It is merely a question of culture. Purslane, dandelion, mallow, and clover can all hold their own against tomatoes and lettuce. They are just as nutritious and even contain medicinal properties.

A decade ago, I was the first in the queue wanting to keep weeds at bay. I cursed and eradicated them without remorse. Nowadays, we prefer to use them in our meals because we believe they are part of the rich biodiversity of our home, and we want others to enjoy them as well.

In times of crisis, it is good to know that food grows on the roadsides - a gift from Nature that does not cost us a penny.

At the end of the nineties, chefs began to introduce edible wild flowers as ingredients in their cuisine. Pau felt driven to explore that world and took charge of that department, whereas I really knew very little about flowers. I had tried stuffed courgette flowers, but did not know there are a wide variety of flowers that can be eaten either cooked or raw. Not all flowers are edible, but many are. Orange, peach, bean, and pea flowers, for example are very tasty, and very nutritious.

When selecting flowers for selling, we are aware that aside from their great taste, they are also pleasing to the eye. The result is a delight for all the senses, especially with pansies, nasturtiums, carnations, begonias, courgette flowers, and *Spilanthes oleracea.* Ferran Adrià called the latter the "electric flower" because of the strange sensation you get in your mouth when you bite into it.

I do not know if it was a sign from the Universe or a coincidence, but the arrival of the new millennium was a revolution for me and for our agricultural way of life.

In the year 2000, I was doing some research on Monsanto, from whom I bought pesticides and seeds, and I discovered a medicinal plant that would change my life: stevia. That same year we also began labelling our salad vegetable mixes, indicating the medicinal properties of their components as per the *Vademécum de Farmacia* and cited in

Dioscórides[9], a phytotherapy programme initiated in Ancient Greece by Pedanio Dioscórides (doctor, pharmacologist and botanist), and renewed in the twentieth century by Pius Font Quer. The idea behind it was to build bridges between the old knowledge of traditional medicine and the urban society of today that is so far removed from ancestral wisdoms.

We were in for a big surprise when, in December 2004, Sebastià Ravine, health delegate for Lleida, began a disciplinary action requiring us, under threat of prosecution, to cease labelling the properties of the vegetables we were selling. We were unaware at the time, but, in accordance with the Royal Decree 1334/99 of 31st July regarding labelling regulations, we were committing an administrative irregularity by labelling the medicinal properties of our plants. This was in spite of their properties being recognised by science and in popular culture.

To our further surprise, we also discovered that there are two exceptions in this same law concerning product labelling: mineral waters and milk products, two sectors globally monopolised by a few multinationals. With dairy products, processing companies can add plant extracts to their products and are allowed to list the medicinal properties on the label. *Danacol* for example, is a drink publicised as beneficial for cholesterol. What makes it beneficial are phytosterols, compounds of vegetable origin extracted from olive oil, wheat, soy, legumes, etc. However, the law does not permit the labelling of plant properties from which the extract present in *Danacol* is obtained, although they contain the same active ingredient! The same happens with margarines advertised as containing omega-3, an essential fatty acid that is good for blood circulation. But tough luck to anyone who wants to label nuts, flax seed, hemp, and sardines in the same way - all of them natural sources of omega-3.

These discriminatory regulations led me to write an open letter to the person who at that time was Minister of Health for the Generalitat, Marina Geli, in which I questioned this unfair situation. I asked, "Why this discrimination? Is it not more natural and healthier to obtain omega-3 in our diet from blue fish, flax seed, and wholegrain cereals,

rather than consuming dairy products in excess because we are told they contain added omega-3 through misleading advertising?"[10]

Are these industries so powerful (increasingly monopolised by just a few companies across the globe) that they are capable of making a government succumb to their pressures and have laws custom-made for them?

Fearing the threat of prosecution, we eventually removed the labels containing valuable information from all our packaging, except on the stevia packaging.

In 2007, a new chapter was written in our erratic relationship with the Generalitat. On this occasion, they began a new disciplinary action against us, precisely for selling labelled stevia. (I will explain this

Edible flowers in the greenhouse at Pàmies Hortícoles S.L., Balaguer.

episode in more detail during the chapter devoted to this plant.) But in the end they did not dare to bring action against us thanks to massive support from the public and from Santi Santamaria, Ferran Adrià, and Quique Dacosta.

But far from leaving us alone, the government decided to change tactics. After they failed to take disciplinary action against us for labelling stevia, they began to attack us on the matter of edible flowers. In June of 2010 we were informed that we could not sell flowers as edible products because according to Spanish legislation, they were regarded as a simple "culinary ornament", i.e./ a non-edible decorative item. They tried to steer us into labelling them as non-edible! We were informed that if we wanted the Law to address the possibility of changing the status of a particular flower from decorative to edible, a study would have to be carried out to prove that it was non-toxic and that it was fit for human consumption. It was unthinkable for us to consider carrying out a study of this type as it would cost approximately one million euros.

Once again, we refused to obey requirements and we continued selling edible flowers. It might have been illegal, but we were not causing any harm to anyone. As expected, the fines started to arrive. Fortunately, we had some powerful allies – the general public, and the famous chefs who were using our flowers in their dishes.

Via my blog, (http://joseppamies.wordpress.com), I addressed the public and reported that the Generalitat was criminalising edible flowers. I was most surprised when a couple of weeks later, about fifty restaurants in Catalonia and in the rest of the country organised a week of disobedience and were openly promoting edible flowers.

I would like to have seen the face of that councillor as she witnessed such a social reaction. She must have felt that things were getting out of control because she came to Lleida and admitted to the Press that there was no problem in eating flowers, as they were not toxic. That is not all. She also said that she would help us carry out the necessary studies to have them approved and legally certified. Early the next day, I had another surprise as I read the morning newspaper. There was a full-length

colour photograph of that very same councillor – she was pictured eating flowers in one of the restaurants that had taken part in the protest.

To date, no studies have been authorised, and the sale of edible flowers is merely tolerated. The law that regards flowers as simply a culinary ornament is still in force - in reality they are a very nutritious food source rich in medicinal properties.

This is an example of how disobedience can make a difference. I happen to be someone who believes that, when a law is unjust, it is a matter of justice to disobey that law.

3

Revolution begins on our plates

Doing the weekly shop is not an act of transcendent heights, but we mostly go about it with little thought. We need to understand that this seemingly simple act has real social, ecological, and health repercussions on a worldwide scale. We may not realise it, but there is a direct connection between our consumer habits and the current global situation. If every time we bought a product we could see the damage caused by its production and distribution process, we would surely think twice before buying it.

Every time we buy something, we are supporting a certain production system.

One of those systems is the industrial mass production of the giant food conglomerates, who act so irresponsibly from a social and ecological point of view. It has become the way of our western world, and we are exporting it to the rest of the planet. The huge agro-food industry is exploiting farmers all over the world and depriving them of their land, while at the same time destroying the environment and imposing its range of products (many of them completely unhealthy) upon consumers.

Thankfully, there is another way - one that is good for our health, environment, and society – a system of small-scale growers who live and work near our homes and who choose to be ecologically responsible.

We need to redirect the current farming and food situation and retrieve sovereignty over what we eat – that means being able to decide how our food is produced, distributed, and consumed. To do this it is vital for us all to go in the same direction - growers and consumers together. There is no point farmers opting for organic methods without consumer support. We also need take the middlemen out of the equation, and estab-

lish direct relationships between producers and buyers. That way we will strengthen the agro-food fabric of our communities (leading to a positive effect on the local economy) and we will discover new ways of producing and consuming which are both sustainable and fair.

In this chapter, I will appeal to our power as consumers. We can help to revert the global food, health, and ecological crises by changing our consumer habits as they have a direct effect on the market and food production methods.

Real revolution starts with ourselves and it comes about with the little things we do every day. You could say that revolution begins on our plates.

Who controls food controls the world

Production and distribution of food is being increasingly controlled by a few multinational companies (Coca-Cola, Kraft, Nestlé, Pepsico, etc.), who dictate how and what is produced and at what price it is sold. They effectively control all phases of the farming and food chain from production, to manufacture and distribution. These enormous conglomerates do not make their decisions based on their respect for the environment or for the health and dignity of people, but with the main aim of making maximum profit. It is consequently very dangerous to leave the matter of our food in their hands.

Controlling food is tantamount to planetary domination. Apparently, oil - used as a tool for world domination over the last few decades - is running out. Food, however, has a permanent niche in the market: there will always be a demand for food, and you don't need to know much about economics to understand how the game is played.

In recent times, various companies, estates, and large financial investors have been buying up land, seeds, water, (Coca-Cola is purchasing mineral water companies from all over the world) and other essential food products.

It is just like Henry Kissinger (Machiavellian Secretary of State during two US presidencies) said, "Control oil and you will control the nations; control food and you will control the people."

Land grabbing is the mass acquisition of farmland (particularly in Africa and Latin America) for commercial use. It is estimated that the total area affected by land grabbing is between 80 million and 227 million hectares. Klaus Deininger, economist for the World Bank, calculates that more than 30% of the world's fertile land is under negotiation.[1] Alienation of native land is depriving local farmers of their crops. Coupled with speculation, it is causing a significant increase in the food prices, making daily provisions inaccessible to many people, especially those who live in the southern hemisphere countries.

Now that property investment is no longer profitable, many companies have gone over to the business of speculating on primary food crops. Some of the banks for example, are making a fortune in this business. During the peak crisis years, Goldman Sachs made more than 400 million dollars in profit,[2] and Barclays made more than 888 million dollars.[3] But there's no need to look so far from home. In Spain, Banc Sabadell and other financial institutions have offered their clients (Catalunya Caixa continues to offer this to their *Depósito 100% Natural* customers) the chance to earn money by speculating on primary food crops. As I see it, the responsibility lies with those who invest their money looking for higher profits without considering the problems that come with it.

The big multinationals like Cargill have the power to inflate prices as well: that American firm alone controls 25% to 30% of the world's cereal crops, which means they can play with the prices as they see fit.

The people who end up paying for all this activity are the ordinary citizens. In Mexico the rise in corn prices (the main food source of the working classes) has meant that, whereas in 1994 you could buy sixteen kilos of corn bread on a minimum wage, in January of 2007 you could only buy 5 kilos.[4]

Controlling the seed market is also lucrative business for the multinationals. Seeds once belonged to the people, and were exchanged freely amongst each other, but they are progressively ending up in private hands. Monsanto has been buying up small seed companies for years all over the world, so farmers have no choice but to buy seeds from them every year and pay the asking price. The price of seeds has gone through the roof. At Pàmies Hortícoles we have paid up to 36,000 euros (which in today's terms would be around 60,000 euros) for a single season's lettuce seeds. This cost has now been reduced to around 6,000 euros since we began producing our own seeds again.

But farmers are in a large way responsible for this happening: we let ourselves get carried away with our obsession for "improved" seeds and with the convenience of it all, because we believed in science more than we believed in our own knowledge.

The distribution sector at the other end of the food industry chain is also suffering because of the monopolisation process. Markets and small businesses that have been around forever are being replaced by a handful of multinational companies (Carrefour, Eroski, and Mercadona supermarkets, and El Corte Inglés department store), who force their industrial food products on us and create unfair competition. The small producers and retailers are unable to offer the same low prices as the large stores. The trap is that the low prices are largely achieved by exploiting growers obliged to accept pathetic prices for their work. The prices are so low it is difficult for them to make any profit and earn a living. I hope I do not offend anyone when I say that farmers are in part responsible for this situation. We have preferred to have the "security" of knowing that our crops will be bought, rather than having to worry about getting off our seats and selling our own produce every season.

The way in which food is distributed is also harmful to consumers. Firstly, we are becoming used to poor quality food that will eventually take its toll on us in the form of illness. Secondly, produce has been homogenised in the same way seeds have. This is in stark contrast to the vast variety of local foods available to us produced by traditional

methods: contrary to what many people believe, supermarkets do not sell "everything".

Lastly, it is worth pointing out that supermarkets create a continuous consumption of goods, which is not sustainable. The pretty wrappers and the piped music are used to stimulate the irrational side of our nature, and make us consume compulsively and superfluously so that the system can continue to produce and sell products incessantly. That is why we see 2-for-1 offers: they make us buy products we might not use and will probably end up throwing in the bin. And that's not all: they purposely make goods that will not last. The products we buy have a short life span forcing us to keep buying new things over and over again – and so the pace of constant consumerism continues at a fast rate.

Such is the "logic" behind an ailing financial and food system that is leading us to destroy everything around us.

The system keeps growing at the rate it has been thanks to support from western governments who have close ties with the corporate world. Lobbyists treat Brussels - the EU epicenter - like their own playground, and think nothing of sharing space in restaurants, offices, and corridors with our MPs. This is how laws are passed to suit their interests, and in doing so, they manage to push aside other eco-friendly marketing and farming methods. It is fairly obvious if you look at how EU farming subventions are given to mass production conglomerates, whilst leaving the small farmer in the lurch.

In this next section we will see that things are much worse in the southern hemisphere countries.

The food crisis

There was a worldwide crisis long before we here in Europe began to be aware of the current economic depression. The real problem has received little media coverage, in order to keep the public in the dark.

According to the FAO, hunger affects 870 million people across the world[5] and it is predicted that this figure could rise to 1,200 million by 2017.

Here is an interesting fact: according to calculations made by the economist Arcadi Oliveres, rescuing the banks has so far cost us 4.6 billion dollars, which is 92 times the amount the United Nations (UN) claims is needed to end world hunger. However, as I shall explain, all those millions are of no use if there is no political will to put an end to this situation. Let us not be fooled: world hunger is a political problem.

We have grown accustomed to the fact that people die from starvation. It seems to be an inevitable, normal everyday occurrence that we must live with - a natural phenomenon over which we have no control. But it is not the case, as there are numerous defining causes of world hunger. At present, more food is being produced than ever before. For example, production of cereal crops has tripled since the sixties, whilst the world's population has only doubled.[6] In the West we throw away tons of food, and even have problems related to an excess of it. We are eating more and more, while impoverished countries are eating less and less.

The reason why there are people starving and dying because of lack of food is because natural resources are accumulating in the hands of the big monopolies with support from custom-made agricultural and food policies.

The food industry is not trying to feed the world, but trying to make as much profit as it can. Food, which should be a fundamental right and accessible to all, has become a commodity - a commodity subject to the illogical logic of maximum profit margins. It means that certain groups of people find themselves in terrible situations where they have no access to food, either because it's very difficult for them to pay the high prices (progressively more expensive due to speculation), or because the production and distribution networks only go as far as the companies' interest is served.

All the transgenic and intensive crop production in the world is not going to solve a problem that has nothing to do with lack of food, but rather with distribution and accessibility.

I believe that many years down the line we will look back and ask ourselves how we let such something as essential as food be controlled by economic criteria. We have to put human lives and the environment back at the centre of the production system, and we must do it as soon as possible.

In recent times, we have seen a new type of aggressive colonisation that overshadows the pillaging of Africa, Asia, and America by the super-powers of the past. Nowadays the invaders are the big financial companies and the huge western multinationals making pacts with the governments of foreign nations. The big corporations can then do what they like with that nation's land - they exploit the workers, and strip the natural resources. Then they enjoy massive tax breaks, and are under no obligation to explain any possible environmental damage they may cause. The banana companies, old hands at raping and pillaging, pioneered the paradigm for this new type of colonialism.

It is all made possible by the World Bank, the World Trade Organisation and the International Monetary Fund, who pressurise Third World countries into opening their doors to let in free trade. Industrial farming systems are subsequently implanted whereby the needs of the First World will be met via single crop plantations (in particular genetically modified soya and corn), in detriment to the area's own native crop varieties which have been the food source for the local people for thousands of years. Farmers are illegally and ruthlessly ejected from their own ancestral land by means of threats, torture, and murder. Then they are exploited and poisoned, and many of them end up begging on the outskirts of the cities. The situation is extremely alarming - people suffering from hunger and malnutrition (generally due to lack of a varied diet) are living right next to these massive single-crop plantations, which are being used to feed European livestock or are transformed into bio fuel. What's more, according to the organisation Veterinarians Without Borders, 75 out of every 100 people suffering from hunger are farmers.

The effects of this system are devastating: these countries go from having a self-sufficient economy to becoming dependent on other na-

tions. For example, Africa experienced total destruction of its food production and distribution framework, and what was once a self-sufficient country is now dependent on imports.[7]

To this humanitarian disaster in the southern hemisphere countries, we must add the ecological disaster, another result of single-crop farming systems: destruction of flora, fauna and habit diversity, loss of water, desertification, pollution, and deforestation of millions of hectares of tropical jungle…

As a farmer, I feel especially sensitive to the suffering of these people. We should insist that people in rural environments are able to of live off the land in a dignified way, and that they can continue to feed themselves from their local, native crops passed down to them by their ancestors which form the basis of their subsistence.

Many will be unaware of the fact that in this country we are also losing the ability to produce our own food. Spain and Catalonia are like banana republics as well, mortgaging their food security for on bilateral agreements made with the United States. One of those bilateral treaties states that America will buy cava and ham from us as long as our doors remain open to their businesses. This type of pact has forced us into an industrial dynamic where we produce too much of some items whilst the production of more essential goods is being pushed back. An example of this is the irrational meat industry, which is so firmly entrenched in our country and is constantly perpetuated because of American grain imports. We are the like the wooden horse of Troy in which the US multinationals break into Europe.

I would like to reflect upon the connection between the food and humanitarian crises in the southern hemisphere, and our consumerism habits in the west. If we are able to continue consuming at the same pace (or at the pace we were going before we hit the financial crisis), it is because we are consuming resources from our own country, while also stealing resources from other countries.

It sounds harsh, but that is the conclusion: if we want to continue consuming at the same rate, then we have to steal from others.

Western foreign policy over recent centuries has fundamentally involved going around the world taking what isn't ours, whether by means of "humanitarian" wars, barefaced invasions, or by striking up "friendships" with local governments. The West has been incessantly robbing natural resources like gold, silver, oil, coltan, diamonds, crops, etc. for literally hundreds of years.

As John Perkins explains in his book *Confessions of a Financial Gangster,*[8] in recent times the United States has perfected the art of dynamic geopolitical intervention. According to the author, there are three steps: first, send in the so-called financial gangsters, who try to convince foreign governments that they need to open their borders: if the gangsters fail, the CIA's more persuasive tactics come into play – murders, torture, attacks and coups. And, if all that fails, as a last result they send in the army… and always of course, under the pretext of protecting freedom and democracy.

Perhaps now we can understand that is it wrong to call the southern hemisphere countries "poor", as in reality they are so rich in resources that the West depends on them. They are not poor countries, rather impoverished countries.

Now that the crisis has reached us, maybe it will help us to put ourselves in the shoes of all those people who have been living in misery for years, partly because of the western way inflicted upon them.

It is obvious to me that things cannot carry on like this, and I propose we start to change things immediately. We need to start replacing the current food production and farming methods with local and responsible consumer habits.

The hidden price of food

We must not let ourselves be fooled; the multinationals are able to do what they do because they receive our financial support every time we buy one of their products. If consumers demanded ecological and ethical products, then businesses would have no choice but to produce them. But the large majority of consumers do not make these demands,

instead we just conform to paying low prices. The situation has worsened in the current financial crisis, as now we have a lot less money to get our shopping – but food should really be our main investment. I believe it is more important to invest in the food we buy instead of other things we happily spend our money on.

When we are out shopping and perusing the product prices, we need to bear in mind that the number we see on the labels is not the real cost. Food has a hidden price of which we are unaware as we pass through the checkout. The real price is the social, ecological, and health costs caused by the modern industrial system. These costs do not affect the food production companies, and so are not reflected in the final product price the consumer pays. But they do affect our personal health, the health of the planet, and local and world economies.

When I talk of **social cost**, I mean how the agro-food system creates social misery and exacerbates social inequalities. Price tags may well have a low number, but the cost to farmers and other producers is very high.

Farmers have become slaves to the big multinationals. We no longer have a say in what we grow or what we can do with our own seeds. They are taking us away from our land where we have worked for years and we are losing our age-old knowledge. What was once agriculture for farmers has now become agriculture for big businesses. Traditional farming is disappearing in Catalonia and now only 1% of the population makes a living from the land.

It does not surprise me that few people in Catalonia want to be farmers; it is a tough job, and current working conditions have made it worse. As I have already mentioned, almost the total price consumers pay for fruit and vegetables is money that ends up in the hands of the middlemen. From experience, I can vouch that between the price paid to the farmer and the final consumer price, there is an average increase of 500%.

The situation is worse in the southern hemisphere, from where much of the food we eat originates. Companies ship out their produc-

tion to countries where legislation is very lax, and establish huge single-crop plantations, use extremely dangerous chemical treatments, exploit workers, pillage natural resources, destroy the environment and eliminate the native crops. It is very profitable for them and allows western countries to buy cheap products.

We do not see the social cost added on to the final price as we go through the checkout, but it should really be weighing on our conscience.

Another cost not reflected in the price of food products is the **environmental cost** of aggressive farming systems. All non-organic production systems leave their mark on the environment, and I will reiterate what I said in the previous chapter. Pollution (from agrochemicals and other toxins), deforestation, desertification, destruction of flora and fauna and agricultural diversity, plundering of resources… none of it is accounted for in our daily expense budgets, but we are paying for it, and our children will continue to pay the price.

Governments should start taxing these kinds of widespread aggressive farming methods, but they let the companies get away with it. And we need to start realising that all the so-called cheap goods are in fact costing us a lot more than organic, local, and seasonal produce.

Finally, I should point out that all the industrially produced goods mean a **very high cost for our health**. Every day we are confronted with more and more diseases affecting the quality of our lives, to the great expense of the health service. I will expand further on this subject in Chapter 7 entitled, "Let thy food be thy medicine".

I hope my words will urge the reader to see with new eyes the real price of the things we buy. I hope you can understand that the simple gesture of selecting a product and putting it in your basket has enormous repercussions, reaching way beyond the places where we shop, and even beyond the borders of the country where we live.

One of the problems we have when we do our shopping is perhaps an excess of information making it difficult to know how to make the correct choice. The first step therefore is to become pro-active consum-

ers and embark on our own search for information, instead of letting ourselves be swayed by advertisements or by supposed experts on the television telling us what to do.

Slow Food

In 2004, there was a very interesting article in the newspaper about a food movement in Italy that had turned Piamonte into a financially dynamic region. There was so much interest in this story that twenty people from a Balaguer opinion group consisting of farmers, traders, and small-scale businessmen, travelled to the city of Bra, the nucleus of the movement, to find out first-hand about this initiative. During our visit, they told us how the region, which used to be poor, had blossomed thanks to the impetus of a movement called Slow Food. Not only had it become a paradise of small-scale producers and artisans, but it had also started attracting visitors from the big cities to the local markets.

The Slow Food movement advocates the appreciation and recuperation of the typical food and diet traditions of each region (local varieties, processes, recipes, etc.). Its aim is to conserve farming and food diversity and maximise traditional produce that is organic, local, and seasonal, its slogan being, "For good, clean, fair food."

Good food should be food we enjoy, that is pleasing to the palette and satisfies our senses. Slow Food also places great importance on recuperating traditional tastes that have been forgotten or are at risk of disappearing.

Clean food is food that is produced and consumed sustainably, and is respectful to the environment, of which we are all inescapably a part.

Fair food is food that provides a good return to the producer, and is affordable for the consumer.

Slow Food is a social reaction to *fast life* and *fast food* - a way of living and eating on the run with no time for appreciating the truly important things in life. Let's be honest, we no longer have time for anything: no time to have a good conversation or to take a walk in the

countryside… or even for preparing and eating food in the way we should! We are experts at peeling off wrappers of pre-cooked, frozen foods and putting them in the microwave, but that is not cooking. Cooking is an art form, but now has become a robotic function. Having said that, if one day the reader should come for dinner at my house, the culinary artist will be Rosa Mari; I have to admit that the kitchen is not my natural habitat.

The visit to Italy convinced us of the need to form a Slow Food group back home and so in 2005, *Slow Food Terres de Lleida*[9] was born, and ever since we have put all our energies into promoting, dignifying, and displaying our local gastronomy. One of the ways we do this is through educating children, the men and women of the future. We have organised cooking lessons in schools, with the focus on taste-testing workshops to teach children good culinary habits.

We are very proud of the work that has gone into retrieving certain local varieties that were in danger of disappearing such as types of vegetables, legumes, and different varieties of olives that produce fantastic olive oil.

Slow Food is a mixed movement bringing together growers, producers, restaurateurs, and consumers. Everyone is encouraged to have and air their own opinions - we want to include consumers in the food production process, they should be co-producers! We believe consumers should be directly involved in farming methods, and suggest any changes or improvements in our products production methods.

Every autumn, *Slow Food Terres de Lleida* and *La Dulce Revolución* organise a Food and Health Fair. It is a forum for constructive criticism on the current health system, integrating local produce, organic and artisan products, and focusing strongly on medicinal plants as an alternative to the widespread prescribing of synthetic drugs that we are being subjected to. There is an area dedicated to the *Mercado de la Tierra* - a market selling traditional, local, and organic foods, as well as medicinal plants, ointments, cosmetics, and natural pesticides. You will also find *El Rincón de la Cata*, a tasting area where you can try a selection of lo-

cal organic products (goats' cheese, craft beer, organic wines, olive oil, seasonal fruit and vegetables, jams etc.). There are also workshops on cooking with seasonal produce and leftovers, and cooking workshops for children. Last but not least, there is a programme of discussion sessions and talks given by well-known experts.

Organic, local, and seasonal

It is time to start summing up. I have touched on the current catastrophic food and farming situation, and I would like to finish by pointing out what the alternative is. As I see it, there is only one kind of food that is fair, sustainable, and healthy food - organic, local, and seasonal: food produced by small farmers who are passionate about what they do.

Organic food is clean for us and clean for our environment. It is sustainable as it does not exhaust or destroy the eco-system where it is produced.

According to data from the Ministry of Agriculture, Food and the Environment,[10] Spain has the most amount of land designated to organic growing in Europe (in 2011 the total surface area designated to this type of production amounted to 1,845,039 hectares), but 80% of that produce is exported outside of Spanish borders. The same source states that Spanish consumers spend less than 1% of their total food budget on organic goods produced in Spain.

Whenever I step inside a grocery store, I have the feeling we are living in a topsy-turvy world… Most of the goods are made from intensive production methods, refined and loaded with additives. Organic produce on the other hand has been relegated to second league, as if it were destined to just a certain minority. Perhaps this is what the people controlling the political system want – for people in a certain income bracket to be able to afford organic produce, whilst everyone else has to make do with mass-produced goods.

In any case, this discriminatory situation is turning organic produce into an exclusive product and making it more expensive. The re-

ality is that all the cheap food will cost us dearly in the end. We must start considering the hidden non-monetary costs involved in food production - we have to realise we are not getting the best deal by buying conventionally produced foods.

Organic produce sold in Europe bears a symbol stating it is organic and therefore complies with a series of requirements; however, these requirements should ideally be further improved. Products are considered organic if they have been grown ecologically, but if they come from the other side of the world, there are fuel costs and pollution involved in the transportation. It is a huge inconsistency to force those who support responsible production methods to pay the price for the organic stamp, whilst those who use less responsible methods are not taxed. The organic stamp/symbol is really a catch for many growers as the amount it costs them for the organic licence further increases the cost of their produce. For that reason, many farmers prefer to stick to conventional agriculture.

We should all pledge to buy **seasonal** produce because (although not applicable in all regions of the globe) each season gives us the foods we need to feed ourselves. I am a firm believer in eating tomatoes in tomato season and watermelons in watermelon season.

Fruits and vegetables are healthier when they are eaten in season, because they have been grown during their proper cultivation period, and do not need chemical treatments to advance their growth. What's more, they are undeniably tastier because they are picked when they are nice and ripe. I have heard people say so many times that strawberries don't taste of anything?! Of course they don't, because they're not in season!

Another point in favour of seasonal products is that they keep their nutritional properties intact. There is no need to contaminate them with chemical preservatives or freeze them: these methods are harmful and destroy their nutritional properties. Recently harvested produce is always much better than produce which has been travelling round the world for weeks or months.

We are living in a globalised society where we can eat any given product at any time of the year. But is has become more of a whim than a necessity.

As I have already said, I think it is vital for consumers to opt for **local** produce. We need to cut out the middlemen, take produce direct to consumers, stop going to supermarkets, and support local shops and farmers' markets. It can only be advantageous: it reduces costs, benefits the local business economy, avoids unnecessary transportation of goods, and creates synergy and a positive exchange of ideas.

Buying local is also good for the environment. Much of our food travels thousands of kilometres before it arrives at our tables. Food transportation has become extremely irrational: we buy products that have travelled from the other side of the world in vehicles emitting greenhouse gases. It doesn't matter how organic the cultivation and production processes are - the distribution process involves unnecessary pollution and waste of energy. It's not just about organic cultivation and production methods – trading needs to be ecological too. As consumers, we have the right and power to ask where our food comes from. If we were to demand the information, supermarkets and shops would have to tell us from where our food has originated.

In the drive to promote local produce, restaurants in Catalonia have recently embarked upon a very worthy initiative with the creation of the "Kilómetro 0" logo to identify those establishments promoting local food.[11]

Not everything about the current financial crisis is negative: it has given way to new agricultural and commercial frameworks outside of conventional cultivation, production, and industrial distribution methods. People are beginning to unite in the common need for alternative ways to obtain food, leaving behind individualism and capitalist competitiveness, and trying to retrieve the personal touch and regain some ethos in spending habits. A series of initiatives are blooming that are changing the agronomic fabric of the places where we live, such as urban gardens (private or collective, and use of abandoned public spaces),

eco networks for exchanging goods, services and information, organic food co-operatives, and neighbourhood associations in towns and villages who are forming consumer groups to buy direct from growers.

The crisis is actually a great opportunity to look back and start building new production methods, and systems that are healthy, fair, and sustainable for growers and buyers. It is all in our hands.

4

Stevia, the sweet plant

It is surprising what you find when you type "Monsanto" into an Internet browser.

Sometime in 2000, I sat down at my computer eager to investigate the multinational company from which I purchased agrochemicals and seeds. At the beginning of the twentieth century, Monsanto started out in the chemical business marketing saccharin, but soon entered into the agricultural world, producing weedkillers, selling conventional seeds and later, genetically modified seeds. Monsanto is the manufacturer of the dangerous DDT, one of the pesticides I talked about in Chapter 2 (The Slow Return to Organic Farming). It also manufactured Agent Orange, the infamous chemical used by the US Army to strip the Vietnam jungles, which seriously affected the health of both Vietnamese and American soldiers, as well as their descendants who have developed cancers and congenital malformations. Agent Orange was evolved from glyphosate, a weedkiller marketed by Monsanto under the name *Roundup*. Monsanto subsequently developed and patented genetically modified varieties of soybean and maize that were resistant to this weedkiller. It also manufactured polychlorinated biphenyl (PCB), an industrial use compound banned in the seventies because of its toxicity level. Monsanto also has the dubious distinction of being the holder of the bovine growth hormone (rBGH), given to cows in the United States so they produce more milk. In Europe and other countries this hormone was banned as it can cause resistance to antibiotics, and different types of cancer in humans.[1]

The high point of my research occurred when I learned that, with its acquisition of Searle, Monsanto had also entered into the pharmaceutical business. Searle was the pharmaceutical company that owned

the patent for aspartame, an extremely toxic chemical sweetener found in diet products, which I expand on in the appendices of my book. Sat in my office at the computer poring over never-ending websites and articles, I came across an American association for parents of diabetic children. They made the serious accusation of attributing the death of their children to Monsanto and aspartame. Following the advice of pediatricians, the parents stopped giving their children carbonated soft drinks with high sugar content, and made the switch to diet drinks. It would appear that the children drank large quantities of the diet drinks, and their small bodies could not cope.

It was shocking enough to discover that Monsanto was trying to take control of seed production, and poison farmers and consumers with their pesticides… but to learn that it was also accused of poisoning children with a food additive...??? It was a lot to take in! Monsanto started to market aspartame in the 1980s as an alternative to sugar, taking advantage of the growing social interest in diet products. They wanted to corner the keep-fit market aimed at consumers trying to lead a healthier lifestyle. Monsanto's multimillion-dollar investment meant that they declared war on any sweeteners that were a potential rival to their product. Reading about the parents' association, I stumbled upon the subject of a plant called stevia. Monsanto and other interested companies were pressuring regulatory agencies - the US Food and Drug Administration (FDA) and the European Food Safety Authority (EFSA) - not to approve the use of stevia as a sweetener in the USA and in Europe. They even submitted false studies claiming the plant was toxic!

That was the first time that I had heard of stevia. I typed the word into a well-known Internet search engine and began to devour all the information I could find. It was a day full of surprises! The things I read left me speechless - this plant is much sweeter than sugar or aspartame, but has none of the undesirable side effects. In Japan, Brazil, Argentina, the United States, Australia, Thailand, Colombia, and China, it had been used on a massive scale for many years. In fact just a short time after I first heard of stevia in June 2004, the FAO and other international agencies declared it safe for human consumption.

Japan is a key example. Twenty years ago, Japan forced Coca-Cola to switch aspartame for the natural sweetener stevia. It is a plant used in Japan since the seventies to sweeten seafood, marinated and dried food products, meat, soy sauce, fruit juices, soft drinks, frozen desserts, chewing gum, and low-calorie foods. In more than thirty years of use, no adverse side effects were ever detected.

The thing that really grabbed my attention was the high number of medicinal properties attributed to stevia. It regulates levels of glucose in the blood, lowers high blood pressure, regulates the digestive system, aids anxiety management, breaks down fat in obese people, is a diuretic, lowers cholesterol, helps burn triglycerides... I also found out through the Internet that although it is legal to grow stevia in Spain, it is illegal to sell the fresh or dried leaves for therapeutic use. Furthermore, labelling its medicinal properties is also prohibited.

When I read that I had no choice but to think something fishy was happening. As I began to put two and two together, I saw the evidence before my own eyes. Not only was a powerful sweetener being criminalised, but a medicinal plant that could threaten the interests of Big Pharma was being removed from circulation.

Monsanto, like many other multinationals, is a conglomerate with business interests in a wide variety of sectors. Monsanto is not just about food and biotechnology: with its purchase of Searle in 1985, it entered into the pharmaceutical sector as well. Whether we like it or not, the aim of any business is to generate profit, and the multinational pharmaceutical companies generate profits through their sales of medicine. For that to happen they need people to be ill. Sick people are their customers, their source of income: in other words, causes of disease suit the pharmaceutical companies down to the ground, and anything that can cure or avoid illness is seen as counterproductive to their livelihood.

Marketing aspartame is a huge money-spinner for Monsanto for various reasons: it generates massive financial profit, and the harmful effects are a potential benefit to their pharmaceutical interests. Business is booming business for the big industrial conglomerates. They make

people sick with the food they sell, and then they offer pharmaceutical treatments to treat the diseases that arise as a result.

Initially, I could not quite bring myself to believe it. The mere fact that the pharmaceutical companies could place profit before people's well-being seemed almost like science fiction. Even more difficult to accept was the fact that these companies relied on government support to some extent. However, confirmation of my findings came a while later in the form of a striking headline in *La Vanguardia* newspaper, "Medicine that cures is not profitable." These were the words from an interview with Dr. Richard J. Roberts, Nobel Prize winner for Medicine. He claimed the pharmaceutical industry blocks and prevents the distribution of any drugs that can cure disease, and forces investigators to convert the same drugs into medication that exacerbates chronic illness - if they want to continue being sponsored by Big Pharma, that is. The business of disease is very dark indeed.

When I made that disturbing discovery, I had no choice but to conclude that all chronic illnesses (cancer, diabetes, obesity, hypertension, cholesterol, allergies, etc.) are a veritable gold mine for the pharmaceutical industry.

In light of this situation, I was faced with two options: either I resigned myself to the fact, kept quiet, left it in the hands of private powers and health authorities to continue doing what they were doing, or I could become an activist and protest against this type of wrongdoing. But what could I do, standing alone against that gang of Goliaths? The answer was right in front of me - the computer screen. From that day forward, I promised to speak out on behalf of that sweet plant which was about to become marginalised. My next step was to contact a French seed company, who sent me a hundred imported seeds from Paraguay, the native home of stevia. According to analyses carried out at a later date, it seems we were quite lucky with those seeds. The plants had a high content of stevioside, containing the medicinal properties of steviol glycoside and with bitter licorice aftertaste.

I patiently learned to cultivate stevia, and witnessed with much joy that it was well suited to the climate of Lleida. The next step was to check if its properties were as medicinal as was claimed. Then, via the Pàmies Hortícoles website and word of mouth, we spread the news that we were giving away stevia plants. It wasn't long before people starting arriving – there was great interest in that sweet little plant.

Origins of stevia

Stevia (Stevia rebaudiana Bertoni) is a plant native to the subtropical and tropical regions of South and Central America. The Guaraní people of Paraguay and Brazil used this plant as a sweetener and for medicinal purposes as far back as 1,500 years ago.

It is a shrub belonging to the Asteraceae family (to which lettuce and sunflowers also belong), and can measure up to about eighty or ninety centimetres in height. Its leaves are a beautiful green color, jagged and spear-like in shape, measuring between four and five centimetres long by about two centimeters wide.

Stevia can still be found growing wild in the Amambay region of Paraguay. The Guaraní people christened the plant with the name Ka'a He'è, which means sweet herb or plant. In the West, it is known by its full name *Stevia rebaudiana Bertoni*, named after the Swiss naturalist Moisés Santiago Bertoni, who was the first person to give it a scientific description. He called it *stevia* in honour of the sixteenth century Valencian botanist and doctor, Pere Jaume Esteve, the first westerner to study the plant. *Rebaudiana* is in honour of the Paraguayan chemist Ovidio Rebaudi, author of the first chemical analysis of stevia in 1900 and co-author of the book *La vida de Jesús contada por él mismo* (The Life of Jesus as Told by Himself), a work supposedly chanelled by a psychic. Modestly, Bertoni put his surname in third place.

Stevia seeds have a low reproductive ability, so the best way to obtain new plants is via cuttings (I will explain the best way to do this in a later chapter). But with tender care and skill, it is possible to get new plants from seeds. We grew very few plants from the first seeds we pur-

chased, but in a short time, we managed to cultivate more than seven hundred plants.

Properties of Stevia

Stevia is a wonderful, strong sweetener. Rebaudi discovered a glycoside that is between 250 and 300 times more powerful than cane sugar, but with no side effects. He named it rebaudioside; together with stevioside they make up the plant's two main sweetening agents. Stevia is also a source of protein, fibre, iron, phosphorus, calcium, potassium, zinc, and vitamins A and C. It does not contain calories, saturated fats, sugars, cholesterol, or carbohydrates. As if all that were not enough, when added to herbal teas and food, it enhances the aroma and flavour. It is the perfect sweetener, and the healthier alternative to all commonly used sweeteners.

But most remarkable thing is the many medicinal properties of stevia that have been recognised throughout history in the Americas. In modern-day Europe, the only components of the stevia plant which are legally recognised are its sweetening properties. It is forbidden to sell the leaves for medicinal use, which is a real pity and highly irresponsible, since it would measurably reduce the consumption of medication and insulin used to treat diabetes.

More than 500 scientific publications endorse the virtues of stevia. It is **anti-diabetic**, a **hypertensive cardiovascular aid** (regulates blood pressure and heartbeat), **diuretic** (helps to eliminate toxins), **antacid** (regulates the digestive tract), **antioxidant**, **anti-rheumatic**, and **anti-microbial**. Extract of stevia eliminates E.Coli, salmonella, staphylococci, and bacilli, without affecting the helpful bacteria. The action of stevia is selective. It is **anti-bacterial** and **anti-fungal** - therefore recommended for use in oral hygiene - and has a powerful effect on the skin (revitalises skin cells and aids rapid scarring), it **combats anxiety**, **reduces appetite** (in China, stevia tea is used to induce weight loss), and **regulates glucose levels in the blood.**

Since the time we started giving away stevia plants, the most noteworthy and surprising results obtained have been in the treatment of diabetes. There is a large amount of scientific literature that corroborates these positive results,[2] but we can also rely on the experience of hundreds of diabetics who use it and are experiencing the benefits it provides in Catalonia and throughout Spain.[3]

Diabetes is a metabolic disorder characterised by an increase of glucose levels in the blood (hypoglycaemia). Ingesting fresh or dried stevia leaves either by chewing them or in infusions, regulates blood sugar, and is an excellent treatment for this disease. Over the last few years, there has been a high success rate in almost all type II diabetics and a good percentage in type I as well.

Studies carried out by doctor Per Bendix Jeppesen of Aarhus University Hospital in Denmark, conclude that stevioside has a hypoglycaemic action which improves pancreatic circulation, increasing the production of insulin, and in turn reducing glucose in the blood.[4] By taking stevia, the decrease in blood sugar levels caused by insulin injections (sometimes fatal) can be regulated.

I am not exaggerating, but during those first few years with stevia, I met literally thousands of people interested in stevia. Some had high hopes of it working for them, whilst others' hopes were not so high - but they all knew they had nothing to lose from giving it a try. We soon began to realise that everything we had read about stevia was true. So many people telephoned or visited to tell us they had noticed great improvements from taking stevia in conjunction with their diabetic medicine. Many had significantly reduced the dosage in their usual medicine and in some cases, had even been able to stop taking their medication all together. It has been very important for us to stay in touch with them and keep track of their progress.

Most of those who have observed beneficial effects from taking stevia, calculate the recommended daily dosage is two to four fresh leaves just before or during breakfast, and the same again before or during the evening meal.

Diabetes is accompanied by a series of undesirable effects, such as gangrene in the feet and retinopathy (a condition of the retina). With stevia there are marked improvements in both disorders. It was a joy to start receiving letters from people affected by retinopathy, who were witnessing how their eyes and their vision were recovering every day. We also received dozens of testimonies from sufferers saying that they had noticed considerable improvement in their purple gangrened feet, which little by little were returning to normal after taking stevia. For the most part, these people were in agreement that stevia was succeeding where official drugs (tablets or insulin) had failed.

I remember the case of an eighty-year-old man whose legs were amputated because of severe diabetes. He had been taking the standard medication, to no avail. His daughter read about stevia on the Internet and wrote to us asking for a plant. After a while, she got in back in touch to tell me that in just two months her father had managed to regulate his blood sugar and had been able to cease his medication almost entirely. I remember hearing the anger in her voice when she told me, "Imagine how it makes me feel to think how my father could still have both his legs if he had known about stevia earlier."

Unfortunately, many similar cases have been brought to our attention - people unable to lead normal lives and who have become dependent on their family members, along with all the difficulties that entails. It is outrageous to think that these situations could have been avoided with a few simple plants that can be grown at home.

I have to wonder how much unnecessary healthcare expense is generated by following the rules dictated by the chemical/pharmaceutical industries, who refuse to recognise the extraordinary medicinal properties of stevia and many other medicinal plants? How do they not hang their heads in shame?!

The pharmaceutical industry tentacles extend so far that we have not been able to get a single diabetics association on board to support the use of stevia. This is because patient associations (not just for diabetes, but for other diseases like cancer) are not only financed by

members' dues, but are also in receipt of massive financial aid from the pharmaceutical industry. The interested parties guide the problem-solution flow, ensuring that their solutions are the only ones with any recognition. I have met with presidents of diabetic associations who have confided to me that they do use stevia, but they keep it quiet for fear of losing their subsidies.

As writer and journalist Miguel Jara says in a revealing article published in the medical journal *Discovery Salud*, "a network has been created involving political parties, foundations, universities, laboratories, research centres, patient associations, and other institutions whose basic objective is the manipulation of doctors and patients in order to 'educate' them regarding 'diseases'. They are forced to regard matters from a purely commercial perspective whose sole aim is that of promoting the sale of drugs and medical equipment".[5]

Diabetes is a big business, as are the other major diseases of our time. According to the WHO, there are 346 million people in the world with diabetes and, if measures are not taken, this figure will have doubled by 2030. In light of these statistics, we propose not only taking stevia, but also radically changing dietary habits connected to diabetes and many other disorders like cancer, obesity, hypertension, heart diseases, and allergies.

If we do nothing, the outlook could be very bleak indeed with regards to the financial burden on the health system and the toll on our quality of life.

La Generalitat counterattacks

Rosa Mari says I am in the habit of going against the status quo on principle. I am not going to contradict her on this occasion since she is certainly right.

I do not know where this rebellious streak comes from, but I remember that as a child I liked to do the opposite of what others did. For example, if everyone supported Barcelona Football Club, I would support Real Madrid Football Club. At that time, the white team had a

series of fabulous players who defined an era: Di Stéfano, Puscas, Gento and many others. Fate would have it that many years later Alfredo Di Stéfano contacted me wanting to treat his diabetes with stevia, which by the way, has helped him considerably.

There are times in which the only way a society can advance and throw off the yoke of worn-out laws and ideas is by disobeying and challenging the established order. You find yourself in opposition with all those who are interested in keeping things the way they are, but it is the only way to pave a new path. Stevia has been the spearhead of a peaceful but relentless revolution against the offensive of the pharmaceutical industry. Our effort began, and continues to move forward, with sadly no support from the Catalan government. Moreover, as I pointed out in an earlier chapter, they have not hesitated to put up roadblocks every inch of the way.

In 2002, two years after we started to give away the stevia plants, we began to sell the leaves in other markets across Spain. We did the same as with the other culinary herbs we sold - the trays of stevia plants were labelled with information about their medicinal properties. There were no lies - stevia has anti-diabetic and anti-hypertensive properties. But labelling them is considered a crime in this country even though the benefits of stevia have been sufficiently proven in other parts of the world following hundreds and thousands of years of use. Here it is forbidden to label the medicinal properties of plants. In wholefood shops, for example, not a single property of stevia appears on the labels.

As I explained in Chapter 2 in the section about flowers and weeds, Spain's labelling law only allows two specific sectors to list the properties of products: the dairy and the mineral water industries. The dairy sector can add ingredients of vegetable origin to yoghourt or margarine and list the vitamin and mineral contents. But it is illegal to list the properties of the original plants from which the active components are extracted. It is a case of custom-made laws for the big industries.

The situation with stevia is even more serious because in Spain it can be sold as a decorative plant, but its leaves cannot be sold for medicinal purposes. I have already gone on record regarding my position on this: there is no interest in legalising stevia because it would cause a deficit in the transgenic insulin business and in Big Pharma's diabetes and blood pressure medication. It would also pose a serious threat to the massive sugar and artificial sweetener sector. A single plant could jeopardise the business of four or five large industries. Therefore, a plant like stevia must be made illegal in this topsy-turvy world.

In December 2004, we received our first disciplinary action, forbidding us to label wild plants with their properties. Very reluctantly and fearful of the possible problems, we gave in to the Department of Health's demands, and stopped labelling stevia. But strangely enough, they seemed to be unaware that selling stevia was also illegal, so we carried on selling the leaves and giving away lots of plants.

By 2005, we were a little battle-weary, but undefeated, as we had a lot of support from people who were big fans of stevia. The idea emerged to form an association whose aim would be conducting in-depth studies on medicinal plants, and promoting domestic cultivation. In that way, sick people and anyone else interested in the subject could learn about and grow these types of plants at home. The association was named *La Dulce Revolución de Las Plantas Medicinales* (The Sweet Revolution of Medicinal Plants), inspired by the sweet plant that had opened up the doors to our new vision of health. *La Dulce Revolución* has been a very enriching experience, which I will talk about extensively in Chapter 6 entitled "Healing Herbs".

At that time we had already experimented enough with stevia to know that it was effective in treating diabetes, so in 2007 we once again made a valiant effort to label it with its medicinal properties. We felt sure that we could start a process that would certify it as a treatment for diabetes because of all the first-hand information we had obtained verifying its effectiveness in Catalonia. How naïve we were! For a plant to be marketed in the European Union, scientific studies must be undertaken in order to prove its properties even though they are recog-

nised in other countries. And so we directed our efforts to the agency that deals with such matters, the *Instituto de Investigación en Atención Primaria* (IDIAP, the Institute of Research in Primary Care), attached to the Catalan Institute of Health, which at that time was managed by Marina Geli, Minister of Health for the Generalitat of Catalonia.

When she received our letter of request, Concepción Violan, the head of IDIAP, phoned me straight away and, after a formal greeting, asked me a question I will never forget,

"What capital do you have, Mr. Pàmies, to finance the study required for the administration of stevia for diabetics?"

I was obviously surprised by the question, and she informed me that the IDIAP, though linked to the Catalan Institute of Health, is a limited company and as such requires capital investment in order to conduct the research needed to standardise a product. The very same procedure is used to approve synthetic agrochemicals, but at that stage, I still had no idea how bad things would get. Was she saying that I had to pay for studies costing millions of euros to prove beneficial medicinal effects that were already known about?

"I can give you all the information we have been collecting over these last few years. I thought it might be of some use to you," I said after a while.

"Mr Pàmies, our work here is undertaken at the request of companies who want us to authorise their medicines or food products. Danone, for example, which..." she began.

I interrupted her as soon as I heard that name, saying,

"Oh, so you sold out to the dairy mafia?"

Afterwards, I regretted having cut her off mid-sentence, since she might have corroborated our suspicions. We do know that IDIAP is currently conducting a series of clinical trials with patients, the majority of whom are diabetic. Who is funding them? Maybe Danone is already planning to market new anti-diabetic yoghourts containing stevia?

I explained to Ms. Violan that we were not like Danone and our aim was not motivated by self-interest or profit, but to collaborate with the public health authorities and share the information we had gathered. She was not interested in what I had to say and dismissed my request, suggesting that if we drafted a formal study, they would take a look to see if it qualified for a public subsidy. How did she expect me to find a team of doctors who would commit to a task like that, when the majority of doctors I know are fearful of taking a stance in favour of any type of "unofficial" therapy?

We were left feeling thoroughly disappointed in the system that had once again ignored us, favouring instead the economic interests of the big multinationals. It did not end there. That same year, 2007, we received a letter from the Department of Health and Social Security again forbidding us to label stevia's properties, and this time they banned us from selling it as well. We were accused of infringing the *Ley de la Protección de la Salud* (Health Protection Act), and they threatened to fine us. They also threatened to activate the *Sistema de Coordinación de Intercambio Rápido de Información* (SCIRI - Rapid Information Exchange Coordination System) which would remove any stevia leaves already in circulation on the market.

Fortunately, that offensive by the government clashed head on with popular support for our cause. In my blogs I expressed the same attitude I had when we were banned from selling edible flowers - I pulled no punches. We spread our message on the Internet, and people were outraged to know that a poison like aspartame was legal in our country and yet a plant like stevia was being criminalised.

Another critical factor that turned the tide in our favour was the famous interview I had with the journalist Àngels Gallardo on 25th June that same year in the daily newspaper *El Periódico*. The article was entitled, "The Stevia Farmer", and it reached thousands of people who previously had no idea who I was or about my struggle against the system. I am very grateful to Àngels as that interview stirred the sympathy of vast numbers of people and marked a turning point for us.

We also received support from our chef friends, and I will never be able to thank them enough. Once they were aware of the situation, they got involved to a greater or lesser extent by using stevia in their dishes. Quique Dacosta, for example, always stood his ground, publicly defending stevia. If the reader ever visits his restaurant, you will see his vegetable garden where he grows stevia alongside other forbidden plants and herbs that he includes in his dishes. Ferran Adrià also created a dish using stevia, which he called "Air of Stevia". However, he never wanted to enter into any direct confrontation with the government and, when pushed on the matter, he simply replied, "I cook using whatever I find at the market and if I come upon stevia, then it must mean that it is legal." Ferran knew that he was not doing anything wrong; he is a great connoisseur of international cuisine, and he knows that in Japan and other countries stevia is a common ingredient. On the other hand, Santi Santamaria, as expected, did publicly defend our position. He had always been vehement about us being able to count on his support when we needed it. Some years later, he kept his word by joining the collective action group *Som lo que Sembrem* (We Are What We Sow) in support of its legislative initiative against GMOs in Catalonia.

All these chefs risked fines, but because they are famous and also highly respected, the government did not dare to sanction them.

In the end, they did not dare to penalise us either. They were fearful of the social and political backlash that it might cause and decided to look the other way. As for *La Dulce Revolución*, we continue to label our plants, convinced that we are doing the right thing; we are labelling even as I write these lines. The government does not want direct confrontation, but it did inform (threaten?) us that if any diabetic sufferer reports a problem from having ingested stevia, then we will have problems.

That was our first victory, and it would not be the last. Next came the attempt to ban us selling edible flowers, and fortunately social pressure once again made them back off. These experiences have shown us that civil action can make a difference. Many wholefood shops and pharmacies, in Catalonia and Spain, refused to succumb to pressure,

and sell dried stevia leaves for herbal teas, and fresh or dried leaves as a food source or natural medicine.

The things we do in our daily lives, as inconsequential as they may seem, are like small waves which have a ripple effect far beyond their point of origin. I think it was Gandhi who said, "Whatever you will be insignificant, but it is very important that you do it". The book *Las siete leyes del caos*[6] (The Seven Laws of Chaos) has the same message. That book had a huge impact on me, it was an inspiration and made me realise the importance of "small" actions.

Many people ask me if this permanent state of confrontation with the powers-that-be creates stress and ill-being. The truth is that sometimes it has been quite stressful, and I admit that I have also been frightened at times. But there came a moment when I said, "Enough; I am fed up. If they have to penalise me, let them do so; if they want to put me in prison, then so be it." They are playing with the health and nutrition of millions of people. If this is not a reason to revolt and stand up, then I don't know what is.

In an unjust social framework, responsible citizens must disobey. Disobedience is one of the ways in which societies evolve. There are many historical events to illustrate this lesson. Rosa Parks, for example: the young African-American woman who stood up to the segregation rules of the fifties, refusing to move from her seat on the bus. And Gandhi, who encouraged his Indian compatriots to disobey the English law which forbade them to make their own salt. In Spain there is an activist group for people affected by mortgages (*Plataforma de Afectados por la Hipoteca*), which enables communication between victims of forced evictions, and offers them help. Every day, their actions prevent many people from losing their homes and ending up on the streets. Many other similar groups and individuals are out there making a difference.

These acts of kindness and solidarity carried out by ordinary people are directing our history towards a better future. We cannot expect politicians or other people to solve our problems. The revolution must come from below, from the people, from every one of us. It is our responsibility.

Legalisation of stevia – the hoax

In November 2011, stevia finally became licensed as a dietary sweetener in Europe. But let us not be fooled. It does not mean that stevia is legal, as selling its leaves for medicinal use is still prohibited. Allegorically speaking, it would be like legalising refined cane or beet sugar but making brown sugar and its raw material - sugar cane and beet - illegal.

They have not legalised whole stevia as a sweetener, but have only authorised the 95% refined version. It is undeniably better than synthetic sweeteners and ones made from cane and beet, but the refining process removes all the medicinal properties of the plant. This means that people still do not have access to the other active ingredients in stevia, unless some pharmaceutical company patents and markets them in the future. The big pharmaceutical Roche (renown for the huge profits they made on the back of the so-called Avian flu breakout), has patented a formula based on the active ingredients of stevia which, according to their studies can improve overall health, cognitive balance, learning ability, attention span, concentration, and memory. It also improves quality of sleep and reduces mental fatigue, irritability, and tiredness. Furthermore, the company claims that it works well as a treatment in situations of stress and negative social pressure, and aids mental stability in difficult psychological situations.

I regard that as a blessing in disguise! Thanks to that Swiss pharmaceutical multinational, we now know more about stevia's miracle properties than we knew before!

Food monopolies have launched major advertising campaigns so that sufferers from diabetes, obesity, cholesterol, etc. (which these same multinationals help provoke) will buy their stevia products. The sugar company Azucarera Ebro, a subsidiary of AB Sugar and Associated British Foods, will have exclusive rights in Spain to market Coca-Cola and Cargill's new sweetener made with stevia, which they have named *Truvia*. However, there is only 20% stevia sweetener in this product and the other 80% is made up of an active ingredient called erythritol, plus natural flavourings. Erythritol, extracted from alcohol, is an-

other sweetener produced by the Cargill Company. It can increase the amount of glucose in the blood of Type I diabetics, and there have been cases of people consuming products containing *Truvia*, and suffering from rashes, vomiting, dizziness, diarrhoea, and stomach pains. I do not know if there are any scientific studies to corroborate these side effects, but we must be careful.

What we do know is that Cargill and Coca-Cola have ensured that in the 20% stevia, there is no active stevioside, which is the glycoside containing most of the medicinal properties of the plant. Through the process of seed selection, they are using plants containing high quantities of rebaudioside, the glycoside with no medicinal properties. These companies are already running single-crop farms in Argentina and Paraguay, where they are cultivating a type of stevia that only produces rebaudioside. Some friends from Colombia have told us that almost all of the stevia plants there have already been modified in this way. If we do nothing, within a few years there may no longer be any medicinal stevia plants. Could that be what they want?

The Spanish sugar company Azucarera Española is trying to clean up its image after having caused the illness and deaths of thousands of people with their refined sugars. In the same way, Coca-Cola, which is leaving a trail of obesity, diabetes, and hyperactivity wherever it goes, also wants to improve its image. But rather than marketing products containing medicinal stevia, they choose to use a potentially dangerous product with no healing properties.

In short, stevia continues to be a banned plant. The sale of its leaves for medicinal use has not been legalised nor has its labelling. The powers-that-be have only approved the 95% refined sweetener, which robs it of its most important part, its soul - the active medicinal ingredients.

Addendum: On 16th May 2017, the fight to legalise stevia proved fruitful. In Europe it is now legal to use dried stevia leaves in herbal tea drinks.

Stevia in the home

In this section, I will give some basic guidelines for growing and reproducing stevia at home. It is very simple.

Firstly, when you buy your stevia plant, you must check that it is a variety that has not been genetically modified. Non-GM stevia plants are currently available from *La Dulce Revolución* and its network of associate nurseries at various locations across Spain.

In the Iberian climate (except in Andalusia where it's warmer) stevia plants have their own particular life cycle, which may not be the same as in other parts of the world. In Spain, the growth period is from March or April until October, and then the plants are dormant for four or five months. This is because lack of light induces a state of hibernation. When this happens, the stem usually dries out, and it is advisable to cut it.

When the plant is active, the fresh stevia leaves can be picked, dried, and stored for making herbal teas during the dormant months. To correctly dry stevia leaves in summer, direct contact with the sun should be avoided in order to preserve all their medicinal properties. When cutting back the plant for winter, the leaves can be dried in the sun, or if there is a small amount, they can be dried inside the house where the temperature is better.

If you prefer fresh leaves, you can use artificial lighting techniques to complement daylight hours. Used with suitable room temperatures, this method will keep the plant active during autumn and winter.

In spring, the roots produce new shoots that develop into young plants, perhaps as many as thirty. Keeping the roots in place, carefully separate the young plants to obtain several new main plants.

Stevia can also be reproduced via cuttings. Stevia flowers produce seeds low in germination potential, which is why it is better to propagate plants with cuttings. The ideal time to do this is from spring to mid-August. It might seem impossible, but I can assure you that from just a single plant we have been able to obtain between 500-700 more from taking cuttings during the growth period. It is very simple – cut

off a stevia shoot about twenty centimetres long, remove the top ten centimetres, pinch off two or three of the lower leaves and plant the cutting in a pot filled with damp, fertilized soil. Place the pot in a shaded area to prevent the shoot from drying out in the sun, and water three times a day - early morning, midday, and evening. After a month, the stevia shoot will have grown, and when new leaves appear move the plant to a sunnier area where it will continue to grow. After thirty days, it can be transplanted to its final location.

Stevia is not a very demanding plant. It requires no special fertilizer, and is very resistant to insects and fungi. It is a tropical plant, and so does not tolerate dryness. For this reason, it needs to be watered almost every day in summer, depending on the location, but during spring and autumn, wait until the soil is dry to the touch before watering. The plant is dormant in winter, and requires little watering. Too much will cause the roots to rot. The roots sprout new shoots in spring.

How to take stevia

The recommended stevia dosage taken by the majority of people who benefit from its effects is two to four fresh leaves chewed directly before or during breakfast, and the same before or during the evening meal.

When fresh leaves are not available, herbal teas made from dried leaves may be taken twice a day - once in the morning (on an empty stomach), to act during the day, and another before going to bed, to regulate sleep. To make a stevia infusion, boil some water in a pan and remove from heat, add a full teaspoon (about 2 grams) of stevia leaves and stir. Let it steep for ten minutes, then strain.

For convenience, a litre of the tea can be prepared once a day and then kept in the fridge in a tightly sealed glass bottle. Add a heaped dessertspoonful of stevia to one litre of boiling water. Strain and pour into a litre bottle, and you will have enough for two days.

The same can be done with dried stevia leaves steeped in warm water overnight. The next day, strain the liquid, serve the amount required, and keep the rest in the fridge.

Before concluding, I would like to make a couple of brief comments. Diabetics should frequently check their blood glucose levels and adapt their medication as needed. People with low or high blood pressure and/or who take blood pressure medication should also be aware of the possible effects of this plant.

5

GMOs in our soup

On 2nd July 2008, the Catalan Parliament rejected the *Iniciativa Legislativa Popular* - ILP (Popular Legislation Initiative) - against genetically modified organisms in Catalonia. We at *Som lo que Sembrem*, the platform who presented this initiative, were trying to stop the cultivation and development of transgenic food across Catalonia and to guarantee the labelling of products containing GMOs. But none of it became a reality, as various political parties vetoed the ILP even before it could be debated in Parliament.

It was too much to ask the Catalan political class to break their ties with the transgenic industry.

Genetic modification is presented as a significant move forwards in the realm of farming, promoting it - among other things – as an end to world hunger. The truth is that this technology hides many unknown factors. For twenty years, we have been participants in a great global experiment, and we now have sufficient proof that this technology is, in reality, far from innocuous. It comes with many harmful effects for our health and environment (for more information consult appendices), and on the agricultural and social fabric in the countries where it is implanted.

GM crops are part of the modern farming industry that is making the food crisis and global ecology unsustainable. It is the latest modern shackle used by the food monopolies to keep a grip on farmers so they can control the world's food supply.

In Catalonia, as in the rest of the Spain, GMOs were approved behind people's backs, the details of the process hidden from public view. The GMO debate is not just a scientific debate. It is about how

we want our farming methods and food production to be managed; how decisions are made about the world we live in. We live in a land where potentially dangerous technology gets the green light and where politicians refuse to debate a mass public proposal, a land governed by incompetence and by a system that is a long way off from being democratic.

A great experiment on a global scale

Transgenesis is a biochemical procedure born in the United States in the eighties. It consists of modifying information contained in the cells of plants, animals and microorganisms, and giving them characteristics that are not their own. It is being used with relative success in the field of human health, for example in various types of vaccines, transgenic insulin (although it would appear that it producing unwanted effects and is the subject of fierce debate), and other treatments. In this chapter, we shall focus on genetic engineering in agriculture.

GMO technology is currently in the hands of some old friends of ours: the pharmaceutical multinationals. At the top of the transgenic company rankings list is of course our beloved Monsanto, who own 80% of the market (some sources say 90%), followed by Aventis with 7%, Syngenta with 5%, BASF with 5% and DuPont with 3%. These companies are also responsible for 60% of pesticide production and 23% of seed sales currently on the market.

These biotechnology companies presently responsible for two prominent changes in the farming sector: one of them is crops that produce their own insecticides, and the other is crops resistant to the weedkillers they are sprayed with. An example of the first type of GMO is *Bt* corn, so called because it contains a gene of the bacteria known as *Bacillus thuringiensis.* It works as an insecticide, in other words it kills any insect that may attack the plant. The second GMO concerns varieties of wheat, cotton, rape, and soya whereby a gene is introduced making them tolerant to glyphosate, the weedkiller manufactured by Monsanto. This weedkiller, marketed under the name of *Roundup,* is a very potent chemical, and aggressive for our health and our environment.

Transgenic crops are not really being made to be more productive or resistant to drought or frosts, but to contain their own insecticides and be tolerant to weedkillers.

One arguments used by defenders of GMOs is that the transgenic technique is merely the evolutionary process of spontaneous mutations which would occur naturally from selective breeding and hybridisation. These people purport that the same processes have been used by farmers for millennia to "improve" crop varieties. That is not the case. Then there are those who say that nectarines and mules are the result of transgenesis, but we shall talk more about that nonsense later.

The fact is that transgenic modification takes things a step further, as it allows for cross contact between different species, barriers that would not normally be crossed. The result of this is the creation of living things that would not otherwise exist in Nature.[1] An example of one of the experiments is the introduction of salmon genes in strawberries to prevent the soft fruit freezing in winter. Nature would never combine living things from different species. It makes me feel very uneasy, as if we were playing at being gods wanting to create beings that Nature would never create of her own accord - not to mention the risks involved. Richard Lewontin, professor of genetics at Harvard University is very clear on the subject, saying, "Our knowledge on how an organism develops from its DNA is so limited that it wouldn't surprise me if we had a few nasty surprises along the way."[2]

European legislation encompasses an obligation to use precaution as a rule, whereby all new technology must be regulated to protect people from any adverse effects. GM crops have been approved with no proof that they are not harmful either to us or to the environment. The same thing occurred with telecommunication, nuclear power, agrochemicals, and food additives: the industries behind those developments are connected to powerful lobbies that can interfere in political processes and regulatory bodies to get laws passed to suit the businesses. There are innumerable instances of technologies that have been highly marketed only to be withdrawn a few years later because of the harm caused. Just a few years, they were saying tobacco was harmless, as was

asbestos, DDT, Agent Orange, thalidomide, Dioxin, etc. In time, we shall have to add GM crops to that list.

The fact of the matter is there is not enough information to guarantee the safety of transgenic crop varieties. Doctor Suzanne Wuerthele, toxicologist for the Environmental Protection Agency in America said something very worrying, "We are facing the most powerful technology the world has ever known, and it is being introduced quickly, almost disregarding the possible consequences."

In 1999, the British Medical Association approved a report containing the following observation: "Any conclusion on the safety of the introduction of GM (genetically modified) matter in the United Kingdom is premature, given that the evidence is insufficient to be able to make decisions at this stage".[3]

In 2003, the Scottish Parliament approved a resolution in which the following was stated: "Risk assessment processes [for GM crops in Scotland] in relation to human health are incorrect; a more meticulous treatment in the approval process of these reports, as well as additional tests on the possible effects to human health, is required."[4]

In 2004, the European Commission admitted, "from existing investigations it is impossible to know if the introduction of GM foods has had any effect on human health". In 2006, the Environment Council of the European Union was still asking for long-term assessment studies on the possible toxicity of these crops.[5]

Doctor Harash Narang, microbiologist and investigator at Leeds University is very specific in his opinion. "If you look at the very concept of genetic modification, you will see that it is synonymous with ecological disaster. There is no way of quantifying the risks. The only solution is to prohibit the use of genetic modification in food."

So it could be argued that genetic technology is imprecise, unpredictable, and dangerous. There are no guarantees about what could happen when an invasive gene is introduced into an organism composed of thousands of genes that have co-evolved over millennia. Modifying genes in an organism is not like swapping pieces of Lego™ whose parts

are interchangeable. We are not dealing with objects - we are dealing with organisms. They are much more complex systems, which when modified, can mutate in unexpected ways.

You do not have to be that clever to know it is impossible to predict what to expect from introducing a new element into Nature, which is what GMOs do. These are living elements capable of reproducing, evolving, and dispersing, and biotechnology has advanced much more quickly than any study on eco-systems and possible ecological impacts. A new technology has been violently released around us, as part of a mass experiment on a planetary scale.

I often feel that science is taking giant leaps forward, but human understanding is not. Our ability to live in a balanced way still has a long way to advance before it is fully developed. Until such time we are a danger to ourselves and to the eco-system as a whole.

Monsanto says that GMOs are safe. Some years ago, they said the same about DDT, so if that is their idea of safety then we should start to worry. Phil Angell, Monsanto's head of communications, told the *New York Times* that the corporation should not be held accountable for the safety of its products saying, "Our interest is in selling as much we possibly can. Ensuring the safety [of the products] is the FDA's job."[6]

We have already seen the toxic effect GMOs have had on laboratory animals, and in a few years time we will probably be witness to the afflictions they cause in people.

I am not against transgenic experimentation, as it could have its uses, but it should be controlled experimentation, and not harmful to humans or to the rest of the environment.

The transgenic invasion

In spite of the uncertainties surrounding agricultural biotechnology, it has been gaining momentum all over the world. The invasion of genetically modified organisms started out in the United States. The FDA granted GMOs with a safe food status that required no special ruling. They used the "principle of substantial equivalence", saying that GM

crops are just as safe as conventional ones. The trick for establishing that type of criteria was that they only had to take a few characteristics into consideration (not all of them, just the ones they wanted). The characteristics they chose were the ones both GM and conventional crops have in common. This unscientific procedure has meant they can decide that no further or more rigorous types of study on GM crops are required.

Writer and journalist Marie-Monique Robin details in her wonderful work *El mundo según Monsanto*[7] (The World According to Monsanto), how the approval of transgenics in the US was a political decision and not a scientific one. In the same book, she reveals how the multinational's lucrative history has been marked by cases of falsification of scientific studies, misleading publicity, bribery, and withholding information on causes of death, defamation, and pollution.

Current regulations in Europe and America are very simplistic and do not stipulate any food study procedures for analysing consequences in the health of laboratory animals. The few studies of its kind that have been undertaken are carried out by the marketing departments of the big companies. They devise the studies for their own benefit, the same as they do for pesticide research.

Professor Armin Spök, of the Inter-University Research Centre for Technology, Work, and Culture, of Graz (Austria), says that the studies carried out by the industries themselves for approving GM crops in Europe, are full of irregularities. The Austrian government has also said something along the same lines, stating that after revising these tests three times, they were deficient in various aspects.[8]

To the industries' negligent behaviour we have to add the obscurantism with which they operate, by refusing to make the majority of these studies public[9], or offer samples so that independent scientists can study them. They excuse themselves under the pretext of it being a trade secret, and the result is that we have no idea of the criteria used in the approval of GMOs in our country.

That is how the transgenic invasion advances; it turns its back on scientific rigour.

The large majority (85%), of GM crops are concentrated in mainly three countries: United States, Argentina, and Canada. They are also present to a lesser degree in Indonesia, China, India, South Africa, Brazil, Mexico, Uruguay, Colombia, Honduras, the Philippines, Australia, and Europe.[10] In 2011, GM crops covered over 160 million hectares of land - mainly cotton, wheat, soya, and rape.

Developing countries have been subject to a very intense campaign to pressure farmers into substituting their native organic crops with transgenic varieties, in turn creating a tremendous dependency on seeds, fertilizers, and weedkillers.

Only two varieties have been approved in Europe. They are *MON810* (property of Monsanto), a transgenic crop that produces its own insecticidal gene (Bt) making it resistant to certain insects, and the *Amflora* potato, no longer cultivated or marketed due to lack of demand.[11] Paradoxically, importation of GM rape, corn, soya (mainly for animal feed), and cotton (for the textile industry), is permitted. European Union countries can choose whether they want to permit entry of these crops by using the "safeguard clause", which allows them to veto a GM crop if there is information that it could mean "a risk to human health or to the environment". France, Germany, Austria, Bulgaria, Greece, Hungary, Luxemburg, Italy, Switzerland, Turkey, Poland, and Latvia have all used this clause.

It is said that some countries oppose transgenic technology because they do not want to harm their economy, as they are nations heavily reliant on exports and their trade would be greatly affected. Even if that is true (although it is doubtful), we cannot say that a nation's opposition to agricultural biotechnology can be based on that criteria alone. France, for example alleged that *MON810* causes possible long-term adverse toxic effects on earthworms, isopods, nematodes, and Monarch butterflies. In the appendices, I will detail many other toxic effects on the environment and human health caused by GM crops that have been reported.

Only six countries in Europe grow GM crops: the Czech Republic, Slovakia, Portugal, Romania, Poland, and above all, Spain. Countrywide, there are 100,000 hectares of GM crops that provide 75% of all GM corn grown in the European Union.

In 1998, with an almost total lack of transparency, and with a feeble attempt at informing the public, Spain's conservative government, the Partido Popular (PP), gave the green light to eighteen varieties of GM corn. Since then, Aragon, Andalusia, Navarre, Castilla La Mancha, Extremadura, and Catalonia have been producing the *MON810* variety, property of Monsanto. In 2012, the number of hectares in Spain dedicated to growing this crop had multiplied approximately five times since 1998.[12] The principle cultivation zone is Aragon, followed by Catalonia.

Spain's position in relation to GMOs is diametrically opposed to that of most other EU countries. Why is the production of GM crops increasing in Spain when it is decreasing in the rest of Europe? What makes our politicians favour such a questionable and potentially dangerous technology? I am sure that by the end of this chapter we shall have the answers to these questions.

It is clear there is a general rejection of transgenic crops in Europe. In Austria for instance, agricultural politics focus on promoting sustainable organic farming. Austrians debated the matter and concluded they did not want GMOs or any exclusive patents on their seeds. In the Tuscany region of Italy, they knew from the start that GMO crops would not be compatible with their idea of progress. The regional government banned GMOs, because the aim in that area is sustainable crop cultivation and livestock farming, with the main focus on ecology. Transgenic agriculture clashes head on with those ideals. Not only did they ban GMOs, they also implanted a labelling law, and made school cafeterias GMO-free zones.

European consumers are becoming increasingly aware of the problem, and there is a gradual move to avoid consuming GM foodstuffs. In fact, imports of American soya and corn to the EU have fallen dramatically over the last few years.

If you want to keep GMOs away from your table, then you have a problem: despite demands in European legislation, there are currently foods containing GMOs with no specification on the labels. (In Greenpeace's *Red and Green Guide to Transgenic Foods*, you can find most of the brand names whose food contains GMOs not specified on the label[13]). In other words, the regulation is not being complied with. Meat and milk products are exempt from being labelled so we do not know whether the animals have been fed with transgenic feed or not.

It is difficult, if not impossible, to keep our plates completely clean.

The transgenic promise

When you want to sell a product, one of the best tactics is to make it out to be the only solution to a specific problem. Pharmaceutical companies are exemplary at doing this. With the aim of selling as many medicaments as possible, they will exaggerate the danger of a certain illness is (the reader will surely recall the case of Type-A Flu), and will even invent new ones ("restless leg syndrome", and many other psychiatric disorders). With GMOs, we have been sold the idea that transgenic crops are more productive and that they are the solution to a great many world problems, such as hunger and climate change. But we know the truth, and the truth is that GMOs do not help either issue.

Many people who still defend agricultural GMOs talk of the need to increase production, when, as I have already mentioned several times, world hunger is a factor of socio-political concerns. It is not because of lack of food, but rather due to lack of common sense.

Various different studies undertaken by organisations (like Friends of the Earth), by independent investigators (like Charles Benbrook), by universities (Kansas and Nebraska), and even by the United States Department of Agriculture, indicate that transgenic soya produces 11% less yield than conventional varieties, and that GM corn, cotton and rape, produce the same yield, or less.[14]

According to some investigators, the drop in productivity of GM seeds is due to the stress that genetic modification produces in plants,

creating metabolic changes and inhibiting the absorption of nutrients. There is also an increased demand for energy for the plant to be able to assimilate modified characteristics which are not its own.

Genetic engineering is applied to four types of crops: soya, corn, cotton, and rape. Cotton and rape are not edible, and soya and corn are mainly used as feed for western livestock. How is world hunger supposed to be alleviated world when 99% of transgenic harvests are destined as animal feed and bio-fuel?

Rather than ending world hunger, we know that the countries that adopt GM crop production are suffering from genuine economic disaster. Mass cultivation has always had a detrimental effect on other essential crops - for example, Argentina has seen an increase in GM soya production to the detriment of potatoes, wheat, and maize, etc.

In Argentina, as in Brazil, Paraguay, and India, the big single-crop monopolies have ripped up extensive jungle terrains (in Argentina more than two hundred thousand hectares of virgin forest are disappearing every year, due mainly to the expansion of GM soya), and they have driven the small growers and farmers to ruin. That is without considering the enormous problems caused to health and the environment. As I said, we will deal with this at the end of the book in the appendices.

In India, the cost of producing transgenic cotton is twice that of organic cotton. GM seeds are three or four times more expensive than conventional ones. Combined with the requisite high number of chemical products needed for its production, the overall costs notably increase. It has driven many farmers into heavy debt and even suicide.

It is obvious GMOs are not contributing to end world poverty or hunger - instead they are making the situation worse.

Defenders of GMOs claim that climate change will end from using certain transgenic crops capable of capturing greenhouse gases. But this theory falls apart straight away. Let us look at it step by step.

You should now be very aware that transgenic farming is part of an industrial system that is very reliant on oil in the form of fertilizers and

pesticides. Oil is also required for fuel to run the machinery (essential for this type of agriculture) which pollutes the atmosphere, and actually produces greenhouse gases. The problem gets worse when we consider that most of the GM crops grown in the producing nations do not remain in those countries, but are exported abroad, along with all the energy and pollution costs inherent in that process.

Agricultural GM crops are here because of lies, and their defenders will never be able to keep their promises.

A tool for domination

Genetically modified organisms are the new tool for domination the industrial sector pulled out of its sleeve, a tool that forms part of the system implanted during the Green Revolution; another tool in addition to all those already in place that are desecrating the old farming ways handed down from generation to generation. All around the world, farming communities are losing their chance to continue growing their own crops, and using their own techniques. The big companies are forcing them to buy their seeds, fertilizers, and agrochemicals.

Transgenic crops are fencing off the land - there is a new phenomenon in world history: the right to own genes. The multinationals argue that intellectual property is essential for the sector to prosper. It is not surprising they say that, because a large amount of the transgenic industries' profits come from royalties made in the farming industry, and not from the actual crops.

It is a world of paradox, and to understand it we must refer to that unscientific concept called the "principle of equivalence." I previously mentioned that this concept alludes to transgenic crops being essentially the same as conventional crops. Therein lies the paradox. Although the multinationals say the crops are the same, they also consider them sufficiently different enough to have them patented. In other words, they are the same when it suits them (needing approval for marketing purposes), but they are also different enough to warrant patenting. All transgenic seeds are patented, and they cost three times as much as con-

ventional seeds. Seeds have always been humanity's heritage – they are our ancestral legacy and the basic element from which we obtain our food, but we are in danger of losing that heritage. Seeds are becoming the private property of a few multinationals.

Patents give the big conglomerates enormous power over farmers. Before the onset of GMOs, farmers would buy seeds (the "improved" varieties are usually patented as well), and the following year they would either plant them or exchange them for other seeds. Nowadays, patenting laws have made seed-swapping illegal. This means that buyers can only use GM seeds once; the following year they are not permitted to use the seeds gained from the harvest. It seems more like rental than purchase. What's more, seed purchase contracts may contain clauses stipulating the brand of weedkiller farmers must use; this is already happening with crops that have become resistant to certain weedkillers. It is a great business to be in: you have rights over seeds, and over the only weedkiller that can be used on the crops grown from those seeds. Currently, the main crops of that type are *Roundup Ready* by Monsanto, which tolerates the weedkiller *Roundup* (glyphosate), and *Liberty Link* by Agrevo, which tolerates their weedkiller *Liberty* (gluphosinate).

Monsanto is serious about all American farmers growing their *Roundup Ready* soya, complying religiously with the clause that they are not permitted to use the seeds more than once. To make sure they comply, Monsanto spends millions of dollars per year hiring the services of private detectives known as "the gene police". These guys persecute farmers suspected of re-using transgenic soya. In *El mundo según Monsanto*, Marie-Monique Robin says that the "police" draw up reports from genetic analyses of the cultivated crops and in some cases, obtain samples by trespassing on private property, without having asked the farmer's permission. If they suspect any farmers of lying, and saying they are growing non-GM soya, the gene police can even fumigate their property with *Roundup.* This destroys the traditional non-GM crop, but leaves the Monsanto soya behind. To make things easier for themselves, Monsanto has set up a telephone helpline via which farmers can report their neighbours if they think they are in violation of the regulation.

The expansive nature of GM crops plays in Monsanto's favour, as they are capable of cross breeding with conventional crops, thereby contaminating them. They have also made a lot of money from denouncing farmers unlucky enough to have had their fields contaminated by Monsanto's transgenic crops. I shall elaborate on this in the next section.

The outlook is truly horrendous: farmers are condemned to pay hefty fines or even face imprisonment all because their crops have been contaminated by GM crops from neighbouring farms.

In a bid to safeguard their monopolies, the transgenic industry has taken it even further by marketing sterile seeds - also known as suicide seeds or Terminator seeds. They are programmed to germinate only once and cannot reproduce. What a masterstroke! In that way they ensure that year after year, farmers will be knocking on their door asking for new seeds, and for the new agrochemicals especially designed for GM crops. The first patent for this kind of seed was obtained by the company Delta and Pine in 1998. In 2006, Monsanto bought out Delta and Pine along with the patent.

The suicide seed technology also increases the uniformity in crops, creating a loss in agricultural wealth as it restricts the practice of saving and cross breeding seeds, which has always been our job as farmers.

What exactly what is the purpose of GM crops, if they are not more productive than conventional crops, and do not help end world hunger or climate change? I personally think that their purpose is to create wealth for the companies who manufacture them, and to continue to make the farming class even poorer. Farmers have become dependent on seeds and weedkillers sold to them by the biotech companies. On top of that, they receive very poor pay for their crops.

An impossible coexistence

GMOs are like bad neighbours with whom it is impossible to coexist in peace and harmony. They come round your house, they mess the place up, and if you're not careful you might even end up dead.

Coexistence between native crops and GM varieties is impossible. Genetically modified crops can reproduce by pollinating native species and modifying their genetic structure. This phenomenon, called "transgenic contamination", is irreversible and everlasting, and allows GM crops to invade non-GM fields and wild plants. In some cases, it is even killing off some of the conventional varieties.

One of the first voices to raise the alarm came from Canada, where *Roundup Ready* rape was approved in 1996. Just one year later, a farmer said that a nearby wild species of plant growing alongside the crop plantation had been pollinated, producing a weed that was now resistant to weedkiller. That mutant, that Frankenstein plant, had been released into the world.

The situation in Europe is quite complicated, as we have absurd rules in place and the matter of GM crops is totally out of control. The European Union has only set up a few minimum recommendations that have nothing to do with "coexistence", which countries are using to various degrees of enforcement and rigour.

The Ministry of Agriculture in Spain drafted a rough regulation, but rather than being aimed at preventing transgenic contamination in fields, seemed more aimed at legalising it. Even though some parts of the document have been altered on several occasions, the text is still lacking.[15]

Spain is different to the rest of Europe. Farmers who want to grow GM crops are under no obligation to advise local authorities or their neighbours, and are not obliged to undergo any training. This is occurring in spite of the European directive on intentional release of GM crops into the environment. It states that, from 2001, "member states will create registers for the notation of GM crop sites [...], the purpose of which, amongst other things is to monitor the possible effects of GMOs on the environment [...]".[16] Greenpeace has also observed that some wheat fields marked as non-GM are in fact transgenic.

As if that were not enough, the Spanish government delegated the design and execution of GM crop monitoring and control protocols to

the very companies that market them. In other words, not only does the approval of genetically modified crops come from the companies' own studies, and is financed by them, but they also dictate how the crops are monitored and controlled.

Nature reserves and organic farms in close proximity to where GM crops are grown are not considered either. To avoid transgenic contamination, regulations stipulate that there must be a minimum distance of twenty metres between a transgenic field and one where non-GM crops are grown. As if that were enough to stop pollination! It leaves conventional and organic farmers with no proper defences, and they can only stand and watch as their fields become contaminated.

We know of hundreds of cases like this; people such as Juli Bergé, an organic farmer from Bellcaire whose harvest was contaminated by a GM crop variety growing 800 metres from his land. The analyses showed that there was 30% contamination, which meant that he could no longer sell his products as organic and had to sell them off as conventional produce.

Another farmer, Enrique Navarro de Albons (Girona), did not even bother to sell his harvest; when he found out his crops had been contaminated, he preferred to burn them before he pushed that poison out into the food chain.

The rise in cases of contamination is making organic farmers put the brakes on their production and gradually abandon the cultivation of corn. In these types of conditions it's very difficult to maintain a totally organic production and pass crops through the routine controls of organic certification.

The ruling does not consider the protection and conservation of native seeds either. Seeds of traditional local varieties are being threatened with transgenic contamination and this does not bode well for the environment. In 2005, the *Assemblea Pagesa*, the platform *Transgènics Fora!*, and *Greenpeace* carried out a study (financed by the farmers themselves) on the coexistence of crops in Catalonia and Aragon. The results were horrifying: 100% of the samples taken contained GMOs. One of

the crops affected was *Quexal* corn, an old variety grown in the Esporus de Manresa conservation area.

Then there is the case of Félix Ballarín, a farmer from Aragon who lost his organic certification, his job and his hope after a local variety of corn he had been trying to revive was contaminated.

In Spain, we have the added problem of experimental crops being grown in open fields. We know that between 1993 and 2005 there were more than 300 experimental GMO test fields, making up 42% of the test areas in Europe. We also know that the conditions where tests are done are mostly lacking, and show an absolute lack of control: they are not adequately sign-posted, they don't respect the stipulated distances and some of them are not even authorised. What's more, we are not sure who exactly authorises them or what the requirements are for them to be approved, as the authorisation processes are kept completely in the dark.[17]

The cynical Spanish government has systematically denied cases of contamination and even tried to charge the costs derived from contamination to the same farmers who have been affected, and not to the farmers and companies responsible for the contaminations.

Things in Spain are not being done properly; the regulation is deficient and does not prevent contamination or loss of conventional crops. Manufacturers' accountability and control of the possible effects on the environment and health are noticeable by their absence.

We have reason to believe that the strategy of the GMO industry on a worldwide scale is to contaminate fields indiscriminately to create an irreversible situation that will mean the disappearance of any alternative types of crops. At the same time, the industry is forcing farmers and consumers to accept an increasingly higher threshold of GMOs present in our crops and food.[18]

The Register for Transgenic Contamination, managed by GeneWatch and Greenpeace International, documented more than 216 cases of transgenic contamination in 57 countries up to the year 2008.[19]

The indigenous people of Mexico and Guatemala are also suffering from the disappearance of their local varieties of corn, passed down from father to son over centuries and which form the basis of their lives. In 2002, investigators from California University announced that the local maize varieties from the mountains of Oaxaca State in Mexico showed signs of contamination.[20] Following that, other farming communities carried out tests on their crops and they obtained the same results. The situation, far from getting them down, made them join forces and unite against the transgenic invasion via the *Red de la Defensa del Maiz*[21] (Maize Defence Network), an organisation that promotes sovereignty over their food and the right to grown their local varieties with all the safety guarantees.

In Thailand, Canada, and the Philippines, farmers are finding themselves in the same situation and they are organising against the invader. Wherever GMOs go, they generate strong feelings of rejection and resistance.

I cannot resist transcribing the words of Eduardo Galeano from his book *Los hijos de los días* (The Children of Days), which exemplify the attitude of most of the farming collectives towards GM crops: "A few months after the earthquake, during Easter 2010, Haiti received a grand gift from Monsanto: sixty thousand bags of seeds produced by the chemical industry. The farmers got together to receive their gift and they burned all the bags on a huge bonfire."[22]

The fight against GMOs

In 1993, experimental GM crops began to be planted in Catalonia, and a few years after that, farmers started to grow them too. It all happened on the quiet, behind the backs of the Catalan people.

In Chapter 1, "A Brief Look Back," in the section on co-operatives and trade unionism, I explained how in June of 2002, those of us who had broken away from the *Unió de Pagesos* farmers' union together with students and eco consumers associations, formed the *Assemblea Pagesa* (Farmers' Assembly). From the start, we received support from the

anti-GMO movement in Catalonia (especially via the *Transgènics Fora!* platform (Transgenics Out!)) and we turned that fight in to one of our main objectives. We believed it was very important for rural communities and organisations to support the anti-GMO movements which already been operating for some time in Barcelona.

We wanted people to know what was happening with GMOs in Catalonia and so on 13th September 2003, the *Assemblea Pagesa* and *Ecologistas en Acción* carried out a symbolic act which consisted of cutting and burning a field of GM crops, property of Novartis/Syngenta at Alcoletge in the province of Lleida. They were growing a variety of corn, *BT174*, which had been banned in the United States for causing resistance to antibiotics in humans.

Before carrying out that vindicating action, we had asked the government to remove the crops, and in the absence of any reply, we were left with no choice but to act. I am not sure it was such a good idea, as I ended up in another sticky situation, accused of attacking and injuring a civil guard.

When the day came, off we went to the field full of GMOs during late morning. Once we got there we informed the media, who were going to broadcast the events to the public. The corn was quickly cut and piled up, then there was a debate about whether burning it was the right thing to do. The ecologist contingent did not think it was a good idea to pollute the air with smoke. In the end, we decided not to burn it but we all agreed that something had to be done so the press could have some dramatic pictures to print in their papers. We decided to take some samples of the corn to the local government offices in Lleida, and attempt to occupy the building in a peaceful manner.

Activists and press all went to the offices, and as I was the eldest member of the group, I was given the job of spokesperson, and approached the civil guard who was protecting the entrance.

"Good afternoon," I said, "all we want is to deliver a letter to the government sub-delegate."

"You can't all come in here," he said, talking to me from behind the bars of the gates.

"No, it will just be me going in."

"What's it concerning?" he asked

"It's a letter of complaint with regard to the proliferation of transgenic crops in Catalonia," I said, "and more specifically, concerning a field in Alcoletge."

"Very well," said the guard, "give me the letter then, but only you can come in."

He opened the gate and I handed him the paper, but before he could close it I put my foot in the gap to stop him and everyone else pushed until we were all inside, leaving the civil guard stuck between the gate and the wall. We poured in en masse: it's probably not the right way to go about getting inside a building, but I can assure you there was no damage and no-one got hurt. The video can verify this.

The government official was not there at that moment and so whilst we were waiting for him, we hung an anti-GMO banner over the balcony of the building so the photographers and television cameras could get some good pictures. Three or four hours later, the official arrived, we handed him the letter of complaint and once it had been registered, the relevant photos were taken. The next day many newspapers in Catalonia carried the story of our protest on their front pages.

I did not know it at the time, but it did not end there, as I shall explain.

A short time after our protest at the government offices, we found out that the *Instituto de Investigación de Tecnologías Agroalimentarias* (IRTA - Institute of Investigation for Agro-food Technologies) and Barcelona University were carrying out an investigation that was full of irregularities, and using EU subventions. They were cultivating GM wheat, which is illegal in Europe, in a field near Gimenells (also in Lleida province), in an open space with no protection of any kind. It meant an enormous potential contamination risk to neighbouring

farms. We were angry that the Generalitat de Catalunya (Catalan government) was messing around with wheat in this way. After all, it is the basic ingredient of bread; the food we have on our tables every day. We thought it would be a good idea to carry out another action similar to the one in Alcoletge.

We all met at my farm the day before to make a plan. We were all there - *Assemblea Pagesa*, *Cooperativa Germinal*, *Plataforma Transgènics Fora!, Xarxa de Consum Solidari*, plus various other individuals. The following day, about a hundred cars left Balaguer at eleven o' clock in the morning, and other people travelled by bus from Barcelona. We called the Press again just before arriving at the experimental GM field, and once there, we got to work. The people in charge of cutting the wheat wore white boiler suits and many of them were wearing hats to avoid being identified in the media pictures. The protest only lasted twenty minutes, just enough time to cut the wheat and make a few piles.

Just after we got to work we called the police, the Mossos d'Esquadra. Some of us thought it was better to forewarn them that time, as if there were any court cases, the media interest would be greater. Many of the younger people were worried about being arrested as they already had previous charges against them for protesting in other places, so we were taking a chance. When the police arrived, the job of cutting, burning, and mixing the samples had already been done. Although we hadn't been directly involved in harvesting the field, Albert Ferré from *Cooperativa Germinal* and I were the spokespeople.

At the time of the action, no arrests were made, but sometime after Albert Ferré was reported. He faced a lawsuit suing him for 469,064 euros and a sentence of fifteen months in prison - they were using him as a scapegoat. Fortunately, he received massive support in Catalonia and eventually in October 2006 he was absolved of all charges against him.

The Gimenells protest turned out to be a right old scandal. The Generalitat did not hold back in their criticism of our actions:

"You're a load of barbarians! You've ruined years and years of investigation and you've thrown away millions of euros provided by the European Union!"

Personally I don't regret what we did. The Generalitat should always act in an exemplary manner and should not be carrying out experiments without safety measures in place.

In 2004, approximately a year after the first action when we cut the GM crops in the field at Alcoletge and then shut ourselves in the government offices, I received a summons for attacking and injuring a person of authority. The civil guard at the door had denounced me for attacking him and causing an injury to his wrist. I suppose they chose to report me, as I was the only one they could identify. The prosecution was asking for three years in prison and compensation costs of 50,000 euros. At that time, the ant-terrorist laws were in force and any action against public order authorities carried a very severe sentence.

Luckily, I had Jaume Asens defending me, a Barcelona lawyer who charged cut-price rates for social causes. He did an amazing job and I shall always be grateful to him. I also received a lot of public support via the *Josep Pàmies Solidarity* campaign.

The court case was held on 11th June 2007, almost four years after the event. The first thing we did was to ask for the forensic report to check if the civil guard had a prior injury or if it was really me that had caused it. To our surprise, they refused. We also asked for the security camera images but they did not want to show them to us either.

Faced with that nonsensical situation we pleaded Not Guilty and forced the provincial high court to request the forensic report and the camera images. When we had the report in our hands, we saw that the guard had hurt his wrist playing tennis a year before the events at the government offices. The security camera images also showed that there was no way I could have injured him. It was all a set up, and I was cleared of the injury charge. The final high court sentence was six months in prison for "defying authority," which I do admit; I had not

obeyed. Luckily, as I had no previous convictions, I did not have to go to prison.

As for the antibiotic-resistant GM corn, it was banned two years later. But that meant it had been left to grow for two more years, much to my disgust.

Som lo que Sembrem, the long road to Parliament

During one of our meetings, Carles Teulé, organic farmer and member of the *Assemblea Pagesa*, proposed the possibility of initiating a popular legislation initiative (ILP) against GMOs in Catalonia. Carles had been to the Parliament to find out all we had to do to get things underway, and after listening to him many of us agreed that it should be our next step. We knew that after our various scrapes with justice, we wouldn't get away with another protest. Despite that, many colleagues decided to continue with the same line of action we had been following up until that point.

A popular legislation initiative is a tool for political participation that citizens can use to propose a law to Parliament, which is debated in a plenary. To do this 50,000 signatures need to be collected and validated in the space of four months.

This is how the ILP against GMOs in Catalonia came about. We thought it would be the perfect way to promote a big awareness campaign and get the people of Catalonia actively involved, The first thing we did was decide how we would formulate the proposal of the law we would present to Parliament. Over the course of several meetings, the following points were decided: first, the prohibition of transgenic crops for agricultural use in Catalonia; second, exhaustive labelling of foods produced with GMOs; third, a moratorium on the development of GMOs and, last, an independent investigation into the effects on health and the environment. The aim was to try to generate debate and ultimately to make Catalonia free from transgenics.

Over the course of the following years, we met periodically and travelled all over Catalonia to spread news of the initiative. We wanted

everyone to know that a big movement was growing against GM crops and that finally they could make their opinions known.

That was the seed of the grass roots platform *Som lo que Sembrem* (We are What we Sow) which brought together around 200 collectives from all over Catalonia plus people connected to the farming world and responsible consumerism. It was formally constituted and presented on 2nd March 2008 at Lleida's health fair, *Fira Natura 2008.* We also started to collect signatures on that day, we were fortunate to have the support of two special guests: the French syndicalist José Bové and the Secretary General of *La Confédération Paysanne* (Confederation of Farmers), Olivier Keller. They told us about what had been happening in France with GMOs, and about the hunger strike they had held a month beforehand as a result of which Sarkozy banned the only transgenic crop being cultivated in France.

© Família Pàmies-Gràcia

"Josep Pàmies Solidarity" Campaign, 11th June 2007, Lleida.

At that time, the famous PRC, ERC and Iniciativa-Verds tri-party formed part of the Catalan Parliament. Some MPs told us that the socialists and the CiU were intending to join with the Partido Popular conservative party in order to knock back our initiative before it got to Parliament. The strange thing about these initiatives is that even with the requisite 50,000 signatures, the majority parliamentary parties can decide not to debate them.

We knew were playing at a disadvantage and that everything was against us, but that only made us more determined and we took our project very seriously. During the eight months we were collecting signatures, *Som lo que Sembrem* held more than 500 actions across Catalonia… no political party has ever done that in its history!

We organised debates, conferences, and informative events, all with the aim of collecting the signatures we needed and informing the public about the problem of the GMO invasion of our land.

The main events we organised were the scientific conferences called International Symposiums on GMOs, to which we invited well-known figures connected to transgenics, including scientists who had proved the dangers of the technology in France, Austria, and Scotland. The idea was for the Catalan politicians to hear in the investigators' own words the arguments which had served to prohibit GM crops in those countries. All of the following were in attendance: Marcello Buiatti, from Florence University; Henk Hobbelink, from the NGO Grain; Doctor Brian John, from the British pressure group GM-Free Cymru, Professor Armin Spök, from the Inter-University Research Centre for Technology, Work and Culture of Graz (Austria), Doctor Ricarda A. Steinbrecher, co-director of Econexus, Fabio Boscareli, head of the Ministry of Agriculture in Tuscany, and Doctor Gilles-Eric Séralini, from CRII-GEN (Committee for the Investigation and Independent Information on Genetic Engineering).[23]

Out of 135 MPs, only 4 turned up; the others couldn't even be bothered to keep up appearances. I guess if your interests lie elsewhere then arguments are of no use.

The parties opposed to our initiative were scared we would take the investigators to Parliament, to talk in front of the MPs who had been unwilling to listen to what was said at our conferences. We had announced that if the debate was passed, we would take the scientists to Parliament with us (in fact, the ILP regulation foresees calling on specialists to enrich the debate). It would have been too much for a group of politicians sold out to financial interests; the minutes would have recorded that they rejected scientific studies that had been used to ban transgenics in other parts of Europe.

Parliament requested some advisory reports that turned out to be a series of tendentious and biased documents containing no relevant information, quotes or bibliography.[24] *Som lo que Sembrem* complained that no one had approached us (or any of the experts) for information about the inconveniences of genetic modification. The reports were just a pantomime to get them out of tight spot.

Once more, it was clear that MPs who were supposed to represent the Catalan people were not interested in knowing the truth about GM crops.

In August 2008, the time was up for collecting signatures. We presented them to the *Instituto de Estadística de Cataluña* (IDESCAT - Catalan Institute of Statistics), where they were validated and sent to Parliament. We only needed 50,000 but we had collected 160,000 signatures from people all across Catalonia. It was without doubt, a great success. We had support from a large part of the population and from some public figures that had joined the campaign, including film director Bigas Luna, and chef Santi Santamaria, who had already helped us in the fight to legalise stevia.

The date for the first vote was fixed for a year later, on 2nd July 2009, the day when the parties CiU, PP, and PSC would impose their veto on the proposed law to halt the debate on genetics in Parliament. They had already publicly announced this was their intention, and so we organised a protest in Barcelona to denounce their anti-democratic attitude. Using the slogan "*Democracia, salud y buenos alimentos*" (Democracy,

health, and good food), we held the march on 28th June 2009, five days before the vote. 5,000 people attended and it was one of the biggest sectarian protests ever to have been held in Catalonia. The weather was beautiful - warm and sunny. We walked from Plaça Catalunya to Parliament making a noise and waving our banners. The music from the clarinets and drums and the constant noise of the whistles mingled with shouts of "GMOs out!" and "This is your democracy!" Leading the march at the tip of the tide of people, and carrying a huge banner painted with the protest slogan were chefs Santi Santamaria, Antoni Rafecas and Montserrat Esquerda, ex-coordinator of the *Unió de Pagesos* Pep Riera, other members of the *Som lo que Sembrem* movement and me.

Eventually, we arrived at the gates of the Parliament gardens, in the heart of Ciutadella Park where we were met by a few astonished guards who were unwilling to let us pass. But we hadn't gone that far to stand outside the gates, so joining forces we pushed a campervan (that had been with us on the march) through the gates, and followed in behind it. The situation was tragicomic: a group of people pushing a campervan across the grass, a few police officers trying to stop us without success, and the driver jumping from the vehicle so he wouldn't be blamed for the invasion.

Once outside Parliament, we hung the megaphone on the branch of a tree and various spokespeople addressed the crowd. One of them was Santi Santamaria, who although very ill from being overweight, wanted to be with us that day. I felt so moved at the effort he made walking along at the front of the march. At some points along the way he had travelled in the campervan when he couldn't go any further. Once outside Parliament, in spite of his ill health, he did not hesitate to get up on a bench and shout a few choice words at the corrupt politicians. Things like that made him a man of exceptional dignity and bravery, as many of the politicians who he openly criticised were clients at his restaurant.

"I feel like I used to feel when I was a young anarchist," he told me excitedly.

The campervan would be our home for the next few days, during which time, Montserrat Esquerda, farmer Jorge Rafael, Carlos Amela from *Som lo que Sembrem*, sociologist and member of the ILP promotion committee Gerard Batalla, Oriol Grau, and I, set out to resist the police and our appetites by going on a hunger strike that would last until the parliamentary plenary. We knew we couldn't change the minds of the politicians with our protest, but at least we would create a bit more fuss.

The hunger strike also gave us the chance to experiment with two fairly controversial therapies: seawater and urotherapy (yes, drinking one's own urine). Those of us who tried the sea water did so because we had heard that it contains all the minerals and other elements necessary for our bodies to work well (it is also known to reinforce the immune system, to tone and revitalise the body, improve intestinal health and balance pH). I was particularly interested to see how my body would respond to fasting and the result was spectacularly good. I recall that up until the second day, it was quite difficult but after that I began to feel really well. Not only did I feel full of energy physically but I also found my mind was very clear. This was a big help to me as I had to do a lot of interviews with the media who were coming to see us every day. I would say that I have never felt better in my life. I also lost five kilos on the diet, from weight which had accumulated mainly in my abdominal area.

But the person who fared best during the hunger strike was the lad who drank his own urine. Initially he wanted to try the seawater as well but he had become interested in a book on urotherapy that I had taken with me, and he had asked me to let him flick through it. He read the whole thing on the first night. The following day when we got up we were all surprised to see him urinating in a bottle and drinking it. As I said, it was that lad who felt in the best shape during those five days.

Another colleague decided he would only drink mineral water and take it with the occasional sachet of sugar. He was the youngest in the group but he was the one who felt the worst as he had constant drops in glucose levels forcing him to consume more sugar.

At last, on 2nd July 2009, after so many experiences (some of them very enriching, others very stressful), the day of reckoning arrived. In the Parliament gardens where we had slept those past few days, hundreds of people turned up to listen to the Parliament session on a small radio. It was emotional hearing the words of our spokesperson Alexis Inglada, as she addressed the MPs. As we listened to that inspired speech, just for a moment it seemed as if there could still be a possibility that our elected politicians would back down and give the debate on GMOs a chance.

Outside Parliament gates during the protest against GMOs, 28th June 2009, Barcelona.

© Phillippe Regol - blog "Observación Gastronómica 2"

With much missed chef Santi Santamaria during the protest against GMOs.

But that didn't happen; as we expected, our legislation initiative was rejected by the PSC, CiU and the PP. ERC, Iniciativa, and Ciutadans per Catalunya voted in favour but their votes weren't enough.

We did not expect anything different from the conservative PP as their defence of ultra-liberal concerns is well-known and they don't really care about the harm GMOs might cause to people and the environment.

We did expect however a bit more dialogue with CiU; they speak of social democracy but contrarily they displayed intense opposition to our proposal, as shown by the behaviour of one Josep Grau, ex-Minister for Agriculture. That character shamelessly justified his support for GM crops by alleging that the world already produces transgenics naturally, citing mules and nectarines as examples. According to his party, they

© Colectivo "Som lo que Sembrem"

The hunger-strikers outside the gates of Parliament, June 2009.

are both examples of genetic modification! The truth is very different: the mule is a hybrid animal, the result of cross-breeding a horse with a donkey. Nectarines, however, are not even hybrids of plums or peaches, contrary to what many people think and certainly to what Mr. Grau was saying. Nectarines are in fact a variety of peach. Josep Grau was (and maybe still is) either ignorant in this matter or was trying to manipulate public opinion with false information.

Right up until the final moment we were hoping for a miracle from the socialists; we thought they might be decent enough to think and act differently from their counterparts the PSOE (Spanish socialist party), who over the past years had been following exactly the same lines as the PP on the subject of GMOs. The politicans left us feeling very disappointed, in particular Caterina Mieras, who vehemently re-

jected our proposal. Although during the latter part of the hearing, she did give us a nod by accepting a small part of the initiative concerning the labelling; unfortunately, it was never put into practice. Fortunately, when we need to consult which companies use GMOs, we can rely on Greenpeace's *Red and Green Guide to GM Food*, which lists the majority of brands that use GMOs in their products but do not specify on their labels.[25]

After our fruitless foray into Parliament *Som lo que Sembrem*, the sole purpose of which was an infrastructure via which we could collect signatures, ceased to have any kind of function. But it did not dissolve. In subsequent meetings, a vote was taken to transform the platform into an association that would continue to demand the prohibition of GMOs, and the need for everyone to be able to acquire organic food.

Today, transgenics are still gaining territory in our country. To counteract that we are promoting "GMO-free zones" in Catalonia similar to in other parts of Europe.[26] Every person, neighbourhood, institution, village, town etc., should get involved and set up their own campaigns. In Europe, there are currently hundreds of self-declared GMO-free zones.[27] Even in Catalonia some towns whose political party voted against our initiative have declared themselves GMO-free. Of course, it is just a symbolic declaration expressing the will to keep transgenics away from the land, as town councils in Spain do not have the legal capacity to ban farmers from sowing GM crops. But they do have the power to choose which type of food is distributed to school refectories, retirement homes, and other types of state-run establishments. That kind of action helps to keep the debate alive and make farmers understand the importance of making good choices with what they decide to grow.

Spain, the Trojan horse of Europe

We can see at this point that political power in Catalonia and Spain undeniably favours the interests of the biotechnological multinationals, to the detriment of our health, environmental equilibrium, and rural organic farming.

The various governments that have held power in Spain since 1998 have supported GMOs, in contrary to the general position taken by other European countries, the Spanish public, and a large part of the scientific community. In Catalonia the CiU party (Convergència I Unió), and socialist party PSC (Partit Socialista Català), have followed the same path and have filled our fields with GM corn.

The friendship between political powers and the business world can be partly explained by the phenomenon of "revolving doors": the constant movement of people from the public sector to the private sector and vice versa. Unfortunately, the revolving door syndrome is an epidemic that is playing out in favour of GM crops. In *El mundo según Monsanto*, Marie-Monique Robin says, "in the European Community, 90% of the committee in charge of advising on food safety has links with the biotechnology companies." To give an example of this, let's look at the famous case of Suzy Renckens. From 2003 to 2008, she was director of the Unit for Genetically Modified Organisms for EFSA, the organisation in charge of assessing possible risks from transgenics. When she left that post in 2008, she went to become a lobbyist for Syngenta, the giant Swiss transgenic company.

There is a similar story with Spain's Cristina Garmendia, ex-minister of the Zapatero government's Ciencia e Innovación (Sciene and Innovation). Journalist Miguel Jara provides a resumé of her curriculum vitae: "Garmendia was, until she entered into Zapatero's government, president of ASEBIO (the Spanish Association of Bio-Companies), the largest pro GMO and pro biotech medicine lobby in existence in Spain (along with other lobbies such as the Antama Foundation and the largest GMO multinationals in the world, Monsanto and Pioneer), that also brings together a large part of the biotechnological pharmaceutical industry (Bayer, Merck, Bristol-Myers Squibb, Roche, Schering Plough, Esteve – who control Farmaindustria, and Gilead Sciences – the creators of Tamiflu/bird flu)".[28]

Needless to say that when she entered the government, she was a fierce supporter of transgenics, as you can see by her CV.

At *Som lo que Sembrem,* we were aware that a lot was going on behind the scenes but what we couldn't have imagined that two years later such detailed information would come to light about the close relationship our politicians had with the American biotech multinationals. On 19th December 2010, the daily Spanish newspaper *El País* reflected upon a series of supposed messages sent to the American government from the US Embassy in Spain. Between 2008 and 2009, several "wires" were sent, which were exposed by Wikileaks and revealed what we already knew: that there is a great alliance between Spain and the United States on the matter of transgenics. These two nations stand together against the positions of France and other European countries requesting the use of GM crops to be limited.

When we read the emails, we were honoured to discover that the anti-GM movement to which we belonged was making the American Embassy nervous. One message also revealed that there was a certain amount of concern about various other European countries such as Germany, Austria, France, Greece, Luxemburg, and Hungary vetoing the transgenic crop *MON810*, property of Monsanto.

In their communications the American Embassy spoke of their fear of losing Spain's support and the absolute certainty that "if Spain falls, the rest of Europe will follow".[29] Reading these words you will get an idea of the strategic importance the Spanish territory has in the clandestine implantation of GMOs. Spain is the Trojan horse in which the biotech companies want to invade Europe. The US believes that in time it will be able to pull back the rest of the EU from their standpoint in Spain. It was so vitally important for our ILP to have made headway, because if Catalonia had declared itself a GMO-free zone it would have meant the beginning of the end of the GMO business in Spanish and European territories.

Another of the texts published by *El País* reveals how the then secretary for the Rural Environment, Josep Puxeu, contacted the American Embassy after the Basque Country had approved a difficult legislation to avoid transgenic contamination in April 2009, and after the aforementioned EU countries had vetoed GMO crop cultivation. His mes-

sage communicated his concern at the increasing pressure the Spanish government was under to prohibit GMOs as well. Puxeu, who the American Embassy defined as a "traditional biotech defender" was asking the embassy to work shoulder to shoulder with the Spanish government in order for biotech farming to continue existing in Europe.[30]

A recent fusion of the Ministries of Agriculture and Environment into a single ministry was also considered beneficial by the American Embassy, in the drive for biotech farming to be accepted. The communication in question stated that the decision to merge would cause "the anti-GMO factions in the Ministry of Environment to lose strength and influence".[31]

Wikileaks made it clear that the Embassy knew exactly who they talking about, congratulating themselves on the nomination of Cristina Garmendia as Minister for Science. They knew she "was working for a (non-agrarian) biotech industry group, and that she could be an ally for GMO matters during cabinet talks". And indeed she was.

The Wikileaks wires have been useful in giving us an idea of the invisible links that move around in the sewers of Spain, a long way out of the sight of its citizens. But who knows how far this game of interests really goes. We know that in the United States companies like Monsanto make multi-million dollar donations to the major parties to finance their election campaigns. It is obvious that in doing so they can ensure that whoever gets into power will owe a favour to the generous donor. The problem we have in Catalonia is that there is no transparency law that lets us to see how the parties finance themselves, but would it really be off the mark to assume that here the same thing is happening here with our main political parties?

In an advanced democratic society, there should be public debate on matters such as agricultural GMOs, but there isn't. Here, things are done in a different way, reminiscent of a banana republic - we swallow everything that other countries don't want. Is that why Spain is at the bottom end of Europe?

This chapter tells a particularly sad story; of invasions, of bad science, of sold-out politicians, of false democracy, and of products that should never exist in our food chain.

The good news is that the story is not over yet, and I am certain we can turn the situation around.

6

Healing Herbs

I have spent a good deal of my life near a wide variety plants, not knowing their names or even if they were medicinal. I could not have imagined that one day they would become so important to me and that I would be putting so much effort into getting to know about them.

I was only aware of the everyday ones, the ones found in Catalonia such as chamomile, rosemary, and thyme, and some of the typical culinary herbs. I did not even really drink herbal infusions; perhaps a chamomile tea when I had stomach ache, but that's about it. I remember when I was very small they would make me drink soups made from thyme and garlic when the cold weather arrived. I really didn't like those soups and I didn't understand why I had to drink them every day. Now I know that both of those plants are fantastic natural antibiotics and are good for preventing colds.

I was because of stevia I discovered the world of medicinal plants, and it gave me a new insight into the world of corruption in business and politics (human corruption in other words). I discovered that businesses and governments were denying ordinary citizens the right to have access to a plant that could mean the difference between health and illness. We realised how medicinal plants in Europe were being criminalised and it drove us to start growing them, giving them away, and sharing information we had gathered about them.

This chapter deals with all of the above: the reader needs to know there is an offensive from the political and economic system against medicinal plants, and you should also know that these plants are extremely useful when the need arises.

Ancestral knowledge of phytotherapy

Our planet provides us with an extensive variety of medicinal plants distributed over different areas in accordance with the climate and other factors local to each place.

Phytotherapy (from the Greek *fyton* - plant or vegetable, and *therapeia* -therapy) is the science concerning the medicinal properties of plants, and forms part of what we call natural medicine, which consists of various practices where only natural elements are used.

Ancient cultures over the world discovered that plants not only provided food but could also be used to treat and prevent illnesses and diseases. Medicinal plants are therefore the highest expression of the Hippocratic saying, "Let thy food be thy medicine."

It is impossible to know the exact time when human beings began to use plants for therapeutic purposes, but it is probably the oldest medicine in the world. Remains of pollen granules aging 60,000 years have been found in archaeological digs in Iraq; this type of pollen is still used today as medicine in the East, so it is believed that it may have had the same purpose in olden times. Recent investigations in Peru have discovered that the medicinal properties of chewing coca leaves were known about 8,000 years ago.

The first registered texts on healing with plants date back to Sumerian culture and are 3,000 years old.[1] Ancient Egyptians also knew about the healing power of plants; proof of this comes in the Papiro de Ebers, an ancient medical manual written in Egypt 1700 years B.C. In ancient Greece, the doctor, pharmacologist, and botanist Pedanio Dioscórides stands out as author of *De Materia Medica,* a work which was the main manual on pharmacopoeia throughout the Middle Ages and Renaissance periods, and to which I still refer today.

There is no doubt however, that our ancestors already knew about the medicinal properties of plants long before we may suppose they did. Animals instinctively know which plants they need, so people must have known as well, even before we could be considered human beings.

In ancient times, people knew of the subtleties contained in plants, and knew that something from them transferred itself to sufferers, and would cause their disease to be cured. Tribal witch doctors safeguarded knowledge on how to use medicinal plants: they formed part of their transcendental rituals during which they connected to unseen worlds.

Nowadays, we are disconnected from those ideas and those kinds of magic, relegating it to the realm of superstition. Today we are only concerned with the precepts of science, which has determined that chemical components are solely responsible for modern-day healing processes. Can that really be the case? The truth is, I do not have the answer.

Some people may say I am superstitious or ignorant but to some degree I have more in common with the old ways of thinking about and of understanding life. The ancient communities were much more respectful and much more in tune with Nature than our western societies - we would do well to learn from them. I think it is even rather indecent for us in the West to call ourselves the "developed world." It is true that we have made advances in technology, but in other areas we still have a long way to go.

I cannot say whether it is true or not, but a clairvoyant once told me that I had been a witch in a past life. It might explain why in this life I feel so drawn towards alternative methods of healing, and why it makes me shudder to think of what happened to witches during the Inquisition.

Come to think of it, things have not really changed that much since those terrible times. The system protects the vested interests, and persecutes any "official" alternative with support from the modern "catechism" of scientific fundamentalism, which has nothing to do with real science.

At least nowadays they don't burn us at the stake - how very decent of them.

Forbidden plants

Historically the plant kingdom has always formed the basis of traditional pharmacopoeia, but that all changed at the start of the 20th century, when the pharmaceutical and petro-chemical industries joined forces

in the United States. From that moment on, medicinal plants were cast aside and criminalised. With support from the American government, the giant conglomerate gained control of the supply of medicines, and began to marginalise all other alternatives such as medicinal plants. That was the beginning of the global monopoly on disease and the era (which we are still in) where blind faith has been placed in the chemicals that are given to us as a solution for all our ills.

Pharmaceutical industry drugs have the monopoly on what is regarded as official medicine, at a time when our doctors and the general population are ill informed on the subject of medicinal plants. "They" are trying to make healing herbs become invisible and unnecessary. A case in point is a medicine made from stevia extract that Roche has tried to patent; at the point it becomes available on the market, doctors will be duly informed and will start to prescribe the medicine, unaware that it has been derived from such a wonderful plant which has many other attributes.

Doctors are the first to be evangelised; they have hardly any room for manoeuvre. Later, we will look at the kalanchoe plant and oncology procedures, and we will see a clear example of this in action. Doctors who defend any therapy not officially endorsed may lose their licence, their place of work, and may even be faced with charges. Of course, the matter could be viewed in terms of patient protection, but it could also be seen as marginalising natural treatments that threaten the established order.

Some may think that herbs can only help us with minor illnesses such as colds and stomach aches, but the reality is they contain properties which can help us cure even the most problematic diseases. The fact is, many of the pharmaceutical drugs marketed today are derived from medicinal plants: modern pharmaceuticals owe everything to plants. But the big companies extract just a certain active ingredient from plants and then synthesise it for future patenting. That is how they come to "own" the remedies that once belonged to everyone. But during the extraction processes they discard other components in the plants that are also generally beneficial.

Pharmaceutical companies are perfectly aware of the power of medicinal plants and it worries them. We can see that over the last few years, EU legislation has been trying to make it difficult for wholefood shops and dietary centres to sell herbal plants freely and cheaply. We do have access to the most common herbs like rosemary and thyme, but the more potent plants are being made illegal – these are the plants with which we could obtain many spectacular results in the less common and more serious diseases.

There are hundreds of plants like stevia of Indian, South American, and African origins which have been used since time immemorial and which are now being vetoed in Europe. The EFSA labels them as *novel food*, which means they cannot be marketed until the requisite scientific studies have been carried out. They do not even accept studies that have already been carried out in other parts of the world – no, they demand new ones. The fact is that millions of euros are needed to be able to pay for such studies, and people like me do not have that kind of money. Only the big pharmaceutical and food multinationals can afford to pay those high sums; for them it is an investment, it's part of their business because further down the road they will be able to patent the active component and label its properties. They are already allowed to so with mineral water and milk products.

The excuse authorities give to the public to try to explain the absurd legal rulings is that they want to avoid the introduction of potentially poisonous health-harming plants into the European market. It is true that some plants can provoke adverse reactions, but it's also true that we know the correct non-toxic dosages because of all the studies undertaken in the countries of the plant's origin, and from the experience of thousands of years of human use.

Paradoxically, such strict policies are in sharp contrast to the permissiveness given to other products currently being marketed. We have already come across many of them in this book – the pesticides and GMOs. Others such as chemical additives and certain types of food we will look at in the next chapter.

The European Union is without question protecting the private interests of a handful of companies, instead of protecting its citizens.

I would like to make it clear that I am not against medicines but I am critical of certain aspects of marketing methods geared towards making maximum profit for Big Pharma. Medicines often cost much more than the average person can afford, and there are high costs as well for the public health service. The fact is that the big pharmaceutical companies have created medicines that do not cure diseases, but convert them into chronic illnesses along with a whole host of side effects. These types of medicaments are one of the main causes of death in the developed world. What's more, the big laboratories refuse to investigate some of the rarer diseases because they only affect a few people and so there is no profitable market base. They also invent new illnesses (known as disease mongering) so they can create new niches in the market. This happens a lot in the field of "mental health" where the diagnostics manual (DSM-V) just keeps getting bigger and bigger.

My complaint is also about the mafia-like methods in which medicaments have been established as the only alternative when it comes to our health problems. I do not think it's fair that a patient's choice should be limited to certain range of options when it comes to treating his/her illness. There are some places in the world where patients can choose the type of treatment they want to receive, such as in Switzerland – through the direct democratic route – and in Nicaragua.[2]

It may surprise some of you to know that the same people who carry out the studies used to determine the safety and efficiency of drugs are no more and no less than the pharmaceutical companies themselves.

If medicines were used rationally, it would probably mean real progress for humanity, but as things stand that is not the case.

Having said that I want to make it clear that in my opinion there is nothing better than natural non-synthesised remedies and I believe that they should have never been replaced. One day, the world of medicine will revert to trusting in the pharmacy of the land, and it will once more offer us its superior herbal formulas.

A Sweet Revolution

During the time I was giving away stevia plants, many people who came to my home were kind enough to share their knowledge with me on the curative powers of other plants. They would say, "Do you know about such-and-such plant?" or, "My father used herbs for so-and-so." Some of those people even brought their plants along with them, informed me of their medicinal properties, and how to use them. All that served to stimulate my interest and I began to absorb as much information as I could, becoming more and more aware of the incredible value of those plants, and absorbing knowledge that people shared with me. My home unwittingly became a meeting point where people would come along if they needed some herbs, or if they were just interested in talking about them.

I gradually began to accumulate a great deal of plants – some were gifts and others I had located myself. I decided to plant them in the greenhouse alongside the stevia, the edible flowers, and the "weeds" we sell for salads. They began to encroach more and more on the space until they occupied nearly all of it.

In the five years I was giving away stevia, thousands of people came to my farm. It got to a point where, as willing as I was, I couldn't do it all on my own – attending to my visitors as well as monitoring the plants. I had to attend to my work in the business as well – it is how I earn my living after all. Luckily, my friends from *Slow Food* rescued me with their suggestion of setting up a non-profit association to continue with the work of investigating and distributing plants. It goes without saying that I was delighted to accept. If they hadn't lent me a hand, I wouldn't have been able to continue with my work and maybe I would have lost everything that we had achieved up until then.

Thus in April of 2009, *La Dulce Revolución de las Plantas Medicinales* (The Sweet Revolution of Medicinal Plants) was set up. I don't remember who had the idea for the name, but we all liked it immediately. It is very appropriate: sweet, because it comes from stevia and

revolution, because we are a collective who resists and fights against the current pharmaceutical system.

Whether we liked it or not, we had to start selling plants. At no point have we wanted to make any profit for ourselves, but a collective like ours requires a minimum of infrastructure and that means it needs money. We sell the plants at a minimum profit that goes towards financing the association's costs. Fortunately, we have been able to keep production costs to a minimum because the space and materials required (land, plant pots, treatments and water), and the work, is all done through Pàmies Hortícoles at cost price.

La Dulce Revolución is a group of like-minded people who share a passion for medicinal plants. Our aim is to preserve them, and to make them and their uses known to the general public. It's not our job - it's our passion. We gain personal satisfaction from doing what we believe is right.

Like stevia, our plants are all labelled with their properties. We want people to have an alternative way of curing themselves without side effects and with peace in the knowledge that they are not in the hands of some multinational that needs us to be ill and dependent. We make it clear that we do not want people to rely on the association; on the contrary, we believe it is essential that everyone is responsible for their own health. We like to promote the idea that everyone should

Medicinal plant greenhouse at Pàmies Hortícoles S.L.

experiment for themselves and learn how to grow their own plants at home. We offer our knowledge, but we want people to find things out via their own investigations.

Looking after plants at home is very easy; they don't need much space or much attention. But they do require some consistency.

You can find *La Dulce Revolución* online, the website address is www.dulcerevolucion.com. It is a virtual meeting point where you can

place orders, and obtain information about plants and testimonials from the many people willing to share their personal healing processes with others. *La Dulce Revolución* is what it is because of all those people who have carried out their own investigations. They are usually people who have not found a solution to their problems with conventional medicine and have opted to give plants a try. Over time, we have been able to compile hundreds of cases of people who have cured themselves or who have experienced improvements in serious, sometimes terminal, illnesses by using plants and other natural or "alternative" therapies. On the website, you will find cases of diabetes, cancer, multiple sclerosis, intestinal afflictions, allergies, stress, anxiety etc. The importance of these testimonials is reinforced by the fact that these people do not remain anonymous. They provide their names and surnames and even their email addresses so others can get in touch with them. We would like everyone who has cured themselves with medicinal plants or with alternative therapies to get on board and explain to others how they did so, as it is vital information for people suffering with the same problem.

Every day we receive dozens of emails from all over the world. Many are from Catalonia and the rest of Spain, but there are also some from Latin America and Spanish-speakers in the United States. We even receive letters from far-reaching places such as Canada, Israel, and Singapore. The majority of them are from people who have seen my videos on the Internet, where I talk about medicinal plants, and they ask our advice on where they find them in their own countries, and how they can be used.

I remember an Argentinian boy who asked for our help for his father who was suffering with stomach cancer, and we advised him to use kalanchoe. A few months later, he wrote to us saying that his father had beaten the cancer and that he felt so grateful he was willing to give away kalanchoe plants to anyone who needed them.

It is true that many times the association feels powerless because we are not doctors or health experts and we don't have all the answers. Of course, it would never enter our heads to advise someone to stop taking

their medical treatments. We offer advice based on our experience, but we don't have the answers to every problem, although we would like to.

Many doctors are giving us their support now. Various homoeopaths, GPs, and oncologists have approached us out of curiosity, trying to discover if there is any truth in the efficacy of medicinal plants. Most of them do it on the quiet, as they know that it could harm them to be seen to be involved with this profane knowledge. Many of them advise their patients to take medicinal plants, but they do so off the record and not as a replacement for conventional medicine. Medical professionals are under a lot of pressure not to stray from the path laid out for them by the system.

I believe that there are more and more health workers wanting to help their patients and give them the best treatment possible, and they are opening themselves up to the old ways of natural therapy. Things are changing slowly, but they are changing.

La Dulce Revolución keeps on growing. We currently have 900 members throughout Spain, and independent groups have been formed in Barcelona, Andalusia, the Canary Islands, Madrid, Valencia, and other places. Outside of Spain, there is a group in Andorra, a group being set up in Mexico, and another in Guatemala. Some people have shown an interest in setting up *La Dulce Revolución* groups in South America but complications have meant that this has not yet been possible. We can only act as guides and share our knowledge with them, but we do not have the infrastructure to help them beyond that, nor do we want it. The concentration of power is the seed for much of the corruption that corrodes our institutions.

From the start, we have been clear that we don't want to form branches but we want people to create their own groups in the places where they live, and for them work independently by sharing the knowledge they accumulate without turning it into a business.

At *La Dulce Revolución* we have established a healthy tradition: every Saturday from ten o' clock in the morning until midday we invite everybody to come on a guided tour of the greenhouse where the me-

Talk on medicinal plants during a guided tour of the greenhouses at Pàmies Hortícoles S.L.

dicinal plants are grown. The guides are association members, at times including me. At the end of the visits, we usually sit down to exchange stories and information. Interestingly, not a week goes by without a visit from a health worker or veterinarian who wants to find out more about the world of healing herbs.

Over the next few pages, I will talk about some of the most wonderful plants we know and the persistent offensive to criminalise them. They all have marvellous medicinal properties that we have been able to verify hundreds of times over. I myself have tested them on many occasions to rule out the possibility of them provoking any unwanted effects. Otherwise, I would never dare recommend them to anyone else But I do strongly believe that everyone should be responsible for finding their own information and doing things in a sensible manner. As I have already stated, it is not my place to tell anyone to stop taking their

medicine and to start using plants, although I know people who have done so and it worked out well for them.

If by telling my story, I manage to awaken your curiosity in alternative methods of healing and in being responsible for maintaining or recuperating your own health, then it will have all been worth it.

Kalanchoe

Some time before the association was set up, a gentleman from Paraguay (whose name unfortunately I do not remember), came to my house to ask me for some stevia. He proposed a deal: in exchange, he would give me a "Colombiana".

"Where's this Colombian girl then?" I asked jokingly. He humoured me with a smile, although I must admit my joke was rather bad.

"Here she is," he said, opening his hand to show me the tiny shoot of a plant I didn't recognise. "We call it *Colombiana* and we use it in Paraguay to cure cancer."

At that moment, the expression on my face must have been more amusing than my joke, because he could barely contain his laughter. Hardly surprising really, as I could not believe what I was hearing.

"What, so over there you can cure cancer with a plant?" I asked, not hiding my incredulity. "You must be joking!"

"You'd better believe it. In my country, few of us can afford to pay the high costs of chemotherapy treatment, and so we've resorted to common knowledge. And I can assure you that people who use *Colombiana* are usually better off than those who end up burnt out by chemo."

Obviously, I accepted the swap. That good man, who I have never seen again, went off with his stevia and I kept hold of the tiny *Colombiana.* I planted it in the greenhouse where I watched it grow, checking that it was adapting well to the climate. Not all of the non-native plants acclimatise well to our environment, and sometimes you have to make a big effort to keep them alive. Not so with this plant – there were no

problems at all; within two months it already measured between ten and fifteen centimetres. And that's how it was the day we received a visit from Carles Esquerda, an agronomic engineer who would go on to write a thesis on stevia, and who would later become president of *La Dulce Revolución.*

As he walked around the greenhouse, the growing *Colombiana* caught his eye and he asked me, "Oh, so you know about kalanchoes then?"

"What, this one here? A man from Paraguay told me it was called *Colombiana*," I said.

"It's called *Kalanchoe pinnata*," he said, visibly moved. "My wife cured herself of breast cancer with *Kalanchoe daigremontiana.*"

Once again, my mouth fell open, and I let out an involuntary, "Bloody hell!"

"And how do you know about this plant?" I asked

"It was recommended to us by a naturopath from Zaragoza who came across it during trips to South America. My wife and I were so worried about her disease that we decided to give it a try. Sometime later, when she was due to be operated on, they found that the tumour had reduced in size from four centimetres and was just a tiny nodule that hadn't affected the glands. We were all stunned by this result – the surgeon couldn't believe it!" he explained.

This was fantastic; in just a short time, two people had told me about the healing power of this plant. Now that I knew it was called kalanchoe, I sat myself down at the computer and keyed the name into the search engine.

Kalanchoes originate from the African island of Madagascar; slaves knew about their therapeutic value and took the plants to America with them.

The "*Colombiana*" is one of three types of kalanchoe that are medicinal. Its scientific name is *Kalanchoe pinnata* (*Bryophyllum pinnatum*), but in Latin America they have various interesting names for it:

bruja (witch), *yerba de bruja* (witch's herb), *prodigiosa* (dream herb), *hoja del aire* (leaf of the air), *siempreviva* (everlasting), *ojaransín* (donkey ear), *hojerilla* (little leaf) etc. It is also known as "Goethe's plant", as it was studied by the famous botanist and German poet of the same name.

The variety which Carles Esqueda spoke of is *Kalanchoe daigremontiana* (*Bryophyllum daigremontianum*). In Latin America, it is also known as *aranto*, *madre de miles* (mother-of-thousands), and *Kalanchoe mexicana* (Mexican kalanchoe). It reproduces via hundreds of tiny shoots that grow on the tips of its leaves. They fall off when they are still small and take root in the soil.

Lastly, we have *Kalanchoe gastonis-bonnieri* (*Bryophyllum gastonis-bonnieri*), whose name comes from French botanist Gaston Bonnier. Its leaves are larger than those of the other varieties, and it's also commonly known as *ojaransín* and *oreja de burro* (donkey ear), and *hojerilla* (little leaf), depending on the country. The popular names are sometimes given to more than one species of plant.

Kalanchoe can be used both externally and internally. Various experiences of Spanish NGO workers in Africa have proved that used externally (by mashing the leaves into poultice or from the juice) it is anti-inflammatory, anti-haemmorage, astringent, and can aid scarring. Applied in this way, it can treat deep and gangrenous wounds, infections, burns, and swelling.

The leaves can be eaten in salads (thirty grams of fresh leaf twice a day), in fresh juices, or taken as a herbal tea (a teaspoonful of the herb infused in water 3 times a day before meals). As unbelievable as it may seem, its properties have proved to be effective in cancer remission, high blood pressure, renal colic, diahrroea, and even in psychological disorders like schizophrenia and panic attacks. You only have to search for "kalanchoe" in the online medical encyclopaedia *PubMed*[3] and you will see that a great number of scientific studies corroborate these theories. The government, however, prefers to look the other way.

Kalanchoes are tropical plants that need a warm atmosphere to survive, although they do not require too much light. In Catalonia they

don't fare well with the cold winter temperatures so we have to take them inside on the coldest days. This is also of benefit to us, as unlike the majority of other plants, kalanchoes clean the air. It is fine to sleep in the same room as a kalanchoe, because it does not consume oxygen, but produces it instead. This is because the plant is used to living in the desert where it is forced to withdraw during the day and to carry out its vital functions at night. This characteristic makes it a fantastic plant to keep in rooms where there are sick people with respiratory problems.

These days I am totally convinced of the healing power of this plant but in the beginning I had to test it out, so I did the same thing I did with stevia; I gave it away to anyone who wanted to try it.

A short time later, I became involved in the extraordinary case of a woman who lived in a nearby village. Her name was Antonia and she had undergone several operations for different types of cancer, and been subjected to the usual chemo and radiotherapy treatments. When her husband came to see us, she was already in the terminal phase. He had heard that we had some kalanchoes and even though he was skeptical that the plants might help his wife, he was desperate to try anything. I was absent on the day of his visit, he was attended to and took a few plants home with him.

Two months later, the telephone rang and a voice said, "Hello. This is Antonia from Térmens."

"I'm sorry, I don't think I know you," I answered, trying to place a face to the voice.

"My husband went to see you a couple of months ago and he brought some kalanchoes home. I just had to tell you that they work! I feel a lot better!"

"Goodness me, that's great news! But are you sure it was the kalanchoes? Weren't you having chemotherapy at the time?"

"No, the doctors had given up on me. I was just taking morphine so I wouldn't suffer too much during the little time they presumed I had left. But from the moment I started taking kalanchoe, I have been feel-

ing better, and now I can get up and go outside for a walk," replied the voice of someone who had come back to life. "The only inconvenience is that I have to wear a colostomy bag as in one of the operations they cut away some of my intestine. But the main thing is that now I can feel the fresh air on my face again and go to see people I know in the village."

That phone call was doubly pleasing for me: I could share in the profound happiness of that woman, and it served to reinforce the healing power of kalanchoe.

Later on, I went to see her at her home. I was met by a charming woman, eager to share her life experience. She even kindly accompanied me to the Balaguer retirement home when I went to talk about medicinal plants. She talked about her experience and it was clear she enjoyed doing so. I remember her laughing as she described how the doctors were completely perplexed when they realised she had "miraculously" recovered.

"I called my oncologist," she said, enjoying herself, "and I heard the nurse saying, 'Doctor, Doctor – that woman who we thought had died is still alive!'"

"I can hear you, you know," she had said to that poor nurse, who had surely gone as red as a beetroot.

I was so pleased about the outcome, that I wanted my daughter Marta, who was studying medicine at the time, to meet Antonia. I thought that Marta would be able to ask her questions and arrive at conclusions that were beyond my grasp. Furthermore, I was certain that meeting Antonia would make her question the doubts she had about the power of medicinal plants. Together we went to Térmens, but when we arrived, a very different situation to the one I was expecting awaited us: Antonia was on the sofa, all swollen up, and her hair had fallen out again.

"Oh, Antonia – what happened?" I asked her as I stooped to kiss her on the cheek.

"Well, the doctors told me that as I was getting better and feeling so well it was time to give me another round of chemotherapy," she replied.

"But was that really necessary?" I asked.

"Well the thing is now I'm not so sure, but I really trust my doctors and I couldn't say No," she said, resignedly.

If the reader is observant, you will have realised that I talk about Antonia in the past tense. She didn't make it. She died a month later.

I cannot prove that those final chemotherapy sessions killed her. Perhaps it was something else, or maybe it was the treatment combined with other factors. But to see that woman pass away after I had seen her doing so well has reaffirmed my doubts about chemotherapy.

Over time I have met many oncologists who have expressed their non-conformity on certain aspects of chemo treatment, and who have questioned why it is the only official protocol they can use for their patients. Chemotherapy is a very aggressive treatment with no guarantee of a cure. Oncologists cannot give their patients full assurance that they will be cured with chemo. It reduces tumours by suffocating them, but it doesn't always get rid of them and it doesn't eliminate the possibility that they might reproduce in another part of the body. It also comes with side effects that can be devastating to the kidneys, liver, and pancreas. Another case of the cure being worse than the disease.

I have already mentioned that the other problem is the exclusivity of chemotherapy, and it being the only "official" treatment against cancer. A well-known oncologist - who prefers to remain anonymous – and leading investigator with over two hundred studies published in his field, told me of his frustration with this situation. Apparently, he is not the only one amongst his colleagues who feels that way.

He said that a month before they undergo surgery, cancer patients are given the choice of trying out new chemo products in order to measure their effectiveness. In other words, they are guinea pigs. In recent years, patients have asked if they can try kalanchoe instead of the chemicals. The oncologist in question agreed it wasn't a bad idea.

What's more, he thought it would be a good opportunity to carry out a pioneering investigation in this field, so he proposed the treatment in the hospital where he worked. To his surprise, they said No, because the protocols under experimentation "did not include that".

I was not surprised.

"The protocols are very strict," he continued, "they must first be tested on rats and other animals and ten years after that they can be tested on humans."

Ten years!

"As oncologists our hands are tied," he said. "The chances of offering treatments outside the realm of surgery, chemotherapy, and radiotherapy are practically zero in today's world. You can imagine how frustrated I felt. They even threatened me, saying, 'If you dare offer any treatment outside of the official protocol you will lose your job.'"

Dozens of sick people have told me the same story: when they have wanted to treat their cancer with kalanchoe, they have come up against an insurmountable wall. One woman told me that they even threatened to stop carrying out follow-up tests on her if she refused to continue with the official treatment.

Unfortunately, chemotherapy is a big business with a great deal of money invested in it. As Doctor Richard J. Roberts said, preventing and curing illnesses is not profitable enough, but ensuring the dependency of patients on treatments is. It worries me that with so many cancer treatments available to us today, these out-dated methods are still being pursued. We at *La Dulce Revolución* do not go to the extreme of recommending that people reject chemotherapy, but we do defend the right to decide which therapy or therapies we want to use to cure ourselves.

In 2012, there was a an anti-cancer drive on a television programme called *La Marató* and *La Dulce Revolución* offered to appear on the programme to talk about our experiences but they weren't interested. Perhaps they thought it was too "alternative" to talk about healing plants, or maybe the bosses at TV3 had been swayed by their links with the

pharmaceutical industry. In any case, the directors of *La Marató* didn't think their programme was the place for us to air our points of view, and so millions of people who might have been interested in what we had to say missed the opportunity.

We might have to wait ten years while they carry out the requisite investigations on kalanchoe, until finally some pharmaceutical company starts marketing an extract of the plant. Meanwhile, people are still unaware that we have spent the last four or five years witnessing almost miraculous cures in people considered terminally ill.

Fortunately, things are changing. In the United States, for instance, some oncology centres have begun to incorporate different alternative therapies that the patient can elect as a complementary treatment along with their main one. This is known as "integral cancer collision". In Spain, there are several professionals who have taken this route; Natalia Eres and Alberto Martí Bosch. Natalia is an oncologist friend who stopped working in hospitals, and joined a practice that has a more open attitude. They place a lot of importance on a balanced, alkaline, vegetarian diet (we will look at this in the next chapter entitled "Let thy food be thy medicine"), which is sugar-free and lactose-free; a diet with no refined flours and complemented with medicinal plants. (We recommend kalanchoe, because it is the one we know best, but there are those who say they have had great results with marihuana, aloe vera, and dandelion, amongst other plants).

Another treatment which has had good results against cancer is the intravenous application of vitamin C.[4] Suspiciously the Codex Alimentarius (an international reference document containing standards, codes of practice, and other recommendations relating to food), states it cannot recommend vitamin or mineral complements because they might be harmful to people.

There is still so much we don't know about cancer. We do know that it is the proliferation of mutant cells ceasing to function in harmony with the body; they start to reproduce themselves uncontrollably, altering the body's systems. The reason why it happens is not clear, al-

though it is thought that genetic factors play a small part, and that some risk factors such as chemical and electromagnetic pollution could have a bearing on its development.

It is also believed that emotional aspects have some significance on cancer development and on many other diseases. Doctor Ryke Geerd Hamer is a defender of this theory; he says that cancer is the expression of a process by which the body heals itself from a particularly traumatic emotional impact.

Nobody wants to go through an experience like cancer. But as with any other crisis, perhaps it is an opportunity to stop and see if we should make some changes in our life, maybe in what we eat. Perhaps what we really need is a much deeper kind of change – mental, emotional, or maybe even spiritual. It seems clear to me that we all need a good dose of patience, self-love, and love for our bodies. It is important not to be afraid, because fear propagates the development of the disease.

We have to have trust and let things take their course. Who knows, maybe we will be spontaneously cured.

I have known many cases where a terminal situation like cancer has meant a profound change in mentality, sometimes described as a real wake-up call.

Small-flowered Willow Herb (*Epilobium parviflorum*)

A few years ago, someone posted a comment on my blog encouraging me to pay more attention to our native plants. The person was of the opinion that I was focusing too much of my work on plants from other parts of the planet and overlooking the ones we have in Catalonia and Spain. Perhaps that person was right to some degree, but as the reader will have noticed, my relationship with plants has developed with no established plan.

We are fortunate on the Iberian Peninsula as we live in an area rich in medicinal herbs, where some of the best-known and most studied plants in the world such as elder, fennel, bay, rosemary, thyme, valerian, chamomile, and lime blossom can be found.

The same person recommended a book *Salud de la botica del señor*,[5] (Health from the Lord's Pharmacy), written by Maria Treben, an Austrian woman who compiled the experiences and knowledge she had inherited from her mother and grandmother. Her book has become my main reference manual.

In its pages, I learned about *Epilobium parviflorum*, a herb capable of curing diseases of the prostate – cancer and prostatitis (inflammation) – and different afflictions of the urinary tract. It is a perennial herb with straight, hairy stems reaching a height of sixty or seventy centimetres, and branching out in the top part of the plant. The leaves are long and the flowers are small and pink, spread out in small clusters. According to Maria Treben, it grows in damp places and can be found all over Europe, and so, with little expectation – it has to be said – I organised a short botanical expedition around the farm to see if we could find it. The group of improvised explorers consisted of workers from Pàmies Hortícoles, and myself. The only clue we had was a photo of the plant I had got from the Internet.

After a while, one of the lads came to find me with the good news.

"I think I've found it," he said, "behind the greenhouse, in amongst the hose pipes."

Incredulous, I went with him to the place where he said he had seen the epilobium, and indeed he was right - we had found it!

As delicately as I could, I dug up its roots and took it to what would be its new home inside the greenhouse. The idea was to reproduce it and give it to whoever wanted to try it out as a remedy for their prostate problems. But as I was about to step inside the greenhouse with the plant in my hand, a man drew up in his car and there ensued one of those situations which one does not easily forget.

"Good morning," he greeted us. "Excuse me, but you wouldn't happen to have a plant called *Epilobium parviflorum* by any chance?"

I don't need to tell you how completely perplexed I felt upon hearing those words.

"Goodness gracious, epilobium?" I said, showing him the small plant I had in my hand. "You won't believe this, but I've literally just found it." I could barely believe it myself.

He cracked a smile from ear to ear. It seemed like I had found it just for him.

"I've come over from Manresa to get it," he explained. "It's for my father. Just over a year ago, he was diagnosed with prostate cancer and we were told not to expect any improvement. Fortunately, a friend advised him to take epilobium and since then he has had no more problems. It's as if he's been rejuvenated!"

"But has he cured himself of cancer?" I asked.

"Not entirely. But the cancer has diminished and now he leads a fairly normal life. It's very difficult to find epilobium in wholefood shops, so if you can give me a plant, I will take it home to grow it."

We divided the plant between us, separating the roots in two, and the gentleman returned to Manresa a very happy man. I couldn't wipe the smile off my face either. In a totally unexpected and wonderful way, all the things Maria Treben talks about in her book had been confirmed to me.

It is because of incidences like that I have stopped believing in consequences.

Over the course of the last few years, we have collected testimonials from people who have experimented with the plant, reaffirming its efficiency. When taken as a tea twice a day, men with inflamed prostates start to urinate normally again after a short time. We have also heard of cases of tumours disappearing in the bladders of both men and women. All you have to do is boil some water, and pour onto a teaspoonful of the flowers. Then leave to steep and it is ready to drink.

Epilobium also works in the same way for urinary afflictions in women. We know of an eighty-year old woman who was bleeding constantly as she had various tumours in her bladder. The doctors told her it was inoperable and there was nothing they could do, but after taking

epilobium infusions, the haemorraging lessened, and eventually she was able have the operation. She is now cured and leads a happy life.

Sometimes, it is sad to think all the work we do goes unrecognised by the WHO and government bodies. Then again, maybe it's rather naïve to believe that we would have any influence on these institutions, when they refuse to recognise the wide array of scientific studies carried out on plants.

Holly Thistle (*Eryngium campestre*)

If you want to know about something, ask someone who knows. That is what we do at *La Dulce Revolución*: we have direct contact with men and women, usually elderly country-dwellers, who share their knowledge of medicinal plants with us.

Tonet de Barri, for example. He is very special old man, who at over eighty years old is incredibly agile. He can climb a tree in one leap, putting me to shame. I am twenty years younger than he is, and I can't manage it! Tonet is a man of the land who has spent his life travelling all over, collecting and selling herbs to make a living. At *La Dulce Revolución* we have a name for people like him - we call them "Professors of Nature". In other words, people who do not have an official title given to them from some prestigious university, but who probably know more than most biology graduates do. One thing is certain: Tonet's knowledge inspires more confidence in us than any official biologist could. His knowledge has not come from studying any of the official lines financed by the likes of Monsanto or Bayer.

Tonet told me the story of when he was going home after a hot day's work in the fields, and to his surprise he saw his mules stop to eat a type of thistle - a plant with spiky leaves - that did not look very appetising, much less for mules who have soft, delicate lips. It all seemed very strange to him, so the next time he was on his way home with his animals, he decided to see for himself if the plant produced any noticeable effects. He put some of the stalk in his mouth and chewed it for a while. To his surprise, he noticed that the irritation on his legs from

working long hours in the hot sun began to alleviate. Then it dawned on him that the mules ate it for the very same reason: they too would get rashes on their thighs from their legs rubbing all day long, and they knew they would feel better if they ate that particular plant.

"My mules are pretty clever, don't you reckon Josep?" said Tonet, laughing.

He told me something else that had surprised him: he had seen lizards bitten by snakes that would scuttle towards holly thistle and rub themselves up against it to avoid being poisoned to death.

Holly thistle is known by various other names and is a perennial plant that can reach heights of seventy centimetres. It is noticeable for its spiky leaves and blue-ish flowers. Popular knowledge attributes it with purifying, diuretic, diaphoretic (stimulates sweating), expectorant, and menstrual regulating properties. It can be found on roadsides, on high and low land, and along coastlines.

In the seaside town of Cambrils, we met an elderly fisherman who was also a fan of the plant. We found him on the quayside unloading the day's catch with his fellow workers, sucking on a root he had in his mouth.

"What's that you're chewing, is it liquorice?" we asked.

"No, it's holly thistle," he replied, "I'm chewing it so I don't swell up from the jellyfish stings."

I found another testimonial on holly thistle from a woman who picked off parts of the stalk and root to place on her grandchildren's tummies. Just from contact with the skin alone, the plant's active ingredient would pass into their system and prevent nappy rash on their legs and bottoms.

Sweet Wormwood (*Artemisia annua*)

Artemisia annua is another plant with powerful medicinal properties that has been removed from circulation at the behest of the pharmaceutical industry.

As its name suggests, it is an annual aromatic plant. It has small leaves, bracts, and bright yellow flowers, and can grow to more than three metres in height. It originates from southern China where it has been used as a remedy against recurring fevers like malaria and dengue. Recent studies have concluded its effectiveness in treating lung and prostate cancer, and leukemia.

I obtained some seeds via a charity called *Anamed*[5], which has been working in Africa for many years promoting the cultivation of artemisia and educating the population about its malaria-curing properties. Every year, two million people die from malaria on the African continent, and a million more in the rest of the world, in particular children.

We planted the seeds in our greenhouses, and were delighted to see the growing artemisia plants adapting perfectly well to our climate. We gave away artemisia to anyone and everyone who needed it, usually people who had contracted malaria after travelling to Africa. To start with, they were skeptical about trying it as malaria is regarded as a recurring chronic disease that reappears over the course of the sufferer's life. We witnessed several cases where artemisia cured malaria, reinforcing our conviction that great results can be achieved from just one plant.

To treat malaria, artemisia should be taken as a herbal tea four times a day for a week. If you are planning to travel to the African continent and need it as a preventative measure, then once a day is sufficient.

Why aren't the medicinal properties of artemisia openly talked about?

Its anti-malarial properties were scientifically proven in 1971. A year later, the active component responsible for its healing effect was isolated, and named artemisinine. The pharmaceutical industry recognised a new source of profit in the plant, and in Africa, a new market ready to be exploited. In 1995, the WHO publicised a report in which it advised the world's governments not to promote the use of artemisia in its natural state. This was so people would not build up a resistance to *Coartem*, a new drug containing artemisinine that was to be patented

by the pharmaceutical multinational Novartis/Syngenta. Of course, the "official" medicine does not come free.

In addition to taking *Coartem*, the official strategy for the prevention of malaria includes hanging mosquito nets over beds, and spraying DDT insecticide (prohibited decades ago by half the world because of its toxicity) on the nets and walls of homes, to protect people against the disease. *La Dulce Revolución* proposes a different method to that particular unnecessary and aggressive practice: areas of still or stagnant water can be sprayed with an inoffensive plant extract of *Spilanthes acmella*, which eliminates 100% of the malaria mosquito's eggs and larvae.

Sometimes I think what they really need in Africa is a remedy to cure themselves of the white man.

Returning to the subject of *Coartem*. You have to wonder how the authorities can force someone in Africa to spend what little money they earn (if indeed they earn anything at all) on a costly treatment like that, when just a single artemisia plant could cure them and their entire family? The most sensible and fairest solution would be to inform the African people that with just one seed they could grow a plant to make infusions that would both cure and prevent malaria. And that it could also help cancer and AIDS sufferers. But the powers-that-be prefer to keep people dependent on pharmaceutical medication.

The offensive against artemisia is reaching absurd extremes. Financial pressure has caused several African governments to declared artemisia a drug, making the cultivation and sale of the plant a criminal act. This has happened in Gambia, where it can now only be obtained in a clandestine manner with the threat of arrest and sentence. Some of the co-operative workers who have helped grow the plant in various African communities have already been persecuted and imprisoned, although they have since been released.

The situation becomes particularly nonsensical when you discover that in some areas of Africa, thousands of hectares of land are being cultivated to export artemisia to Switzerland, where Novartis/Syngenta manufactures *Coartem*. In other words, it is being grown for the benefit

of the pharmaceutical companies, but direct access to it is denied to the local population, so they are unable to treat their illnesses naturally and cost-free. I would call that fascism and genocide.

With all the information we have on this plant, it is obvious that to deny people access to it is nothing short of murder. Africa is being subjected to a planned extermination, a crime promoted by the WHO itself, sold out to the interests of the pharmaceutical mafia. At this point, we would do well to look back at history and remember how and why this international body came into being – an organisation which currently guides governments across most of the world on matters of health. The World Health Organisation was a UN initiative, created at the end of World War II. Initially its task focused on the promotion and development of a food network to avoid malnutrition and illnesses derived from poor quality food and lack of food-providing resources. This initial objective ground to a halt after just ten years, when the WHO became nothing more than a pharmacological moderator operating under Big Pharma, who currently finance 80% of the organisation.

Today, the WHO acts like a shadow government, not democratically elected but dictating rules on food and health all over the world.

Certain chapters in the history of Third World countries really do stand out, and reaffirm what I have talked about in these pages. In 1987, the Colombian immunologist Manuel Elkin Patarroyo designed the first synthetic vaccine against malaria. The WHO assessed it in Gambia, Thailand, and Tanzania and concluded that it was "only" 30% effective. The opportunity to produce this vaccine aroused the interest of the big pharmaceutical laboratories but Patarroyo, in an act of integrity, rejected their offers, and instead offered it to the UN so they could carry out the manufacture and distribution. But the UN rejected his offer, because according to them, 30% effectiveness was too low. This was publicly criticised by Doctor Pedro Alonso, head of the *Centro de Salud Internacional del Hospital Clínico* (International Health Centre at the Clinical Hospital) in Barcelona, and a colleague of Doctor Patarroyo. Alonso said that what the UN was doing was terrible, as their refusal to go ahead with this vaccine essentially meant that saving the lives of

"just" 30% of malaria sufferers (approximately one million people) was not worth the bother.

However, for reasons unknown to us, Doctor Pedro Alonso broke ties with Doctor Patarroyo and decided to embark on a different path hand in hand with the multimillionaire Bill Gates, who lately seems to have left behind the world of computers to focus on his supposed philanthropic side. The Bill and Melinda Gates Foundation, with support from the British pharmaceutical multinational GlaxoSmithKline, gave 88.7 million dollars to Alonso to develop another vaccine against malaria. That money has come in handy for Pedro Alonso – he is now at the forefront of all dealings, he is well off and he keeps good company. Such is the advantage of going over to the winners' side.

Bill Gates publicly declared his ideas on human eugenics: he effectively supports a selective process for the human population via birth control and reproduction. At one conference, he admitted that in order to reduce carbon dioxide emissions something had to be done about global overpopulation. According to him, the problem could be avoided by implementing "good work on new vaccines, health systems and reproductive health assistance, through which the population could be reduced by up to 10 or 15%." In other words, as a man on top of the world, Bill Gates invests his time and money in controlling the life and death of those people who are the worst-off financially. Maybe they want a Third World that is submissive and controllable so that First World countries can continue to devour all their resources?

The one thing Bill Gates is not short of is money, so he can afford to donate (or should I say invest?) forty million dollars to another investigator so that synthetic artemisia can be manufactured and patented in a laboratory that already deals with transgenic bacteria in crops. Maybe I think badly of the WHO, but I worry what their next step might be: they will probably try to censure the use of the organic molecule in favour of the synthetic one, like they did with insulin.

In the end, the question remains the same: why is there a need to manufacture so many vaccines and medically synthetic molecules when

there is a plant that can cure and prevent malaria? Well, amongst other things, there is no interest in the African continent being free and self-sufficient. In fact, it is well known in the world of international dealings that the NGOs who promote self-sufficiency in Africa are openly persecuted to one degree or other. One of the tools used to control and prevent the advancement of alternative medicines is the famous Peace Corps., an independent American federal agency created by Kennedy and sent out to developing countries with the supposed objective of helping. But there is enough evidence to make us suspect that their mission is not so selfless. Wherever this NGO turns up, any "unofficial" activity that could enable the emancipation of the African people soon disappears.

In spite of all that, there are truly selfless people who are well aware of the fact that Africa needs to be able to return to self-sufficiency and independence from the West. These people are doing a great job over in those countries where they are exposed to disease, prison, and even death. The work we do here in Catalonia and Spain is nothing compared to what they do.

One of those people is Xavier Galindo from Camporrells, a man who during the holiday months would travel to Gambia with the NGO *Barcelona Solidaria.* One of his jobs there was driving a lorry full of medicines donated by various pharmaceutical companies. He soon realised, however, that those donations were not acts of kindness - they were just using the free samples to promote sales of the drugs, and after the first few free shipments, any subsequent medicines had to be paid for.

Xavier saw me on a television report where we were doing a workshop with people from various different African countries, showing them how to grow artemisia annua, so they could put the information into practice when they got home. Xavier liked the idea so much that he got in touch with me and offered to take artemisia to Gambia on his following trip. When he got there, he discovered that some of his colleagues had contracted malaria and he thought it would be a good opportunity to test the plant's effectiveness. He made them drink four artemisia infusions per day, and contrary to everyone's expectations, the

fever began to subside on the second day. By the fourth day, they were all back at work. The experience inspired him to set up a garden in the village where he was staying and he quickly went from attending three or four people per day to over two hundred. In the end, he had to prepare the tea in large pans of one hundred litres.

These surprising results moved him to give up his life here and stay on in Gambia. News of his achievements spread quickly and he began to visit people all over the place to treat them for malaria. His enormous success soon upset the local shamans and hospitals, rather unhappy about him stealing their patients. Xavier told me that a doctor from the NGO *Barcelona Solidaria* warned him what he was up against if he continued to defy the authorities, saying, "You're putting your life at risk. Over here, it's easy to find a hit man for 25 euros… it wouldn't be the first time." (*The Constant Gardener* is a film based on a true story that portrays this situation quite well). Fortunately, no hit man appeared, but the public health service in Gambia soon banned him from growing artemisia, saying it was illegal. Xavier could not believe what was happening. He tried to reason with them, telling them of the wonderful results he was getting for a minimal cost, and how he was saving people who mostly could not afford to buy the pharmaceutical drug to treat their illness. But it was in vain; the reply was categorical – "What you are doing is not allowed."

The last I heard of him he was trying to get his project going legally. He is faced with obstacles every step of the way but fortunately Xavier Galindo is a brave person who does not back down easily when up against problems.

Charity workers in Africa are also helping us to discover other uses for artemisia. In Senegal for example, a colleague of ours had the idea of making a topical application by mixing artemisia (powerful antibiotic properties) and kalanchoe (powerful regenerative properties) to treat the awful scars left behind by some insect bites that sometimes lead to loss of muscle tissue and leave holes in the flesh right down to the bone. They told us that just two or three days after the first application, the tissue visibly started to regenerate.

Not long ago, José María Gómez from the town Montcada i Reixac, found a variety of artemisia we were unaware of, growing naturally near Besòs River, and immediately told us of his discovery. Thanks to doctor Pilar Almajano, professor of Chemical Engineering at Barcelona Polytechnic University, we found out that this variety does not contain as much artemisinine as the hybrid varieties we use, but that it does contain many other very potent anti-malarial properties. As it is not a hybrid variety, any member of the public who needs it can reproduce it freely and without cost, year after year.

If the WHO is at all interested in this plant, we would be delighted to share information about the new variety, along with all our other knowledge… but I doubt that they are.

Pepperwort (*Lepidium latifolium*)

Josep Vilanova is another of our "Professors of Nature" whose knowledge has been crucial in the identification of plants and their properties.

"Forty years ago," he began, "my father suffered from kidney stones a few times a year, and a simple plant was enough to cure him."

After so many surprising experiences, it seemed perfectly possible to me.

"A healer advised him to take teas of pepperwort (also known in Spain as *rompepiedras* - "stonebreaker"), a wild plant found along riversides. He told him that he should take one or two daily infusions made with a couple of fresh leaves for nine days, then stop for nine days, and finally, take the tea for a further nine days," he continued.

"And did it work?" I asked, although I already knew the answer.

"They dissolved in a few days and he hasn't had them since!" he replied.

But Josep's story did not end there.

"Afterwards, I recommended the plant to my friends and neighbours who had the same problem," he said. "After taking the tea over

a short period of time they were all cured. The most notable case was that of a friend who was in the intensive care unit at Lleida Hospital waiting for an operation to remove the stones. They had postponed the operation for two weeks, as he was too ill to undergo surgery. During a visit to him I made a suggestion, saying, 'If you want I can bring you two infusions a day, without the doctors knowing – one in the morning and one in the evening. I am certain they will do you good.' When the day of the operation arrived, my friend asked them if they could test to see if the stones were still there. 'What do you mean, IF they're there?' the doctors asked. But he insisted, 'If you don't do the test I won't have the operation.'"

I stared at him wide-eyed like a child, enjoying that wonderful tale.

"Eventually they did the test," he said, obviously enjoying the story as well, "and do you know what?"

"The stones weren't there, were they?"

"Not a single one! So off he went home, safe and sound."

This "stonebreaker" is called *Lepidium latifolium*, it is a perennial plant with large spear-like leaves, and a stem which blooms in May into a series of small stalks of white flowers. It can be found all over the Iberian Peninsula in damp wooded areas, in particular near streams, brooks, lakes, and ponds.

It doesn't just dissolve kidney stones; it has been used as a painkiller and anti-inflammatory for sciatica pain since olden times. It is also known to have anti-fungal, contraceptive, anti-diabetic (it improves pancreatic metabolism) properties, is a stomach tonic and a powerful treatment against leishmaniasis.

Pepperwort is most active during the spring, when its properties are at their peak. The active components are distributed throughout the plant so we can use its roots, stalks, and flowers. The most effective way to take it is fresh and recently picked to ensure that the properties are intact. It has a distinctive taste, similar to mustard, and is quite pleasant. The fresh leaves can be added to salads, which is the usual custom

in eastern European countries. If we want to keep it to use as a dry herb, we just have to leave it a while to dry out and then store it in the shade in sealed containers. To prepare the tea, heat a quarter litre of water to boiling point and then add two large leaves to the water. Let it steep for a few minutes and it is ready to drink.

This plant helped my daughter Marta to be more open-minded about using medicinal plants, as she herself witnessed a spectacular cure in one of her patients. He was a middle-aged man suffering from constant bouts of nephritic colic and who once had to be taken by helicopter to Barcelona for an emergency operation.

The last time Marta had seen him in her office, she did not know what to advise him. He had stones again, and that meant another operation.

"I don't know what to do with you," admitted Marta. "Perhaps you could try one of my father's plants. If you like, go and see him and see what he says."

He came to see us and we gave him some pepperwort leaves to chew and make teas. Ten days later Marta was at work looking over some case files when suddenly her office door opened. Without giving her time to react, the man walked in and hugged her.

"What's going on, what's the matter?" Marta asked. She didn't know what was happening.

"I'm not in pain any more! The stones have gone!" he exclaimed excitedly.

"Do you mean you no longer have stones?" asked Marta.

"They're dissolving! They're passing through in my urine - they've turned into a green jelly!"

He knew what he was talking about: the x-rays corroborated the fact that he no longer had a trace of stones in his kidneys. Marta called me straight away. She had mixed emotions; on one hand, she was surprised and happy for her patient, but at the same time, she was worried she could be held responsible for guiding someone to using a medicinal plant.

"I can't believe it Dad, I just can't believe it," she said to me down the phone, sounding concerned.

I tried to calm her down by reminding her that nobody can report a doctor for recommending herbs and that it was the patient himself who decided to come to see me and give the plant a try. It bothers me that some doctors must suffer for helping their patients to cure themselves in such a natural and conclusive way.

Once again, it brings to mind the cost in healthcare that we could save with just a simple plant.

Why isn't this knowledge widely available? Is it because of ignorance, because of weakness in the face of such fixed protocols? Or could it have something to do with financial interests?

Perilla / Shiso (*Perilla frutescens*)

Perilla is an annual plant belonging to the mint family, and is easily recognised by its characteristic reddish colour. Its leaves are slightly rounded and serrated, similar to nettle leaves.

We have been selling perilla at Pàmies Hortícoles for many years. Chinese and Japanese restaurants are the main consumers of the leaves. In Japan, they call it *shiso* and they use it as a condiment for seasoning their dishes and as an accompaniment to *sushi* and *sashimi*. I originally thought it was used solely to give flavour to their food, but I discovered it is also used to prevent problems with allergies and to eliminate *anisakis* - a parasite in fish and marine mammals that can affect humans by producing a serious anaphylactic reaction.

But such a marvellous plant cannot be left alone in our country. One day, I received a visit from a biologist, who, upon seeing the shisho, asked me,

"Do you know Health and Safety have prohibited the sale of oil made from the seeds of this plant?"

"What do you mean, why?" I asked.

"It's a great anti-allergen. You used to be able to buy the oil in wholefood shops and dietary clinics, and many naturopaths would prescribe it as an antihistamine remedy for allergies. But now it's been banned and it will stay that way until it passes the pharmacological tests permitting its conversion into a medicine."

So we are once again faced with the same strategy: another remedy taken from the hands of the people for the next ten years, until it is patented by some pharmaceutical company. And until such time, doctors will be prescribing the usual chemical anti-allergens, which are not as effective and are full of side effects.

I immediately began to investigate this plant and I discovered that it contains anti-cancer and anti-inflammatory properties, and is very rich in omega-3 fatty acids. Soon I began giving it away to people with asthma, allergies, and rhinitis.

On *La Dulce Revolución* website, there are various testimonials from people who have been kind enough to talk about their personal experiences with shisho.

A lad who suffered from severe allergy outbreaks noticed that they became much less intense when he started taking daily infusions of stevia and perilla. When the following year he started to sneeze and splutter again in springtime, the allergy was much less severe than in previous years. His dosage is a dessertspoonful of dried stevia and one of perilla added to a litre of water, which is then boiled. Leave the infusion to cool and drink one glass in the morning on an empty stomach and another in the evening.

Another testimonial comes from Virginia Pastor detailing the case of her partner Iñigo Martínez-Peñalver, who suffers from chronic allergies, allergic asthma, and atopic asthma, and also contracted *anisakis* after eating some rotten fish. Virginia says that his whole body swelled up, his skin blistered, and the itching was unbearable. He had to be taken to the Accident & Emergency ward on various occasions. Iñigo was treated with cortisone and a few times a year they had to inject him with vaccines costing 240 euros a time. But none of it was much

use, and instead of curing the problem, caused even more allergies. After seeing the video of *Plantas que curan, plantas prohibidas*,[7] (Healing Herbs, Prohibited Plants), Virginia and Iñigo came to Balaguer to get some perilla. He was initially eating a couple of leaves a day. Since then he has stopped the vaccines and no longer uses his inhaler, and his skin is in a better state that it was before the *anisakis* infection. He has no itching or dermatitis, and is able to eat fish and seafood again. Virginia ends her testimonial by saying that the doctor who told him that Iñigo would have *anisakis* for the rest of his life, became angry when they cancelled the vaccination appointments and was not interested in hearing about the plant that had cured his patient.

Then there is Sara, who after a fruitless search visiting various dermatologists to find a solution for her daughter's allergic dermatitis, decided to treat her with perilla. She began eating the leaves, and applying the pulp to her skin mixed with aloe vera. Her mother says it has been working well and says she prepares the aloe by peeling five or six large leaves and blending them in a mixer with nine or ten large perilla leaves. Then the mixture is strained and kept in the fridge in a glass jar. Her daughter applies the potion to her skin morning and night.

Sara has also cured her candida using perilla and natural yoghourt. She says she searched on various Internet forums for natural remedies, and discovered that rinses made from natural yoghourt, vinegar, and bicarbonate, work well for this affliction. Armed with that information, she created her own formula: she blended five or six perilla leaves in some yoghourt and put it in the fridge. Then she washed the affected area with a good dose of vinegar mixed in a litre of water, and dried herself. Finally, she applied the perilla-yoghourt mixture with a piece of cotton wool. The itching calmed immediately and the inflammation gradually reduced, and in three days, it had completely cleared up.

Today it is prohibited to sell oil made from perilla seeds, but we still sell the plant and its leaves. It is such a potent anti-allergenic plant and we are afraid that sooner or later, it will be illegal to sell the leaves.

If and when that time comes, we will have to disobey – of that I am very sure.

Marihuana / Cannabis (*Cannabis sativa*)

I am sure many of you will have been horrified to learn that in some African countries, a wonderful medicinal plant like artemisia has been classed as a drug. More than one of you will have thought, "The governments are so corrupt! They're letting people die!" But, what would you think if you knew that in Spain and in the rest of the world another plant has been criminalised in the same way, a plant they call it drug when in reality it contains great medicinal properties?

When my children were teenagers, I personally thought it was wise to warn them about the dangers of taking drugs. I said things like, "If you start taking drugs, even soft drugs, you won't be able to stop," and, "Drugs will kill you in the long run." I didn't really know a lot about drugs, but we have all heard terrible stories, or we know somebody who has had problems. When I referred to drugs, I meant the substances I had occasionally seen on television broadcasts or in News reports about intercepting drug shipments. Interestingly, I was less worried about the effects of regular tobacco when my son Pau started smoking cigarettes. It was a still a drug, yes, but one that could be purchased anywhere in the cold light of day so it couldn't be as bad as those other drugs in the media reports... could it?

My attempts at paternal advice were not very successful, as in most families. Marta, being how she is, always stayed away from drugs, but Pau began to experiment with marihuana and hash. It was very traumatic for Rosa Mari and me. Our son had taken a step into the world of drugs and we didn't know what to do. It was one of the many causes of the tension between and us.

But now I see it all in a different light. My perspective began to change the day we received a visit from Joan Alay, member of the *Asociación de Amigos del Sahara de las Tierras de Poniente* (AASTP - Association of Friends of the Sahara from Lands of the West), which, amongst

other things, organises summer holiday trips in Lleida for children from the Sahara.

"In a few days time I'm going back to the Sahara with the children," he told me, "and I'd like to take some plants with me, ones that could be useful."

He stopped for a moment, thinking of how to express himself.

"I've had an extraordinary experience," he continued, "I've cured myself of my multiple sclerosis with a plant"

"Really?" I exclaimed, "What plant are you talking about?"

Joan continued to choose his words carefully, as if he was scared or ashamed to give me the answer. Finally, he said in a low voice,

"It's a prohibited plant…"

"Which one?" I asked, involuntarily imitating his tone of voice.

"Marihuana."

I had heard something about the medicinal properties of marihuana, but it was the first time I had met someone who had experimented with it.

Joan continued, "When I was thirty I had already suffered various episodes of partial blindness and total blindness. Sometimes I would be blind for two weeks and suffered terrible pain that confined me to a wheelchair. I was diagnosed with the beginnings of multiple sclerosis and prescribed corticosteroids, which made my body swell up, and did nothing to improve my well-being."

I knew perfectly well what he was talking about. One of my aunts died at home, affected by multiple sclerosis. Her medicine failed to cure her; in actual fact, it caused her more pain and suffering.

After some months of desperation," continued Joan, "and following the advice of a neighbour who had been suffering from the same illness for a long time, I decided to stop all my medication at once and I began to try cannabis. I knew it could be the end of me, but I was

fed up with the way things were going. I had to do something. I got in touch with a doctor who gave me some guidelines on how to take it and got to work. There are various ways you can take it, but I prefer to infuse it in milk, as the main active ingredients need fat to dissolve in. I drank it needed to… we can self-regulate the dosage depending on how we feel."

"And did it work, did you cure yourself?" I asked.

"I would say so, yes. But I don't think it was just because of the cannabis. The infusions helped me to alleviate my tiredness, the dizziness, and the vomiting. But perhaps the most important thing was the process of introspection I embarked on, which helped me to get to know myself better and accept the illness. After a year and a half with a positive attitude, I began to feel much better and I was able to go back to work. Now the only treatment I use is looking after myself emotionally and psychologically, and ensuring I derive maximum enjoyment from every passing moment."

His testimonial had a big affect on me, not only because it corroborated the therapeutic qualities of marihuana but also because the introspection process he had gone through would come in useful for me later on, when I myself was forced to face a difficult moment brought on by angina.

My way of thinking about drugs has changed over the last few years. When you stop following the official established line and start to ask yourself questions, the answers you get usually make you forget about your prejudices.

Why is cannabis illegal? If it is because it's addictive and bad for your health, then alcohol and tobacco should be illegal too, and they're not. Commercial tobacco is a recognised carcinogen, responsible for fifty million deaths throughout the world over the last decade alone. In China, tobacco is the main cause of death, with more than 1.2 million fatalities per year. In Spain, the figure is around 50,000 deaths annually. Tobacco is responsible for approximately 30% of deaths from cancer, 20% of deaths from cardiovascular diseases, and 80% from chronic

obstructed lung diseases. And it is legal - its sale is permitted by all the governments over the world.

The same occurs with alcoholic drinks, consumption of which causes 2.5 million deaths every year. According to a study carried out by the UK Institute for the Study of Alcohol, alcohol is the underlying cause of sixty different diseases. These include some of the mental and behavioural illnesses, gastrointestinal afflictions, cancers, cardiovascular, pulmonary, and muscular-skeletal diseases, and some reproductive illnesses.[8] We should neither ignore the ravages produced by alcohol on a social level; it is a drug involved in many cases of violence, neglect, child abuse, and absenteeism in the workplace. The consumption of alcohol is the cause of many broken families and many lives that end up going down the drain.

The pharmaceutical companies are filling their boots from the consequences of alcohol and tobacco.

The story of cannabis prohibition follows the same script as many of the other plants that feature in this book.

Marihuana originates from Central Asia where is has been grown for more than 10,000 years. It appears in a Chinese phytotherapy manual dating back to 4,000 B.C., and for many centuries it has been used as a healing remedy in India, China, the Middle East, South Africa, and South America. In 1839, Doctor O'Shaughnessy published the first article on its painkilling, anti-spasmodic, and muscle-relaxing properties. In 1937, at the time of its prohibition, it was present in more than thirty pharmaceutical preparations being sold in the United States.

Cannabis however, has had other uses apart from medicinal ones; the plant is ideal for making clothes, sails, rope, and paper, etc. From the fifth century B.C. until the end of the nineteenth century, 90% of navigational ropes and sails, plus a high percentage fishing nets were made from cannabis.

But the turn of the century marked the beginning of the chemo-pharmaceutical industry era, with its painkilling pills that would sub-

stitute natural remedies: and marihuana was its main competitor. The cannabis plant also posed direct competition to the emerging paper (manufactured from wood), and the synthetic fibre (derived from petrol for nylon etc.) industries. The lobbies all joined forces so that the United States Parliament would declare it a drug and therefore get it out of the way. It was a controversial decision and received a great deal of opposition from within Parliament. Many parliamentarians were aware of the manipulation that was going on but they were unable to make a stand against the enormous power these industries had at the time. And, as always, that same political decision was exported to other places across the world like Europe, where American culture had become the thing to follow.

This is the story of the twentieth century - the story of governments dominated by financial power. The situation however is turning around. It seems the American people are reacting, and currently fourteen states have legalised marihuana for medicinal use. Two states have even passed it for recreational use.

After smoking marihuana for a few years, Pau decided to give it up. As with all addictive substances, it was rather difficult, but he managed it first time round. Not so with tobacco, (although today's cigarettes do not contain much actual tobacco and are full of other very addictive substances); giving up smoking has been much more difficult for him and he has tried many times.

I am not trying to underestimate the addictive power of marihuana, and I would like to make it clear that I only recommend it for therapeutic use.

My opinion is that no plant should be prohibited. Every time something is banned, it just urges people to try it and only serves to perpetuate consumption. I believe health authorities should inform the population on the best way to use plants to get the best out of them, while at the same time warning us of the consequences of abusing them. Plants are like anything else: you have to use them sensibly and carefully.

Before I finish this section, I would like to mention the work of investigator Manuel Guzmán, professor of biochemistry and molecular biology at Madrid University, who since the end of the nineties has been studying the beneficial properties of cannabinoids, the active components in cannabis. Thanks to his diligent research, he has found that this plant is useful in treating neurodegenerative diseases such as Huntington's disease,[9, 10] and cerebral cancer. Sadly, he does not get the recognition he deserves from the health authorities.

At *La Dulce Revolución* we have heard of several spectacular cases of rheumatoid arthritis being cured with marihuana, and we even know people who say they have cured brain tumours from using it.

Hypericum / St. John's Wort (*Hypericum perforatum*)

Hypericum, also known as St John's Wort, is a perennial plant and very common in Catalonia. It is native to Europe but has become acclimatised in many other parts of the world such as China, Australia, America, and North Africa.

It has small leaves about one centimetre in length and about half a centimetre wide. If you look at the leaves against the light you can see they are perforated (hence the name *perforatum*). Its stem is reddish in colour and its flowers are a very distinctive yellow, grouped around on small stalks at the end of the stem.

Hypericum contains hypericine, an active component attributed with a powerful anti-depressive effect that can help us with the usual problems accompanying depression like anxiety, tiredness, lack of appetite, and difficulty in sleeping. It is also a good tonic for repairing the nervous system, and contributes to an efficient digestive system (it works well for stomach ulcers, vomiting, and diarrhoea). Generally, the recommended dosage is a teaspoonful of the flowers in a glass of water. However, its use is not recommended during pregnancy, or at times when we spend long periods in the sun as hypericum can produce photosensitivity.

For as long as I can remember we have always had hypericum oil at home, but I never had a clue what the plant looked like. We always called it the "oil for cuts and bumps", because one of its most common uses is the topical treatment of wounds, cuts, and burns etc. Its pain-killing effects make it especially recommendable for rheumatic pain (gout, sciatica, arthritis, lumbago, etc.), and it works well when rubbed onto affected areas for muscular aches and arthritic pain as it stimulates blood circulation. The oil is made by steeping some leaves in a bottle of olive oil and leaving in sunlight for forty days. Then strain the mixture and pour into small bottles or jars made of dark glass. Another way to use hypericum is by soaking the fresh leaves and placing them on the affected area. During the Middle Ages it was used a great deal in that way; they called it the "wound herb", and later on, the "soldier's herb". As an external application, the whole plant can be boiled and is efficient in curing varicose veins and haemorrhoids.

Hypericum also regulates menstrual period: it can reduce heavy flow and help late periods to begin.

The ideal time to collect St. John's Wort is in spring, especially at the end of June; this plant gets its name because on 24th June it is in full bloom on the day of San Juan in Spain. That is when we can harvest the flowers and put them in a cloth bag. Later we can take them out, dry them, and keep them in a sealed container.

One Saturday, during one of the guided tours at *La Dulce Revolución* one of the male visitors said, "Do you know that in Germany 80% of depression cases are treated with hypericum?"

"Germany? That's part of the European Union as we are!" I said.

"Yes, but while the doctors here in Spain prescribe Prozac, over there hypericum has been included in the official pharmacopoeia and is widely used."

It is true: in Germany, the country where the chemo-pharmaceutical beast was born, they are freeing themselves from the tyranny of that industry. A group of investigators from the Centre for Complementary Medicine of Munich has reached the conclusion that hypericum

is more efficient in treating the symptoms of depression than any other pharmaceutical antidepressant, and with less side effects.[11]

For the time being, in Catalonia and Spain we have to make do with Prozac, Diazepam and the like; if a doctor breaks protocol and goes "mad" by prescribing hypericum to a patient, he could get in trouble, either with the patient or with medical officialdom.

Common Rue / Herb of Grace (*Ruta graveolens*)

Common rue is yet another plant persecuted by the health system. In spite of its medicinal properties that can improve circulation and digestion, and regulate the female reproductive organs, our dear government has declared it illegal because of its abortive effects. However, the effects only occur if an excessive amount is taken. Paradoxically Bayer encountered no problems in marketing their morning-after pill.

The fact is that rue could finish the abortive pill business. It is of minimal cost and does not come with the side effects of hormonal medicine. Could it be they have banned it for exactly that reason?

I heard of a woman whose foetus died in the womb at five months, and following the advice of a midwife, she refused to have a Caesarian section. The midwife advised her to take infusions of rue, which allowed her to eject the dead foetus naturally and without complications. If that case had gone to court, the midwife would have probably faced charges.

In Latin America, where rue is generally used for medicinal purposes, some women have had to be admitted to hospital after buying it from garden centres, where the plants are treated with insecticides. This would not have happened if rue were sold in wholefood shops and available to everyone.

Other plants

In this short section, I will give a brief summary of the other plants we are cultivating and investigating at *La Dulce Revolución*.

Dandelion (*Taraxacum officinale*). Also called meacama. This plant is diuretic with the potential to regenerate the liver. Recent studies have confirmed its effectiveness in the treatment of leukaemia.[12]

Calendula / Marigold (*Calendula officinalis*). This plant has extraordinary regenerative properties. There are more than 300 scientific studies corroborating its effectiveness in curing cancer, colitis, bacterial infections, skin afflictions, and other health problems.

Nettle (*Urtica*). Found in abundance in fields and meadows. There are around 350 studies available endorsing its medicinal properties. It has a high iron content and is a powerful blood cleanser; for these reasons its use is recommended in cases of anaemia, leukemia, eczema, gout, and uric acid.

Common Yarrow (*Achillea millefolium*). Found in large quantities in meadows and on mountainsides. There are currently 350 scientific studies on its medicinal power. It is an extraordinary plant for treating problems of the female genitalia and reproductive system. It regulates the duration and regularity of periods, cures ovarian cysts, myomas, migraines, haemorrhoids, and is a powerful anti-carcinogenic.

Lady's Bedstraw (*Galium verum*) and **Cleavers** (*Galium aparine*). Even though these plants are a nuisance to farmers, they do have many properties that can treat throat and thyroid afflictions, also cancers of the mouth, tongue and skin.

Horsetail (*Equisetum arvense*). This plant is perennial and ideal for elderly people as it is a powerful diuretic and can remineralise bones and cartilages, and prevent osteoporosis. It is also recommended for incontinence. Taken jointly with hypericum, it is used in the treatment of memory loss and arteriosclerosis.

Great Ribwort (*Plantago mayor*) and **Lesser Ribwort** (*Plantago menor*). These perennial plants are very effective in treating afflictions of the lungs. When applied in a poultice, they can treat skin cancer, ulcers, wasp stings, snake bites, and stings from other animals. The Romans

put this plant in the soles of their sandals to avoid getting blisters during their long marches.

Celandine (*Chelidonium majus*). Perennial plant also known as Swallow Grass or Verruca Plant as it dissolves verrucas, and has many other extraordinary uses. We have known skin cancer to go into remission just from daily regular applications of the orange sap from this plant. When applied to eyelids, the sap rejuvenates our eyes, reduces cataracts and age spots, and alleviates retinopathy. Mixed with nettle and elder shoots, it works well for leukaemia.

Rosemary (*Rosmarinus officinalis*). This plant is very common in Spain. There are more than 500 scientific studies detailing its healing effects. It is called "European ginseng" due its reinvigorating properties. As a lotion or in tincture form it can be used to prevent hair loss; the effect is multiplied when mixed with nettle. Rosemary oil can be used to calm inflammation arising from knocks and bumps. It also acts as a bactericide and hepatic.

Cat Nip (*Nepeta cataria*). A very aromatic plant sometimes called "legal marihuana", as it contains sedative and slightly psychoactive properties (it has a relaxing effect on cats). The essential oil from this plant repels fleas and mosquitoes. It is very digestive, and is effective in the treatment of bronchitis.

Thyme (*Thymus vulgaris*). It is one of the most typical and utilised plants in Catalan cuisine. There are 1,300 scientific studies on its medicinal properties in which bacteriological, anti-tumoral, and immune-system boosting properties are well detailed. In olden days, people made soup from thyme to prevent and cure colds and gastritis.

Milk Thistle (*Silybum marianum*). This thistle grows abundantly in areas where there is activity, on roadsides, and at the edges of fields. Its seeds contain properties for curing liver and pancreas. It is used to treat cirrhosis, fatty liver, and stones in the kidney and bile duct. It is also anti-diabetic, improves cholesterol, and has beneficial effects in the treatment of AIDS. It induces suicide in cancer cells. Some people also use it to recover from the effects of hangovers.

Plants undergoing investigation

We are currently continuing with our investigative work into new plants. We are learning how to adapt them to the continental climate and they are available to anyone who wants to use them to treat their illness, and gain practical experience of their effectiveness.

The new plants allow us to broaden the possibilities of treating diseases, as sometimes the ones we are familiar with are not always efficient enough. In today's globalised society, it is also a positive thing to do for the immigration population, as many of the plants originate from their native countries.

Chameleon plant (*Houttuynia cordata*). This plant is originally from Asia, also known as the "fish herb." It has great many healing properties for the intestines and can be used to treat colitis and Crohn's Disease. It is also a powerful anti-viral, and recommended for curing rectal cancer and leukaemia.

It is widely used in Japan as a powerful antioxidant taken as a drink called *dokudami cha.* According to the testimonial of a hundred year-old Japanese woman, this plants contains anti-radioactive properties; she witnessed this herself when her son was affected by radiation in Hiroshima during World War II.

Longevity Spinach (*Gynura procumbens*). This plant of Asian origin is notable for its properties in improving diabetes and high blood pressure. It can be eaten raw in salad, cooked, or taken as a tea.

Cancer Bush (*Sutherlandia frutescens*). This plant of south African origin has anti-influenza and anti-viral properties. It is also recommended in the treatment of cancer, AIDS, and diabetes. The WHO has endorsed it as a safe plant.

Mountain Tea (*Sideritis syriaca*). Originating in Europe, it is used a lot in Eastern Europe because of its anti-oxidant, anti-viral, and digestive properties, in the treatment of respiratory allergies, and for the prevention of osteoporosis and cancer.

Madeira Vine (*Anredera cordifolia*). Of South American origin, it has adapted well in the Canary Islands and seems to have adapted to the climate of Catalonia as well. For us it is a very interesting plant, as we know that the Ministry of Health has applied for a patent to use it as an anti-diabetic.

Damiana (*Turnera diffusa*). It is called "Nature's Viagra" due its aphrodisiac properties, and works for both men and women. It is also a psycho-stimulant, diuretic, and urinary antiseptic.

Medicinal plants

© Miquel Figueroa

Stevia
Stevia rebaudiana Bertoni

© Miquel Figueroa

Kalanchoe pinnata
Bryophyllum pinnatum

© Miquel Figueroa

Kalanchoe daigremontiana
Bryophyllum daigremontianum

© Miquel Figueroa

Kalanchoe gastonis-bonnieri
Bryophyllum gastonis-bonnieri

© Miquel Figueroa

Small-flowered Willow Herb
Epilobium parviflorum

© Miquel Figueroa

Holly Thistle
Eryngium campestre

© Miquel Figueroa

Sweet Wormwood
Artemisia annua

© Miquel Figueroa

Pepperwort
Lepidium latifolium

© Dalgial, bajo licéncia de Creative Commons

Perilla / Shiso
Perilla frutescens

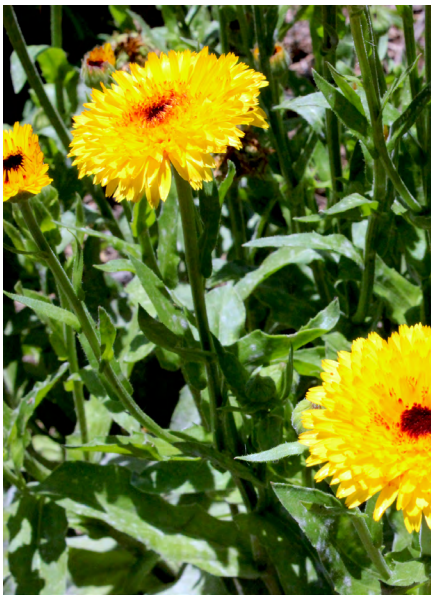
© Miquel Figueroa

Marihuana / Cannabis
Cannabis sativa

Hypericum / St. John's Wort
Hypericum perforatum

Common Rue / Herb of Grace
Ruta graveolens

Dandelion
Taraxacum officinale



Calendula / Marigold
Calendula officinalis

© Miquel Figueroa

Nettle
Urtica

© Judith Sanleandro

Common Yarrow
Achillea millefolium

© Miquel Figueroa

Lady's Bedstraw
Galium verum

© Miquel Figueroa

Horsetail
Equisetum arvense

Great Ribwort
Plantago mayor

Celandine
Chelidonium majus

Rosemary
Rosmarinus officinalis

Cat Nip
Nepeta cataria

© Miquel Figueroa

Thyme
Thymus vulgaris

© Miquel Figueroa

Milk Thistle
Silybum marianum

© Miquel Figueroa

Chameleon plant
Houttuynia cordata

© Miquel Figueroa

Longevity Spinach
Gynura procumbens

© Miquel Figueroa

Cancer plant
Sutherlandia frutescens

© Miquel Figueroa

Mountain Tea
Sideritis syriaca

© Miquel Figueroa

Madeira Vine
Anredera cordifolia

© Judith Sanleandro

Damiana
Turnera diffusa

7

Let thy food be thy medicine

In the previous chapter, we learned about the medicinal power of various different herbs, but the ability to prevent and cure diseases is not something exclusive to the plant world. Everything we eat can be an ally or a potential enemy to our health.

As a society, we have advanced in many ways, but we are still lost when it comes to such a basic and important matter as nutrition. It is not only because of a lack of information, but also because we have lost our instincts about which foods are beneficial and which ones are not. It is interesting to observe how domestic pets often develop diseases typically found in humans, whereas wild animals are generally free from such disease. This must occur because pets, like us, are subject to the misfortunes of our "unnatural" society - emotional stress, chemical, environmental, and electromagnetic pollution, and of course, poor diet.

We need to rid ourselves of the idea that diseases happen due to bad luck, or an inevitable genetic legacy inherited from our parents. I believe we must take responsibility. Responsibility is a gift. It allows us to be the captains of our own lives and know that we have the ability to change direction. However, we have a tendency to want our problems to be solved quickly with little or no effort. That is why prescription pills have been a major success - they are fast acting and allow us to temporarily forget the problem. But the problem will persist until we face up to whatever is troubling or affecting us. We must get to the root of the issue. Unfortunately, that root is often a lot deeper than we would like it to be.

If we fall ill, we should take a good look at our life and take certain steps to change things. Some illnesses are caused by emotional or psy-

chological factors, but in this chapter, we will focus on the nutritional aspect.

Speaking from experience, I can assure you that food and health go hand in hand. I would say food is one of the cornerstones of our health and well-being. In today's world, poor diet is creating many problems, and is responsible for many of the most common diseases of our time. By changing our eating habits, we could avoid many of the illnesses that affect us. It is so easy that it seems impossible: a good diet prevents diseases and if we become ill, we can reverse the effects with the correct diet. Over the last few years, I have met hundreds of people who began to recover their health when they changed their eating habits. I have recorded truly spectacular cases involving people with terminal illnesses, who through a radical change in diet have succeeded in overcoming cancer and diabetes.

It surprised me that doctors do not focus more on dietary habits during their consultations, but it is because health professionals receive very little or no information at all on this subject. What's more, any nutritional advice they do give goes toes the official line, which is unfortunately distorted by certain outdated ideas and by the interests of the food industry.

That is why I believe we all have to go on a voyage of personal discovery to determine which diet is best for us. Of course, we have to keep an open mind and be ready to question our beliefs and change our habits. Our inability to do so might be one of the main blocks preventing us from having a healthy life.

The Greek physician Hippocrates, considered the precursor of dietetics and one of the most prominent figures in the history of medicine (the Hippocratic Oath is attributed to him, on which medical graduates traditionally swear before embarking on their careers), once said, "Let thy food be thy medicine." He and his followers believe that Nature has all that we need to be healthy and that food is an ally for good health.

Revolution begins on our plates and so does our health.

To whom should I listen?

If we accept the idea that everything we eat can either affect our health or bring us closer to disease, the question is inevitable: what is the correct diet for us?

We are inundated with advice from everywhere telling us what we must and must not do. We are advised by "supposed" experts, TV advertisements, and even by government campaigns. With so many contradictory messages, it is very difficult to decipher which foods aid our organism in maintaining the correct balance and which create imbalance, causing us to become ill.

Are dairy products necessary? Are chemical additives safe? Should we eat meat? Is it better to eat raw foods? The best thing is to keep an open mind and take it step by step.

I do not have all the answers. As I have been saying throughout this book, I can only share the knowledge I have based on my own research and experience. I am sure that many readers could provide much more information on this chapter. I, for my part, will continue reading and listening. I do not discard the possibility that within a few years my ideas about food might have changed. My intention is not to create a guide on nutrition, but to share what I have discovered up until now. I hope I can awaken your curiosity and make you think about on the various dangers and possibilities that are out there.

At this point, I hardly need to say that the "official" version makes me feel uneasy. After seeing what happened with GMOs, I believe it is entirely reasonable to doubt the honesty of governments and official organisations connected to the food sector. We just have to remember that the marketing companies are the very same organisations that provide the scientific literature for the approval of their own products, the "revolving doors" syndrome once again coming into play.

As for governments, it seems to me that they strive to care more for the wealth of large companies than the health of the public. We must remember that businesses generate a lot of money and jobs within the governmental networks. We all know that politicians' goals are

short-term and they do not especially care whether business activities are harmful to our health and environment, or whether they are ethical or not.

Nutritional guidelines provided by the government have more to do with the interests of corporations than with the health of consumers. The heavyweight industries of the meat and dairy sectors receive full backing from the Spanish government. The latter has a stake in those industries and must ensure the public consumes the products they sell. Instead of looking out for our best interests, governments are more like large-scale sales agents, and we in turn are nothing more than clients of the companies they work for.

Studies funded by the food industry also have a strong influence on nutrition professionals. Danone, for example, employs university graduates to give free lectures on nutrition to the public. Wherever they go, they provide dietary guidelines that unsuspecting citizens and their children are supposed to follow. I am sure that none of these graduates says anything against dairy products. I, on the other hand, will do so a bit later on.

I can categorically say that the "official" line that we have been fed about nutrition-related health and disease is at worst open to correction and at best, requires further investigation. In any case, we can safely assume that the truth has been somewhat distorted.

In my opinion, meals should be mainly vegetable-based, perhaps accompanied by a weekly serving of fish or white meat, and always prepared with organic, fresh, local, and seasonal produce.

Food safety?

Due to the number of regulatory agencies currently in existence, I am frequently told we live in an age of unprecedented food safety control that does not compare to any other period in history.

The problem is, as I have previously mentioned, is that these institutions are mediated by the needs and interests of the big food lobbies. Today's food control agencies and organisations are unmatched in

terms of infrastructure but leave much to be desired in terms of responsibility and transparency.

There are two main global authorities involved in controlling food safety: the European Food Safety Authority (EFSA) in Europe, and the Food and Drug Administration (FDA) in the USA. These two agencies are protected by the umbrella organisation Codex Alimentarius - an initiative funded by the World Health Organisation (WHO), and the Food and Agriculture Organisation (FAO), which currently acts as the point of reference for producers, government agencies, and associations concerned with matters of nutrition.

One of the ways in which the industry influences regulating agencies, and governments is by the "revolving door" syndrome. The story of Suzy Renckens, (which I talked about in the GMO chapter) is not an isolated incident. It is often the case that people working in these public organisations today, might find themselves working for Nestlé, Coca-Cola, Monsanto, Syngenta etc. tomorrow.

The matter has become so serious that the following groups - Corporate Europe Observatory, Greenpeace, Lobbycontrol, and Spinwatch - filed a complaint with the Ombudsman about the European Commission's inability to stop the revolving door phenomenon. Rachel Tansey, from the Corporate Europe Observatory said, "The European Commission adopts a laissez-faire attitude regarding the revolving doors matter and has not been able to prevent former employees from selling their knowledge and influencing the industries' lobbies. Although a few rules do exist, they are not correctly implanted, and when infractions occur, fines are never issued".[1]

I am sure some workers in the regulatory agencies are good people and want to do their job well, but the cross-prostitution of information within these institutions is an undeniable fact. It is a system full of cracks leaving us, the public, high and dry.

In this country there is the *Agencia Española de Seguridad Alimentaria y Nutrición* (AESAN - Spanish Food Safety and Nutrition Agency), an agency currently headed by Angela López de Sá, who until not too

long ago held the position of Director of Scientific and Regulatory Matters for Coca-Cola Iberia. That means the agency supposedly safeguarding our food is in the hands of a woman who has worked for a multinational that promotes wide-scale sugar addiction, and which adds large quantities of harmful ingredients, such as aspartame and refined sugar, to its beverages. I do not believe this to be the best of situations.

These agencies are lowering the standards of food quality in such a way that they can classify many substances as "food", when in reality we shouldn't be touching them with a bargepole.

However, there are still people who proclaim the virtues of this food control system, and often cite as an example the issue of life expectancy, which has increased over the last few decades. I would like to add my own thoughts to that statement. It is undeniable that in the past years life expectancy has increased in the "developed" countries. This is due in part to the fact that improvements have been made in many areas such as hygiene (food and other), and surgery. In addition, overall life expectancy has increased because infant mortality has decreased significantly.

Every era in human history has had its own diseases and corresponding symptoms. In the Middle Ages, life conditions and habits led to the emergence and expansion of plague, typhus, and cholera. Today, excess of toxin-laden food, stress, lack of contact with Nature, our sedentary lifestyles, etc., encourage different types of chronic disorders, already known as the "great diseases of our time".

According to figures from the International Agency for Cancer Research (IARC), the incidence of chronic diseases in developed countries has multiplied in the last thirty years. Cancer is particularly serious because it now affects twice as many people as before, and the rates of this particular disease are noticeably higher in those countries considered most "developed".

Life expectancy does not always go hand in hand with a good quality of life. Many people reach ninety or a hundred years of age, but they are medicated to the hilt, and often kept alive in artificial and painful ways. And what is going on with people in their thirties, forties and

fifties who fall ill with cancer, diabetes, obesity, heart and degenerative diseases? You would have to be blind not to realise that we are doing something seriously wrong.

Life expectancy is a cultural matter: the result of several factors typical of the places where we live, one of which is food. At present, the places on the planet with a greater index of longevity are Okinawa (Japan), Hunza (Himalayas), Vilcambamba (Ecuador), and Abkhazia (Caucasus). In these places people often live to be more than one hundred years old, and it is common to see people of eighty and ninety years of age doing physically-demanding tasks. In the West, we do not often reach old age with our mental faculties intact, whereas those living in the aforementioned places have a clear mind until the day they die. What's more, those cultures do not suffer from cancer, diabetes, asthma, allergies, or other chronic diseases, and they are communities living in social harmony and who are perfectly integrated with Nature.

Scientists have tried to understand what makes these people special, and have found a number of common features among them. They live off the land and harvest foods close to where they live, consume a minimum of animal protein (it represents 1% of their diet, although the Abkhaz, because of their living conditions, eat up to 10%), and they base their diet on complex carbohydrates: vegetables, pulses, and non-refined cereals. In addition, they enjoy an exceptional quality of water and air and do a lot of physical exercise.

Our current diet in the West may be safer, in the sense that it is more hygienic, and yes, there are regulations in place to prevent food being contaminated with undesirable elements, but the problem is we are too lax when it comes to the refined, fast, and junk foods that are not good for us.

If we added good quality, natural food to all the medical, technological, and hygienic progress seen in the West over the past few decades, I am sure that we would live many more years and with a much better quality of life. And if we returned to a more natural lifestyle, the change would be spectacular.

Food and nutrition

Humans need to nourish our bodies in different ways: our personal relationships, contact with Nature, breathing, exposure to sunlight and, of course, food.

There seem to be more and more people like Hira Ratan Manek, from India, who can feed themselves only with sunlight, using a technique called sun-gazing. Maybe someday all of us will be fed exclusively by the sun or "prana" (universal energy), but until that happens, we will have to continue nourishing ourselves mainly from what the Earth provides us.

Feeding ourselves is a process that satisfies (or should satisfy) a series of needs which are essential for our body to work well. But Montse Bradford, an expert in energy nutrition, says that many of us are in a very primary phase in terms of food. We have still not understood the full extent of the nutrition process. Although we eat very often, we are not eating correctly.

We can get carried away by our impulses and eat certain products merely because they produce sensory pleasure, out of habit, or because our mother cooked the meal. But the truth is that the process of nourishing ourselves supplies the cells of our body with nutrients which are needed for its optimal functioning. We eat to absorb carbohydrates, proteins, vitamins and minerals, all of which become our fuel.

I am not going to go into the complicated details of digestion and nutrient absorption, because it is a topic beyond my scope of knowledge, but I would like to point out some things that I consider interesting.

There are several factors responsible for poor nutrition. One of them is the low nutritional value of industrial food. The food chain is full of "food" which does not merit being called food. Junk food only serves to end hunger, but does not contribute to supplying our body with the nutrients it needs. What's more, these non-nutritious substances require our body to expend considerable energy in order to eliminate them. Rather than contributing nutritionally, these substances are expending energy.

The warning issued by *Asociación Mexicana de Estudios para la Defensa del Consumidor* (AMEDEC - the Mexican Association of Studies for Consumer Defence) about soft fizzy drinks might serve as an example. "It constitutes the most serious perversion of our food habits since it involves the ingestion of empty calories and zero proteins, vitamins, and minerals".

Another reason for the nutrient deficit in food is the poor quality of the land where crops are grown, as agronomist André Voisin points out in his book *Suelo, hierba y cáncer,* to which I have already referred. He observed how animals fell ill with cancer from grazing on pasture deficient in magnesium and other minerals and wondered whether the same were true of human beings. Organic, non-intensive production immunises us against that possibility, and problems can be avoided if fields are left to regenerate and re-balance the full potential of their nutrients.

When we go shopping, the best food to choose is fresh recently picked produce. It still emanates the breath of life, because the energy absorbed from the sun and the soil is present. Food treated with chemical preservatives or flash-freezing techniques loses its properties after a time. It is one reason why I always recommend eating seasonal and local food, as it is a way to ensure a minimal loss of nutrients and the conservation of all the vital energy.

The opposite is true with frozen and canned food products, ubiquitous amongst the huge food distribution channels. Although they fall within the parameters that the regulating agencies deem acceptable, the fact is they are foods that have lost most of their vitality, are difficult to digest, and are not an advisable component of any healthy diet. They are "zombie" foods: dead food that has been treated with radioactive isotopes (also called "ionised" so as not to alarm the public) which lengthens the conservation period - a technique that is far from safe.

Using Kirlian cameras and images from crystallisation processes using copper salts, we are able observe significant differences in energy quality between fresh food and the unnatural food found on supermarket shelves.

To obtain maximum nutritional benefit from our meals, we must be very careful how we prepare them, and how we combine different foods. This is something I know very little about because the women in my family (Rosa Mari, my mother-in-law, and a long time ago my mother) have always been in charge of the kitchen at home. I know some basic things, like how cooking food alters food molecules and causes it to lose nutrients. It is another reason why cooking is an art form: it is not only about a meal tasting nice, but also about maintaining vitamins, minerals, etc. I know it is preferable to use germination methods as well as grilling, steaming, boiling, blanching, and stir-frying rather than frying or roasting. The latter two procedures not only destroy nutrients, but also make food toxic.

Some people believe that the best choice is not to cook food at all, and only eat food in its raw state (some are even raw-food vegetarians or raw-food vegans). They do not eat anything that has been cooked over forty degrees, as anything above that destroys many nutrients.

I also feel strongly that microwaves should go directly into the rubbish bin because they de-naturalise food. They were banned in Russia for a time for that very reason. Microwave ovens use a technology that should never have been brought into circulation.

It is important to give food the importance it deserves and make our meal times special occasions. When we are at the dinner table, we should forget about our problems and take time to savour, chew, and salivate correctly. According to some people, "tranquility and good food" is the key to a fuller, longer life.

Eating right

Life is an opportunity for us to delve deeper into and take a closer look at the knowledge of self, and although it sounds strange, food can help us in this task.

Experts in nutritional energy invite us to ask ourselves, "What does food mean to us? Is it a way to feed our organism or a way to cover up our emotional vacuums and satisfy our unfulfilled desires?"

Before I go any further, I should explain that nutritional energy is an approach that takes into account the vital energy found and maintained in food and how it relates to our physical, as well as our mental and emotional energy. I would say, therefore, that it is a more holistic vision of nutrition than the paradigm used in the western world.

Nutritional energy studies look at the existence of three groups of food based on their energetic properties. At one end of the spectrum, there are contractive foods, which have a very slow vibration and generate tension and cause contractions in our organs, such as the liver and gallbladder. This group includes all saturated fats, examples of which are: cheeses, sausages, meats, eggs, etc.

At the other extreme, we have the expansive foods, which have a fast vibration and have the ability to swell and expand. This group includes sugar, alcohol, sugary soft drinks, vinegar, etc. They are stimulant foods that "go to our heads".

Between the two, we have the food group that brings balanced energy, comprising fruits, cereals, vegetables, and fish.

Whenever we eat contractive or expansive foods, the high-energy intake upsets our bodies, and as a result, we feel the need to eat food belonging to the other end of the spectrum in order to counteract the imbalance. Contractive calls for expansive and expansive calls for contractive. For example, when we eat meat we usually feel like accompanying it with something sweet or an alcoholic drink. And, when we drink something alcoholic we will usually feel like eating a contractive food, such as steak.

This type of extreme eating is not recommended. Extreme food translates into a waste of energy for our body, which constantly has to compensate for our excesses. This reduces our vitality and leads to fatigue and diseases.

From an energy point of view, it is better to eat balanced food because it keeps us from feeling the desire to eat extreme foods.

Things become more complicated when we take into consideration the most subtle aspects of a human being: the mental and emotional ones. Nutritional energy experts suggest that we are constantly unconsciously trying to compensate for some type of mental or emotional want or need by consuming extreme foods. Someone who is feeling depressed or nervous may consume expansive foods, such as sugar or alcohol, and will feel better for a while, but it is not advisable to use food in that way. The root of the emotional imbalance will persist and we will have to subsequently deal with the physical disorders resulting from the ingestion of those foods.

Sugary products, chocolate adulterated with milk and refined sugar, and alcohol have become shelters where we like to hide to avoid addressing our problems. We must therefore be attentive and aware of the reasons for wanting the foods we eat.

Nutritional energy works in a similar way to traditional Chinese medicine, defining food by its temperature (hot, warm, neutral, cool, and cold). The same concept applies to hot and cold food as to expansive and contractive food: one beckons the other. That is why Chinese nutrition experts recommend eating neutral foods (beans, rice, potatoes, beets, carrots, grapes, olive oil, honey, eggs, chickpeas, lentils, almonds, white fish, sepia, seaweed, etc.).

We can use the traditional Chinese nutrition and nutritional energy concepts to help us be aware of and understand why sometimes we eat things we know we shouldn't.

We must all make the decision for ourselves. We can continue to destroy ourselves through an unconscious addiction to certain foods, or we can take steps to nourish ourselves in a balanced way for the good of our bodies and souls.

Acid-alkaline balance

Our body only works at its best when it is within a certain pH level (hydrogen potential). The pH scale is from zero to 14, measuring the degree of alkalinity or acidity of a substance. A pH of seven is consid-

ered neutral. If the number is closer to 14, it is an alkaline pH, and, when it is around zero, it is an acid pH.

When our blood is healthy, the pH is slightly alkaline, between 7.35 and 7.45. Any variation in these parameters will result in a malfunction of our organism.

The accumulation of acid in our body is called acidosis. It is an imbalance that affects the liver, kidneys, heart, and cell health, and can cause bone decalcification, which the body's way of trying to restore pH balance. All this can result in hormonal imbalances, cerebrovascular strokes, cardiovascular problems, heart attacks, osteoporosis, obesity, hypertension, neurological problems, and cancer. Acidosis can have several causes: accumulation of toxins, by-products of aerosol sprays, carbon dioxide emissions, or nitrogen from cars, factories, fertilizers, etc.

It is well known that stress and other nervous, psychological, and emotional disorders acidify our body as they produce an excess of adrenaline and corticoids, giving way to the emergence of disease.

Finally, acidification can also be due to the quality of the food we eat. Food creates an acidic or alkaline reaction that influences the pH of our blood. The current western diet is full of refined, sugar-laden products, and foods of animal origin that are basically acidifiers. It must be noted, however, that the pH of certain foods is not related to the alkalinity or acidity generated by our bodies. Lemons, for example, are very acidic, but in the human organism, they are a great source of alkalinity. Likewise, meat, which is alkaline prior to digestion, generates acid waste in our body.

Some **acidifying foods** include: milk, milk derivatives such as cheese, meat, fish, eggs, coffee, alcohol, white sugar, refined grains, etc.

Some **alkaline foods** include: fruit (apples, pears, melons, watermelons, oranges, lemons, mandarins, grapefruits, peaches, nectarines, strawberries, cherries, grapes, pomegranates, bananas, avocados, coconuts, pineapples, etc.), the majority of vegetables (tomatoes, asparagus, lettuce, endives, cabbage, broccoli, carrots, onions, garlic, courgettes,

aubergines, turnips, radishes, green peppers, green beans, potatoes, sweet potatoes, pumpkin, cucumbers, beetroot, spinach, celery, parsley, watercress, fennel, dandelion), some nuts (almonds, chestnuts, etc.), and dates, raisins, seaweed, cinnamon, and stevia. Alkaline beverages include almond milk, vegetable broth, tea, lemon water, mineral water, and sea water.

Tap water contains a number of pollutants, including chloride and fluoride, both very acidic.

We have known for many years that cancer needs an acidic environment that is low in oxygen, to survive and thrive. In 1931, the physiologist German Otto Heinrich Warburg (1883-1970), received the Nobel Prize for his thesis, *The Primary Cause and Prevention of Cancer*. Warburg claimed that the main cause of cancer is an anti-physiological diet and lifestyle, the combination of which causes the expulsion of oxygen from our bodies' cells and the acidification of our organisms.

This eminent scientist left us some quotes worthy of remembering: "acidic substances reject oxygen; in contrast, alkaline substances attract oxygen." "To deprive a cell of oxygen for 48 hours may turn it into a cancerous cell." "All normal cells have an absolute need for oxygen, but cancer cells can live without it." "Cancerous tissues are acid, while healthy tissues are alkaline."

In short, blood with an alkaline pH is synonymous with vitality and health, while blood with an acidic pH is synonymous with disease and death. The most sensible thing, therefore, is to avoid or moderate our intake of acidic foods, and always accompany them with abundant alkaline foods.

The usual suspects

It often occurs within groups of people that we take on each other's worst qualities and habits. The same thing happens with different nations, as is evident from the number of unsavoury habits imported from the United States. In previous chapters, I have spoken about the US-born Green Revolution and agricultural GMOs. Now let's look at some

of the eating habits we have imported from America over the recent decades.

The menus of fast food chains and hot dog and burger franchises consist of synthetic drinks and sandwiches that contain heavy concentrations of saturated fats, refined sugar, salt, and are lacking in essential nutrients. These types of foods are designed to please our taste buds but they come with terrible negative consequences.

The success of junk food goes hand in hand with the superficial society in which we now live that prioritises appearance and instant pleasure, but neglects the medium and long-term consequences of fast food culture.

The situation is complicated because the industries that manufacture these products are extremely powerful. Multinational companies can afford massive advertising campaigns with which to bombard the public, and they always build their chain restaurants in choice locations. Fast food is today the cheapest food around and the easiest to purchase.

But you don't even have to McDonald›s or any other fast food chain to get junk food. Almost all the food in our supermarkets is junk food – products manufactured from intensive farming based on super-processed, refined ingredients, and loaded with toxic additives, pesticides, etc. They bear no comparison to whole grain, organic products.

Industrially processed food (also called "convenience food") is the norm in today's society. It is on all shelves in the big supermarkets and in the majority of smaller grocery stores. Just because these products are easily available does not make them nutritious or healthy.

Interestingly, the rise in "convenience foods" and fast food has coincided with the drastic increase in diseases and chronic disorders that are affecting the industrialised countries (diabetes, obesity, hypertension, cancer, osteoporosis, high cholesterol, etc.).

Over the following pages, I will give a brief summary of some of the most harmful foodstuffs. There are many such products, but I have chosen to focus on salt, sugar, refined flour, dairy products, and meat.

Let's begin with **salt**, used for thousands of years to preserve foods, and as an additive. Used in moderation, salt is not harmful, but our excessive consumption of the substance has become detrimental to our health. When we follow a balanced diet, we do not really need to add any salt to our meals at all.

The best salt to use is sea salt as it is unrefined and so contains a balance of all its minerals, which number more than ninety. I remember when I was a child, we served salt with a spoon because it got so damp that it became practically liquid. This is because of the magnesium and other hygroscopic minerals in unrefined salt that are essential for the formation of bones, cartilage, and an optimal blood quality. For all these reasons, it is advisable to use seawater in cooking and in salads.

In contrast, refined salt, which is the most usual nowadays, has lost almost all its beneficial properties. Most of the minerals are removed when it is turned into sodium chloride, which is done primarily for aesthetic and convenience purposes. By removing the magnesium from salt, it no longer gets damp, which improves its appearance, and our salt containers don't get sticky. But this "convenience" causes two problems: firstly, we are not ingesting the minerals required by our bodies, and secondly, we are ingesting an excessive amount of sodium because of the mineral removal. According to the United States Heart Association, this can lead to cardiovascular problems, and it would not happen with real unrefined salt as it contains a balanced composition of nutrients.

As if that were not enough, refined salt is not only an empty and harmful food by itself, but potassium ferrocyanide (E-536) is added to it - an anti-caking agent that in certain conditions can be dangerous for our health.

Refined sugar or sucrose is another dangerous guest at the dinner table. It is an artificial product obtained from refining brown cane or beet sugar, and in the process loses most of its essential minerals and vitamins. For this reason, it is said to contain only "empty calories", and curiously enough is used to feed animals.

As with salt, sugar is refined specifically to "improve" its appearance and for it not to get sticky, but this process alters its chemical make-up (denatures) and turns it into a dangerous food associated with many diseases: adrenal gland imbalance, fatigue, a weakened immune system, allergies, premenstrual syndrome (PMS), and diabetes are all related to sugar intake.

From the perspective of nutritional energy, refined sugar is one of the most harmful foods there is. It acts like a drug when ingested into our organisms, producing an energy and momentary euphoria that disappear immediately, leaving us despondent and irritable.

Like refined flour and cows' milk, refined sugar can cause pancreatic disorders as it is assimilated very quickly by our intestines and produces a disproportionate increase in blood glucose, forcing the pancreas to work beyond its capabilities in order to try to regain a balance. It is also has an acidifying effect on our bodies, which can lead to cancer. It is a known fact that cancer cells consume about 25 times more glucose than healthy cells, which is why some oncologists currently recommend removing sugar, refined flour, and lactose from our diets.

Interestingly, a procedure exists for locating possible areas of metastases that involves injecting an overdose of glucose containing radioactive iodine into veins. The glucose naturally gravitates towards the metastasis, thus allowing specialised equipment to determine where the cancer is located.

Fortunately, there are many natural and healthy alternatives for sweetening our food such as oat and rice molasses, maple and agave syrup and, of course, stevia.

We will find the same problems, as well as some additional ones, with **refined grains and flours**, in particular bread and pasta.

Whole grains are rich in fibre, vitamins, minerals, and enzymes. The refining process removes both the germ and bran, and causes the grains to lose more than fifteen basic nutrients. This is what happens with bread and pasta.

Wheat germ and maize germ contains phytosterols, vegetable substances that protect our arteries and prevent the formation of bad cholesterol, but which are lost during the refining process. The very same phytosterols are added to *Danacol*, a yoghourt product advertised as a treatment for cholesterol. If our diet contained wholegrain cereals, we would not have to consume phytosterols artificially by eating those kinds of yoghourts. It is absurd to eat food whose composition has been altered and then have to take supplements or medication to rectify the long term damage caused to our organisms.

By the same token, the famous breakfast cereals sold in supermarkets have nothing in common with natural wholegrain cereals: Dr. Kellogg, please stand up!

As with salt and sugar, the refining process not only deprives cereals and flours of nutrients, but also has harmful effects for our health. Refined foods are assimilated very quickly into our intestines, causing an increase in blood glucose levels, which in turn damaged the pancreas. Refined foods induce acidification in the body, which, as I have said before, can lead to cancer.

Refined grains and flours contaminate our organisms with a sticky mucous that lines our respiratory, nervous, lymphatic, and digestive systems.[2]

I hope the reader is wondering the same thing as I am: why is no one pointing out that refined starches and sucrose are carcinogenic, and why isn't anything being done to remove them from the food chain?

Salt, sugar, cereals, and flours become particularly harmful when they are refined. This is because food in its natural state is like a "symphony" of nutrients. When it becomes altered during the refining process, it loses its "harmony".

Interestingly, many people associate the word "wholegrain" with dietary products, when actually it refers to food that has all its nutrients intact. Eating whole foods, therefore, is the best way to prevent nutritional deficiencies that may later have to be treated with mineral supplements or medication, and is also a good way to prevent disease.

Let us now look at **cows' milk** and **milk derivatives**. I spent most of my life consuming this type of food, but have now removed it from my diet for several reasons. Milk of animal origin, in particular cows' milk, can be a source of nutrients in times of famine and economic hardship, but nowadays we have access to many other nutritional foods that do not have the damaging side-effects of dairy products.

Milk and dairy products acidify our body and have a high percentage of fat, which can overwhelm liver function. Milk is also associated with allergies, anaemia, arthritis, asthma, prostate and ovarian cancer, cataracts, colic, childhood diabetes, multiple sclerosis, heart disease, and osteoporosis.

We must remember that human beings go through a stage after birth that the optimal time for drinking our mother's milk. The name for this first phase of our life says it all: lactation.

Cows' milk, however, is especially designed to meet the primary nutritional needs of calves. These animals have a very different weight, growth cycle, and constitution from ours. We could say that drinking cows' milk goes against nature. The commercial success of cows' milk is due to the massive campaign of lies promoted by the powerful dairy lobby. They have made us think we need milk for strong bone development and to prevent osteoporosis, a degenerative bone disease associated with a lack of calcium. If that were true, countries where there is a high consumption of cows' milk should report lower levels of osteoporosis, but exactly the opposite is true. The percentage of osteoporosis is higher in industrialised western countries where more milk is consumed.[3] This could be explained by the fact cows' milk acidifies the body, which is then forced to fight the imbalance by removing calcium from the bones in order to neutralise the excess acidity.

Fortunately, calcium deficiency can be prevented with a diet rich in vegetables, moderate in protein, and low in salt. Some vegetable dietary sources rich in calcium are: spinach, broccoli, onions, turnips, cabbage, dried fruit and nuts, seaweed and seeds (pumpkin, sunflower, sesame, etc.).

But the problems related to milk do not end there. Milk is formed by fat and cream, serum, and milk solids; the latter two contain lactose, sugars and various proteins, one of which is casein. This protein is associated with several diseases and affects our body in a very strange way. It induces the production of antibodies that attack our own tissues, causing autoimmune diseases.

Furthermore, both casein and lactose are difficult to digest, and many people are intolerant to them. My granddaughter had blood in her stools until she was four and a half months old. We all wondered what the matter was, and eventually convinced Marta, her mother, to stop drinking animal milk whilst she was breastfeeding. Two weeks later, my granddaughter was passing normal stools, and we avoided a colonoscopy appointment. A few years later, Marta reintroduced animal milk into her daughter's diet to see if that had been the cause of the problem, and indeed, within a few days there were signs of blood in her stools.

The problem was caused by an extreme allergy to casein and lactose, which can affects us all in varying degrees. We may not have any symptoms, but milk consumption can trigger chronic problems in the long term.

As I have already mentioned, cows' milk and dairy products have an acidifying effect, which has been related to cancer. The Harvard School of Public Health has recently withdrawn dairy from their guide called *Healthy Eating Plate,*[4] because a "high consumption of these foods significantly increases prostate and ovarian cancer". Other interesting studies related to this topic have been carried out by Dr. Miquel Porta[5] and also by Jane Plant, a scientist and victim of breast cancer.[6]

Another negative aspect of cows' milk is the large amount of oestrogen (female hormones) it contains, which can affect both men and women. In women (especially young women taking contraceptive pills), the oestrogen hormones combine with those generated by their own bodies, which can lead to hormonal imbalances. This in turn can trigger polycystic ovarian syndrome or fibroids.

For women who want to continue drinking dairy milk, *La Dulce Revolución* recommends infusions of plants such as yarrow and monk's pepper to aid hormonal regulation.

The large amount of growth hormones given to cows is another major drawback to drinking milk. Monsanto's rBGH hormone is banned in Europe, as it is considered carcinogenic, but that does not prevent us from ingesting hundreds of products containing dairy products (biscuits, chocolates, etc.) imported from the United States and other countries where it is still legal.

It is also important to consider the inhumane treatment animals are subjected to, especially in intensive industrial farms. Free-range cows can live up to twenty years, but factory farm cows generally do not live for more than four or five years as they are squeezed dry until they can give no more.

Industrially farmed animals are fed with genetically modified feed and are given antibiotics and other drugs because of the poor conditions in which they live. Therefore, it's always better to drink the milk from free-range animals that can graze exclusively on fresh grass. Milk alternatives can be made from wholegrain cereals such as oats, rice, wheat, and quinoa, and from nuts such as almonds, which are very nutritious and healthy.

I will conclude this short list of unadvisable foods with **meat**. Like milk, meat contains an excess of saturated fats and acidifies our body, which can lead to a variety of issues.

I remember when I was young that meat was a food reserved for special occasions, and perhaps eaten once or twice a week. Now it has become ubiquitous at the dining tables of western families.

At the turn of the century, the need for animal protein consumption was an idea promoted by many nutritionists, and the idea has become firmly entrenched in our general consciousness. Protein is found abundantly in the vegetable kingdom, particularly in legumes, nuts, cereals, fermented soybeans, miso, seitan, seaweed, and brewer's yeast. Protein intake, however, should not make up more than 10 to 15% of

our diet. Even the WHO states that the developed world consumes more than double its daily need of protein, which means we should not really be worrying about a lack of protein, but rather an excess!

There is famous book called *The China Study*[7] (from which the fantastic *Forks Over Knives* documentary was made),[8] which lists the effects of animal protein on human health. In its pages, the scientist and nutritionist Colin Campbell expounds on the compelling findings of the most thorough study on nutrition ever to be undertaken: a study lasting two decades and involving thousands of people. It reports on how the lobbies who represent the large agro-industries influence governmental institutions to steer consumers towards the consumption of meat and dairy products. These foods, according to the results of this study, are hazardous to our health and cause cancer, diabetes, obesity, cardiovascular, autoimmune diseases, and other types of illness.

The book also presents the conclusions of the American surgeon Caldwell Esselstyn, who says that heart disease would be virtually nonexistent if we were to follow a diet of whole grains, fruits, and vegetables. It has caused me to reflect upon my own experience when I was suffering with angina.

Both Doctor Campbell from the scientific world and Doctor Esselstyn from the medical world came to the same conclusion: many diseases can be prevented or reversed by eating whole grains, fruits, and vegetables.

Ingestion of products of animal origin creates many problems, some of which I have already detailed in the section on milk products. The most common animal products are derived from intense, industrial cattle farming, where animals are fed genetically modified feed and are kept in unhealthy conditions. Living in such conditions, the cattle's health is compromised and farmers are required to immunise their livestock, subjecting them to a pharmaceutical "cocktail" that is subsequently ingested by people. This causes human resistance to antibiotics that then have little effect in cases of serious infections.

Apart from the health issue, we must consider another negative aspect to the way meat is currently produced. It is a wholly unsustainable activity, leading to the deterioration of our planet, and the unnecessary usage of large volumes of land, water, and other resources.

According to statistics obtained in California, 85 litres of water are needed to produce 500 grams of lettuce, while the same amount of pork requires 6,000 litres, and 20,000 litres for beef. Millions of acres of land are allocated for producing soybeans and corn to feed the animals we eat in the West. If that land were to be used for vegetable production, we would be able to feed many more people.

Here is another piece of information: it is estimated that 7,000 million animals are slaughtered every month across the world for various purposes. That is the same number as the world human population!

I know many people who are vegetarian and live perfectly well following a meat-free diet. I still am not a vegetarian myself, and so not in a position to recommend it. However, I would assume it to be the healthiest, most ethical and most sustainable diet there is.

This has been a brief overview of some of the least healthy foods and food practices, but there are many more, so once again I encourage readers to undertake their own personal investigations.

Two Experiments

The effects of bad food in our bodies reach beyond physical deterioration, and could also be having negative effects from a social point of view.

Studies carried out by Barbara Reed, Chief Probation Officer in Cuyahoga Falls, Ohio (United States), indicate a relationship between criminal behaviour and hypoglycaemia, which is an abnormally low concentration of glucose in blood caused by poor diet, and produces high peaks of energy followed by sharp declines. She studied the diets of thousands of juvenile delinquents prior to their arrest, and noted that virtually all of them were hypoglycaemic. Not surprisingly, they all had similar eating habits, as the cities where they live are full of fast

food bars and restaurants, and supermarkets packed with low cost ice-cream, hot dogs, burgers, fries, and sugary drinks. Hypoglycaemia is also linked with alcoholism and drug consumption. But the study did not end there. The next step was to provide a balanced diet to the delinquents, following which, 90% of the subjects became less hyperactive and more co-operative.[9]

A similar study, although much less rigorous, was conducted by Luigi Frigo, a teacher at a Wisconsin school. Familiar with Barbara Reed's work, he decided to carry out an experiment with his students. They were to observe the possible variations in behaviour of mice when subjected to a change in diet.

The experiment was as follows: for four days, the mice were fed refined and sugar-frosted cereals, sugary snacks, cookies, and low-calorie soft drinks laden with synthetic additives – products all easily found in supermarkets. The teacher and his students observed that the animals' behaviour became drastically different. Previously, they had been sociable and relatively active, and now they were hyperactive and antisocial, and had started to fight amongst themselves.

According to Mr. Frigo, it took the mice between two to three weeks of eating natural foods for them to recover from their ingestion of processed foods. The class attempted to repeat the experiment again with the same mice, but the animals rejected the processed foods. Following their discovery, the teacher and his students proposed that the school remove all the vending machines containing processed foodstuffs, and provide fresh, natural, and nutritious food.

Is our food one of the reasons for the irritability, hyperactivity, and aggressiveness so characteristic of our times?

Toxic Additives

A few years ago, I was invited to participate in a debate on the Spanish television channel La 2, regarding the use of chemical additives in our food.[10] They were hoping I could bring something to the table by talking about my own personal experiences with aspartame and stevia.

Sat around the table were the two opposing sides: one side was represented by Andreu Gavilán, president of *Asociación de Fabricantes de Aditivos y Complementos Alimentarios* (AFCA – Association of Manufacturers of Food Additives and Supplements), and José Juan Rodríguez from Barcelona University's *Observatorio de la Seguridad Alimentaria* (Observatory on Food Safety). Both men were defending the use and safety of chemical additives. Arguing on behalf of the other side was Olga Rodríguez, dietician and member of the healthy eating association *Comer Sano*. I was on that team as well, talking about the danger of those substances and for the need to replace them with natural alternatives.

The debate was contentious, but the best thing happened afterwards when the cameras had stopped rolling. But before I get to that, I think it is only fitting to explain what food additives are.

For a long time now, the food we eat has been "enriched" or "enhanced" with preservatives, artificial colourings, sweeteners, taste enhancers, stabilisers, etc. These substances are of no nutritional value, and are added in small quantities to food and drink to alter their organoleptic properties: taste, smell, colour, and texture, and to make the manufacture and storage processes more cost-effective. There are currently more than 3,800 additives in use, which in the European Union are identified by using the letter E followed by three figures.

We might well regard these additives as part of the general progress towards a more comfortable lifestyle, but recently a long list of harmful effects has come to light. These chemical additives can accumulate in our bodies (liver, kidneys, adipose tissue, etc.) and can seriously damage our long-term health, as they can trigger cancer, obesity, neurodegenerative, and cardiovascular diseases, and other illnesses.

We should now add all these chemical additives to the already long list of toxic substances we have come across in the pages of this book – pharmaceutical drugs, GMOs, pesticides, weedkillers, hormones, antibiotics, and chemical fertilizers.

The irony of the situation is that toxic additives pass approval in the same way that agrochemicals, GMOs and medicines do, via studies

funded by the very same companies that manufacture them. The European regulatory agency responsible for the approval process is called JECFA - the Joint Experts Committee on Food Additives.

At this stage of the game, we can just imagine how the conversation might go…

"Hi, how are you?"

"Oh hey man - you again! What have you got for me now?"

"Well I've got this new synthetic additive I'd really like to market."

"I see… but it's not gonna be harmful to consumers' health, is it?

"No way. We've done the studies and we can prove it's fine."

"Oh right, so it's already been approved, that's great!"

The problem with regulating food additives is very well explained in the book *Nuestro Veneno Cotidiano*[11] (Our Daily Poison), written by the French journalist Marie-Monique Robin. In a documentary based on her work, Dr. Peter Infante, who worked at a regulatory body for 25 years, said, "Some scientific studies have been well executed, but there are others which are just shocking. It is not uncommon for studies financed by the industry to be designed in such a way that it is impossible to detect any harmful effects. It essentially means that scientific literature is corrupted by studies which are not properly designed."

JECFA and the food additive industry know exactly how many of these additives are toxic, and have devised a very interesting way for regulating the amount of poison they consider "acceptable" for consumers to ingest. In Chapter 2, I talked about the MRLs (Minimal Risk Levels) for hazardous substances acceptable in fruits and vegetables in Europe. When it comes to chemical additives, the terminology used is the Acceptable Daily Intake (ADI). It is the amount in milligrams of an additive that a person can ingest daily throughout their lives, based on their body weight, without it becoming an appreciable health risk.

To determine the ADI, the Non Observable Adverse Effect Level (NOAEL) is used, a measure denoting the level of exposure to a

chemical additive that, in principle, does not affect our health. Before NOAEL, the term NAEL (No Adverse Effect Level) was used, but it became apparent that effects do not always manifest outwardly, or at least not until sometime afterwards, which is why they added the word *observable*.[12]

In her research, Marie-Monique Robin concludes that MRLs, ADI, and NOAEL are all arbitrary measuring systems and at best can only be approximate. The margins used have changed over time, as new studies have appeared and forced regulating agencies to modify their findings. In no way do they represent any efficient step to prevent consumers from ingesting toxic food. The ADI system measures admissible amounts by arbitrary means, and I think we all would much prefer lesser quantities of poison in our food than the amounts they are currently willing to pass off as safe.

We are not being poisoned in any kind of dramatic way, but we are accumulating poison in our bodies, which is taking its toll. Toxicologist René Truhaut, creator of the ADI, admitted that small doses [of additives] repeated every day over a lifetime could bring serious risks.

There is another factor in the regulatory process that makes it all even more absurd. Approval of chemical additives is carried out by analysing the effects of each one separately, and does not take into account the possibility of a harmful reaction or interaction when different additives are mixed together. Therefore, if a product contains three additives, the regulators can say that separately, they are harmless, but cannot guarantee any negative synergy which may occur when one additive is mixed with others. This is called the "cocktail" effect.

An example to illustrate this stupidity can be seen in a study commissioned by the British Food Standards Agency, and carried out at the University of Southampton. They discovered that a combination of any of the following food colourings E-102 (the famous **tartrazine**, that replaced saffron as food colouring despite not having any nutritional value), E-122, E-124, E-110, E-104 and E-129, which are found in

sweets and soft drinks, combined with the preservative **benzoate** (E-211), present in the same products, causes hyperactivity in children.

It was a masterstroke for the chemical and pharmaceutical industries. They are manufacturers of the artificial colourings and preservatives, AND the harmful medications prescribed to children suffering from hyperactivity. Both European and Spanish authorities washed their hands of the unwelcome responsibility of this childhood disorder, saying the onus is on the consumer to ascertain whether chemical additives are present in the products they buy, and to avoid them if they deem it convenient. It is nothing short of criminal!

If the reader would like more detailed information, there are several reference books in which these additives and their dangers are specified, such as the *Guía de los aditivos usados en la alimentación*[13] (Guide to Additives Used in Food), and *Los aditivos alimentarios*[14] (Food Additives).

There are many undesirable food additives in use, one of the most notable being **aspartame** (E-951), upon which I have already expounded. There is an entire appendix devoted to it at the end of this book.

Another dangerous additive is **sodium cyclamate** (E-952), which has recently been in the news because of the decision taken by the Venezuelan government to ban it as food colouring due to its carcinogenic effects. It was already banned in the US, Ireland, Belgium, Australia and Mexico, among other countries, but in Spain we continue to "enjoy" it in Coca-Cola Zero and in other low-calorie diet products on the market.

Finally, let's take a look at the taste enhancer, **monosodium glutamate** (E-621). According to a study carried out by Jesús Fernández-Tresguerres, professor of medicine at Madrid University, MSG modifies the area in the brain responsible for regulating appetite and causes it to increase by 40%. This is why it is known as the "the nicotine of food". A heightened appetite increases the risk of developing obesity and all the pathological disorders associated with over-eating - diabetes, heart problems, etc.

Pesticide containers have the skull-and-crossbones symbol on them to warn us they are poison. Perhaps the same should be done with the additive-laden food that we serve at our tables.

After filming had finished for the Spanish television programme, I had the chance to talk to Andrés Gavilán, president of AFCA. I could not help reprimanding him for his fervent defence of synthetic additives that he maintained throughout the debate:

"You really went too far," I said, "How can you defend something like that?"

"I am aware there are many alternatives," he admitted half-heartedly. "There are maybe ten or twelve natural additives and sweeteners (apart from stevia) that do work, but what can we do about it? Nowadays, companies in the food sector are set up to produce synthetic additives and replacing them would cost us a lot of time and money."

Away from the set, the conversation was much calmer, and he even extended a gesture of good will by inviting me to lunch. He had extensive knowledge on the topic, and I took advantage of the opportunity to take notes. Off the record, he told me it is his job to defend the industry's interests, but did admit that synthetic additives could theoretically be replaced by natural ones. The only thing preventing this change from happening is lack of political endeavour, and the protection of business interests.

We have to turn things around: it is time to end the old type of industry and build a healthier, more sustainable one.

The pharmacy on our table

It may surprise you to know that fruits, vegetables, grains, and nuts all have curative properties. They should really feature highly in our daily food intake. Seeds, roots, stems, leaves, flowers, and fruits are the medicines given to us by Nature to prevent and cure disease.

To get the most benefit from the medicinal properties in our food, it is important for it to be organic, a conclusion reached in a study con-

ducted by Carlo Leifert from Newcastle University. His study affirms that organic plant food contains a significant amount of fibre, a high concentration of antioxidants (that prevent aging of the body's cells and protect us from disease), numerous minerals, vitamins, a high proportion of Omega-3 polyunsaturated fatty acids, and carbohydrates.[15]

There is a wide selection of fruits and vegetables available to us from the plant pharmacy, with all of the following information being widely publicised: the virtues of Omega-3 in reducing cholesterol levels; the anti-inflammatory and anti-carcinogenic effects of resveratrol present in red grapes; the beneficial action of oleic acid (found in olives) on blood vessels; the healing and disinfectant powers of garlic for the respiratory system; the endless advantages of vitamin C found in vegetables and citrus fruits, and the benefits for bones and teeth.

Another widely studied vegetable group is the cruciferous family: rocket, turnips, radishes, parsnips, cabbage, cauliflower, and watercress, which contain indole-3-carbinol and sulforaphane and are natural substances with anti-cancer properties. Some studies recently published by the Institute of Food Research in the United Kingdom show how a few servings of cruciferous vegetables a week reduce the risk of prostate, breast, lung, and colon cancer.[16]

Studies carried out by the University of Illinois have revealed that mixing broccoli and tomato is especially beneficial in the treatment of cancer. This is because tomatoes contain a large amount of lycopene, also present in watermelons and in other vegetables to a lesser extent. Lycopene protects our cells from oxidation and can prevent different types of cancer, particularly prostate, lung, and stomach cancer. The reader may be surprised to learn that tablets containing lycopene already exist for the treatment of cholesterol.

As this chapter comes to its close, I would like to emphasise the importance of purging our body of toxins from time to time through fasting or other cleansing techniques. To do this we can use seawater, hepatic plants (dandelion, boldo, milk thistle, stevia), renal plants (horsetail, nettle, dandelion), and many other methods to help our bodies

eliminate substances that have accumulated in our intestines and blood, and which can seriously poison our organism.

Periodic detoxifications also serve as emotional and mental cleansing.

In spite of everything I do believe it is important to look on the bright side. The ability to prevent chronic and degenerative diseases is largely in our own hands. We have the power to feel full of energy and alive, and have long, healthy lives simply by being careful with what we eat. I hope my words will help the reader to undertake his/her own personal search towards achieving a healthier and more balanced diet.

I will end with an old Chinese proverb that sums up this chapter very well, "He who takes his medicine but ignores his diet, deceives his doctor".

8

A new life

The cardiologist looked me directly in the eyes with a very serious expression on his face, and said in no uncertain terms, "Look, Josep, if you're not intending to take the medication, then tell me now, because if that's the case then it's not even worth operating on you."

I had reached a dead-end road: me, who had always been so critical of pharmaceutical drugs and the powers that promote them. I had an instant to decide whether I was going to take the medicines or not, and it was a life-or-death situation.

I was suffering from angina, and it hadn't happened overnight; for some time I had been feeling my strength sapping from my body, as if it were about to switch itself off. Then one day, I suddenly felt a pain in my chest, just from very slight physical exertion, and it was enough for Marta to suspect my heart was in a bad way. Our fears were confirmed when, at the Arnau de Vilanova Hospital in Lleida, we were informed that one of my coronary arteries had a 95% blockage. My test results, electrocardiograms, and general state of arteries were all perfect, but that particular area required urgent surgical intervention – the insertion of a stent to open the artery. The worst thing was I would have to take medication for at least a year after the operation, and according to the cardiologist I would have to carry on taking most of the tablets for the rest of my life.

They were difficult and emotional moments. Rosa Mari, Pau, and Marta were begging me to accept the treatment and undergo the operation. Marta, a doctor, was trying really hard to make me understand I had arrived at a critical point and had to take action.

Finally, I gave in and accepted I would have the surgery and take the relevant medication.

Even so, before I had the operation, I exhausted all avenues in an effort to avoid surgical intervention. I consulted with various friends of mine who practise alternative medicine: I got in touch with homoeopaths, acupuncturists, healers... but none of them could help me.

The day of the operation arrived. I was extremely worried, and as if that were not enough, a few hours before going into the theatre, some colleagues of mine who practise biodescodification[1] brought to my attention a series of "coincidences" which left me feeling very emotional. To begin with, that very day was the thirty-first anniversary of my father's death – he had had a fatal heart attack. When he died, he was sixty three, the same age as I was on the day of the operation. What's more, Pau was thirty-two when they operated on me, the same age I was when my father died. Were we repeating a family tradition? Was I being condemned to repeat the same life cycle as my father's?

As the reader will have already deduced, the operation went well and I am still here in this world. I still sometimes wonder why I got angina. Maybe it had something to do with diet, although I had been making certain changes towards eating more healthily, or maybe because it's in my genetic make-up... Now I tend to think that it was because of my inability to manage my thoughts and emotions; I was going through a bad patch with the business and with my family, and had been feeling affected by all the sick people coming to see me and asking for my help, many of them in a critical situation. Sometimes I would ask myself if, given my limitations, I should really be giving advice to other people, but then again I couldn't help sharing my knowledge.

I have no doubt that both my conscious and unconscious conflicts were having an effect on my heart.

Faced with the possibility of dying, those days were a time of profound introspection. Seeing death at close hand is a great lesson in humility. It allowed me to view my relationships with others from a new perspective, and understand that at times I have been too radical and

too belligerent. My family - in particular my son Pau, and my wife - have had a lot to put up with because of me.

I have the feeling that I've been given some extra time and it's now in my hands to make the most of it.

Maybe I needed that wake-up call.

I think that a nice way to finish this book is by sharing a few thoughts on my vision of the path that lies ahead of us. I am an optimist, and I believe we are heading towards a new world where, amongst other things, there will be new medicine, new education, new science, new technology, new politics, and a new economy. And I believe that this will be made possible because we will be capable of evolving into new human beings.

New medicine

Marta was not very impressed when, a few years ago, I began to stick my nose into health matters, and I understand why. She is a doctor and I am a farmer – it can't be easy for her, hearing me say that some of her subject matter was not from genuine sources, and that much of her profession is controlled by vested interests.

When I started talking to her about medicinal plants, she as not all at interested. If there were no scientific studies offering proof of my theories, then she would not even consider what I had to say. There was no feasible dialogue between us. I have to confess that I did not behave very well, and I was not very diplomatic. The fact is that we both have strong personalities, in that way we are very much alike. We were both as bad as each other, and refused to listen to what the other one was saying.

At the weekends, Marta would come over for lunch, and we usually ended up arguing. Rosa Mari tried to keep the peace but it was difficult to deal with a pair of hotheads like us.

"Stop it – that's enough! Stop talking about that. From now on, I just want neutral conversations at home. We don't see each very often and I don't want to always end up arguing!" she would say.

Marta used to get particularly upset when I criticised her university education. She refused to admit that what she had studied was largely directed by the pharmaceutical industry, which controls medical experiments as well as student training. It is hard to find any medical studies carried out by governments, independent bodies, or laboratories. The pharmaceutical giants pay the money and give the orders; they decide the kinds of investigations that must be done, and they do not hesitate to alter the results. The doctors of the future study whatever these companies decide they should study.

As hard as it was for her to accept, her profession of helping patients was (and still is) influenced by the industry's financial interests.

But then something happened which touched her to the core, helping her see things more clearly. Marta found out that one of the pharmaceutical multinationals had deliberately kept quiet about the side effects of *Rosiglitazona*, a diabetes medication that she used to prescribe. She felt very betrayed. The medication was recalled in 2010, when the proof emerged that the drug increased the risk of heart disease. The manufacturers already knew this, but hid the fact so they could rake in the profits for as long as possible. Marta had to ask herself at that point whether she had been getting correct information and provided with the right tools over the course of her career.

At last, we had something in common! When profit forms part of the equation, the drug companies are unlikely to provide medicine just for the good of human welfare.

Our public health service is not safe from the pharmaceutical tentacles either. The big companies have infiltrated and custom-built their infrastructure within the system, and geared it all towards selling their products, so it is not at all surprising that the health service is unsustainable. It would be a different story if it was managed sensibly with the emphasis on de-medicalisation, and promoting prevention rather than cure.

Marta is a family doctor (General Practitioner) and well aware of the drug companies' interest in selling their products to her. Like all

doctors, she gets regular visits from the so-called "pharmaceutical representatives", whose job, as their name suggests, is to go and see doctors to keep them informed of the latest medications, and try to sell them. Marta told me that these "reps" turn up early in the morning with their lists of prescription products, and try to convince doctors that their drugs are the most efficient and the quickest acting, etc. Then along comes another saying the same thing. They usually give the doctors all kinds of free promotional "gifts", ranging from ballpoint pens to weekends away at medical conferences where they impart information on the pharmaceutical offerings du jour. My daughter even knows of someone who had their kitchen refitted thanks to these "reps".

She invites them in as a courtesy but whenever possible she prescribes generic medicaments instead of brand-name drugs. For some time now, she has suspected that the reps know which doctors prescribe the pharmaceutical brands, and which do not. Once she was asked why she hadn't been offering the brand-name medicines, which made her wonder how they knew.[2]

The health system is turning doctors into veritable drug-dispensing machines. There are certain protocols to be followed: if a patient has a sore leg, then he must be prescribed anti-inflammatories; if the patient has emotional issues then he must be given Prozac, etc. Consultations with doctors are also getting shorter and shorter, making quality doctor-patient time almost impossible. The relationship is becoming dehumanised and that is a big mistake. Everyone is different and should be treated as such, and dealt with in a personal way. Doctors need time to listen to their patients and to gain their trust. It has been repeatedly proven that better results are obtained in this way. Perhaps some people need reminding that we are all human beings, and not just numbers on a screen.

I think things are gradually changing. In some areas of medicine such as oncology, there are still very strict protocols, but in Marta's field doctors do have a certain amount of leeway to able to prescribe herbs for minor illnesses instead of unnecessary medicaments with side effects. Marta took a course in acupuncture, and would like to be able to

offer the treatment to her patients, but as yet health system protocols do not permit it.

For the system to change, we also have our part to play by changing our patient mentality. Our attitudes are in some way responsible for doctors' abandonment of natural cures – we have become used to quick fixes in the form of tablets, syrups, and vaccinations and will often demand that the doctor prescribe them. Marta has patients who refuse to leave her office if she does not prescribe medication. Some of them have even changed doctors because she "wouldn't give them anything".

We are drawn to pharmaceutical drugs because of their rapid effectiveness – but immediate relief does not translate to their efficiency of cure. All they do is remove the symptoms. For example, if we have a headache, medication will stop us feeling the pain but the cause of the problem will continue to exist. Tranquilisers, antidepressants, sleeping tablets etc., are making us insensitive - we may no longer feel ill but the problem will persist and sooner or later we will have to confront it.

Illnesses are really a wake-up call, one of the ways in which our bodies speak to us, urging us to stop and take steps to correct what it is we are doing wrong. If we regard disease in a positive light, then it's rather like having a good friend telling us that things are not going all that well. It is an opportunity to change our lives and we shouldn't let it pass us by. If we stop medicating ourselves with pharmaceutical drugs then perhaps we will begin to reconnect with ourselves and become aware of the signs our bodies give us.

Fortunately, over time Marta and I have found more common ground and our conversations have become less heated. Neither of us was totally in the right, we have both discovered new things, and our points of view have been enriched by the other's opinions.

I would often make the mistake of badmouthing allopathic medicine and she helped me to see that it isn't all corrupt and that certain progress has been made which is worth taking into consideration. But it does have its limits. It is based around the current scientific system that disregards anything which cannot be measured, classified, or ex-

plained. There are many aspects of Nature (of which human beings are a part) which cannot be measured on a day-to-day basis, and which fall beyond the scope of our laboratory apparatus, and even beyond our comprehension.

I am convinced that we are much more than just a physical body, and that western medicine should open itself up to that fact. When we treat just the physical and chemical aspects of our bodies, the potential scope for making progress becomes limited.

Medical science is beginning to understand that our bodies, our minds, our emotions, and maybe our spirits (as some call it), form an inseparable whole. Psychosomatic illness is indeed already recognised - the influence of emotions and thoughts on the physical body. For example, it is not unusual to get stomach ulcers in times of stress or, as in my case, for heart conditions to flare up in times of emotional mismanagement.

Most of the time what we really need is to heal our souls, not our bodies. Thanks to Pau, I have become more aware of the importance of these subtle aspects, in myself as well as in the people who come to see us asking for our opinions on their health problems. Muscles, bone, thoughts… it is all energy. Human beings are a symphony of vibration and we need each of the instruments to be in tune to create an overall pleasant sound.

And how can we explain all the cases of people with apparent terminal illnesses who make great recoveries, to the amazement of their doctors?[3] Perhaps we are capable of self-healing? Maybe all the resources we need are contained within ourselves and we only need to reconnect with our inner wisdom.

More recently, curiosity has led Marta to investigate fields of interest that go beyond conventional medicine. She has become more and more convinced of the need to find new ways to help her patients. On more than one occasion, she has felt frustrated with not being able to offer them solutions, and she has seen too many cases of people hooked on tranquilisers, anti-depressants, and anti-inflammatories.

Her frustration would grow each time a patient told her about an experience with alternative medicine. She would constantly hear things like: "I've had an acupuncture (or osteopathy) session and I feel really good; I've been able to come off the medicine". So the day she received a letter from Lleida University announcing a Masters degree in acupuncture, she decided that it was time to open up to new horizons.

During the first few days of the course, she felt a bit out of place, but then she began to enjoy it. There were ten people in the class, including GPs, lab workers, and emergency paramedics, all feeling slightly incredulous. When they heard the tutor start to talk about yin and yang they looked around at each other as if to say, "Oh my goodness, what are we doing here?!"

Marta and her course companions all found it difficult to leave their old ways of thinking behind; they were desperate to know the science behind how those little needles could cure a wide spectrum of diseases and pain.

The tutor would not answer their questions, and instead asked them to be patient, and carry on with their experiments. He told them, "Try it, and you'll see it works. And then you probably won't care WHY it works."

Of course, time has proved that that good man was right. Marta still wonders if the needles she sticks in her patients really do activate some invisible energy channel, but those questions are now not so important to her, as she can see that the treatment works. Friends and family have all undergone her needle treatment, and with surprising results.

If so-called alternative and complementary therapies were to become official, it would lead to a more rational use of pharmaceutical medicines. That is why the drug companies have little interest in investigating these therapies, as it would not be beneficial to them in business terms. Acupuncture needles are very cheap and therefore non-profitable. The only way for alternative therapies to stop being alternative is if doctors start using them, and we start asking for them.

The last point I want to make in this section can be summed up in a quote from Thomas Edison, "Doctors in the future will not prescribe medicines, but will ensure their patients are interested in taking care of their bodies and their diet, and in the cause and prevention of disease."

Medicine in an intelligent society should surely start with prevention and emphasis on our day-to-day habits, which play a determining role in the quality of our health. It is a question of cause and effect from which we cannot escape, and which unfortunately is not taken sufficiently into account. Prevention comes from being aware of the importance of our food, the quality of the water we drink and the air we breathe, our respiration, physical exercise, the environment where we live, and the quality of our thoughts and emotions.

If we all placed more importance on prevention, and if there was a health policy to back it, the business of disease would largely fall apart and at the same time create massive savings in public expenditure, as well as an incalculable increase in the quality of our lives.

In summary, new medicine is a medicine that prevents problems by gaining maximum benefit from Nature's gifts. Such a system would place the common good above financial gain, and is not about making sick people dependent, but would instead focus on integrating various different methods. New medicine would consider human beings holistically, in harmony with our connection with the cosmos and all its subtle aspects and bodies.

What we really need is medicine that begins with ourselves.

New science and new technology

If we were truly an intelligent species, we could live very well with all the technological progress we have developed up until now. We have the means to live better lives and have more free time. But wealth accumulates in the big industries who own these technologies. They sell us their products as a solution to all our problems, when really they are the problem. No real advances are being made. We've already seen some examples - agrochemicals, food additives, GMOs, and most of the

medications on offer. These days we can travel long distances in a few minutes, produce enormous quantities of food, and talk in real time to people on other continents, but as things stand right now, all that comes at a high cost to the environment and to our health.

To all the harmful products talked about over the course of this book, we have to add a few more; the personal hygiene and home cleaning products. Fluoride (found in tap water, is more toxic than lead and nearly as toxic as arsenic), dioxins, polychlorinated biphenyl (PCB), Teflon, low energy light bulbs (containing mercury), and Bisphenyl A. We should also take in to account the large amount of electromagnetic pollution to which we are constantly subjected from telephone masts, microwaves, modern electricity meters, wi-fi, etc. Some places in Europe have now done away with wi-fi and have gone back to using cable Internet. Something similar happened in Silicon Valley, California, known as the IT paradise. Workers who pioneer new technologies no longer want their children going to schools where there is wi-fi or electronic apparatus, and are choosing to take them to schools that still have the old-style facilities.[4]

Cases of hypersensitivity to chemical and electromagnetic pollution are increasingly more frequent. People who suffer with that condition are intolerant to levels of these types of pollution that are all around us, especially in the big cities. There are already cases of people who have had to go and live in remote areas, even in mountain caves. Some say that hypersensitive people are like "the sentries of life" - similar to the canaries we used to send down the mines that would perish if there was an accumulation of dangerous gases. They served as a warning to the miners, whose lives would be saved. We should take notice of these so-called "sentries", because if we don't, there might come a time when it's too late.[5]

I refuse to accept that any technological development or product can be considered progress if it compromises our health and the balance in our environment. Progress makes things more convenient in some ways, but it would be a mistake to confuse convenience with well-being. Common sense tells me that real progress cannot arise outside of Na-

ture's framework; human beings cannot prosper by violating the laws of Nature to which they are subjected. The rise in technological advances will be of little use to us if it ends up being part of our self-destruction, therefore we need to ensure this new era of technology is used to serve humanity and not financial interests. If there were no profit motives, we could already be enjoying new clean technologies, such as the water engine and Tesla's free-energy apparatus, which was deliberately derailed by the multinational companies. They buy the patents and leave them forgotten in some drawer where they never see the light of day.

There would be no more obsolescence either. Obsolescence is the practice of limiting a product's life span so that consumers are forced to constantly renew their possessions. This is very profitable for the multinationals, but it is wasting the planet's resources and filling it up with rubbish.

Science and technology of the future will be ecological, healthy and sustainable, generating minimum stress on the environment.

A new education

I would sincerely like to have been a better father, to have always known the best way to act, and for my children to have had all the understanding and attention they deserved, which many times I did not give them.

Even now, I am still trying to learn, repeatedly asking myself the best way to educate our children and be a good parent. A few things have become fairly clear to me. One of them is that you cannot measure or judge a child by his or her capacity to fit in to the education system. There is a characteristic that all the great geniuses of the last few centuries have in common – they were all mediocre students. They simply did not fit in to the system. Perhaps the system is not really interested in producing too many Einsteins who might leave their mark on the world. Maybe they don't want too many pioneers embarking on humanity's evolutionary path.

Formal schooling is full of great professionals whose natural vocation is teaching. My criticism is not of them, but of the obsolete system

in which they work. Education should be like a trampoline to help young individuals along their paths to new awareness that would make the world a better place. Instead, it is an institution that does exactly the opposite. It is based on control, in an endeavour to perpetuate the current society norm whereby a child's deepest potential and aspirations are drowned. The focus is not on making individuals happy and fulfilled, but rather turning them into machines to fit in with the system's production line. School is just a tool to turn us in to domesticated, oppressed, docile individuals.

In my opinion, we need schools that don't ignore the profound needs of children. Maybe then, they wouldn't have to memorise so much information and they could spend more time getting to know themselves as people and creating emotional and spiritual values.

Fortunately, over time, various kinds of alternative education have appeared on the scene, which is having very good results. One method is to let children choose to a certain extent how they want to learn. In that way they discover what they like doing, and can develop their own skills. Someone who probably would not agree with those methods is Rajoy's Minister for Education, Mr. Wert, who urged university students not to study what they wanted but rather what was needed. That what his opinion… I hope the students do not heed his words, and that they spend their time doing what they like and what they are good at.

The world will be a better place when every one of us dedicates our time to doing what makes us happy.

The role of adults in alternative schools is rather that of assistants than authority figures. A great deal of importance is placed on the relationship children have with Nature and on the pedagogical power of play, which is vital to their learning. It is not normal for children to be forced to sit down and be quiet from a young age, and for them to spend most of their childhood like that. What they really want to do is to be running, playing, investigating, and communicating.

An education initiative that really impressed me was the one founded by Jacque Fresco, probably one of the most intelligent and

With my granddaughter Berta.

lucid people of all time. When I started writing my blogs, I wrote an article on him to help spread word of his knowledge and his extraordinary political principles.[6]

Outside of school hours, parents are responsible for educating our children, and we cannot and should not deny this fact. Our own children, Marta and Pau, have turned out completely different to one another, and it has helped me to understand the need to let children have space to develop and to be their own people.

The philosopher Jiddu Krishnamurti used to say the purpose of education should be to create free individuals and not to condition children to our own ideas.

Unfortunately, Rosa Mari and I have not always been the best parents in that respect, especially with Pau. I tried to control him in many ways, and I even tried to curb his reformative ideas when he wanted us to speed up the change in our farming methods from conventional to organic. In the end, he felt so oppressed that he had to leave home to go and find himself.

My children have learnt things from me, but I think I have learnt more from them. We would do well to listen to our children, as they have a lot to teach us. They are genuine above all else when it comes to social conventions. Their innocence and infinite curiosity allows them to ask a lot of questions.

It is not always easy, but we all need a common space where we can establish dialogue and question everything without holding back. Only then can we break through our inner barriers and expand our awareness. The members of our association have come to realise this more and more over the last few years.

Younger generations are destined to move further forward than their parents, so it is normal for their actions and their visions to seem strange to us. We need to give them space to grow, because they will bring solutions to things in the future that we cannot even begin to think about today.

I don't know if it's true, but it is said that today many children are being born with a special energy and perception, children who are able to live between two realities - between the physical world we all live in, and invisible worlds. Pau always showed signs of possessing that kind of sensitivity, but when he was younger we didn't really understand it. He had to wait a few more years for us to catch up and evolve enough to be able to accept him and understand what he was going through. I am sure that one day it will be normal to ha ve that kind of awareness, but we still have to lose the fear of speaking about such matters. We must let it become a normal thing for us to do, and then perhaps we will all start connecting with these other spheres.

Life is a continuous process of discovery and learning. We are never too old to change or start to do things in a better way.

A new economy

From the ashes of the current economic crisis, there will emerge a new way of relating to each other. We have a great opportunity to correct our mistakes and to look for different types of economies that are more appropriate for a truly intelligent society. Like consumerism, capitalism is just another of the many stages of our learning process as human beings. It emerged from a world filled with resources and it did produce a few good things, but now it looks like it has reached the end.

I cannot guess how the new way will be, but I intuitively believe it will be based on **co-operation**, not competitiveness.

My father always made a point of ensuring the other farmers were our friends and not our competitors. "The sun shines for us all," he would say.

In those days, there was much more spirit of co-operation amongst farmers than there is today. I remember the first cart we used on our land did not belong to us, but to our neighbour. In exchange, we let him use the private track that crossed our farm, saving him a fair old trek. Even today, our neighbours still use that track.

As I see it, competitiveness is based on fear: fear of not having what you want, of not finding your place, of ending up with nothing or as no one, etc. These worries lead us to believe that we cannot prosper if we are not doing better than everyone else. But something magical happens when you stop fearing and start sharing. I am speaking from experience: every time I have given freely to others, life has repaid me with much more.

All these years they have sold us the story that the only way to prosper is by being competitive: it is the basis of the neoliberal economic system that has been imposed on us worldwide. They have even used the Darwinism theory to defend the economic system and ways of thinking. But the latest discoveries in biology point in the exact opposite direction: co-operation has brought us to where we are today, and it is co-operation that will ensure our survival as a species is co-operation. It is the belief of a good friend of mine, the bio-anthropologist Máximo Sandín of the *Universidad Autónoma de Madrid*' (Autonomous University of Madrid), and a belief held by millions of people around the world.

It is convenient for those at the top of the social pyramid to have us believe that current social differences are an inevitable fact of life, and that the only way to prosper is by fighting amongst ourselves, but I do not agree with that. To me, their ideas lack of sensitivity and empathy, but they are disguised as scientific truth.

Humanity will never truly progress while humans remain selfish.

The economic crisis we are going through in Europe has revealed our most human nature, our most generous side. Every day I hear about people helping their neighbours who can't afford to pay for food, rent or other essentials. All the propaganda in the world cannot hide these examples of our true nature.

In today's world, the rules of the economic game are made to favour the ambitious and the speculative, that is why new proposals such as the one devised up by economist Christian Felber are so necessary. It is a new initiative called "economy for the common good",[8] which seeks to

redefine the meaning of economic success, incorporating values such as sincerity, trust, solidarity and sustainability in financial relations.

Legislation should take into account respect for our environment, fair wages, and equal rights for women so we can avoid the psychopathic economic behaviour that has turned humans into a cancer, not only against ourselves but for our planet.

Another concept requiring urgent revision is the myth of growth. We constantly hear politicians and experts insisting on the need to return to economic growth, but the fact is that we cannot keep growing limitlessly on a planet that has limited resources. Even a child of four can understand that. Some Third World countries still need to develop to some extent, but we have arrived at a point where we have to start backtracking: we need to start decreasing. According to the UN, if every nation wanted to live as we do in the West, we would need four planets to satisfy everyone's needs. The western way is not viable, and would be even less so if other countries joined the orgy.

Gandhi said that on Earth "there are enough resources to cover the needs of all, but not to cover the greed of a few." Fortunately, we can live very well with very little and we would do well to follow the example of people who live simply. If we live sustainably, we won't have to mortgage our children's future.

Politicians and experts who advocate economic growth always use the country's Gross National Product (GNP) as a scale to measure our well-being. But it only really serves to measure the movement of money, and does not take into account human rights, equality, or minimum wage and is in no way an indicator of social well-being. In fact, wars always increase the GNP of countries, because they create an increase in monetary movement.

Perhaps we should follow the example of a small country in the south of Asia called Butan, where not so much emphasis is placed on the GNP but on Gross National Happiness, an index for measuring the quality of life of its citizens.

In our consumerist society, they have wanted to make us believe that a fulfilled life is achieved by what money can buy. They have told us that we should aspire to having a big house, a big car, and all the latest technology, but we really should have realised by now that all that will not really make us happy. The fact is that consumerist society is constructed in such a way so we sink into continual dissatisfaction. We have become compulsive shoppers and we hide our inner voids with the momentary pleasure of buying something new. If retail therapy really brought us true happiness, the western world would not be so full of unhappy people.

It might be time to take a good look at what we are doing on this planet and what we really consider personal success to be.

Each one of us plays a leading role in the economic change. Let us not be naïve: those who have brought us to this crisis point are not the ones to get us out of it. The solutions, as usual, must come from below, from the people, from us. From grass-roots society great initiatives are arising: ethical banks (Coop57, Fiare, etc.), eco networks that use monetary tokens, consumers' co-operatives, and self-sufficient time banks and collectives.

In Catalonia, there is the *Cooperativa Integral Catalana* (CIC - Catalan Integral Co-operative) who organise events on education, health and home, and use an alternative to money for exchanging goods and services.

There is an African proverb: "Many small people in small places doing small things will change the world."

We are living in times of change, changes that may cause us to worry and fear. Whatever happens now was bound to happen: the old way was an unsustainable situation. We have before us a unique opportunity to make the right changes. With things the way they are, the worse that could happen would be for nothing to happen at all.

New politics

Politics is not just something that happens in Congress and Parliament; it is not exclusive to professional politicians. Everything we do has a

political element to it. I see it as the art of living together and of understanding one another. Politics really involves us all.

My foray into to the world of politics was brief, and I became just as tired of it as I did with trade union life. Some years ago, I presented myself as a candidate for the *Iniciativa per Catalunya Verds* (ICV - Catalonia Green Initiative) in Lleida. I thought being involved in that type of group would mean I could make some progress towards organic farming, but I was wrong. When *Som lo que Sembrem* presented its legislation initiative against GMOs in Catalonia, the ICV approved it, but allowed the *Partit dels Socialistes de Catalunya* (PSC - Catalan Socialist Party), the main tri-party member, to vehemently oppose it. The ICV gave no appropriate response to that action and it was enough for me to leave the militant side of that party. "We can't do anything about it," they said, "we're not about to break up the tri-party government."

And there was me thinking, "So what are we going to do in government, if even with basic matters the best we can do is hold on to our seat?"

After that disappointment, I decided I would never present myself for another candidature. But it wasn't long before I got involved again, first with *Des de Baix*, a party formed by young people from different social movements, and later with the *Candidatura d'Unitat Popular* (CUP) in the last elections. Although I was never elected, I did feel much more comfortable being in those parties, as the groups hold assemblies where everyone's participation is firmly on the agenda.

One of the defects of party politics is that the system of majority decision prevails and drowns out many potentially interesting initiatives. When you try to break down dogmas by proposing new ideas, vested interests knock those ideas back without a second thought. As I see it, we should be looking for mechanisms to find consensus, not majorities. What the minorities have to say should have more bearing, as they often offer good solutions. The most active people are often found in the minority groups, whereas those in the majority just make themselves comfortable, and ignore suggestions that could offer possible good solutions to the current financial crisis.

The Catalan and Spanish political systems need profound reform; we saw this with the 15-M movement. Although the system is made to seem like a democracy, in reality it is not. When private financial interests are involved with politics, a system cannot really consider itself democratic. The pseudo-democracy in which we live is very well disguised; for a long time now, we have known that we have no say in the important matters affecting our daily lives, and it has been a hard lesson to learn. Outright dictatorships are actually much more honest because the people who live in them know they are slaves. Philosopher and linguist Noam Chomsky says, "You shouldn't believe you live in a democracy just because you can vote and they don't shoot you."

We ordinary citizens should take back politics for ourselves – leaving it in the hands of a few politicians has been a big mistake. We need to build a participatory democracy where we can talk about matters that are important to us all the time, and not just once every four years.

We could follow Switzerland's example – a historical democracy where the important matters are debated in meetings for the people, organised by the people (and if necessary, without permission from the government or parliament). They can decide on matters ranging from food and the health service, to whether they want to increase VAT (the last time they did so was to cover a gap in pensions, and interestingly the majority voted in favour). In Switzerland, they have open electoral registers and the politicians are not professionals, so they avoid the political class being embedded in the system as it is in Spain.

We have our reasons for being angry and complaining. In our part of the world, attempts on behalf of citizens to create change are constantly sabotaged (Spanish Congress has toppled all legislation initiatives presented since 1983) and we can only express our opinions (and in a very limited way) by voting every four years. We have closed registers, and parties have what is called "voting discipline", which means that all MPs have to follow their group's directives. My question is, "why do we need so many MPs if they all vote the same?"

After all our complaints, we need to be honest with ourselves and admit that up until now it has been very convenient for us to have someone else take care of all those things which politicians are elected to do. Let's be honest, if we want democracy in our country to work like it does in Switzerland, we have to get involved in politics. We have to make the effort to devote our time and energy to managing our communities. We must be responsible citizens, political citizens.

At the risk of sounding boring, I will say it again: if we want change, we must create it ourselves.

We need to get to work urgently because whilst we are looking for alternatives, there are some who have spent decades, even centuries, designing a new world order where power is being centralised via just a few supranational organisations. The International Monetary Fund (IMF), the World Bank, and the United Nations (UN) are precursors to the one great government that is supposed to come into being. It all points to such a government having the power to keep us all even more controlled and enslaved than we are already.

A new human being

There are abundant theories about the dawning of a new era in humanity. I am not sure how true that is, but we do seem to have arrived at a historical crossroads where we must take a series of important decisions. We live in a time of transition, of rebirth, and we can feel the need for change in the air. It is a confusing and difficult time but if we get it right, it might be the beginning of a new world.

Political and social movements can be very useful tools up to a certain point, but real change is only going to come about from within ourselves. As I said in Chapter 3, I think that the little things we do in our daily lives will make all the difference. We all talk about how we would like to change our institutions, our politicians, our partners, our children, our parents… But we're not always brave enough to stand in front of the mirror and take a look at our own faults.

Revolution starts with us. It goes way beyond who we vote for or what we do with our money; we need to spend time being introspective so we can reconnect with ourselves and get to know ourselves better. All the social movements and political actions amount to nothing if we do not start with personal transformation. Let's be honest - it's our greed, our egotism, and our fear which has created the current situation. If there is no peace in the world, it is because there are conflicts deep within our inner selves. Believing that things can change if we do not change ourselves is just an illusion.

There is no use fighting against the system because deep down each one of us IS the system.

If we want new medicine, new education, new technology, a new economy, new politics, and a new world, we must first become new human beings. Gandhi expressed it very well: "Be the change you want to see in the world."

Being close to death has meant a spiritual rebirth for me. I find myself face-to-face with all the transcendental questions I used to have, and they are resonating inside me with overwhelming force and urgency. What are we doing here? Who are we really? Personally, I don't expect to find the answers in some holy book or from some guru or other. Dogmas and beliefs belong to the world of the mind, and what we probably need is a real connection with our spiritual sides. Now more than ever we should keep an open mind and be ready to challenge our most deeply rooted ideas. I am sure that all the answers lie within ourselves, but we have to open a way out of our conditioning. Sooner or later, we will all have to stand alone; naked and stripped of our beliefs, standing before the mystery of life.

Since I had the angina attack, my life has become very interesting, and a great many peculiar people have begun to appear. Usually they come to see me about the medicinal plants, and once here they start talking about their incredible experiences. I would not believe the things they say if it wasn't for the enormous sincerity they transmit as they recount their stories. They all say the same thing: that death is not

the end - it's just one more step along our evolutionary path. They say we are much more than what we appear, that we are not physical beings having a spiritual experience, but rather spiritual beings having a physical experience. One day we will find out for sure.

As long as we keep doing our inner work and being aware of who we really are, the way in which we relate to each other will also change, and this in turn will create a new society. Then we won't need religions or ideologies, and we won't need laws either; understanding will be the law.

Little by little, everything the mystics have said over the course of history will become clear: in reality, we are all one. The science of today recognises that everything is connected and that nothing is really separate. We are all part of the same evolutionary current from which we cannot escape.

There is still a long way to go and we may fall over a few more times. Even so, I am certain that we will manage to find our rightful place and be able to live in harmony.

A new world is not only possible, it is inevitable. The seed is already planted.

Appendices

Appendix 1: The additive aspartame

Aspartame (E-951) is an artificial sweetener that made a great deal of profit for Monsanto during the diet product boom in the eighties. Although in the beginning it was hailed as the big alternative to sugar, we now know that it really is a poison. Even today, we will find aspartame in over 6,000 products consumed on a daily basis such as fizzy drinks, diet products, yoghourts, cereals, children's medicines, and cooking sauces.

However, it was because of *aspartame* and its terrible side effects, that I came to learn about stevia in the year 2000.

The history of *aspartame* is very interesting. It was discovered accidentally in 1965 by James Schlatter, a chemist who worked for the pharmaceutical firm, G.D. Searle & Company. The product was given the trade name *Nutrasweet*.

Following normal procedure, the company undertook the requisite studies to be able to market it. In June of 1974, it was approved by the FDA but five months later, due to high controversy surrounding the viability of the tests carried out by Searle, it decided to retract the approval. Mistrust boiled down to two facts: firstly, neurologist John Olney of Washington University had proved the connection between *aspartame* and the appearance of brain tumours in rats, and secondly, further suspicions of fraud were fuelled by the discoveries of Doctor Adrian Gross, FDA toxicologist, who found irregularities in studies undertaken by Searle with another of its products, *Flagyl*.

The controversy went on for many years, during which a court hearing was held to decide on the future of the additive and of the company, which had reached a financial crisis point.

Just when it seemed that *aspartame* was about to fall into oblivion, Donald Rumsfeld appeared on the scene. In 1976 he was elected Chief Executive of G.D. Searle & Company. His aim was to find solutions to the company's financial problems, and to do that he needed to get *aspartame* approved.

In 1980, Rumsfeld took a significant step towards achieving his aim when he was elected Vice President of the United States during Ronald Reagan's term. He elected Arthur Hull Hayes, an old colleague of his who had links with chemical projects in the defence world, to be the new commissioner for the FDA. Thanks to that manoeuvre, the FDA approved *aspartame* in 1983 for use in non-alcoholic drinks in the United States. And as usual, Europe followed suit. What they didn't achieve through scientific means, they managed to do via politics.

Finally, in 1985, Monsanto acquired Searle and the rights to *aspartame*.

In the fantastic article, "Aspartame, a danger to humanity?",[1] published in *Discovery Salud* magazine, Antonio F. Muro gathers investigations carried out by renown doctors and scientists such as Carmen Trocha, Morando Soffritti, Russell Blaylock, H.J. Roberts and Ralph Walton, concerning the toxic effects of *aspartame*.

We can conclude that, according to these investigators, *aspartame* can contribute to the appearance of lymphomas and leukemia,[2,3] mental disorders,[4] cancer[5,6] and, upon interaction with monosodium glutamate, it can be the cause of some cases of multiple sclerosis. A useful exercise is to type in the word *aspartame* in *PubMed*[7], a search engine on scientific studies.

In the aforementioned article, the conclusions of Ralph Walton are detailed and point to a very interesting fact: all the studies financed by the *aspartame* industry indicate that it is a safe product, whilst a hun-

dred percent of studies carried out independent by laboratories indicate that it is dangerous!

However, the FDA and EFSA, whose job should be to oversee our food safety, ignore or reject these studies and allow *aspartame* to continue in the food chain.

Appendix 2: GM crops and health

The scientific world has wanted to make us think they have a favourable view on transgenics, and that the mistrust amongst the general population is because we don't know enough about this new technology, or have an inherent fear of it, but that is not the case.

The truth is, after a decade of investigations into genetically modified organisms (GMOs) in farming, serious effects in the environment and in human health[1] have been detected.

We must bear in mind that the marketing of genetically modified food has been approved on the basis of the "substantial equivalence principle": in other words, that transgenic crops and conventional varieties are the same. This concept has no scientific basis whatsoever, and it gives us an idea of the lack of control with which GMO crops are being regulated.

We will use this second appendix to have a look at the different effects that transgenic crops can have on our health, and in the next appendix we will look at the effects on the environment. Both chapters have been drawn up by José Ramón Olarieta, Doctor in Agronomic Engineering, professor at Lleida University and member of *Som lo que Sembrem* (We are what we Sow).

Work carried out in 2000 and 2007 by professor José L. Domingo of Rovira i Virgili[2] University exposes the lack of studies in scientific magazines analysing the long-term toxicological effects of these crops. Subsequent revisions undertaken by Professor Domingo reveal that, although there have been more studies on the matter in scientific publications, most of them have been carried out by the very same companies

that market different types of GMOs.[3] What's more, other investigations reveal the poor quality of such studies.[4]

In the US, not one genetically modified crop variety has been approved as explicitly safe for human consumption. The authorities leave this responsibility in the hands of the marketing firms.[5]

Scientifically, the matter of GM crop safety is still in the very early stages. There is no scientific consensus on the experimental design of the toxicity tests, or on the criteria for evaluating the presence of possible pathological signs in such tests.[6] This is fundamental for understanding the debates which have arisen about the design and interpretation of toxicity tests undertaken by companies that produce GMOs, particularly in relation to the varieties of transgenic sweetcorn *NK603*, *MON810*, and *MON863*,[7, 8] and toxicity tests for the *NK603* variety carried out by investigators from the University of Caen (France).[9]

In any case, risks from GM varieties to human health stemming from the insertion and unpredictability of their behaviour did appear at the beginning. Firstly, problems were detected in the first ever commercialised transgenic crop, the *Flavr Savr* tomato. This genetically modified variety produced lesions in the stomachs of mice.[10] Later on, allergies to transgenic soya were discovered.[11] And, in 1999, the work of professor Árpád Pusztai revealed problems in the gastrointestinal system of mice fed with transgenic potatoes.[12] Intestinal problems were also detected from consuming *Bt* potatoes.[13]

There exist practically no studies which analyse the possible effects GMOs have directly on humans, and no toxicity or epidemiology studies at all. The three reports which do relate to some kind of study show fairly unpleasant results. In one of those reports, it was revealed that transgenic soya genes pass into human intestinal bacteria, with all the potential implicated health risks.[14] Another study reported a specific allergic reaction in people to transgenic soya.[15] Finally the toxin *Bt*, contained in many commercially produced varieties of transgenic corn, accumulates in our bodies and leaves residue inside us. It has been found in the blood of a high percentage of women and in the foetuses

of pregnant women in Québec.[16] Regulatory bodies have been increasing the permitted threshold of this insecticide.

Studies carried out on laboratory animals clearly show different risks.[17] There is an increase in risk of allergies, and the problems caused either by direct ingestion of the transgenic plants or via exposure to their pollen and dust,[18] partly because GMO crop varieties can produce new proteins differing in intensity to those of conventional varieties.[19] *MON810* has also been shown to produce problems in the immune system. This variety has been approved and is used in Europe.[20] *Bt* corn was seen to provoke problems in the liver, kidneys, and pancreas,[21] and the corn variety *NK603x MON810* produces problems with fertility and in the metabolism.[22] The toxin *Bt*, present in *MON* corn also has cytotoxic effects on human cells.[23]

GM crop varieties resistant to glyphosate, whether self-perpetuated or due to the residual presence of weedkillers, can produce the following: morphed changes in the functionality of cells;[24] have toxic effects on human placenta cells and behave as potential endocrine disruptors;[25] affect the functioning of the enzymatic system;[26] have toxic effects on pancreatic, liver, and testicular cells[27] and produce premature aging of the liver;[28] have negative effects on kidneys, the hormonal system, and produce a higher mortality rate;[29] affect the female reproductive system;[30] negatively affect human reproduction and foetal development,[31] and increase the incidences of non-hodgkins lymphoma.[32]

Although European regulations in force since 2001 state that GM varieties should not be approved for therapeutic purposes, the *Amflora* potato was given the go-ahead – a variety which contains a gene resistant to kanamicine and neomicine. These types of genes pose a serious risk to public health for various reasons. For instance, if food containing them is consumed at the same time as antibiotics, the effect of the latter may be inhibited. These genes could also be transferred to human or animal pathogens. Antibiotic resistant genes have already been found in bacteria in many rivers throughout China.[33]

Glyphosate weedkiller, marketed by Monsanto under the name *Roundup* which is used on GM crop varieties specifically designed to be resistant to it, is connected to cancer and non-hodgkins lymphoma.[34]

For all these reasons, doctors' associations the American Academy of Environmental Medicine and the Irish Doctors Environmental Association, requested a moratorium on GMOs.[35]

Appendix 3: GM crops and the environment

We have already looked at how the approval of GM crop varieties has been based on reports issued by the manufacturers' marketing companies. These reports are of very poor quality and contain serious errors in the risk assessments of these varieties, as shown in various different reports carried out by the Austrian and German governments.[1]

The use of varieties obtained through genetic engineering (GM) has not decreased the burden of biocides in the environment:[2] for one thing, usage of genetically modified crops producing *Bt* insecticide in the US only reduced insecticide application by 5% during the first nine years (from 1996 to 2004)[3]. These crops self-produce insecticides therefore they continue to release them into the environment.[4] Furthermore, they are sometimes used in places where insecticide treatments were not previously carried out. In Spain, the introduction of genetically modified corn varieties has meant a reduction of just 0.8 in annual treatments, and 40% of conventional corn growers do not carry out any insecticide treatment at all.[5] The other thing is that the use of weedkillers in fields planted with resistant GM corn increased by 5% during the same period in the US; the amount of weedkillers used however, is much greater that than of insecticides, and the total load of biocides is therefore much greater with GM varieties.[6]

The use of GM varieties is also wiping out techniques of integrated crop protection.[7]

Just ten years after the introduction of *Bt* insecticide-producing GM crop varieties, insects in various different countries are already showing signs of resistance.[8]

The reason that more cases have not come to light is in part due to the fact that these crops have not been altogether successful. Paradoxically, the future of these varieties as a system for pest control depends on them not being widely adopted.

Some diseases are developing a resistance to the *Bt* insecticides. What's more, secondary diseases can become highly significant as they fill the place left behind by the diseases controlled by the *Bt* insecticide-producing GM crops. This kind of occurrence starts to multiply on an increasingly larger scale,[9] leading to the need to apply new insecticides.[10]

Unplanned transformations produced in transgenic plants favour the creation of new diseases.[11]

The supposed specificity of the *Bt* toxin produced by some GM crops is not at all certain.[12] Many cases have been reported of negative effects upon species that are not harmful to crops:[13] significant quantities of type *Bt11* corn is being detected in non-harmful herbivores and in predatory arthropods.[14] Given the importance that some of these species have in biological pest control, their role could be greatly affected.

MON810 corn has shown toxicity in non-destructive arthropods,[15] and also has negative effects on Monarch butterfly larvae and on European butterflies affected by long-term exposure.[16]

Bt176 corn produces toxic effects in butterflies in the US[17] and also in European butterfly larvae.[18] The *Bt* toxin can also accumulate in higher trophic levels.[19] Transgenic matter from *Bt* corn can also get into surface water where it can travel up to 180 metres, and can decrease growth and increase mortality in non-harmful insects.[20]

The *Cry1Ab* protein negatively affects the learning process of bees, and this can have an effect on their alimentation, being potentially lethal.[21] The *Bt* toxin can also accumulate in bee tissue.[22] *Cry1Ab* toxin produces an increase in mortality of immature ladybirds.[23]

The *Bt* toxin in *MON810* corn is found in the tissue of snails that feed upon it, as well as in their excrement – therefore it can be passed

on to their predators.[24] Growth in snails who feed on this *Bt* corn type is slower than if they consume their isogenic food.[25] The *Bt* toxin also accumulates in slugs and appears in their excrement, and can be passed along the food chain.[26]

The use of GM crop varieties resistant to weedkillers presents a serious danger to our health, to the environment and to farming:[27] Application of weedkillers, specifically glyphosate, is increased where resistant plants already grow,[28] causing many problems in the crops themselves.[29] It has also produced very severe negative impacts on biodiversity and productivity in aquatic ecosystems.[30]

Furthermore, cross-pollination between these crop types and wild varieties can transform the latter into "weeds" that are hard to control.[31] In Canada they have already found plants resistant to three different weedkillers, as a result of acquiring genes from varieties of genetically modified rapeseed.[32] US varieties of sunflower, some types of turnip in the UK and sugar beet in France have also shown a capacity to cross-breed with wild varieties.[33] There are 18 crop varieties worldwide which have developed a resistance to glyphosate, some of which have already appeared in 22 states across America. In Georgia, 40,000 hectares have been seriously infested with a plant - *Amaranthus palmeri* - that has developed a resistance to glyphosate, to the point that in Macon County, 4,000 hectares of land had to be abandoned in 2007.[34] In Argentina there are more than 10,000 hectares of land covered in plants resistant to glyphosate.[35]

Transgenes introduced into genetically modified crop varieties are capable of contaminating wild plants. Up until now, this has been found in three species of plant (*Gossypium hirsutum*, *Brassica napus* and *Agrostis stolonifera)*[36] and in native maize varieties in Mexico.[37]

Transgenic crop varieties can interbreed with other species and produce spontaneous hybrids.[38]

Fields where GM crops have been grown can remain contaminated with abnormal plants or the same self-seeding GM varieties for many years after cultivation has ceased. The cultivation of weedkiller-resistant

rapeseed for instance, can continue to contaminate fields from between eight and ten years from when the products were last used.[39] In the United Kingdom, the density of genetically modified rapeseed plants 15 years after cultivation ceased was enough to contaminate conventional crops with a level above the permitted EU stipulation.[40] In Sweden, GM rapeseed plants continued to appear for up to ten years from final cultivation.[41] Transgenic rapeseed is still considered a dangerous "weed" in California, four years after terminating its cultivation on the land.[42]

It has also been proved that GM varieties can have modifying effects on the microbe population and negative effects on microorganisms and their activity in soil.[43] Transgenes are persistent in the network of soil organisms[44] and can be transferred to native bacteria populations.[45]

The capacity for cross-pollination between GM crops and the equivalent wild varieties[46] is now the norm rather than the exception, as it is with conventional crops. There are at least 28 cultivated species which can cross-breed with wild varieties. This process increases the probability of extinction of some of the wild species and they may even transform into the "weed" version of the cultivated species.

A study carried out in China shows that in all the rivers analysed, there are bacteria carrying synthetic genes resistant to antibiotics that have come from laboratories, industrial plants and transgenic crops.[47]

A field-by-field environmental assessment carried out over three years by the British government showed that the cultivation of GM rapeseed and beet has worse effects on the environment than that of conventional crops.[48]

It is possible that as a result of metabolic changes produced by the genetic engineering process, the cultivation of GM crops requires a greater amount of other elements. For instance, some varieties of GM cotton have shown a greater sensitivity to a lack of potassium in the soil.[49]

A thorough assessment of the agricultural system shows that these varieties do not produce any improvement. In comparison, one assess-

ment that takes into account the financial and ecological aspects of different corn cultivation methods across Europe, shows better results from organic cultivation than with GM crops. The comparison of these methods in economic terms, including conventional production also shows slight differences.[50]

In 2004 the *Unión Internacional para la Conservación de la Naturaleza* (UICN - International Union for the Conservation of Nature) requested a moratorium on the deregulation of GM crop varieties.[51]

Notes

1. A quick look back

1. http://www.arbolmat.com/emilio-elizalde/
2. Tompkins, Peter; Bird, Christopher. La vida secreta de las plantas. México: Diana, 1973.
3. http://www.pamieshorticoles.com/

2. The slow return to organic farming

1. Shiva, Vandana. *The Violence of the Green Revolution. Third World Agriculture, Ecology and Politics*. Londres: Zed Books, 1991.
2. OMS, 1990; Eddleston [*et al.*], 2002.
3. Pan-Montojo, F.; Schwarz, M.; Winkler, C.; Arnhold, M.; O'Sullivan, G.A.; Pal, A.; Said, J.; Marsico, G.; Verbavatz, J.M.; Rodrigo-Angulo, M.; Gille, G.; Funk. R.H.; Reichmann, H. 2012. Environmental toxins trigger PD-like progression via increased alpha-synuclein release from enteric neurons in mice. *Sci Rep*, 2:898.
4. Jiménez, M.; Rivas, A.; Olea, F.; Olea, N. 2004. Pesticidas organoclorados en suero y tejido adiposo de mujeres del sureste español. *Ecosistemas: Revista científica y técnica de ecología y medio ambiente*, 13(3):1697-2473.
5. Cesh, L.S.; Elliott, K.H.; Quade, S.; McKinney, M.A.; Maisoneuve, F.; Garcelon, D.K.; Sandau C.D.; Letcher, R.J.; Williams, T.D.; Elliott, J.E. 2010. *Environ Toxicol Chem*, 29(6):1301-10. doi: 10.1002/etc.165. Erratum in: Environ Toxicol Chem. 2010 Oct;29(10):2388.
6. Lavado, R.; Thibaut, R.; Raldúa, D.; Martín, R.; Porte, C. 2004. First evidence of endocrine disruption in feral carp from the Ebro River. *Appl Pharmacol*, 196(2):247-57.
7. Voisin, André. *Suelo, hierba y cáncer*. Madrid: Técnos, 1961.
8. http://www.aesan.msc.es/AESAN/web/cadena_alimentaria/subseccion/fitosanitarios.shtml

9. Font Quer, Pío. *Plantas medicinales: El Dioscórides renovado*. Barcelona: Península, 1999.
10. http://joseppamies.wordpress.com/carta-oberta-a-la-consellera-de-salut/

3. Revolution begins on our plates

1. http://www.slowfood.com/filemanager/landgrabbing/SPA_landgrabbing_editato.pdf?-session=query_session:42F94CA4027e503366tw14365CB0
2. http://actualidad.rt.com/economia/view/84449-negocio-crisis-grandes-bancos-ganan-hambre-millones
3. http://actualidad.rt.com/economia/view/54152-barclays-gana-900-millones-dolares-especulando-alimentos-basicos
4. http://colombiareport.ss.uci.edu/webdocs/crisisdelatortilla.pdf
5. http://www.fao.org/docrep/016/i2845s/i2845s00.pdf
6. http://www.grain.org/article/entries/183-el-negocio-de-matar-de-hambre
7. Duch, Gustavo. *Lo que hay que tragar*. Barcelona: Los libros del lince, 2010.
8. Perkins, John. *Confesiones de un gángster económico: la cara oculta del imperialismo americano*. Barcelona: Tendencias, 2005.
9. http://www.slowfoodterresdelleida.com/
10. http://www.magrama.gob.es
11. http://restaurantskm0.wordpress.com/

4. Stevia, the sweet plant

1. Epstein, S.S. 1996. Unlabeled milk from cows treated with biosynthetic growth hormones: a case of regulatory abdication. *Int J Health Serv*, 26(1):173-85.
2. http://www.ncbi.nlm.nih.gov/pubmed/?term=stevia+diabetes
3. http://dolcarevolucio.cat/es/testimonios/diabetes
4. Jeppesen, P.B.; Gregersen, S.; Poulsen, C.R.; Hermansen, K. 2000. Stevioside acts directly on pancreatic beta cells to secrete insulin: actions independent of cyclic adenosine monophosphate and adenosine triphosphate-sensitive K+-channel activity. 49(2):208-14.
5. http://www.dsalud.com/index.php?pagina=articulo&c=179
6. Briggs, John; Peat, Francis David. *Las siete leyes del caos: las pautas de una vida creativa*. Barcelona: Grijalbo, 1999.

5. GMOs in our soup

1. *Guía roja y verde de alimentos transgénicos* (Greenpeace). <http://www.greenpeace.org/espana/Global/espana/report/transgenicos/Guia_Roja_Verde_Alimentos_Transgenicos_Actualizada.pdf>.
2. "Playing God in the Garden". *New York Times,* 10-25-98.
3. British Medical Association, Board of Science and Education. The Impact of Genetic Modification on Agricuture, Food and Health – An Interim Statement. 1999. <http://www.argenbio.org/adc/uploads/pdf/bma.pdf>.
4. Scottish Parliament's Health Committee say risk assessment of GM crops is flawed. Scottish Parliament, UK, News Release, 14-01-2003.
5. http://ue.eu.int/ueDocs/cms_Data/docs/pressdata/en/envir/88721.pdf
6. "Playing God in the Garden". New York Times, 10-25-98.
7. Robin, Marie-Monique. *El mundo según Monsanto*. Barcelona: Península, 2008.
8. Spök, A. [*et al.*]. 2004. Risk Assessment of GMO Products in the European Union. Forschungberichte der Sektion IV, Band 7/2004. Bundesministerium für Gesundheit und Frauen,Vienna.
9. Freese, W.; D. Schubert. 2004. Safety testing and regulation of genetically engineered foods. *Biotechnology and Genetic Engineering Reviews*, 21:229-234.
   Séralini, G-E. [*et al.*]. 2009. How subchronic and chronic health effects can be neglected for GMOs, pesticides or chemicals. *International Journal of Biological Sciences*, 5(5): 438-443.
10. http://www.infoagro.com/agricultura_ecologica/transgenicos.htm
11. http://ec.europa.eu/food/dyna/gm_register/index_en.cfm
12. http://fundacion-antama.org/wp-content/uploads/2012/12/Transgenicos-Espa%C3%B1a-Evolucion.pdf
13. http://www.greenpeace.org/espana/Global/espana/report/transgenicos/Textos-listado-5edicion.pdf
14. http://www.grain.org/es/article/entries/1192-hambre-y-transgenicos
15. http://www.ecologistasenaccion.org/article3178.html
16. http://www.greenpeace.org/espana/Global/espana/report/other/copy-of-la-imposible-coexisten.pdf
17. Ibíd.
18. Ibíd.
19. Informe Anual de Registro de Contaminación Transgénica. 2008. <http://tinyurl.com/79osjp>.
20. Quist, D.; Chapela, I.H. 2001. *Nature*, 414(6863):541-3.

21. http://redendefensadelmaiz.net
22. Galeano, Eduardo. *Los hijos de los días*. Buenos Aires: Siglo XXI, 2012.
23. http://www.somloquesembrem.org/index.php?id=30&hover=10
24. http://www.moviments.net/ilp/tiki-index.php?page=Informes+del+CAPCIT&structure=Inici
25. http://www.greenpeace.org/espana/Global/espana/report/transgenicos/Textos-listado-5edicion.pdf
26. http://www.somloquesembrem.org/index.php?id=17
27. http://www.gmo-free-regions.org/
28. http://www.migueljara.com/2008/04/22/el-lobby-farmaceutico-y-transgenico-en-el-gobierno-zp/
29. http://elpais.com/elpais/2010/12/18/actualidad/1292663828_850215.html
30. http://elpais.com/elpais/2010/12/18/actualidad/1292663824_850215.html
31. http://elpais.com/elpais/2010/12/18/actualidad/1292663823_850215.html

6. Healing herbs

1. http://es.wikipedia.org/wiki/Herbolog%C3%ADa
2. http://joseppamies.wordpress.com/2011/12/22/todas-las-terapias-naturales-autorizadas-en-nicaragua/
3. http://www.ncbi.nlm.nih.gov/pubmed
4. Chen, Q.; Espey, M.G.; Krishna, M.C.; Mitchell, J.B.; Corpe, C.P.; Buettner, G.R.; Shacter, E.; Levine, M. 2005. Pharmacologic ascorbic acid concentrations selectively kill cancer cells: Action as a pro-drug to deliver hydrogen peroxide to tissues. Proc Natl Acad Sci USA, 102(38):13604-9.
5. Treben, Maria. *Salud de la botica del señor*. Austria: Ennsthaler, 1980.
6. http://www.anamed.net/Spanish_Home/spanish_home.html
7. http://www.youtube.com/watch?v=OI5iOv_d-nE
8. Li, T.K.; Hewitt, B.G.; Grant, B.F. 2004. Alcohol Use Disorders and Mood Disorders: A National Institute on Alcohol Abuse and Alcoholism Perspective. *Biological Psychiatry*, 56(10):718-720.
9. Palazuelos, J.; Aguado, T.; Pazos, M.R.; Julián, B.; Carrasco, C.; Resel, E.; Sagrado, O.; Benito, C.; Romero, J.; Azcoitia, I.; Fernández-Ruiz, J.; Guzmán, M.; Galve-Roperh, I. 2009. Microglial CB2 cannabinoid receptors are neuroprotective in Huntington's disease excitotoxicity. *Brain 132*, 3152-3164.
10. Blázquez, C.; Chiarlone, A.; Sagredo, O.; Aguado, T.; Pazos, M.R.; Resel, E.; Palazuelos, J.; Julien, B.; Salazar, M.; Börner, C.; Benito, C.; Carrasco, C.; Diez-Zaera, M.; Paoletti, P.; Díaz-Hernández, M.; Ruiz, C.; Sendtner, M.; Lucas, J.J.;

De Yébenes, J.G.; Marsicano, G.; Monory, K.; Lutz, B.; Romero, J.; Alberch, J.; Ginés, S.; Kraus, J.; Fernández-Ruiz, J.; Galve-Roperh, I.; Guzmán, M. 2010. Loss of striatal type 1 cannabinoid receptors is a key pathogenic factor in Huntington's disease. *Brain 134*, 119-136.

11. Linde, K.; Berner, M.M.; Kriston, L. St John's wort for major depression. 2008. Cochrane Database Syst Rev.
12. http://www.plosone.org/article/info:doi/10.1371/journal.pone.0030604

7. Let thy food be thy medicine

1. http://www.gmwatch.org/index.php?option=com_content&view=article&id=14322:eu-commissioner-brought-down-by-anti-fraud-investigation
2. Casademunt, Jordina. *Salud interior*. Barcelona: Océano Ámbar, 2012.
3. 1992. *Calcif. Tissue Int*, 50:14-18.
4. http://www.health.harvard.edu/plate/healthy-eating-plate
5. Porta, M. 2007. Food and nutrient intakes and K-ras mutations in exocrine pancreatic cancer. *Journal of Epidemiology & Community Health*, 61:641-649.
6. www.janeplant.com/
7. Campbell, T. Colin; Campbell II, Thomas M. *El Estudio de China*. Barcelona: Sirio, 2012.
8. http://www.forksoverknives.com/
9. Reed Stitt, Barbara. *Food & Behavior: A Natural Connection*. Wisconsin: Natural Press, 1997.
10. Robin, Marie-Monique. *Nuestro veneno cotidiano*. Barcelona: Península, 2012.
11. Repetto, Manuel. *Toxicología fundamental*. Madrid: Ediciones Díaz de Santos, 1997.
12. Cabal, Esteban. *Guía de los aditivos usados en la alimentación*. Madrid: Mandala, 1999.
13. Gouget, Corinne. *Los aditivos alimentarios*. Barcelona: Obelisco, 2008.
14. http://www.rtve.es/alacarta/videos/para-todos-la-2/para-todos-2-debates-aditivos-colorantes/754662/
15. http://www.qlif.org/
16. Traka, M.; Gasper, A.V.; Melchini, A.; Bacon, J.R.; Needs, P.W.; Frost, V.; Chantry, A.; Jones, A.M.; Ortori, C.A.; Barrett, D.A.; Ball, R.Y.; Mills, R.D.; Mithen, R.F. 2008. Broccoli Consumption Interacts with GSTM1 to Perturb Oncogenic Signalling Pathways in the Prostate. *One*, 3(7):e2568.

8. A new life

1. Biodecodification is a method of finding and decoding psychological and/or emotional conflicts that make us ill.
2. For more information on the dark side of medical visits, read *Laboratorio de médicos*, by writer and journalist Miguel Jara.
3. http://joseppamies.wordpress.com/2013/04/06/vida-despues-de-la-muerte-o-desdoblamiento-del-tiempo/
4. http://america.infobae.com/notas/49441-Cerebros-de-Silicon-Valley-envan-a-sus-hijos-a-un-colegio-sin-computadoras
5. For more information on hypersensitivity, consult the following book *La salud que viene,* by writer and journalist Miguel Jara.
6. http://joseppamies.wordpress.com/2009/12/28/el-gran-jacques-fresco/
7. http://vimeo.com/60364345
8. http://www.gemeinwohl-oekonomie.org/es/

Appendix 1: The additive aspartame

1. http://www.dsalud.com/index.php?pagina=articulo&c=309
2. Trocho, C.; Pardo, R.; Rafecas, I.; Virgili, J.; Remesar, X.; Fernández-López, J.A.; Alemany, M. 1998. Formaldehyde derived from dietary aspartame binds to tissue components in vivo. Sci, 63(5):337-49.
3. Schernhammer, E.S.; Bertrand, K.A.; Birmann, B.M.; Sampson, L.; Willett, W.C.; Feskanich, D. Consumption of artificial sweetener- and sugar-containing soda and risk of lymphoma and leukemia in men and women. 2012. 96(6):1419-28.
4. Humphries, P.; Pretorius, E.; Naudé, H. 2008. Direct and indirect cellular effects of aspartame on the brain. *Eur J Clin Nutr*, 62(4):451-62.
5. Soffritti, M.; Belpoggi, F.; Tibaldi, E.; Esposti, D.D.; Lauriola, M. 2007. Life-span exposure to low doses of aspartame beginning during prenatal life increases cancer effects in rats. 115(9):1293-7.
6. Soffritti, M.; Belpoggi, F.; Degli Esposti, D.; Lambertini, L.; Tibaldi, E.; Rigano, A. 2006. First experimental demonstration of the multipotential carcinogenic effects of aspartame administered in the feed to Sprague-Dawley rats. *Environ. Health Perspect.*, 114(3):379-85.
7. http://www.ncbi.nlm.nih.gov/pubmed/?term=aspartame

Appendix 2: GM crops and health

1. http://www.somloquesembrem.org/index3.php?actual=11&actual2=34
2. Domingo, J.L. 2000. Health risks of GM foods: many opinions but few data. *Science*, 288: 1748-1749.

   Domingo, J.L.; Gómez, M. 2000. Riesgos sobre la salud de los alimentos modificados genéticamente: una revisión bibliográfica. *Revista Española de Salud Pública*, 74: 255-261.

   Domingo, J.L. 2007. Toxicity studies of genetically modified plants: a review of the published literature. *Critical Reviews in Food Science and Nutrition*, 47: 721-733.
3. Domingo, J.L.; Giné, J. 2011. A literature review on the safety assessment of genetically modified plants. *Environment International*, 37: 734-742.
4. Pryme, I.F.; Lembcke, R. 2003. In vivo studies on possible health consequences of genetically modified food and feed - with particular regard to ingredients consisting of genetically modified plant materials. *Nutrition and Health*, 17: 1-8.

   Snell, C. [*et al.*]. 2012. Assessment of the health impact of GM plant diets in long-term and multigenerational animal feeding trials: a literature review. *Food and Chemical Toxicology*, 50: 1134-1148.
5. Freese, W.; Schubert, D. 2004. Safety testing and regulation of genetically engineered foods. *Biotechnology and Genetic Engineering Reviews*, 21: 229-234.
6. Malatesta, M. [*et al.*]. 2008. A long-term study on female mice fed on genetically modified soybean: effects on liver ageing. *Histochem. Cell Biol.*, 130: 967-977.
7. Séralini, G-E.; Cellier, D.; De Vendomois, J.S. 2007. New analysis of a rat feeding study with a genetically modified maize reveals signs of hepatorenal toxicity. *Archives of Environmental Contamination and Toxicology*, 52: 596-602.
8. De Vendomois, J.S.; Roullier, F.; Cellier, D.; Séralini, G-E. 2009. A comparison of the effects of three GM corn varieties on mammalian health. *International Journal of Biological Sciences*, 5(7): 706-726.
9. Séralini, G-E. [*et al.*]. 2012. Long term toxicity of a Roundup weedkiller and a Roundup-tolerant genetically modified maize. *Food and Chemical Toxicology*, 50: 4221-4231. También se pueden ver los comentarios a este trabajo y la respuesta de los autores en: <http://www.sciencedirect.com/science/article/pii/S0278691512005637>.
10. Martineau, B. 2001. Food fight. *The short, unhappy life of the Flavr Savr tomato*. *The Sciences, Spring* 2001: 24-29.
11. Nordlee, J.A.; Taylor, S.L.; Townsend, J.A.; Thomas, L.A.; Bush, R.K.; 1996. Identification of a Brazil-nut allergen in transgenic soybeans. *New England Journal of Medicine*, 334: 688-692.

12. Ewen, S.; Pusztai, A. 1999. Effect of diets containing genetically modified potatoes expressing Galanthus nivalis lectin on rat small intestine. *The Lancet*, 354: 1353-1354.
13. Fares, N.H.; El-Sayed, A.K. 1998. Fine structural changes in the ileum of mice fed on endotoxin-treated potatoes and transgenic potatoes. *Natural Toxins*, 6: 219-233.
14. Netherwood, T. [*et al.*]. 2004. Assessing the survival of transgenic plant DNA in the human gastrointestinal tract. *Nature Biotechnology*, 22 (2): 204-208.
15. Yum, H-Y. [*et al.*]. 2005. Genetically modified and wild soybeans: an immunological comparison. *Allergy and Asthma Proceedings*, 26(3): 210-216.
16. Aris, A.; Leblanc, S. 2011. Maternal and fetal exposure to pesticides associated to genetically modified foods in Eastern Townships of Quebec. *Reproductive Toxicology*, 2011, doi: 10.1016/j.reprotox.2011.02.004.
17. Dona, A.; Arvanitoyannis, I.S. 2009. Health risks of genetically modified foods. *Critical Reviews in Food Science and Nutrition*, 49: 164-175.
18. Prescott, V.E. [*et al.*]. 2005. Transgenic expression of bean a-amylase inhibitor in peas results in altered structure and immunogenicity. *Journal of Agricultural and Food Chemistry*, 53: 9023-9030.
19. Yum, H-Y. [*et al.*]. 2005. Genetically modified and wild soybeans: an immunological comparison. *Allergy and Asthma Proceedings*, 26(3): 210-216.

    Rang, A.; Linke, B.; Jansen. B.; 2005. Detection of RNA variants transcribed from the transgene in Roundup Ready soybean. *European Food Research and Technology*, 220: 438-443.

    Herrero, M.; Ibáñez, E.; Martín-Álvarez, P.J.; Cifuentes, A. 2007. Analysis of chiral amino acids in conventional and transgenic maize. *Analytical Chemistry*, 79(13): 5071-5077.

    Rosati, A.; Bogani, P.; Santarlasci, A.; Buiatti, M. 2008. Characterisation of 3' transgene insertion site and derived mRNAs in MON810 YieldGard maize. *Plant Molecular Biology*, 67(3): 271-281.

    Zolla, L.; Rinalducci, S.; Antonioli, P.; Righetti, P.G. 2008. Proteomics as a complementary tool for identifying unintended side effects occurring in transgenic maize seeds as a result of genetic modifications. *Journal of Proteome Research*, 7: 1850-1861.
20. Finamore, A. [*et al.*]. Intestinal and peripheral immune response to MON810 maize ingestion in weaning and old mice. *Journal of Agricultural and Food Chemistry*. DOI: 10.1021/jf802059w.
21. Séralini, G-E.; Cellier, D.; De Vendomois, J.S. 2007. New analysis of a rat feeding study with a genetically modified maize reveals signs of heptorenal toxicity. *Arch. Environ. Contam. Toxicol.*, 52: 596-602.

Kilic, A.; Akay, M.T. 2008. A three generation study with genetically modified Bt corn in rats: biochemical and histopathological investigation. *Food and Chemical Toxicology*, 46(3): 1164-1170.

22. Velimirov, A.; Binter, C.; Zentek, J. 2008. Biological Effects of Transgenic Maize NK603xMON810 Fed in Long Term Reproduction Studies in Mice. Bundesministerium für Gesundheit, Familie und Jugend, Sektion IV, Viena.
23. Mesnage, R. [*et al.*]. 2012. Cytotoxicity on human cells of Cry1Ab and Cry1Ac Bt insecticidal toxins alone or with a glyphosate-based weedkiller. *Journal of Applied Toxicology*, doi: 10.1002/jat.2712
24. Malatesta, M. [*et al.*]. 2008. Hepatoma tissue culture (HTC) cells as a model for investigating the effects of low concentrations of weedkiller on cell structure and function. *Toxicology in Vitro*, 22: 1853-1860.
25. Richard, S. [*et al.*]. 2005. Differential effects of glyphosate and Roundup on human placental cells and aromatase. *Environ. Health Perspect.*, 113(6): 716-720.

    Benachour, N.; Séralini, G-E. 2009. Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells. *Chemical Research in Toxicology*, 22(1): 97-105.
26. Tudisco, R. [*et al.*]. 2010. Fate of transgenic DNA and evaluation of metabolic effects in goats fed genetically modified soybean and in their offsprings. *Animal*, 4(10): 1662-1671.
27. Malatesta, M. [*et al.*]. 2002. Ultrastructural analysis of pancreatic acinar cells from mice fed on genetically modified soybean. *Journal of Anatomy*, 201: 409-415.

    Vecchio, L. [*et al.*]. 2004. Ultrastructural analysis of testes from mice fed on genetically modified soyabean. *European Journal of Histochemistry*, 48(4): 448-454.

    Malatesta, M. [*et al.*]. 2002. Ultrastructural morphometrical and immunocytochemical analyses of hepatocyte nuclei from mice fed on genetically modified soybean. *Cell Structure and Function*, 27: 173-180.

    Magaña-Gómez, J.A. [*et al.*]. 2008. Pancreatic response of rats fed genetically modified soybean. *Journal of Applied Toxicology*, 28: 217-226.
28. Malatesta, M. [*et al.*]. 2008. A long-term study on female mice fed on a genetically modified soybean: effects on liver ageing. *Histochemistry and Cell Biology*, 130: 967-977.
29. Séralini, G-E. [*et al.*]. 2012. Long term toxicity of a Roundup weedkiller and a Round-up tolerant genetically modified maize. *Food and Chemical Toxicology*, 50: 4221-4231.
30. Brasil, F.B. [*et al.*]. 2009. The impact of dietary organic and transgenic soy on the reproductive system of female adult rat. *The Anatomical Record*, 292: 587-594.

31. Savitz, D.A.; Arbuckle, T.; Kaczor, D.; Curtis, K.M. 1997. Male pesticide exposure and pregnancy outcome. *American Journal of Epidemiology*, 146(12): 1025-1036.

Benachour, N. [*et al.*]. 2007. Time- and dose-dependent effects of Roundup on human embryonic and placental cells. *Archives of Environmental Contamination and Toxicology*, 53: 126-133.

32. Hardell, L.; Eriksson, M.; Nordstrom, M. 2002. Exposure to pesticide as risk factor for non-Hodgkin's lymphoma and hairy cell leukemia: pooled analysis of two Swedish case-control studies. *Leukemia & Lymphoma*, 43(5): 1043-1049.

DeRoos, Z.S.H. [*et al.*]. 2003. Integrative assessment of multiple pesticides as risk factors for non-Hodgkin's lymphoma among men. *Occupational and Environmental Medicine*, 60(9), E11.

33. Chen, J. [*et al.*]. 2012. A survey of drug resistance *bla* genes originating from synthetic plasmid vectors in six Chinese rivers. *Environmental Science & Technology*, 46: 13448-13454.

34. Hardell, L.; Eriksson, M. 2003. Is the decline of the increasing incidence of non-Hodgkin lymphoma in Sweden and other countries a result of cancer preventive measures? *Environmental Health Perspectives*, 111(14): 1704–1706.

35. http://www.aaemonline.org/gmopost.html (19-05-09).

http://www.ideaireland.org/gmfood.htm

Appendix 3: GM crops and the environment

1. Eckerstofer, M.; Heissenberger, A.; Gaugitsch, H. 2007. Supplementary Risk Assessment for GM Maize MON810 with Regard to the Conclusions of the WTO-Panel in the Case "EC Biotech" on Austrian Safeguard Measures for GM Maize. *Forschungberichte der Sektion IV*, Band 4/2007. Bundesministerium für Gesundheit Familie und Jugend,Vienna.

Anònim. 2007. Review of Scientific Evidence Including Latest Findings Concerning Austrian Safeguard Measures for GM-maize Lines MON810 and T25. *Forschungberichte der Sektion IV*, Band 1/2007. Bundesministerium für Gesundheit Familie und Jugend,Vienna.

Anònim. 2007. Risk Assessment of "Stacked Events". *Forschungberichte der Sektion IV*, Band 2/2007. Bundesministerium für Gesundheit Familie und Jugend,Vienna.

Dolezel, M. [*et al.*]. 2009. Standardising the Environmental Risk Assessment of Genetically Modified Plants in the EU. *BfN*, Skripten 259, Bonn. <http://www.bfn.de/fileadmin/MDB/documents/service/Skript259.pdf>.

2. In Brazil, the consumption of biocides has steadily increased since the introduction of GM crops. http://antigo.aspta.org.br/porum-brasil-livre-de- transgenicos/updates/update-9-june-2010/
3. Benbrook, C.M. 2004. Genetically Engineered Crops and Pesticide Use in the United States: the First Nine Years. *Tech. Paper No. 7*. BioTech InfoNet.
4. Szekacs, A.; Juracsek, J.; Polgar, L.A.; Darvas, B. 2005. Levels of expressed Cry1Ab toxin in genetically modified corn DK-440-BTY (Yieldgard) and stubble. *FEBS Journal*, 272, s.1, Abstracts of the 30th FEBS Congress: 508.
5. Gómez-Barbero, M.; Berbel, J.; Rodríguez-Cerezo, E. 2008. Adoption and Performance of the First GM Crop Introduced in EU Agriculture: Bt Maize in Spain. *JRC Scientific and Technical Reports*. Institute for Prospective Technological Studies, Sevilla.
6. Benbrook, C.M. 2012. Impacts of genetically engineered crops on pesticide use in the US - the first sixteen years. *Environmental Sciences Europe*, 24: 24. <http://www.enveurope.com/content/pdf/2190-4715-24-24.pdf>.
7. Gray, M.E. 2011. Relevance of traditional Integrated Pest Management (IPM) strategies for commercial corn producers in a transgenic agroecosystem: a bygone era? *Journal of Agricultural and Food Chemistry*, 59: 5852-5858.
8. Tabashnik, B.E.; Gassmann, A.J.; Crowder, D.W.; Carrière, Y. 2008. Insect resistance to Bt crops: evidence versus theory. *Nature Biotechnology*, 26(2): 199-202.

   Tabashnik, B.E.; Van Rensburg, J.B.J.; Carrière, Y. 2009. Field-evolved resistance to Bt crops: definition, theory, and data. *Journal of Economic Entomology*, 102(6): 2011-2025.

   <http://indiatoday.intoday.in/site/story/Bt+cotton+has+failed+admits+Monsanto/1/86939.html>.

   Gassmann, A.J.; Petzold-Maxwell, J.L.; Keweshan, R.S.; Dunbar, M.W. 2011. Field-evolved resistance to Bt maize by western corn rootworm. *PLoS ONE*, 6 (7), e22629.

   Dhurua, S.; Gujar, G.T.; 2011. Field-evolved resistance to Bt toxin Cry1Ac in the pink bollworm, *Pectinophora gossypiella* (Saunders) (Lepidoptera: Gelechiidae), from India. *Pest Management Science*, 67: 898-903.

   Liu, F. [*et al.*]. 2010. Evidence of field-evolved resistance to Cry1Ac-expresing Bt cotton in *Helicoverpa armigera* (Lepidoptera: Noctuidae) in northern China. *Pest Management Science*, 66: 155-161.

   "Du-Pont-Dow Corn Defeated by Armyworms in Florida: Study". *Bloomberg*, 16-11-2012. <http://www.bloomberg.com/news/2012-11-16/dupont-dow-corn-defeated-by-armyworms-in-florida-study.html>.

Gassmann, A.J. [*et al.*]. 2012. Western corn rootworm and Bt maize. Challenges of pest resistance in the field. *GM Crops & Food*, 3(3): 235-244.

9. Sasu, M.A. [*et al.*]. 2009. Indirect costs of a nontarget pathogen mitigate the direct benefits of a virus-resistant transgene in wild *Cucurbita*. *Proceedings of the National Academy of Sciences*, 106(45): 19067-19071.

   Lu, Y. [*et al.*]. 2010. Myriad bug outbreaks in multiple crops correlated with wide-scale adoption of Bt cotton in China. *Science*, 328: 1151-1154.

10. Wu, K.; Li, W.; Feng, H.; Guo, Y. 2002. Seasonal abundance of the mirids, *Lygus lucorum* and *Adelphocoris spp*. (Hemiptera: Miridae) on Bt cotton in northern China. *Crop Protection*, 21: 997-1002.

    "Insect control pushes cotton costs higher". *Delta Farm Press*, 15-01-2010.

    Keely, J. 2005. Interrogating China's biotechnology revolution: contesting dominant science policy cultures in the risk society. A: Leach, M.; Scoones, I.; Wynne, B. (eds.), *Science and Citizens*. Zed Books, Londres, p. 155-166.

    Catangui, M.A.; Berg, R.K. Western bean cutworm, *Striacosta albicosta* (Smith) (Lepidoptera: Noctuidae), as a potential pest of transgenic Cry1Ab *Bacillus thuringiensis* corn hybrids in South Dakota. *Environmental Entomology*, 35(5): 1439-1452.

    Wang, S.; Just, D.R.; Pinstrup-Andersen, P. 2008. Bt-cotton and secondary pests. *International Journal of Biotechnology*, 10(2/3): 113-121.

    Lu, Y.H. [*et al.*]. 2008. Species composition and seasonal abundance of pestiferous plantbugs (Hemiptera: Miridae) on Bt cotton in China. *Crop Protection*, 27: 465-472.

    "Insect control pushes cotton costs higher". *Delta Farm Press*, 15-01-2010. <http://deltafarmpress.com/cotton/cotton-insect-control-0115/>.

    Zhao, J.H.; Ho, P.; Azadi, H. 2011. Benefits of Bt cotton counterbalanced by secondary pests? Perceptions of ecological change in China. *Environmental Monitoring and Assessment*, 173: 985-994.

11. Faria, C.A. [*et al.*]. 2007. High susceptibility of Bt maize to aphids enhances the performance of parasitoids of Lepidopteran pests. *PLoS ONE*, 7, e600.

12. Andow, D.A.; Lövei, G.L.; Arpaia, S. 2009. Cry toxins and proteinase inhibitors in transgenic plants do have non-zero effects on natural enemies in the laboratory: rebuttal to Shelton [*et al.*]. 2009. *Environmental Entomology*, 38(6): 1528-1532.

13. Dolezel, M.; Heissenberger, A.; Gaugitsch, H. 2005. Ecological Effects of Genetically Modified Maize with Insect Resistance and/or Weedkiller Tolerance. *Forschungberichte der Sektion IV*, Band 6/2005. Bundesministerium für Gesundheit und Frauen,Vienna.

14. Harwood, J.D.; Wallin, W.G.; Obrycki, J.J. 2005. Uptake of Bt endotoxins by nontarget herbivores and higher arthropod predators: molecular evidence from a transgenic corn agroecosystem. *Molecular Ecology*, 14: 2815-2823.

15. Bøhn, T.; Primicerio, R.; Hessen, D.O.; Traavik, T. 2008. Reduced fitness of *Daphnia magna* fed a Bt-transgenic maize variety. *Archives of Environmental Contamination and Toxicology*, 55(4): 584-592.

    Bøhn, T.; Traavik, T.; Primicerio, R. 2010. Demogrpahic responses of *Daphnia magna* fed transgenic Bt-maize. *Ecotoxicology*, 19: 419-430.

16. Dively, G.P. [*et al.*]. 2004. Effects on monarch butterfly larvae (Lepidoptera: Danaidae) after continuous exposure to Cry1Ab-expressing corn during anthesis. *Environmental Entomology*, 33: 1116-1125.

17. Zangerl, A.R. [*et al.*]. 2001. Effects of exposure to event 176 *Bacillus thuringiensis* corn polen on monarch and black swallowtail caterpillars under field conditions. *Proc. Natl. Acad. Sci. USA*, 98: 11908-11912.

18. Felke, M.; Lorenz, N.; Langenbruch, G.A. 2002. Laboratory studies on the effects of pollen from Bt-maize on larvae of some butterfly species. *Journal of Applied Entomology*, 126: 320-325.

    Lang. A.; Vojtech, E. 2006. The effects of pollen consumption of transgenic Bt maize on the common swallowtail, *Papilio machaon* L. (Lepidoptera, Papilionidae). *Basic and Applied Ecology*, 7: 296-306.

19. Zhang, G.F. [*et al.*]. 2006. Transmision of Bt toxin to the predator *Propylaea japonica* (Coleoptera: Coccinellidae) through its aphid prey feeding on transgenic Bt cotton. *Environmental Entomology*, 35: 143-150.

20. Rosi-Marshal, E.J. [*et al.*]. 2007. Toxins in transgenic crop byproducts may affect headwater stream ecosystems. *Proc. Nat. Acad. Sci. USA*, 104(41): 16204-16208.

    Trank, J.L. [*et al.*]. 2010. Occurrence of maize detritus and a transgenic insecticidal protein (Cry1Ab) within the stream network of an agricultural landscape. *Proc. Nat. Acad. Sci. USA*, doi:10.1073/pnas.1006925107.

    Bohn, T.; Primicerio, R.; Hessen, D.O.; Traavik, T. 2008. Reduced fitness of *Daphnia magna* fed a Bt-transgenic maize variety. *Archives of Environmental Contamination and Toxicology*, 55(4): 584-592.

    Bohn, T.; Traavik, T.; Primicerio, R. 2009. Demographic responses of *Daphnia magna* fed transgenic Bt-maize. *Ecotoxicology*, doi: 10.1007/s10646-009-0427-x.

21. Ramírez-Romero, R. [*et al.*]. 2008. Does Cry1Ab protein affect learning performances of the honey bee *Apis melllifera* L. (Hymenoptera, Apidae). *Ecotoxicology and Environmental Safety*, 70: 327-333.

22. Babendreier, D. [*et al.*]. 2005. Influence of Bt-transgenic pollen, Bt-toxin and protease inhibitor (SBTI) ingestion on development of the hypopharyngeal glands in honeybees. *Apidologie*, 36: 585-594.
23. Schmidt, J.E.U.; Braun, C.U.; Whitehouse, L.P.; Hilbeck, A. Effects of activated Bt transgen products (Cry1Ab, Cry3Bb) on immature stages of the ladybird *Adalia bipunctata* in laboratory ecotoxicity testing. *Archives of Environmental Contamination and Toxicology*. DOI 1.1007/s00244-008-9191-9.

    Hilbeck, A. [*et al.*]. 2012. A controversy re-visited: is the coccinellid *Adalia bipunctata* adversely affected by Bt toxins?. *Environmental Sciences Europe*, 24: 10. <http://www.enveurope.com/content/24/1/10>.
24. De Vaufleury, A. [*et al.*]. 2007. Exposure and effects assessments of Bt-maize on non-target organisms (gastropods, microarthropods, mycorrhizal fungi) in microcosms. *Pedobiologia*, 51: 185-194.
25. Kramarz, P.E. [*et al.*]. 2007. Increased response to cadmium and *Bacillus thuringiensis* maize toxicity in the snail *Helix aspersa* infected by the nematode *Phasmarhabditis hermaphrodita*. *Environmental Toxicology and Chemistry*, 26(1): 73-79.

    Kramarz, P. [*et al.*]. 2009. Effects of Bt-maize material on the life cycle of the land snail *Cantareus aspersus*. *Applied Soil Ecology*, 42: 236-242.
26. Zurbrügg, C.; Nentwig, W. 2009. Ingestion and excretion of two transgenic Bt corn varieties by slugs. *Transgenic Research*, 18: 215-225.
27. Dolezel, M.; Heissenberger, A.; Gaugitsch, H. 2005. Ecological Effects of Genetically Modified Maize with Insect Resistance and/or Weedkiller Tolerance. *Forschungberichte der Sektion IV*, Band 6/2005. Bundesministerium für Gesundheit und Frauen,Vienna.
28. Robert, S.; Baumann, U. 1998. Resistance to the weedkiller glyphosate. *Nature*, 395: 25-26.

    "Conventional soybeans offer high yields at lower cost". *News from University of Missouri Extension*, 08-09-2008.

    Gaines, T.A. [*et al.*]. 2010. *Proceedings of the National Academy of Sciences*, <http://www.pnas.org/cgi/doi/10.1073/pnas.0906649107>.
29. Yamada, T. [*et al.*]. 2009. Glyphosate interactions with physiology, nutrition, and diseases of plants: treta to agricultural sustainability? *European Journal of Agronomy*, 31: 111-113 (i articles posteriors).
30. Relyea, R.A. 2005. The impact of insecticides and weedkillers on the biodiversity and productivity of aquatic communities. *Ecological Applications*, 15(2): 618-627.

    Relyea, R.A. 2005. The lethal impact of Roundup on aquatic and terrestrial amphibians. *Ecological Applications*, 15(4): 1118-1124.

31. Clark, E.A. 2006. Environmental risks of genetic engineering. *Euphytica*, 148: 47-60.

Binimelis, R.; Pengue, W.; Monterroso, I. 2009. "Transgenic treadmill": responses to the emergence and spread of glyphosate-resistant johnsongrass in Argentina. *Geoforum*, doi: 10.1016/j.geoforum.2009.03.009.

32. Hall, L. 2000. Pollen flow between weedkiller-resistant Brassica napus is the cause of multiple-resistant B. napus volunteers. *Weed Science*, 48: 688-694.

33. "Scientists shocked at GM gene transfer". *The Guardian*, 15-08-02.

"Alert after GM crop altered other plants". *The Guardian*, 30-12-02.

34. "Superweed explosion threatens Monsanto heartlands". 19-04-09. <http://www.france24.com>.

35. Binimelis, R.; Pengue, W.; Monterroso, I. "Transgenic treadmill: responses to the emergence and spread of glyphosate-resistant johnsongrass in Argentina. *Geoforum*, doi:10.1016/j.geoforum.2009.03.009.

36. Reichman, J.R., [*et al.*]. 2006. Establishment of transgenic weedkiller-resistant creeping bentgrass (*Agrostis stolonifera* L.) in nonagronomic habitats. *Molecular Ecology*, 15: 4243-4255.

Zapiola, M.L. [*et al.*]. 2008. Escape and establishment of transgenic glyphosate-resistant creeping bentgrass, *Agrostis stolonifera*, in Oregon, USA: a 4-year study. *Journal of Applied Ecology*, 45: 486-494.

Wegier, A. [*et al.*]. 2011. Recent long-distance transgene flow into wild populations conforms to historical patterns of gene flow in cotton (*Gossypium hirsutum*) at its centre of origin. *Molecular Ecology*, 20: 4182-4194.

Schafer, M.G. [*et al.*]. 2011. The establishment of genetically engineered canola populations in the US. *PLoS ONE*, 6(10): e25736. <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0025736>.

37. Quist, D.; Chapela, I.H. 2001. Transgenic DNA introgressed into traditional maize landraces in Oaxaca, Mexico. *Nature*, 414: 541-543.

"Modified genes spread to local maize". *Nature*, 456: 149. (2008).

Piñeyro-Nelson, A. [*et al.*]. 2009. Transgenes in mexican maize: molecular evidence and methodological considerations for GMO detection in landrace populations. *Molecular Ecology*, 18: 750-761.

38. Zapiola, M.L.; Mallory-Smith, C.A. 2012. Crossing the divide: gene flow produces intergeneric hybrid in feral transgenic creeping bentgrass population. *Molecular Ecology*, 21: 4672-4680.

39. Warwick, S.I.; Légère, A.; Simard, M-J.; James, T. 2008. Do escaped transgenes persist in nature? The case of an weedkiller resistance transgene in a weedy Brassica rapa population. *Molecular Ecology*, 17: 1387-1395.

Andersen, N.J.; Rasmussen, J.; Jorgensen, R.B. 2010. You reap what you sow -or do you?- volunteers in organic row-sown and broadcast oilseed rape fields. *European Journal of Agronomy*, 32. 121-126.

40. "GM crop 'ruins fields for 15 years'". *The Independent*, 9-10-05.
41. "Genetically modified crops can stay in soil for up to ten years". <http://www.all-headlinesnews.com/articles/7010509348>.
42. Munier, D.J.; Brittan, K.L.; Lanini, W.T. 2012. Seed bank persistence of genetically modified canola in California. *Environmental Science and Pollution Research*, 19(6): 2281-2284.
43. Siciliano, S.D.; Germida, J.J. 1999. Taxonomic diversity of bacteria associated with the roots of field-grown transgenic *Brassica napus* cv. Excel and *B. rapa* cv. Parkland. *FEMS Microbiol. Ecol.*, 29: 263-272.

Griffiths, B.S.; Geoghegan, I.E.; Robertson, W.M. 2000. Testing genetically engineered potato, producing lectins GNA and Con A, on non-target soil organisms and processes. *Journal of Applied Ecology*, 37: 159-170.

Dinel, H. [*et al.*]. 2003. Extractable soil lipids and microbial activity as affected by Bt andnon-Bt maize grown on a silty clay loam soil. *Journal of Environmental Science and Health Part B*, B38: 211-219.

Blackwood, C.B.; Buyer, J.S. 2004. Soil microbial communities associated with Bt and non-Bt corn in three soils. *Journal of Environmental Quality*, 33:832-836.

Brusetti, L. [*et al.*]. 2004. Bacterial communities associated with the rhizosphere of transgenic Bt176 maize and its non transgenic counterpart. *Plant and Soil*, 266: 11-21.

Sessitsch, A. [*et al.*]. 2004. Activity of microorganisms in the rhizosphere of weed-killer treated and untreated transgenic glufosinate-tolerant and wildtype oilseed rape grown in containment. *Plant and Soil*, 266: 105-116.

Turrini, A. [*et al.*]. 2004. Development of a model system to assess the impact of genetically modified corn and aubergine plants on arbuscular mycorrhizal fungi. *Plant and Soil*, 266: 69-75.

Wu, W-X.; Ye, Q-F.; Min, H. 2004. Effect of straws from Bt-transgenic rice on selected biological activities in water-flooded soil. *European Journal of Soil Biology*, 40: 15-22.

Castaldini, M. [*et al.*]. 2005. Impact of Bt corn on rhizospheric and soil eubacterial communities and on beneficial mycorrhizal symbiosis in experimental microcosms. *Applied and Environmental Microbiology*, 71: 6719-6729.

Griffiths, B.S. [*et al.*]. 2005. A comparison of soil microbial community structure, protozoa and nematodes in field plots of conventional and genetically modified

maize expressing the Bacillus thuringiensis Cry1Ab toxin. *Plant and Soil*, 275: 135-146.

Höss, S. [*et al.*]. 2008. Effects of transgenic corn and Cry1Ab protein on the nematode *Caenorhabditis elegans*. *Ecotoxicology and Environmental Safety*, 70: 334-340.

Sarkar, B.; Patra, A.K.; Purakayastha, T.J. 2008. Transgenic Bt-cotton affects enzyme activity and nutrient availability in a sub-tropical Inceptisol. *Journal of Agronomy and Crop Science*, 194: 289-296.

Wenke, L.; Lianfeng, D. 2008. Interactions between Bt transgenic crops adn arbuscular mycorrhizal fungi: a new urgent issue of soil ecology in agroecosystems. *Acta Agriculturae Scandinavica, Section B - Soil and Plant Science*, 58: 187-192.

44. Hart, M.M. [*et al.*]. 2009. Detection of transgenic cp4epsps genes in the soil food web. *Agronomy for Sustainable Development*, 29: 497-501.
45. Donnarumma, F. [*et al.*]. 2010. Potential gene exchange between *Bacillus thuringiensis* subsp. *kurstaki* and *Bacillus* spp. in soil *in situ*. *Soil Biology and Biochemistry*, 42: 1329-1337.
46. Ellstrand, N.C. 2003. Current knowledge of gene flow in plants: implications for transgene flow. *Philosophical Transactions of the Royal Society of London B*, 358: 1163-1170.
47. Chen, J. [*et al.*]. 2012. A survey of drug resistance *bla* genes originating from synthetic plasmid vectors in six Chinese rivers. *Environmental Science & Technology*, 46: 13448-13454.
48. "Damning verdict on GM crop". *The Guardian*, 22-03-05.

    "GM crops fail key trials amid environment fear". *The Guardian*, 02 -10-03.
49. Zhang, Z. [*et al.*]. 2007. Differential responses of conventional and Bt-transgenic cotton to potassium deficiency. *Journal of Plant Nutrition*, 30: 659-670.

    Zhao, J.H.; Ho, P.; Azadi, H. 2011. Benefits of Bt cotton counterbalanced by secondary pests? Perceptions of ecological change in China. *Environmental Monitoring and Assessment*, 173: 985-994.
50. Bohanec, M. [*et al.*]. 2008. A qualitative multi-attribute model for economic and ecological assessment of genetically modified crops. *Ecological Modelling*, 215: 247-261.
51. http://www.iucn.org/congress/members/MotonsEngFin1-for-web.pdf

Bibliography

Barnosell, Francisco. *Entre dos aguas*. Barcelona: Luciérnaga Nova, 2012.

Bradford, Montse. *La alimentación y las emociones*. Barcelona: Océano Ámbar, 2012.

Briggs, John; Peat, Francis David. *Las siete leyes del caos: las pautas de una vida creativa*. Barcelona: Grijalbo, 1999.

Cabal, Esteban. *Guía de los aditivos usados en la alimentación*. Madrid: Mandala Ediciones, 1999.

Campbell, T. Colin; Campbell II, Thomas M. *El Estudio de China*. Barcelona: Sirio, 2012.

Casademunt, Jordina. *Salud interior*. Barcelona: Océano Ámbar, 2012.

De Prada, Carlos. *S.Q.M.: El riesgo tóxico diario*. Madrid: Fundación Alborada, 2009.

Duch, Gustavo. *Lo que hay que tragar*. Barcelona: Los libros del lince, 2010.

Duch, Gustavo. *Alimentos bajo sospecha*. Barcelona: Los panfletos del lince, 2011.

Font Quer, Pío. *Plantas medicinales: El Dioscórides renovado*. Barcelona: Península, 1999.

Galeano, Eduardo. *Los hijos de los días*. Buenos Aires: Siglo XXI, 2012.

Gouget, Corinne. *Los aditivos alimentarios*. Barcelona: Obelisco, 2008.

Jara, Miguel; Carrasco, Rafael; Vidal, Joaquín. *Conspiraciones tóxicas: Cómo atentan contra nuestra salud y el medio ambiente los grupos empresariales*. Barcelona: Ediciones Martínez Roca - Grupo Planeta, 2007.

Jara, Miguel. *La salud que viene*. Barcelona: Península, 2009.

Jara, Miguel. *Laboratorio de médicos*. Barcelona: Península, 2010.

Perkins, John. *Confesiones de un gángster económico: La cara oculta del imperialismo americano*. Barcelona: Tendencias, 2005.

Plant, Jane. *Tu vida en tus manos*. Barcelona: RBA Libros, 2001.

Reed Stitt, Barbara. *Food & Behavior: A Natural Connection*. Wisconsin: Natural Press, 1997.

Repetto, Manuel. *Toxicología fundamental*. Madrid: Ediciones Díaz de Santos, 1997.

Riechmann, Jorge. *Argumentos recombinantes: Sobre cultivos y alimentos transgénicos*. Madrid: Los Libros de la Catarata, 1999.

Riechmann, Jorge. *Cultivos y alimentos transgénicos: Una guía crítica*. Madrid: Los Libros de la Catarata, 2000.

Riechmann, Jorge. *Qué son los alimentos transgénicos*. Barcelona: Integral/RBA, 2002.

Robin, Marie-Monique. *El mundo según Monsanto*. Barcelona: Península, 2008.

Robin, Marie-Monique. *Nuestro veneno cotidiano*. Barcelona: Península, 2012.

Shiva, Vandana. *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics*. Londres: Zed Books, 1991.

Tompkins, Peter; Bird, Christopher. *La vida secreta de las plantas*. México: Diana, 1973.

Treben, Maria. *Salud de la botica del Señor*. Austria: Ennsthaler, 1980.

Varios. *La coexistència impossible*. Balaguer: Assemblea Pagesa, Plataforma Transgènics Fora!, Greenpeace, 2006.

Vivas, Esther; Montagut, Xavier. *Supermercados, no gracias*. Barcelona: Icaria, 2007.

Vivas, Esther; Montagut, Xavier. *Del campo al plato*. Barcelona: Icaria, 2009.

Voisin, André. *Suelo, hierba y cáncer*. Madrid: Técnos, 1961.

Resources

Websites relating to Josep Pàmies:

Josep Pàmies Blog: http://joseppamies.wordpress.com/

Pàmies Hortícoles S.L.: http://www.pamieshorticoles.com/

Dulce Revolución: http://dolcarevolucio.cat/es/

Slow Food España: http://slowfood.es/

Slow Food Terres de Lleida: http://www.slowfoodterresdelleida.com/

Som lo que Sembrem: http://www.somloquesembrem.org/

Websites on health:

Revista Discovery Salud: http://www.dsalud.com/

Blog of independent journalist Miguel Jara: http://www.migueljara.com/

Blog of writer Jesús García Blanca: http://saludypoder.blogspot.com.es/

Curing Diabetes: http://www.curardiabetes.com/

De tots els colors (holistic health): http://detotselscolors.wordpress.com/

Bienestar (sensitive crystallisations): http://celebrador.blogspot.com.es/

Websites on social movements:

Grain (charity fighting for food sovereignty): http://www.grain.org/

Cooperativa Integral Catalana: http://cooperativa.cat/

Consumo Colaborativo: http://www.consumocolaborativo.com/

Decrecimiento: http://www.decrecimiento.info/

Sindinero: http://www.sindinero.org/

Esther Vivas Blog: http://esthervivas.com/

Gustavo Duch Blog: http://gustavoduch.wordpress.com/

Websites on ecology:

AlSol (cookers, solar dryers, and energy-saving systems): http://alsol.es/

Som Energia (green energy co-operative): http://www.somenergia.coop/es/

Ecoticias (ecology, environment and renewable energies): http://www.ecoticias.com/

Terra (practical ecology): http://terra.org/

Websites of the alternative press:

Miquel Figueroa Blog: [correo electrónico: mikifm@live.com]

El Proyecto Matriz (hidden, ignored, and suppressed information): http://el-proyectomatriz.wordpress.com/

Liberación Ahora (alternative news, new paradigms): http://liberacionahora.wordpress.com/

Free News (independent information): http://www.free-news.org/htm/index.htm

La Caja de Pandora (citizens' journalism): http://www.lacajadepandora.eu/

Other websites

PubMed (search engine for medical texts): http://www.ncbi.nlm.nih.gov/pubmed/

Teresa Forcades: http://www.benedictinescat.com/Montserrat/Teresacas.html

Alexandre Deulofeu: http://deulofeu.org/

A Sweet Revolution

Josep Pàmies (Balaguer, 1948) is a farmer who has been involved with unions and co-operatives since his youth. Over the years, he has witnessed first-hand how conventional agriculture is causing harm to people's health and to the environment; this has made him aware of the hidden interests that operate out of the public's view. Disillusioned with the industrial food that he too produced for some years, he now pours his energy into promoting a natural way of life, and he encourages everyone to be a part of the change that humanity needs.

In the pages of this book, the reader will learn of the experiences and reflections of a countryman dedicated to matters such as organic farming, the fight against GMOs, medicinal plants and other healing methods which are today considered alternative.

He currently writes a blog *joseppamiesblog.com,* which receives more than 5,000 hits per day.

ISBN: 978-84-946105-4-7
9 788494 610547