



Memo n°6: Diego FERNANDEZ

GMO Farmer, Argentina

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My name is Diego Fernandez Bantle. I'm married with two children and I live part of the week in the country in Bouquet, Santa Fe province, Argentina and part of the week in the city of Rosario.

I graduated from the National University of Rosario with a degree in Political Science and began working on research in the Conicet (Argentine state research agency) in 1984. Later that same year I resigned for various reasons and started working with my father managing the family farm that was 1000 hectares at that time.

Today, after 32 years working in the farm, it is divided and I own 150 hectares, 1/3 of which is certified organic and 2/3 of which is for conventional farming, with the aim of converting it to agro ecological use. My brother also has 150 hectares, also for conventional farming.

The original owner of the land was my great-grandfather, the late 19th century. My father began to work the land in 1973, which is soy entered Argentina. It was not known here before.

Until then, the field was rotated between several crops and pastures for livestock. The producer and employees mostly lived in the countryside.

Soybean profitability began to gain prominence and displace other activities and this was a landmark moment in soil degradation because many stopped proper crop rotations. The economic results spurred several producers to sell up and move into a house in the town with more amenities and not have to take their children to school every day from the farm, with the usual inconveniences of rainy days and distance.

Weeds were dealt with using tools such as double action disks alongside some broadleaf herbicides and finally, any problem weeds (chamico for example) that "escaped", were hoed down by teams of men.

But for soybeans, Johnson grass (sorghum halepense) was a problem from the start and when round-up came along 1 litre at most was used per hectare per year, applied to the Johnson grass growing above the soybean. At the time it was used as full coverage prior to planting because everything it touched died. Monsanto's propaganda was that it killed from above and below. We did not know was that this statement was not true if the same product was used for years.

In 1977 vertical tilling implements appeared like the chisel, then cultivators that did a better job than the double disc, because they removed the weeds without disturbing the soil so much.

Another landmark that impacted agricultural production in Argentina severely was direct seeding technology that appeared around 1989. Gradually almost everyone adopted this practice. No one worked the soil any more; they only planted and used various combinations of herbicides to control weeds. Glyphosate was one of several chemicals, but as tools were no longer used to weed, more and more litres were used per hectare. Direct seeding brought some benefits like retaining more moisture in the soil, making them and less dependent on weather when choosing the best planting dates.

But the biggest landmark was the appearance of GM soy in Argentina around 1996. Many looked at it with suspicion, because when we started to use it, the RR yields were lower than the non-GMOs. But along with the RR soybean Round-up came cheap and this in principle made sense in economic terms. It was better and seemed simpler to apply one herbicide that killed everything as they said, instead of several mixtures.

In Argentina we have two large institutions which create technology and information for farmers: the National Agricultural Technology Institute (INTA), state-owned, and Argentina Direct Seed Producers Association (AAPRESID), private-owned. Both played an important role here, and producers and farmers respect their decisions.

But soon after this combination appeared (RR soy and cheap glyphosate), instead of raising the alarm, these two institutions, as influential producers, supported it. This was strange because INTA, being state-owned, should have been looking out for us and because AAPRESID initially criticised RR soy, calling it "yield resistant". Not long after in that institutions magazine, a photo appeared with its leaders standing behind some boxes of Monsanto glyphosate. I asked my technical advisor about this and he referred to Monsanto and the institutions about the possible harmful effects to people or the environment, the answer was: when applied, Round-up becomes an inert, it deactivates and does no damage. Today I know that this was a lie and fraud.

The progress of this change was very fast and brought consequences:

By taking this tinned package of Round-up-transgenics, advisors and technicians who taught and collaborated with producers lost their relevance. They almost took directly what came from the company and left to one side the traditional means of production of farmers, who gave most importance to soil as a resource.

Livestock was driven to outlying areas so the natural fertility that we had on the land with crop rotation also became totally dependent on imported inputs (chemical fertilizers).

What at first had seemed effective over the years led to problems that I attach to the repeated use of glyphosate:

- 1) Chemical fallow land has greatly expanded. Before, during winter and spring the grass looked greener, because of the weeds that were being worked on (or sprayed with cocktails of herbicides) or because a green manure was used. But now the recommendations of the technical and institutions already mentioned were to *kill everything before sowing so that weeds do not consume water, which we need after for further growing*. Therefore: more Round-up (one litre per hectare from the beginning, now between 10 and 12 litres per hectare per year) and the land empty between the last harvest and next planting. Many years of doing compacted the soil, with the absence of living roots and lower microbiological activity. About 5 years ago in INTA Marcos Juarez a couple of engineer agronomists began to do tests and show that this was a lie. Leaving the green manure prior to cultivation, the soil would be more porous and absorb later rains better. In addition, no one warned at the time of the damage caused by almost always using the same product (damage to the environment, people, increased resistance in invasive plants).
- 2) The propaganda that it killed everything began to become exposed as not doing so. First we had to increase doses of glyphosate and Monsanto released the full Round-up 2, Round up ultra max, which were more powerful and with additives. Soon this was not effective either and glyphosate had to be mixed with other

products to try to control the same weeds, but unlike 10 or 15 years ago, now they were not as effective because the Johnson grass has developed resistance to glyphosate, as have other weeds such as redroot pigweed (*Amaranthus quitensis*).

3) At least 5 years ago I observed the emergence of invasive plants that previously had not been seen. For example *Conyza bonariensis* and *Lolium multiflorum*. These, among others, have been growing rapidly despite applying more herbicides and even desiccants, as the plant resists. This year, to harvest 30 hectares of soybeans that could not be identified because of the severity of an invasion of *Conyza bonariensis*, I had to hire a team of people to weed the land using hoes.

4) My farm is crossed by a basin and due to rains and high water tables last year, the water sits on the surface making a small lake and a channel. The day after applying glyphosate 2.4-D I have seen many dead fish (mojarras). This is repeated after we use it or our neighbours do. Here it is true that it kills everything!!!

5) The soil has changed: it is more compact; it no longer has the fluffiness or colour it had before. It is less fertile, and to achieve the same yields I have to add more fertilizer. Flooding is not because it has rained more, but because the soil does not hold the water, since it cannot permeate the surface and so runs along it. When I do soil checks (a well to observe what is happening below) the soil is compacted in layers, which is logical after years of chemical fallow, which has not allowed roots to go deeper.

6) The GM corn deserves a separate chapter. This is very serious because I never wanted to plant a RR corn, but eventually I could not gain Access to the market without transgenics. They have been stopping sales of other types of corn, forcing us to buy only RR. As far as resistance to budworms or other infestations (Bt), this worked initially then it ceased to be effective, because everything depended on farmers also planting non-GM plots and institutions checking up on this: so the pests became resistant, as there was no alternative food. In addition, as the corn is a product of cross-fertilization, it ends up contaminating any other non-GMO corn planted by a neighbour. If action is not taken soon, GMO-free corn will unfortunately cease to exist.

6) Last year I planted non-GMO corn. I have the certificates to prove it and took care in both the planting and harvesting to ensure it was not contaminated. However I could not sell it at a better price for being non-GMO because it had been contaminated with transgenic corn from relatively nearby fields. On the one hand Monsanto still charges me for soy I bought from them six years ago, and on the other hand it is not responsible for the GM plants it produced and which everybody

plants, because there are almost no alternatives and this leads to my originally non-GM corn being contaminated.

Today, I can look at the attitude Monsanto has to farms through different eyes. Example: A few months ago there was an important meeting near my farm where Monsanto engineers presented the new soybean X-Tend which, as well as being RR and intact (insect resistant), is now resistant to the herbicide 2.4-D in certain stages of the plant. These people wanted to convince the fumigators they had invited that it was not risky to apply 2.4-D. This idea is crazy, because of the changing winds and the fact that there are soy plants nearby that are not resistant to the herbicide. The risks of destroying the neighbours' soybeans are very high. Not to mention the fact that this GM soy promotes the use of more agrochemicals. This story reveals the irresponsibility of the company and its sole intention of gaining more profits no matter what happens to the producer, soil and so on.

This is basically what I have to say. As a producer for over 30 years and now remembering the whole process, I can say that Monsanto deceived us, imposed GMOs with glyphosates on us, with the collaboration of the institutions that advised us, leaving us in a deplorable state, which is unprecedented, with enormous dependence on inputs we did not previously have.

3 years ago when the group of organic producers I belong to got INTA to experiment again with different varieties of non-GMO soybeans, its director was about to cut the programme by arguing "Monsanto and other companies have better resources to do it." This small example, the difficulty I had 10 years ago in finding a single advisor or alternative testing when I started with organic alternatives to transform the farm, shows the current lack of thinkers and researchers that there used to be in the Institutions Argentina's countryside. I think this is primarily yet another achievement of Monsanto's.

Diego Fernandez Bantle

Livestock and crop farmer