

Genetically modified (GM) soya was introduced into Argentina in 1996 without any kind of debate either in Congress or among the public. Since then, its cultivation has spread across the country like wildfire. Today more than half of the country's arable land is planted with soya. No other country in the world has devoted such a large area to a single GM crop. Argentina provides a unique opportunity to investigate the consequences for a country of intensive GMO cultivation.

Twelve years of GM soya in Argentina

a disaster for people and the environment

GRAIN



16

With this year's planting season well under way, it is estimated that Argentina will be planting soya on a record 18 million hectares, about half of the country's farming land. Almost all of the soya planted today is Monsanto's Roundup Ready (RR), a type of soya that has been genetically modified to be resistant to the Roundup herbicide – largely composed of glyphosate – which is also manufactured by Monsanto. So what have the consequences been for the people and for the country?

Perhaps those who have suffered most have been small farmers and peasant families. Even before RR soya was introduced, the Argentine government adopted policies that favoured big farmers, deciding that farming units smaller than 200 hectares were “uneconomical”, and predicting that at least 200,000 farmers would have to leave the land.¹ Since then, government policies have not

changed. Thousands of peasant families have been evicted violently from their land for trying to resist the advance of soya. Members of the Movimiento Campesino de Santiago del Estero (Mocase), a peasant movement in northern Argentina linked to Via Campesina, and of the Movimiento Nacional Campesino Indígena suffer constant harassment for trying to halt the advance of the soya front.

The families that manage to stay on the land have also been badly affected, particularly by chemical contamination, which has grown worse in recent years. When it introduced RR soya, Monsanto promised that there would be a dramatic decline in herbicide use. As RR soya had been genetically modified to be resistant to glyphosate, Monsanto argued that it would be possible to kill all weeds by applying the herbicide just once, early on in the planting season. In fact, this advantage never materialised as strongly as the company predicted. Instead of falling, national consumption of glyphosate has risen dramatically: Argentina

¹ Lilian Joensen, Stella Semino and Helena Paul, “Argentina: A Case Study on the Impact of Genetically Engineered Soya”, The Gaia Foundation, 2005.

* In November 2008 the third meeting of Rural and Urban Women for Food Sovereignty was held in Santa Fé in Argentina. One of the working groups decided to hold their two-day seminar on the railway line owned by the private company Belgrano Cargas, which is used during harvest to transport soya beans. It was a protest, the women said, against the “soya model” and against the privatisation of the railways. For 48 hours they halted all traffic on the line, causing losses to the rail company estimated at US\$200,000.

These are extracts from the document that the women issued to explain their action:

- The soya model contaminates our environment and, by concentrating land and the means of production, expels peasant communities from the land they have occupied for many years, increasing the vulnerability of all, but particularly of women and children.
- You only have to look along the edges of the so-called “roads of production” to catch a glimpse of the life to which expelled people are condemned. They are forced to live in dark, forgotten places, where the only light comes from gambling dens and bars. The women are economically and sexually exploited, not only by men but by a whole ideological system validated by our society.
- To attack women is to attack food sovereignty, since women produce 80 per cent of the food that the world consumes. It is for this reason that the struggle for food sovereignty, the struggle to stay on the land and recover our capacity to produce what we eat, is also a struggle to regain sovereignty over our bodies.
- As we women are responsible for feeding our families, we have to be at forefront of the struggle to replace a model of consumption, commercialisation and production that fills the coffers of transnational companies at the expense of the well-being of our people.
- We are fighting for a new economy that respects people and nature, that includes everyone and guarantees the just distribution of all production so that everyone can live a life of dignity, happiness, autonomy and sovereignty.
- NO TO MONOCULTURE! YES TO TRAINS FOR ALL (BUT NOT FOR SOYA)!

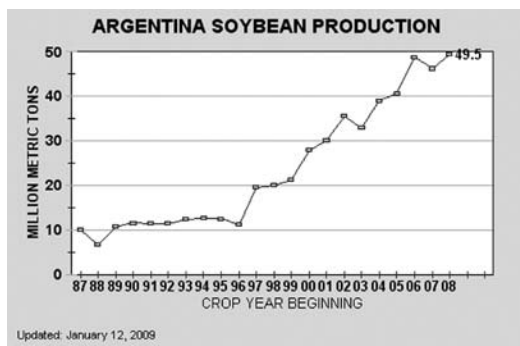
is estimated to have used 200 million litres of glyphosate in 2008, compared with 13.9 million litres in 1996.² In other words, while the Argentine soya harvest has increased fivefold during the period, consumption of glyphosate has increased fourteenfold.

The intense application year after year of a single herbicide – glyphosate – has led to the emergence of weeds that have become resistant to this chemical. Some of the better known of these “super-weeds”, as they are popularly called, are: *Hybanthus parviflorus* (Violetilla), *Parietaria debilis* (Yerba Fresca), *Viola arvensis* (Violeta Silvestre – Field pansy), *Petunia axillaris* (Petunia), *Verbena litoralis* (Verbena), *Commelina erecta* (Flor de Santa Lucía – Slender dayflower), *Convolvulus arvensis* (Correhuela – Field bindweed), *Ipomoea purpurea*

(Bejuco – Morning glory), *Iresine difusa* (Iresine) and recently *Sorghum halepense* (Sorgo de alepo – Johnson grass), which, because it is a difficult weed to control, has caused considerable alarm among farmers.³

To deal with these weeds and also with “volunteer” soya – that is, soya that sprouts out of season – soya farmers have started spraying the land with stronger herbicides before planting. It is estimated that today 20–25 million litres of 2,4-D, 6 million litres of atrazine (banned in the European Union in 2004 because it contaminates groundwater) and 6 million litres of endosulfan (a highly toxic organochlorine insecticide) are used on the soya fields each year.⁴ Experts quoted in a study by Friends of the Earth believe that an additional 25 million litres of non-glyphosate herbicides will be required each year to control Johnson grass.⁵

The soya farmers make little effort to prevent chemicals being carried by the wind into the homes and on to the land of the rural population. As a result, the chemicals have seriously affected the health of both people and domestic animals, damaged food crops and contaminated the soil, water courses and the air. Even though there are no official statistics for the overall picture, organisations have collected detailed information on hundreds of cases and have repeatedly complained to the authorities.⁶



Source: USDA

2 Secretaría de Ambiente y Desarrollo Sustentable, “El avance de la frontera agropecuaria y sus consecuencias”, March 2008.

3 Walter A. Pengue, “El glifosato y la dominación del ambiente”, Biodiversidad, July 2003; Monsanto, “Se confirma la resistencia de un biotipo de Sorghum halepense a glifosato en Tartagal, Salta”, 16 August 2006. <http://tinyurl.com/7wdzcu>

4 Friends of the Earth, “Who benefits from GM crops? The rise in pesticide use”, January 2008, p. 19.

5 Ibid., p. 20.

6 Diego Domínguez and Pablo Sabatino, “La muerte que viene en el viento. Los problemas de la contaminación por efecto de la agricultura transgénica en Argentina y Paraguay”, November 2008.





Protest against GM soya, Buenos Aires

Urban dwellers, too, have been indirectly hurt by the soya boom. The export model dominated by soya has threatened the country's food sovereignty. Argentina used to produce plentiful quantities of cheap meat, dairy produce, lentils, beans and other vegetables. Mixed farming, with livestock and crops in rotation, provided good yields. Soya monocropping has changed all that. The number of dairy farms fell 50 per cent between 1988 and 2003, from 30,000 to 15,000.⁷ National production of most staple foods has declined sharply. Argentina, which used to be called "the granary of the world", is having to import food. People are even going hungry. It is not only food crops that have been affected: cotton production has fallen by 40 per cent in the province of Chaco and 78 per cent in the province of Formosa.

While the majority of farmers have been greatly harmed, the adoption of GM soya has clearly strengthened some groups within the country. Big farmers, many of whom are linked to "pools" of financial investors, have greatly extended their control over the farming sector. Financial returns on soya are not high per hectare, so, in order to make large amounts of money, the pools have been leasing vast stretches of land from thousands of small and medium-sized farmers, many of them dairy cattle farmers or food producers, driven out of business by the export-oriented economic policies.

One of the advantages of GM soya for big farmers is that it facilitates "no-till" farming – that is, farming without ploughing the land, which means that they need few labourers. Indeed, it is estimated

that only one labourer is required for every 500 ha of soya. So the farmers are able to farm intensively, using gigantic machines. They pay little attention to the long-term health of the soil, particularly if they are leasing the land and returning it to its owners once its fertility has been exhausted. Huge profits are possible by farming this way: one of the bigger producers, Grupo Los Grobo, which has 150,000 ha under soya, has an annual income of US\$400m and expects to double its turnover this season.⁸

The price Argentina pays for these few financial groups' high profits is the mortgaging of its long-term future. Each year more than 200,000 ha of native forest are felled as the agricultural frontier advances.⁹ With the intense monocropping come leaching, erosion and soil degradation. It has been estimated that the deforestation results in 19–30 million tonnes of soil being washed away each year. Moreover, soya cultivation extracts nutrients from the soil and absorbs water, embedding them in the crop. In practice, this means that 1 million tonnes of nitrogen and 160,000 tonnes of phosphorus are "exported" each year, along with 42.5 billion cubic metres of water.¹⁰ These are serious losses. Argentina will need these resources in the future for its agricultural development.

The costs of the soya boom have rippled out beyond the country's borders, for Argentina was used by Monsanto as a gateway for the expansion of GMOs into the rest of the southern cone. For six years a small group of Brazilian consumers and environmentalists fought doggedly in the courts to keep GMOs out of their country, but their battle was fatally undermined by the smuggling of RR soya over the frontier from Argentina. Seduced by the extravagant promises made by salesmen, Brazilian farmers bought the illegal seeds on such a scale that the official ban on GMOs became meaningless and was revoked by president Lula. Similar tactics were used to spread RR soya into Paraguay and Bolivia.



Harvesting the vast soya fields, Argentina

7 Secretaría de Ambiente y Desarrollo Sustentable, "El avance de la frontera agropecuaria y sus consecuencias", March 2008.

8 "Los Grobo esperan duplicar su facturación el próximo año", Clarín, 28 February 2008. <http://tinyurl.com/8l7fw>

9 Secretaría de Ambiente y Desarrollo Sustentable, "El avance de la frontera agropecuaria y sus consecuencias", March 2008.

10 Walter A. Pengue, "Agua virtual", agronegocio sojero y cuestiones económico ambientales futuras", Instituto Argentino para el desarrollo económico, Realidad Económica No. 223, 24 November 2006. <http://tinyurl.com/9p52ng>



The RR soya frenzy, which is turning the southern cone into what has been called the “Republic of Soya”, has led to no increase in productivity, despite all the promises made by the salesmen. Indeed, a recent investigation by the University of Kansas shows that RR soya has an average yield that is 6–10 per cent lower than that of conventional soya.¹¹

Prospects


“Superweeds” created by ecological imbalances inherent in monocropping with a GM crop, long predicted by ecologists, are jeopardising the long-term economic and environmental viability of RR soya. But instead of rethinking the whole agricultural model and encouraging farmers to return to mixed farming, where natural balances make it far easier to control weeds, the Argentine authorities are offering their full support to Monsanto, which is planning over the next five years to introduce a new form of GM soya. The new soya will have a gene inserted into it which makes it resistant to dicamba, a herbicide that kills broadleaf weeds.

According to Robert Hartzler, a weed specialist at Iowa University, dicamba brings its own problems.¹² The compound’s volatility means that it will kill off broad-leaved plants on fields and in houses up to half a kilometre away, which will undoubtedly



“Soya monoculture = death”, says a banner on an anti-GM protest march in Argentina

cause yet further serious problems for the rural population. Monsanto is confident that resistance won’t become a serious problem, but Hartzler is not so sure. “I don’t think we can say that resistance won’t develop”, says Hartzler, “but it is a much lower likelihood than with other herbicide classes. But then, that’s what they originally said about glyphosate.”¹³

Another technical fix and another swathe of problems for Argentina’s communities. How long will this madness prevail? 

11 Silvia Ribeiro, “¿Quiere bajar la producción? ¡Use transgénicos!”, La Jornada, Mexico, 19 July 2008. <http://tinyurl.com/8asytc>

12 Heidi Ledford, “Geneticists create ‘next generation’ of GM crops: Soya beans could be treated with alternative herbicide”, Nature, 24 May 2007. <http://tinyurl.com/7gatbz>

13 Ibid.

Going further (with videos, protests and analysis)

Campana Paren de Fumigar

<http://www.grr.org.ar/campanapdf/index.php>

Soja para Hoy, Hambre para mañana

<http://sojahambre.blogspot.com/>

Redaf

<http://redaf.org.ar/noticias/?p=329>

Fundación Proteger

<http://www.proteger.org.ar/soja>

La Soja Mata

<http://www.lasojamata.org/es>

Instituto de Investigaciones Gino Germani

http://www.iigg.fsoc.uba.ar/pub_rural.htm

GEPAMA

<http://www.gepama.com.ar/>

Video Hambre de Soja

http://www.dailymotion.com/video/xu9kc_hambre-de-soja

RR, La cosecha Amarga

<http://www.rrlacosechaamarga.blogspot.com/>

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www.grain.org

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www.biodiversidadla.org

