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NEW MONSANTO AND GMO PROPAGANDA

Seeds of irreversible change

*Multinationals like Monsanto are facing real grassroots opposition in the world, especially over agro-chemicals and GMOs. Monsanto has led the big corporations towards diversionary tactics: they have issued codes of conduct and ethical charters to conceal their real objective of creating value for their shareholders. They are promoting their products as cures for third world hunger and disease, and as an alternative to the dangers of pesticides. They hope to win over a hostile public with advertising. by AGNÈS SINAI **

Monsanto has declared a state of emergency. Following a bomb threat at its Peyrehorade site in the French department of Les Landes, the world's second largest farm seed producer launched a security protocol on its Intranet network to safeguard its computer systems and protect its employees from physical attack. Personnel must report all suspicious behaviour, anonymous telephone calls and persons not wearing security badges; they must lock all doors, use passwords to block access to computer screens and not use modems to connect to the outside world. Only persons expressly authorised to do so may talk to journalists. Monsanto-France's present director of communications, Armelle de Kerros, is in fact no stranger to a culture of secrecy, since she was previously with the Compagnie générale des matières atomiques (Cogema). But this does not prevent Monsanto presenting an image of "transparency".

Since the scandal surrounding Terminator, the first killer plant in the history of agriculture (1), the company has been divided between defensive paranoia and aggression. Its troubles started when it bought Delta & Pine Land for all of \$1.8bn. This brought into Monsanto's hands a patent for a method of genetically engineering seed so that it will no longer reproduce from one year to the next. The Rural Advancement Foundation International (RAFI) dubbed this sterilisation technique Terminator. The ensuing international outcry forced Monsanto president Bob Shapiro to withdraw the product and resign.

Since then, the multinational has abandoned its ambitious slogan, "Food, Health, Hope", and is seeking to rebuild its reputation. Producing genetically modified organisms or GMOs (now modestly referred to as biotechnology) is a highly risky undertaking in terms of both image and investment. Not to mention the possibility of biological accidents: threats to biodiversity

and the appearance of mutant insects resistant to the insecticides incorporated into transgenic plants (2). In the United States, the Environmental Protection Agency (EPA) now encourages farmers to devote at least 20% of their land to conventional crops so that insects that are not resistant to the transgene *Bacillus thuringiensis* can develop.

All this goes to explain why, in the maelstrom of mergers, acquisitions and restructurings, agrochemicals, including plant biotechnologies (GMOs), are being systematically isolated from the other sectors so as to compartmentalise the transgenic risk. In the same way, Aventis is trying to dissociate itself from its agrochemicals branch, CropScience. The firm used to market the transgenic maize Starlink, which can cause allergies in humans. Although intended only for use as animal feed, the maize turned up on a large scale in US consumers' crisps and cornflakes and in Homemade Baking brand cakes sold in Japan. The same process resulted in the creation of the world's largest agrochemicals group, Syngenta, in October last year; the outcome of a merger between Switzerland's Novartis and the Anglo-Swedish firm Astra-Zeneca, its turnover is expected to approach \$7bn.

After merging with pharmaceuticals giant Pharmacia & Upjohn, Monsanto is now concerned only with agriculture, turning over \$5.49bn last year. It has made its flagship anti-arthritic drug Celebrex over to Pharmacia in order to specialise in the production of plant health products, agricultural seeds and, more especially, genetically modified seed. Monsanto is now the world's second largest seed producer after Pioneer, the second largest plant seed producer after Syngenta, and the number one in herbicides. Its Roundup is the world's best selling herbicide, with \$2.6 bn turnover last year, nearly half that of the group. It is now trying to get its transgenic products accepted by persuading consumers it is better to eat a genetically modified plant than one that has been sprayed with pesticides (3). To overcome the remaining obstacles, the strategy is now taking on a philanthropic and ecological guise.

Cashing in on ethics

Keen to cash in on the ethical approach, this January Monsanto published a new Pledge containing five commitments to its customers; dialogue, transparency, respect, sharing and benefits. According to Monsanto-France's chief executive Jean-Pierre Princen, European consumers, who are the most cautious about GMOs, need to understand that a genetically modified organism is a genetically improved organism. Hence the birth of the new Monsanto, referred to internally as Monsanto M2: its seeds are ecological and healthy. Anyone who doubts that is simply ill-informed. We need a clean break with the past. Who remembers that Monsanto made the Agent Orange defoliant used by American bombers during the Vietnam war? Now the multinational's teams meet in Ho Chi Minh City to sell their herbicides and establish useful contacts with the media, scientists and members of the Vietnamese government. From the Philippines to Argentina, they are looking for unlimited freedom of action: to be, in house jargon, "free to operate"

For outside consumption they are therefore pushing the ecological benefits of GMOs, two kinds of which are sold by the group: the Bt gene, first of all, which is obtained from the bacterium *Bacillus thuringiensis* and produces its own insecticide toxins. This makes additional pesticide spraying unnecessary: a crop of Bt cotton will need only two sprayings instead of six or eight. The second variety is Roundup Ready, designed to be resistant to the Roundup herbicide. The farmer buys a "kit" containing both the seed and the weed killer. The firm describes Roundup as biodegradable, as a result of which the Directorate General for Competition, Consumer Affairs and Fraud Prevention (DGCCRF) in Lyons, France, is taking them to court for misleading advertising.

In the US the EPA estimates that between 20m and 24m g of glyphosate are spread every year (4). Vast quantities of it are used in growing soya, wheat and hay, and on grazing and fallow land. Its use has increased some 20% a year since 1998. Contained in Roundup, it is the most widely sold herbicide in the world, earning Monsanto around \$1.5bn every year. The patent expired last year, but Monsanto will keep some of the monopoly because its genetically modified plants are designed to be tolerant to glyphosate. In Brittany glyphosate is a major and regular pollutant. In October 1999 as much as 172 times the safe level were found in the Elorn River, which supplies one third of Finistère with drinking water. "This proves that calling Roundup biodegradable is a fraud", explains Dr Lylian Le Goff, a biotechnologist with the organisation France Nature Environnement. Pollution of the soil, water, rain, the entire food chain and the atmosphere by pesticides has become a serious public health problem that the French government has been slow to recognise. Hence Le Goff believes that "it's essential that we apply the precautionary principle and stop encouraging the use of pesticides, especially when it's done through misleading advertising that claims glyphosate-based products are harmless and biodegradable."

Consumers would ingest much more pesticides if genetically modified plants were to spread because they contain so much of them. Like dioxins, pesticides, including glyphosate, are not broken down in the human body; they are a form of invisible pollution (5). Their molecules have allergenic, neurotoxic, carcinogenic, mutagenic and hormonal effects and are harmful to male fertility. They have similar properties to female hormones, oestrogens; over all, these hormonal effects could be responsible for a 50% decline in sperm counts over the last 50 years. If that decline were to continue, the human race would have to resort to cloning by about 2060.

Apart from their alleged biodegradability, Monsanto presents its Roundup Ready transgenic seeds as being "climate friendly" because using them would allow farmers to cut back on ploughing, or even stop ploughing altogether; this would allow massive amounts of carbon gas and methane to be stored in the soil, cutting US carbon emissions by 30%. In what way non-transgenic cultivation would be less effective is not explained. One thing is certain: there would be lower profits because an ordinary crop would not need Roundup herbicide. Monsanto's sudden ecological vocation and the zeal of its "sustainable development sector" president, Robert B Horsch, coincide with the interests of people selling rights to pollute, like the Montana landowners who have formed a coalition to sell carbon gas emission rights.

To the point

If New Monsanto's language for external use is centred on "tolerance, respect and dialogue", the strategic terminology used in-house is far less compromising. The firm's "philosophy" as described by plant development programme director Ted Crosbie to a meeting of Monsanto Latin America executives in January this year is straight and to the point: "deliver the pipeline and the future on the same day." In plain terms, that means flooding available farmland with GMOs in order to occupy the land irreversibly. From this point of view, Latin America is "winning environment": Monsanto estimates there are 100m hectares to be "developed" in Brazil alone.

Unfortunately, Brazil remains stubbornly resistant to GMOs according to Nha Hoang and his colleagues of the Monsanto group responsible for the "free to operate" strategy in Latin America. "It is already the second largest soybean producer in the world, after the US, and will soon probably become number one. It's the largest economy in Latin America and it's the

last of the three big powers without legally approved biotech crops. Judges variously declared the regulatory process defective, claimed that the appropriate environmental impact studies had not been done and even held the existing biotech regulatory agency to have been illegally constituted." The amended statutes of the agency in question, CTNBio, are awaiting ratification by the Brazilian Congress. The aim is to unplug the "pipeline" of transgenic soya, paving the way for further marketing authorisations: YieldGard maize, Bollgard cotton and Roundup Ready cotton next year, Roundup Ready maize in 2003 and Bt insecticide soya in 2005. Meanwhile Monsanto is investing \$550m in building a Roundup herbicide production plant in Brazil's north-eastern state of Bahia.

The multinational's strategy is based on "biotech acceptance", getting GMOs accepted by society and then, or at the same time, flooding the markets. It involves massive high-profile publicity campaigns. In the US, the sector's propaganda organ, the Council for Biotechnology Information, buys TV commercial spots direct. Monsanto is a co-founder of this organisation, which collects and disseminates information on the "benefits of biotech". "Television is a powerful tool for getting biotechnologies accepted," says Tom Helscher, director of biotechnology acceptance programmes at Monsanto headquarters in Creve Coeur, Missouri. He urges people to get their families and friends to watch out for biotech publicity and is particularly keen to reassure American farmers hesitant about buying genetically modified seed, for fear of losing their foreign markets.

If Aventis Crop Science, BASF, Dow Chemical, DuPont, Monsanto, Novartis and Zeneca Ag Products have launched massive propaganda campaigns in the US, they are still hesitant to do as much in Europe. In the United Kingdom, Monsanto's sales team is congratulating itself on the success of its biotech advocacy programme; once trained by their firm, reps are able to call themselves experts and sing the praises of transgenic products to farmers and in schools. "There's no such thing as too much communication," says Stephen Wilridge, director of Monsanto Northern Europe.

The educational system is also strategic in the battle for minds. Partly funded by Monsanto, the Biotechnology Challenge 2000 programme saw 33% of Ireland's secondary school pupils produce reports on the role of biotechnology in food production. As he handed out the prizes and trophies, David Byrne, the European Commissioner responsible for protecting consumers' health, said: "There's no doubt in my mind that there is a link between consumers' reluctance to accept biotechnology and the serious lack of information on the subject." Patrick O'Reilly, director of Monsanto Ireland, is hoping for wider participation this year because "these students are tomorrow's discerning consumers and decision-makers".

The multinational is learning to decode and recycle society's messages and expectations. For some months Monsanto has been wavering between a vague attempt at dialogue and a pathological rejection of the main non-governmental organisations that dispute the supposed virtues of GMOs. Greenpeace is the first in line, described as guilty of crimes against humanity by Ingo Potrykus, the Swiss inventor of golden rice who works for Syngenta. Golden rice is a transgenic rice enriched with beta carotene (vitamin A), a second-generation GMO called pharmafood because it claims to have medicinal properties as well as being a food.

The first therapeutic rice in the history of farming, it is just what the big biotech corporations have been waiting for: the last sceptics will no longer be able to doubt the fundamentally virtuous nature of the GMO project. The vitamin A incorporated by transgenics will become the moral harbinger of the world's transgenic food supply: who will dare criticise its merits

when so many third world children suffer blindness because of beta carotene deficiency? And who will dare doubt that the transgenic seed business serves a basically nutritive, ecological and humanitarian purpose?

Whether golden rice will have the vaunted effect among the populations concerned is open to question. Greenpeace and others have shown the absurdity of it all by pointing out that to ingest an adequate daily dose of vitamin A would be quite a feat for a third-world child: he would have to eat 3.7 kg of boiled golden rice a day, whereas two carrots, one mango and a bowl of ordinary rice would suffice. Potrykus' public reaction at a press conference at Biovision (the biotechnology "Davos") in Lyons this February was: "If you plan to destroy test fields to prevent responsible testing and development of golden rice for humanitarian purposes, you will be accused of contributing to a crime against humanity. Your actions will be carefully registered and you will, hopefully, have the opportunity to defend your illegal and immoral actions in front of an international court."

Fiendish dispute

To doubt and to dispute are therefore crimes against humanity committed by "Fiends of the Earth", a pun on Friends of the Earth and the domain name of an internet site much valued by Monsanto personnel (www.earthfiends.org). If political protest is "fiendish", that doesn't leave much room for dialogue. And yet, new Monsanto's Pledge says: "We commit to an ongoing dialogue with all interested parties to understand the issues and concerns related to this technology".

This apparent solicitude masks a frank commercial strategy of conformity on two fronts: to create conformity between the image of GMO products and consumer expectations, and to create a conformity of thinking by brainwashing them with intensive advertising and information. Because if Monsanto's only aim is to get its global biopolitical project accepted, new Monsanto will have to show an ethical face; it will be of variable geometry since the multinational itself will write the rules. The company has therefore engaged Wirthlin Worldwide, a business communications specialist, to "find the mechanisms and tools to help Monsanto persuade consumers by reason and motivate them by emotion".

Dubbed the Vista project, this survey of opinion is designed to detect consumers' value systems. The data collected will be used to map out people's ways of thinking on four levels: ideas, facts, feelings and values. In the US, this research has resulted in advertising with a real impact on the public, using as a major argument in favour of biotech the slogan "less pesticides on your plates". In France, Monsanto employees took part in this survey in the guise of a confidential interview where they were invited to speak freely about what they felt about biotechnology, good or bad. The aim was to train spokespersons who will use messages designed for the public at large.

Access to genetic material and to markets with total freedom to manoeuvre is the two-pronged strategy of "free to operate". It costs \$200-400m to develop a GMO and takes seven to 10 years. The multinational wants a return on this massive investment, which it gets by filing a patent on the plant. People must pay the firm royalties every time they want to sow it. All varieties containing a genetically modified organism will be patent-protected, which means that the farmer will have to buy a licence. The risk, of course, is that the big seed producers will be able to monopolise the world's genetic heritage and take control completely and irreversibly. Farmers will no longer be able to select their own seed.

This could be a problem for Monsanto, because it says in its pledge: "We commit to bring the knowledge and advantages of all forms of agriculture to resource-poor farmers in the developing world to help improve food security and protect the environment." Hence its generosity in granting the patent in the transgenic sweet potato to South Africa in the hope of gaining a greater foothold there: "As to Africa, we could, with patience, widen our position through YieldGard or even Roundup Ready maize. In parallel, we should consider licensing on a free or minimal fee basis some of our technologies adapted to local crops, such as sweet potato or cassava."

This is a double edged strategy, with a show of generous intentions to gain a hold over the least demanding markets - the least creditworthy markets, true, but ones potentially dependent. A similar approach to that taken with Syngenta's golden rice in Thailand (where about 70 patents had to be waived to make it available free of charge) or with Indian cow's milk laced with Monsanto's Posilac, a hormone banned in the European Union, in order to take control of local markets not particularly keen on biotechnology.

Risks of genetic pollution

Conversely, Monsanto recently got a Canadian farmer, Percy Schmeiser, fined around \$9,000 for "pirating" transgenic rape. He counterattacked by accusing Monsanto of accidentally polluting his fields of conventional rape with its Roundup Ready transgenic variety. Are the courts capable of establishing the origin of genetic pollution? This case, which is likely to be repeated elsewhere, shows the difficulty of containing the accidental spread of GMOs. In France, such incidents are passed over in silence. In March last year several batches of Advanta conventional spring rape seed sown in Europe turned out to be contaminated with another company's GM seed. The plants in question were destroyed. Last August varieties of winter rape checked by the French authorities proved to be contaminated with GM seed. But no GM rape has yet been licensed for growing or consumption in France.

The imperfections of traceability are already evident. Accidental contamination is becoming very frequent. A public health official in Lombardy recently found GMOs in batches of Monsanto soya and maize seed. GMOs have been found in stocks of maize seed stored in Lodi near Milan. Pressure will increase in Europe as imported soya, much of it already transgenic, replaces animal meal, which is now banned.

The firms producing transgenic seed are no doubt hoping to see the end of GM-free varieties, banking on the massive supervision costs involved. In the years ahead, farmers will probably find it increasingly difficult to get hold of non-GM seed. With world research focusing on transgenic seed, it is not impossible that non-GM varieties will become obsolete, unadapted to changing farming techniques.

What does Monsanto's much vaunted "transparency" really mean? The consumer has to rely on the information supplied by the firm. Every genetic design is considered a patent, and there is no legal obligation for the company to provide the test to private laboratories so that checks can be made. In France, the description of a genetic design is filed with the DGCCRF, which is the only body to conduct analyses. It is not allowed to do it commercially, so it cannot be used for the purpose by consumers or manufacturers.

The consumer will therefore have to be content with knowing that the firm cannot sell seeds until they have been authorised for human consumption and that it has committed itself "to respecting the religious, cultural and ethical concerns of people throughout the world by not

using genes taken from animal or human sources in our agricultural products intended for food or feed." The recent appointment to the board of the US EPA of former Monsanto executive Linda Fischer suggests, however, that since new Monsanto cannot be above the law, it would like to help create the laws.

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- (1) See Jean-Pierre Berlan and Richard C Lewontin, "Menace of the genetic-industrial complex", Le Monde diplomatique English print edition, January 1999, "Operation Terminator", Le Monde diplomatique English internet edition, December 1998.
- (2) The risk of uncontrolled dissemination was one of the justifications given by French farmer José Bové and two other activists for destroying transgenic rice plants in the greenhouses of the Centre de coopération internationale en recherche agronomique pour le développement (Cirad) in Montpellier in 1999. The three appealed against suspended prison sentences on 15 March.
- (3) Les Éditions de l'Institut national de la recherche agronomique (INRA) has published a cartoon (La Reine rouge by Violette Le Quéré Cady, Paris, 1999); it is apparently recommended reading for Monsanto employees. It uses the dangers of insecticides as an argument in favour of GMOs.
- (4) Figures quoted by Caroline Cox, "Glyphosate", Journal of Pesticide Reform, autumn 1998, vol 18 no 3, published by the Northwest Coalition for Alternatives to Pesticides.
- (5) See Mohammed Larbi Bouguerra, La Pollution invisible, PUF, Paris, 1997.