

A couple of years ago it seemed as if mass-based movements throughout the world had won the battle to ban Terminator seeds. But the biotechnology companies are back on the offensive, arguing that the urgent need to combat global warming makes it imperative to use Terminator technology. Many peasant farmers around the world believe this to be yet another spurious argument used by the companies to gain acceptance for their unnecessary and dangerous technology. In the run-up to COP 9 in May 2008, we reproduce an edited version of an article* first published in our sister Spanish-language magazine, *Biodiversidad*.

Seeds of passion

VERÓNICA VILLA



2

If a neighbour were to sow Terminator seeds, the community would have to drive him out”, says José Pequeno, a peasant in the state of Paraíba, Brazil, when reflecting on what would happen if Terminator technology finally came on the market. “Farmers are passionate about the seeds they sow in the fields. They love them, in accordance with the trust they have in each variety. I don’t know the Terminator seed and I don’t want to know it. We do things differently here. We are in favour of seeds that have life, that have passion, that will bring joy and not death.”

Terminator technology runs counter to the peasant conception of life and work by creating genetically modified crops that have seeds that poison themselves and become sterile, so that farmers cannot save the seeds produced in the harvest and sow them again. They will be forced every year to buy new seeds from the companies (or, as we shall discuss later, to buy another product from the companies to “activate” the seeds).

In 1996 Terminator technology was publicly attacked by peasant organisations, including Via Campesina. In 2000, after mobilisation by peasant and environmental movements, the Convention on Biological Diversity (CBD) adopted Decision V/5, a de facto moratorium on Genetic Use Restriction Technologies (GURTs), which is the official name for the new technology that includes the Terminator. The Decision recommended that field trials should be stopped and that crops developed from this technology should not be sold on the market. Despite this, the seed industry pressed ahead with its research. In 2005 and 2006, Decision V/5 was strongly attacked by some of the companies, and several governments tried to have it withdrawn. However, further demonstrations by farmers, peasants, indigenous peoples and civil society throughout the world led governments at the eighth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 8), held in Curitiba, Brazil, in March 2006, to decide unanimously to reaffirm and strengthen Decision V/5.

* This article was compiled on the basis of public statements by Hope Shand, Pat Mooney and Silvia Ribeiro, from the ETC Group.

Terminator back on the agenda

This battle, it seemed, had been won. But the companies did not give up. Only three months after COP 8, the European Union began a three-year research project called Transcontainer, with a €5 million (US\$7.3 million) budget, to investigate the development of suicide seeds. A month later, in August 2006, Monsanto acquired Delta & Pine Land, the world's biggest cotton seed company, which owns patents on genetic sterilisation technology and has been conducting Terminator field trials in greenhouses.

This is not the first time the biotechnology companies have refused to take 'no' for an answer with respect to the Terminator, but today they have marshalled more persuasive arguments. They have long presented the Terminator as an environmentally friendly tool that can prevent GMO contaminations. They have claimed that, if the genes of a Terminator crop were to escape, the seeds that resulted from any accidental pollination would not germinate, so there would be no risk of contamination. But until recently there seemed no good reason, to the European public at least, for farmers to cultivate GMOs, as they brought no great advantage. But this is changing. Today agro-industrial giants and oil companies are joining forces to promote the idea that, in the face of the threat posed by climate change, the world needs a new generation of genetically modified crops and trees to produce agrofuels more efficiently. The industry clearly wants to present the environmental crisis as a single, overwhelming argument in favour of the new GMOs. Terminator technology, they say, will ensure the "safe" production of both agrofuels and crops designed to produce industrial drugs and chemicals.

Transcontainer project

It is within this context that the European Union is developing the Transcontainer project. Europe is the region of the world where there has been most resistance to GMOs, and this project has been specifically developed to combat European fears of GMO contamination. It states on the official Transcontainer website:

The overall goal of Transcontainer is to develop genetically modified (GM) crop plants that are "biologically contained", in order to reduce significantly the potential spread of transgenes of such GM crop plants to conventional and organic crop plants and to wild or weedy relatives, when such exist.¹



Photo: Maria Eugenia Jeria

Fruit and vegetables for sale at Mercado Chachagüí, Nariño department, Colombia

There is no doubt that transgenic contamination is a serious problem. Neither industry nor government authorities have been able to control or contain GMOs. Between 1996 and 2006 at least 146 cases of transgenic contamination were documented in 42 countries on six continents. Genetic contamination has massive legal and economic implications, not only for farmers, but also for agribusiness and the food processing industry. A single case of contamination (caused by Starlink maize in the United States in 2000) has to date cost the companies more than US\$600 million. In 2006 Bayer's transgenic rice, Liberty Link, affected 40 per cent of United States exports of rice and represented a financial loss of US\$520 million for that country's farmers and food industry.

The goal of the European Union project is to develop biological containment strategies that permit the coexistence of transgenic and conventional crops. The project has 13 partners, from both public and private sectors, from eight European countries. Partners include universities, government agencies and seed companies. The project is co-ordinated by Wageningen University in the Netherlands. Along with the Terminator, one of the project's activities is to develop "reversible transgenic sterility". The ETC Group calls it "zombie technology", because the idea is that the seeds will "return from the dead" with the application of an external stimulus, which could be a chemical agent or heat. It means that farmers will be able to restore the fertility of the seeds for each new agricultural season. The companies insist that the aim of the new technology is to promote biosecurity, not to stop farmers from illegally planting patented seeds.

¹ All quotations in this article are from the Transcontainer website: <http://tinyurl.com/35fjn6>



But there is no doubt that the farmers will have to pay for the “reversible” technique and that the companies will try to maintain a monopoly on the new technology.

The companies like to say that farmers will not be forced to use Terminator or Zombie seeds. However, the most likely scenario is that companies will do everything possible to convince farmers to use these technologies. They will offer new transgenic traits that are supposedly more productive, always affordable and are genetically sterile “to prevent accidents”. They will keep the price low, at least at first, to test their product. Once they have trapped farmers into adopting their technology, they can raise the price of restoring fertility as high as they want. This is not a conspiracy theory. It is the inevitable logic of market forces, where a handful of companies is dominant, where public programmes for improving biodiversity have been destroyed, and where there is no such thing as “free choice”.

Biocontainment seeds

Terminator seeds can pollinate related plants in neighbouring fields, because its pollen remains fertile and the seed is programmed to poison itself only when it is completely formed. But the seeds that result from this pollination will not germinate and will be sterile. Neighbouring farmers will not know what percentage of harvested seeds will be sterile, until they can see with their own eyes that they have not germinated. In the same way, farmers who depend on food aid risk devastating crop losses if they sow seeds provided as food aid – a very common situation – and these contain Terminator genes. Of course, poor farmers will not knowingly plant Terminator seeds, but they might end up doing so if agencies introduce them in the technological packages they provide as aid.

Will biocontainment work? It is important to realise that biocontainment based on genetic sterility is NOT a trustworthy mechanism to avoid the escape of transgenes. It is perfectly possible that something will go wrong in such a complicated system and that these crops will introduce new biotechnological dangers. In the question-and-answer session on the Transcontainer website, the question is asked: “Will biological containment strategies always be entirely fail-safe?” The answer: “Possibly, but in reality the complete, hundred per cent prevention of transgene spread cannot be proven scientifically. One can experimentally determine only that transgene spread is lower than a certain frequency.” In other words, molecular biocontainment based on the sterility of genes is

NOT a mechanism that can be trusted to avoid genetic flux.

But would it really matter if Terminator were imposed on us? What are the dangers? More than 1.4 billion people in the South depend on seeds saved from the harvest as their principal source of seeds for the following cycle; and three-quarters of the world’s farmers exchange saved seeds with their neighbours. We are talking about a huge number of people, with their communities, territories, histories and languages. Community selection and improvement of crops are the basis of local food security.

The researchers in the Transcontainer project insist that their suicide seeds are not designed to stop farmers saving seeds. They say their objective is the biological containment of GMOs and that the sterility is a biological safety tool. However, it seems undeniable that these same biocontainment strategies that are being developed to avoid the escape of GMOs will make it difficult for small-scale farmers to go on keeping and using the seeds collected from their harvest. To quote again the Transcontainer website:

Will GURTs or biological containment strategies not decrease the possibility for European farmers to save seeds from crops they grow on their farm for planting in the next season?

Not necessarily. Transcontainer will study and develop technologies that prevent transgene spread from GM crops, while at the same time their fertility can be restored. Moreover, Transcontainer is specifically targeted at European agriculture and European crops, and European farmers do not generally save seeds from crops they grow.

This is not a very reassuring response from the very authority that is promoting the new technology.

Indeed, it seems clear that Terminator technology is an assault on local communities: it may well reduce the capacity of farmers to produce food and it threatens biodiversity. And this is without mentioning the harm it will do to communities and the way of life of people like José Pequeno, who know about the passion contained in seeds.

Before COP 9 (May 2008)

According to the Transcontainer website: “The results of Transcontainer will contribute to an informed decision whether the moratorium should be continued or modified in the context of



supporting EU coexistence measures”. This suggests that the industry will argue that sterile seeds are not a problem because sterility is reversible. It is clear that the moratorium is fragile. After two or three additional arguments and more pressure we could find the technology on the market before we know it.

The European Union broke an important agreement with the Group of 77 developing countries when it launched the Transcontainer project. Other countries, such as Canada, New Zealand, Australia and, of course, the United States, have also decided to promote these technologies. It is also clear that countries such as Brazil, Mexico and Argentina will take a position in response to their short-term interests. It is clearly important for activists to defend the moratorium at the Convention on Biological Diversity (CBD) during COP9, outside and inside the conference hall, as occurred in Curitiba in 2006. However, in the last resort, it will be national bans that will make companies pause for thought before they descend like vultures on peasant seed varieties and technological packages in our countries.

What do they really want to control? Seeds are the first link in the food chain. The companies want to control them because this is how they can ensure their power along the whole chain. This is why manipulation of seeds has so many implications, and why the genetic diversity of crops threatens company profits. The companies want to eliminate genetic diversity so that their GMOs are the only seeds available. The greater the presence of GMOs in a country, the easier it is to criminalise farmers’ varieties. Evil laws increasingly make the latter illegal and hand over control to the big chemical, pharmaceutical and seed companies.

Terminator and Transcontainer are not about controlling GMOs. They are about controlling farmers, restricting their rights and eliminating the practice of saving, exchanging and enriching peasant seeds. What is at stake is not only the impact of the Terminator on our health and the environment but also what it means for food policy: who is to be in charge of this policy, the people or the companies? Companies say that GMOs have higher yields and that they will solve the problem of hunger, cure new diseases, counter climate change and improve the food we eat. Until now, however, the only quality possessed by 80 per cent of GMOs produced and marketed in the world is resistance to herbicides. The only thing they feed is company profits.



Photo: María Eugenia Jeria

Stallholders at Mercado Consaca, Nariño department, Colombia, in 2006

Unmodified seeds have passion and speak to the people who sow them and work the land. They are the starting point for achieving the food sovereignty and the food security that make countries stronger. A technology that reduces the capacity of farmers and peasants to produce food, and that puts an end to their age-old right to save the best seeds threatens food sovereignty, food security and biodiversity. It is a danger to crops and therefore to people. From an ethical and logical point of view, genetic sterility is not in any way “safe” or “acceptable”. Public money should not be used to subsidise company programmes. If governments do not react and ban Terminator, the technology will become available on the market. Brazil and India have already tried to take this step. Not all the news is bad: a bill banning the Terminator was sent to the Canadian Parliament in June 2007. COP 9 should move in this direction, strengthening the moratorium on GURTs and completely banning the Terminator.

