

SCIENCE & TECHNOLOGY

A threat stalled

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Farmers of Via Campesina demonstrating against Terminator seeds outside the COP8 venue.-ASHISH KOTHARI

A technology, which renders sterile the very basis of life, the seed, is defeated at the COP8 meeting but is likely to resurface later.

THE power of ordinary citizens to make a difference was vividly displayed at a global environmental conference in the last week of March, when a move to legitimise a deadly technology was defeated, at least for the moment. Delegates from nearly 200 countries participated in the Eighth Conference of Parties (COP8) of the Convention on Biological Diversity at Curitiba, Brazil. Apart from them, representatives of several hundred non-governmental organisations (NGOs), indigenous and community groups, industry associations, educational institutions, and the media attended the conference. Among the several topics that came up for discussion, there was one that hogged the limelight: the Terminator. Not so much because of its name, but because it was seen by many participants as a litmus test for whether the Convention on Biological Diversity (CBD) really had teeth.

In the list of dubious technologies, the Terminator would score 9 or a perfect 10. Also called Genetic Use Restriction Technology (GURT), the Terminator has a simple objective: create seeds that commit suicide after one generation. In effect, farmers who plant these seeds would get a 'normal' harvest, but if they tried replanting seeds from this harvest, they would get a dead crop. In the second-generation seeds, a genetic process triggered by the technology, which is inserted into the first generation seeds, would render them sterile.

Now who would conjure up such a technology, and why? It is the multinational corporations once again. In 1998, the United States-based Delta Pine and Co. (the world's biggest cotton-selling company) and the U.S. Department of Agriculture jointly obtained a patent on "Control of Plant Gene Expression". This included technology geared to make crops kill their own seeds in the second generation, a process that NGOs later dubbed "Terminator".

Since then, Monsanto and Syngenta, two of the world's largest seed/pesticide corporations, have jumped onto the hearse. Together, these companies hold over 85 per cent of the patents on this technology. It is worth mentioning that along with DuPont, these four corporations account for a

third of the world's commercial seed sales. They are global giants, long used to disguising their greed for profit in the garb of feeding the world's poor. And the U.S. Department of Agriculture is only happy to help; it teamed up with Delta and Pine Land to get Terminator patents in the U.S., Europe and Canada.

Corporations and governments behind the development of GURT argue that these will help improve productivity. But critics point out that these companies have never shown evidence of such a benefit. The second argument given is that GURT will eliminate the chances of genetic contamination of normal crops by genetically modified (GM) crops, especially in the case of genetically engineered trees that are increasingly being researched upon. But this is a rather cynical solution, dealing with one hazardous technology by using another hazardous one. It is also a tacit acceptance by corporations that GM technologies are not safe, just the opposite of what they have tried to make out all these years. And in any case, many experts have pointed out that given the tremendous uncertainties of how GM organisms will behave in the open, no one can guarantee that the 'suicidal' gene will always work. So the chances of hazardous terminator-laced genes contaminating normal crops always remain.

The real motive behind the Terminator becomes clear in the following passage from a full-page advertisement by Monsanto in *Farm Journal*, issued in 1997:

"It takes millions of dollars and years of research to develop the biotech crops that deliver superior value to growers. And future investment in biotech research depends on companies' ability to share in the added value created by these crops. Consider what happens if growers save and replant patented seed. First, there is less incentive for all companies to invest in future technology, such as the development of seeds with traits that produce higher-yielding, higher-value and drought-tolerant crops... in short, these few growers who save and replant patented seed jeopardise the future availability of innovative biotechnology for all growers. And that's not fair to anyone."

The assumptions hidden above are problematic. First, it is debatable whether corporation-produced seeds have delivered substantial benefits to farmers worldwide, without getting them locked in a vicious cycle of dependence on the same corporations for all kinds of inputs. Here is a classical example: soya and cotton varieties developed by corporations such as Monsanto were engineered to be resistant to herbicides which were also produced by Monsanto! Farmers who grew these seeds were therefore forced to buy herbicides from the same company. Secondly, it is untrue that it is only a "few" farmers who save and replant (indeed, if it were so, why would Monsanto be worried?). Most farmers in the world engage in this practice; the Food and Agricultural Organisation (FAO) estimates that there would be at least 1.4 billion of them.

On the other hand, the dangers are clear. Agricultural communities that switch to Terminator will be affected economically since they will be forced to buy seeds from MNCs every year, rather than have their own crop to rely on. The loss could run into billions of dollars a year; in Pakistan alone, estimates the leading NGO involved in the Terminator issue, ETC Group (Action Group on Energy, Technology and Concentration), farmers could be forced to pay \$191 million more if the Terminator is licensed there. Equally scary, toxic genes from Terminator-impregnated crops could cross over into neighbouring normal crops, possibly leading to sterile produce in those crops as well. Then, the toxins used to destroy the seed's productive capacity could have an unpredictable impact on other living organisms.

Finally, an antibiotic would have to be used to trigger the suicidal gene; no one knows its environmental or health impact when used in large quantities.

There is also the cultural and ethical issue: how can we accept a technology that renders sterile the very basis of life, the seed? It is clear that the Terminator is not about bringing benefits to the lives of farmers, as the corporations would have us believe. Their real motive is to increase profits by having a stranglehold on the world's farming population.

Since advocacy groups such as ETC Group (then Rural Advancement Foundation International or RAFI) blew the lid off the Terminator in the late 1990s, it has been a subject of increasing political posturing. Intense public pressure at the Fifth Conference of Parties of the CBD in 2000 resulted in the parties agreeing to a sort of moratorium, despite strong resistance from some industrial countries and lobbying by seed companies. The decision (No. V/5, Section III) noted that no studies

were done on the impact of the technology and recommended that the parties not approve its field testing or commercial use until full scientific assessments were carried out.

But in January, predatory profit again raised its ugly head. At a meeting of the CBD's subsidiary working group on traditional knowledge issues (related to the CBD's Article 8j), Australia, New Zealand and Canada (backed by the U.S.), tabled a new text to weaken the moratorium. They asked for a "case by case risk assessment" of various GURTs. This was widely seen as an attempt to drive a wedge into the moratorium, as it could allow for field-testing. Several other countries, however, opposed the new text, asserting that the decision V/5 should stand. The 'case by case' text was put in square brackets (the United Nations jargon for text not agreed upon as yet) and forwarded to COP8 in Brazil.

Thus was set the scene for Curitiba. And what a scene it evoked. NGOs, indigenous peoples' groups, farmers' associations, and others from around the world had in 2005 mobilised themselves into an International Ban Terminator Campaign. By COP8, 500 organisations from several dozen countries had signed a statement asking delegates to strike down Para 2b and stick to the moratorium. Briefing notes with solid reasoning were available to all delegates, and articles were published in the popular media.

As COP8 began, hundreds of farmers belonging to Via Campesina (a global network of small farmers) held daily demonstrations; on one occasion a group of women farmers entered the conference hall with banners against the "suicide seeds", singing songs, and left after receiving an ovation from the delegates who were obviously moved by their action. Ban Terminator Campaign members were everywhere, donning T-shirts with appropriate slogans. Farmers held protests in Madrid, Greenpeace and Indian farmers' organisations picketed the New Zealand Embassy in New Delhi, and nearly half a million farmers signed a petition to the Indian Prime Minister asking him to save them from the Terminator. News on all these was constantly flowing into the COP8 halls.

Providing a dramatic political backdrop was Brazil's decision to ban the Terminator technology - the second country (after India) to do so - just before COP8, and President Lula de Silva made sure he reminded the delegates about this. The G-77 countries made a strong statement against the Terminator during the official deliberations, with the Malaysian delegate speaking on their behalf dramatically declaring that "2b was not to be".

The pressure must have got to the unholy trinity of countries still pushing the "case by case" text. After some initial resistance, they accepted the continuation of the moratorium.

In a world dominated by greedy corporations and uncaring or corrupt governments, environmental and human rights victories such as this one are never permanent. Undoubtedly, the Terminator will resurface. Multinational corporations have put in too much money to give up so easily. Civil society around the world will need to be constantly alert to the insidious ways in which the technology may enter the market, or go directly to farmers. Many GM crops have entered countries illegally or without due process (Bt cotton in Gujarat being an example). Most countries and communities do not have the wherewithal to detect this until it is too late.

In India and Brazil, national bans on the Terminator are in place, for which their governments need to be commended. However, a legal ban is not enough to stop its insidious entry. There are more fundamental issues of agricultural policy here. In terms of focus, India's agriculture has moved steadily away from farmer self-sufficiency to state or market-dominated regimes. Rather than encourage farmers to continue innovating and developing their own seeds, and build or rebuild rural economies that provide critical inputs locally such as water, manure, credit, and crop protection, policy has made them more and more dependent on government or private producers of seeds and other inputs.

Recent moves like the proposed Seed Bill, 2005, threaten to worsen this as they would make it harder for farmers to use, re-use, exchange and sell their own seeds in the informal market as they have done for centuries. A stress on hybrids rather than productive pure line varieties has already meant that many farmers have to go back to companies to buy seeds every year or every second year, since hybrids start to lose productivity after the first or second generations. In such a situation, farmers are especially vulnerable to technologies like Terminator, as they would have lost their ability to produce and re-use seeds they have.

If the Indian government is serious about safeguarding the country's farmers from dangerous technologies that undermine their livelihoods and threaten biological security, it needs to encourage farmer-led development of seeds and agricultural technologies, help rebuild a substantial level of self-sufficiency for critical farming inputs, and adopt ecologically sound farming systems that benefit the small farmer and sustain the land and water resources. It has to rein in the predatory moves of multinational and national seed corporations and put a stop to the dangerous spread of GM crops. The Terminator ban in India is only one step in a series of policy measures that are urgently needed to assure livelihood security to the country's several hundred million farmers and the food security of its entire population.

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