News Release:
31 January 2002
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Sterile Harvest:

New Crop of Terminator Patents Threatens Food Sovereignty

The World's Largest Agrochemical and Seed Enterprises --Syngenta & DuPont -- Win Two New Patents on Genetic Seed Sterilization

The ETC group (formerly RAFI) announced today that the biotechnology industry continues to aggressively pursue the development of genetically modified seeds that are engineered for sterility. "We have uncovered two new patents on Terminator technology," said Hope Shand, Research Director of ETC group. "One patent is held by Dupont (the world's largest seed corporation) and the other is held by Syngenta (the world's largest agrochemical corporation)," said Shand.

Terminator has been widely condemned as an immoral technology that threatens global food security, especially for the 1.4 billion people who depend on farm-saved seed. If commercialized, the technology will prevent farmers from saving seed from their harvest for planting the following season. In 1999, due to widespread public opposition to Terminator seeds, both Monsanto (soon-to-be-spun-off by Pharmacia)[1] and AstraZeneca (now Syngenta) publicly vowed not to commercialize genetic seed sterilization technology.

"Contrary to what some of these companies have pledged in the past, the Gene Giants are refining the technology and moving forward to commercialize Terminator seeds," warns Hope Shand, Research Director of the ETC group. "Terminator is a real and present danger for global food security and biodiversity – governments and civil society cannot afford to let 'suicide seeds' slip beneath their radar," said Shand.

Syngenta, the world's largest agribusiness firm, holds the largest arsenal of Terminator patents to date.[2] In 1999, Zeneca's R&D director wrote that Terminator was "one piece of technology we did not want to take forward, and the project was stopped in 1992."[3] Why, then, has the company continued to file for and win Terminator patents since 1992? (The newest Syngenta patent issued on May 8, 2001. The application date was March 22, 1997, long after Zeneca claims it stopped the project.)

"Obviously, we can't rely on the goodwill of multinational seed and agrochemical corporations to safeguard the public from the threat of Terminator seeds. If these

[1] Pharmacia, which currently owns 85% of Monsanto, will distribute its Monsanto stock to shareholders in second half of 2002.

[2] See RAFI/ETC group, "New Terminator Patent Goes to Syngenta," News Release, 12 March 2001. www.etcgroup.org

[3] Letter from Dr. D.A. Evans, R&D Director, Zeneca Agrochemicals, to Prof. Richard Jefferson, CAMBIA, Australia, 24 Feb. 1999.

companies are serious about abandoning the technology, they should surrender their patents to the control of the UN Food & Agriculture Organization, agreeing not to develop the technology themselves, nor allow others access to their technologies," advised Julie Delahanty.

Two New Terminator Patents

Dupont (Pioneer Hi-Bred International), US Patent 6,297,426, issued: October 2, 2001, Title: Methods of mediating female fertility in plants. The patent describes the identification and inactivation of a native gene critical to female fertility. The gene is cloned, linked to an inducible promoter and inserted into the plant. The result is a plant that is functionally female sterile with inducible female fertility. (Note: Although the patent describes the use of this technology for facilitating production of hybrid seed, this approach involves chemical control of female fertility, and its extension to other seed lines. ETC group considers this a Terminator-type technology.)

Syngenta (Zeneca), US Patent 6,228,643, issued: May 8, 2001, Title: Promoter. The patent describes a new promoter, isolated from rapeseed, and the control of plant traits (including fertility) that can be inactivated and restored by application of a chemical inducer. In one embodiment, the seeds will not germinate unless sprayed with a chemical inducer.

Industry's "Green Gene" Defense of Terminator:
The new Syngenta patent does not describe its technology as a method to prevent farmers from saving seed, but as an approach to prevent unwanted gene flow from transgenic varieties. In theory, any seed that goes where it shouldn't would die without the application of a chemical inducer. According to the patent:

"A problem addressed by the present invention is the containment of crop plants within the area of cultivation. Seeds of cultivated crop plants may be conveyed outside the defined growing area by a number of routes (by birds or small mammals or simply by being dropped during post-harvest transport of a seed crop) where they assume the status of weeds, or they may remain as volunteers in a subsequent crop in later years…It will be appreciated that the problems of crop non-confinement mentioned above become more acute where transgenic crops are involved… Ways to reduce viability of such hybrids would limit the risk of transgene escape to non-crop species thus avoiding the spreading of plants with enhanced invasiveness or weediness." - US patent 6,228,643

It is irresponsible and unacceptable to suggest that society must accept genetic seed sterilization as a method for solving industry's genetic pollution problem. **Food security for poor people must not be sacrificed to gain commercial acceptance for an unsafe and unproven technology.**

The biotech industry is reeling from the most recent debacles involving GM pollution from transgenic plants. The Mexican Ministry of Environment confirmed again last week that indigenous farmers' maize varieties in Oaxaca and Puebla have been contaminated with DNA from genetically modified (GM) maize. It is illegal to grow GM maize in Mexico precisely because of the potential threat to the world's primary center of maize diversity. In Canada, the escape of transgenes from GM canola is a menace for organic farmers who cannot certify their canola crops as GM-free. On January 10, 2002 organic farmers in Saskatchewan filed a class action suit against Aventis and Monsanto.

"It is particularly alarming that the Gene Giants (and some governments) are promoting Terminator under the guise of biosafety," explains Julie Delahanty of ETC group. "The industry's primary goal is to gain market acceptance for seed sterility as a biosafety tool,

which will then give them *carte blanche* to use it as a monopoly tool for maximizing seed industry profits," said Delahanty.

Terminator on the Road to Rio+10:
New Terminator patents underscore industry's ongoing investment in the goal of genetic seed sterilization and the urgent need for governments to ban these technologies before they are commercialized.

Terminator is on the agenda this week at meetings in New York City, Porto Alegre and Montreal. ETC group, together with civil society organizations and governments, will hold briefings on the issue at the Rio+10 PrepCom in New York, at the World Social Forum in Brazil, and in Montreal at an informal consultation on the impacts of Terminator on local communities and Farmers' Rights (held under the auspices of the Convention on Biological Diversity).

In the months leading up to Rio+10, intergovernmental organizations have a critical role to play in raising global awareness and recommending actions to ban the technology.

COP6 – The Sixth Conference of the Parties to the Convention on Biological Diversity meets in The Hague, 8-26 April 2002. After numerous studies on genetic trait control technology, COP6 should ban Terminator as an anti-farmer technology that threatens biodiversity and food sovereignty.

World Food Summit Five Years Later: When governments meet 10-13 June 2002 in Rome they should re-affirm the findings of FAO's Panel of Eminent Experts on Ethics, which concluded that Terminator seeds are unethical, and recommend that member nations ban the technology.

World Summit on Sustainable Development (Rio+10): Heads of State meeting in South Africa in 26 August- 4 Sept. 2002 will have the opportunity to call for a ban on Terminator technology as an immoral application of genetic engineering that threatens biodiversity and food security.

Please go to our web site, www.etcgroup.org, to enter our April Fools' Day contest. We need your help completing the sentence, "Using GM Terminator to halt GM seed contamination is like…"

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The Action Group on Erosion, Technology and Concentration, formerly RAFI, is an international civil society organization headquartered in Canada. The ETC group (pronounced Etcetera group) is dedicated to the advancement of cultural and ecological diversity and human rights. www.etcgroup.org