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## Terminator gene: judgment day

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These days, nobody is surprised when political contention arises over biotechnology. Though stem cell research and human cloning get a lot of the attention, they are far from the only issues.

For instance, there's an area of research devoted to preventing plants from reproducing.

As with drugs and the pharmaceutical industry, genetically modified plants represent an investment on the part of the company that created them, and such companies want to enact technical and legal measures to ensure they recoup their research costs.

Such technologies are referred to as Genetic Use Restriction Technologies (GURT). One developed implementation of this technology is a special gene called the "terminator gene." When farmers buy seeds that contain the terminator gene, the plant will grow as usual and the farmer will be able to harvest the crop. However, the next generation of seeds — the ones generated by the crop — will be infertile. If the farmer tries to save those seeds and replant them in order to get the benefit of the bioengineered crop, the seeds just won't germinate. In order to continue growing the crop the farmer has to purchase new seeds year after year. Think of it as copy protection for biology.

While this technology has been developed and tested, it is not available for commercial sale. The Canadian patent for the technology was held by Delta & Pine Land. However, on June 1 the United States Justice Department gave the green light for biotech giant Monsanto to purchase the company; as such, it will inherit the patent. Monsanto has repeatedly stated they do not intend to commercialize the technology.

In a move that would pre-empt the technology from ever being commercialized, Canadian MP and agriculture critic Alex Atamanenko introduced a bill on May 31 that would ban the deployment of terminator technology in Canada.

Atamanenko did not have the time to interview with Imprint before press time, but he supplied a copy of the proposed law. Interestingly enough, not only would this bill ban import or sale of seeds with the terminator gene in Canada, but would also prohibit companies from obtaining patents on the technology in Canada. This caveat would be put on the same footing as the clause that prohibits patents for "any mere scientific principle or abstract theorem."

In a written statement Atamanenko said, "This bill would protect the right of farmers to save seeds. The right of farmers to save seed should not be threatened by this technology that offers no benefits to farmers. The right to save seeds must be protected, even for those farmers in Canada who do not currently practice seed saving."

It's not widely expected this bill will pass, given that Minister of Agriculture Chuck Strahl is against it. The Canadian Food Inspection Agency (CFIA) has also taken an adverse stance. On the group's website, they state, "The unfortunately named "terminator gene" has received much negative press because it has been portrayed as a vehicle for large multi-national seed companies to suppress the freedom of farmers. However, the terminator approach provides an excellent method to protect against transference of novel traits to other crops and plant species."

What CFIA means is the terminator gene could prevent modified genes from becoming expressed in natural plants which could happen through cross-pollination. It would also prevent such modified crops from spreading on their own, which would prevent legal cases such as Monsanto vs. Schmeiser. (The famous lawsuit where chemical giant Monsanto sued farmer Percy Schmeiser for growing Monsanto's patented canola variety on his land — despite the fact that the seeds blew over from a neighbouring farm and the crop was growing without his knowledge.)

The flip side of the coin is that the terminator gene itself could be spread to naturally occurring plants through cross pollination — potentially resulting in loss of yield for farmers who are opting not to grow patented plants.

Two other national governments — those of India and Brazil — have already banned this technology.

Graphic by Peter Trinh