

A look at genetically engineered foods

BY DANIEL MCKILLOP

The presence of marketed foods that have been altered or improved genetically has fueled a debate of great passion on the part of both supporters and doubters.

The sides of the debate which grab much of the media attention include radical protesters ferociously certain of their position, as well as overzealous experts who militantly defend their faith in science. However, despite the controversy, no law currently exists in North America that requires the labeling of genetically engineered foods.

Moreover, genetically engineered products that are already in Canadian stores are mixed with non-engineered foods, which are also unlabelled.

Genetically engineered yeast, enzymes and additives can be used to produce baby food, fruit juices, beer, sugar, bread, and many other processed foods. Genetically engineered corn can be used in carbonated beverages as a corn sweetener, as well as in corn oil, cornstarch, virtually all sweetened products and corn meal products including cereal and potato chips.

Genetic engineering is unlike any previous strategy in history for improving the human food supply, including selective breeding. It is a technology that involves altering physical traits in organisms through a direct transfer of hereditary material that has been manipulated outside of the cell. This fairly recent advancement in technique and knowledge gives scientists an unprecedented freedom in experimenting with novel organisms, that are the direct result of industrial inventiveness. Although the potential benefits of harnessing this power are great, biotechnological corporations and other research centers should proceed with caution.

For instance, some corn plants have been engineered to produce a toxin (B.t) designed to kill the corn burrowing insects which feed on the plants. This toxin is unfortunately also fatal to the caterpillars of moths and butterflies, and may threaten the regional ecosystem as a result. The Bt toxin contains a microorganism called *Bacillus thuringiensis*, and, like any corn pollen, is blown by winds from the corn plant and onto other surrounding plants, namely the milkweed on which caterpillars

depend. According to lab tests done by entomologists at Cornell University, nearly one half of the monarch caterpillars that consumed milkweed leaves dusted with B.t. corn pollen died, whereas nearly no deaths occurred among those that ingested normal corn pollen. The U.S. Endangered Species list names nineteen species of threatened or endangered butterflies and moths.

Moreover, there are inherent dangers in engineering any population that is genetically monocultural, making it much more susceptible to the destructive intrusions of parasites and viruses than more diverse populations.

As well, patents of engineered products necessarily gives more ownership and control of crops to corporations and far less to the farmers who work the lands. According to some supporters of the Canadian-based organization known as R.A.F.I. (Rural Advancement Foundation International), the struggle for control of food production between companies and workers is a more serious issue than the actual genetically engineered products themselves.

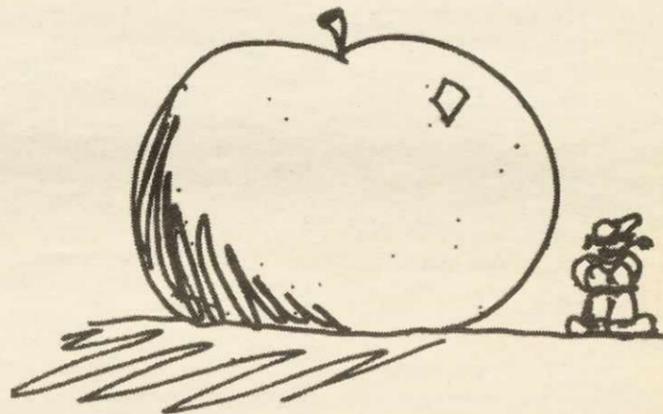
One patent in particular has fallen under harsh scrutiny in

recent years. Coined by R.A.F.I. as the "terminator," the patent involves an engineered sterile seed and is jointly owned by the U.S. Department of Agriculture and Delta & Pine Land Co. (a subsidiary of Monsanto, the world's leading biotechnology corporation). In order that Monsanto protect its investments in genetically-improved crops, this particular seed sold to farms has been made sterile, forcing farmers to repurchase the seed every year. The problem is that 1.4 billion farmers in the world (mostly in Africa, Asia and Latin America) depend on saved seeds as a crucial resource for better crop yields and for minimizing cost. However, as of the 4th of October, Robert B. Shapiro, chairman and C.E.O. of Monsanto, issued a letter to the Rockefeller Foundation claiming that the so-called "terminator" seed will not be sold. R.A.F.I., and others opposed to this patent hope that the company will follow through with this promise.

Recently, a meeting of a newly-formed group called C.E.A.G.E. (the Coalition for Education and Action in Genetic Engineering) was held. They are a

Halifax-based group that is actively uniting various provincial and national organizations in order to establish common positions on the subject of genetically-engineered foods. They are struggling to convince the government of Canada to change the national policy of labeling genetically engineered food, and are even arguing that a morato-

rium be placed on genetically engineered products until more tests are done to ensure that all food on the market is safe for the environment and for human consumption. They are also planning a panel debate this coming year on this topic, which will involve five differing viewpoints from various experts followed by a question period.





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