

Why “SmartStax” is Dumb:

An Analysis of the Dangerous Consequences of Stacked GE Traits and the Deliberate Failings of Canadian Regulation

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On July 15, 2009 Monsanto and Dow announced that they had approval from Canada and the US for ‘SmartStax’ GE corn.

What is ‘SmartStax’?

SmartStax is a genetically engineered (GE or genetically modified, GM) corn that is unique because it has **eight GE traits combined or ‘stacked’ together** – 6 for insect resistance (*Bt*) and 2 for herbicide tolerance. There are some stacked GE trait crops on the market already but these only have up to 3 traits each.

‘SmartStax’ was created through a research collaboration between Monsanto and Dow AgroSciences so that the two corporations could share their GE traits. Monsanto and Dow are predicting that ‘SmartStax’ will be the largest ever commercial launch of a GE corn because it will replace a lot of the existing GE corn on the market.

What’s the problem with ‘SmartStax’?

There are many serious problems with ‘SmartStax’ including new potential environmental and health risks, all exacerbated by the Canadian government’s refusal to assess the new risks of GE stacked traits:

Health Canada did not assess the safety of ‘SmartStax’:

Health Canada did not conduct a safety assessment for ‘SmartStax’. The department has chosen to exempt stacked trait GE crops from its already weak biotech safety assessments. Health Canada has approved the eight traits separately, in the past, and

does not see anything new in combining the eight traits together. This is not consistent with the international guidelines that Canada has negotiated at Codex. Codex guidelines are recognized under the World Trade Organization (WTO) and are used to settle trade disputes. Codex is clear that foods from stacked crops with stacked GE traits should go through a full safety assessment for new unintended effects. Health Canada did not do this and does not even list the ‘SmartStax’ corn on its website as a new GE food.

The insecticidal toxins in *Bt* crops show similarities to proteins that cause food allergies. In 2000/2001, a *Bt* corn known as ‘StarLink’ was approved in the U.S. only for animal feed because of concerns it could cause food allergies. When it massively contaminated the U.S. food supply, hundreds reported allergic reactions, and the subsequent investigation was never able to determine the cause. ‘SmartStax’, which contains 6 insecticidal toxins, will mean greater human exposure to insecticidal toxins that may be allergenic.

The Canadian Food Inspection Agency did not conduct an environmental risk assessment:

The Canadian Food Inspection Agency (CFIA) authorized the environmental release of ‘SmartStax’ but did not assess its environmental risks. Normally, the CFIA (like Health Canada) posts “Decision Documents” to summarize their approval decisions – but there is no such document for ‘SmartStax’. This implies that no environmental risk assessment was done. There is no public rationale for why the CFIA approved

'SmartStax' without environmental risk assessment.

The Canadian Food Inspection Agency dramatically weakened the environmental rules for 'SmartStax':

For 'SmartStax', the CFIA has reduced the required size for refuge areas from 20% to 5% - that's a 75% reduction!

Refuge areas are a strategy to delay the evolution of insect resistance to the *Bt* toxin. A refuge is part of a field that is planted with a non-*Bt* variety of the same crop, to ensure that some insects remain susceptible to the *Bt* toxins.

Bt (*Bacillus thuringiensis*) is a naturally occurring soil borne organism that can be used topically by organic farmers to control pests. The genes from *Bt* have been genetically engineered into corn to make the plant act as a pesticide. *Bt* crops are speeding the development of insect resistance to *Bt*, something that is seen as inevitable, because they express the *Bt* toxin in every cell, all the time.

Farmers who plant GE insect resistant (*Bt*) corn must plant a 20% refuge of non-*Bt* corn within one-quarter mile of any *Bt* field. But with 'SmartStax' the area has been reduced to only 5%. The CFIA did not provide a rationale for this major reduction in its already extremely weak environmental stewardship rules for GE crops.

Monsanto has increased control in the seed market:

It is expected that 'SmartStax' will soon replace all of Monsanto's single, double and triple stacked GE crops. This means that farmers who do buy GE seeds will only be able to buy 'SmartStax', at a higher price. For example, a farmer who wants to buy Monsanto's herbicide tolerant technology will have to buy seeds that incorporate other traits like *Bt* for insect resistance as well.

Monsanto's increasing control over the seed market is also clearly seen in a trend where seed companies are selling fewer and fewer non-GE seeds. For example, of the 40 varieties that Pickseed had available for sale this year, only 5 were non-GE.

Monsanto has increased profits:

Stacking traits together in one crop means that corporations like Monsanto can make even more money because farmers are buying even more patented technology. Monsanto and Dow are already saying that they could add even more GE traits to 'SmartStax'.

The new reduction of the refuge area for 'SmartStax' from 20% to 5% also means that Monsanto can sell 15% more 'SmartStax' seed.

GE Insect Resistant Crops Unnecessary:

Today, European Corn Borer and corn rootworm are not serious pests in most corn fields in Canada. The U.S. based Union of Concerned Scientists has shown that yield increases in corn are due to conventional breeding, while the *Bt* insect resistance trait only reduces yield losses on those infrequent occasions of heavy pest infestation. *Bt* corn has not significantly reduced pesticide use because few farmers ever actually sprayed for the European Corn Borer.

The Future:

The Canadian Biotechnology Action Network advocates the immediate recall of authorization for 'SmartStax' in Canada and a moratorium on all new approvals of GE crops and foods until there is a comprehensive reform of the entire regulatory system in Canada.

For More Information:

On Regulation: www.cban.ca/Regulation

On SmartStax: www.cban.ca/Corn

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