

SmartStax: Illegal imports of genetically engineered maize into the EU?

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TESTBIOTECH Background 20-12-2012



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SmartStax, a genetically engineered maize produced by Monsanto and Dow AgroSciences, was developed by cross-breeding several genetically modified maize plants. It produces six different insecticides and is resistant to two herbicides (glyphosate and glufosinate).

EFSA assessed SmartStax in 2010 but it was not authorised in the EU. Imports are not allowed without authorisation. However, research conducted by Testbiotech shows that it is very likely that there have been imports of SmartStax since 2010, and that it has, moreover, been introduced into the food chain.

What is SmartStax and why is it grown?

Genetically engineered maize crops producing Bt toxins have been grown since 1996. Bt is an acronym for *Bacillus thuringiensis*, a group of soil bacteria which produce different insecticidal proteins. Some of these toxins kill the caterpillars of certain butterflies or bugs.

During the last few years, extensive cultivation of genetically engineered Bt crops has led to increasing problems. For example, pest insects have tended to become resistant to some of the Bt toxins, and the rise of secondary pests has been observed in some regions (overview in Thies, 2010¹).

Industry's strategy to combat these developments is to combine several Bt toxins into one genetically engineered plant. In the case of SmartStax, six different insecticidal proteins are combined in one plant to target the caterpillars of butterflies (Lepidoptera) and bugs (Coleoptera). One of the toxins (Cry1A.105) was artificially synthesised from several insecticidal toxins so that there are no natural variants of this toxin. SmartStax is also tolerant to two different herbicides. It was developed and is jointly marketed by Dow AgroSciences and Monsanto.

¹ Thies, C., (2010), New pest in crop caused by large scale cultivation of Bt crops, in: Breckling, B. & Verheijen, H. (2010) Implications of GM-Crop Cultivation at Large Spatial Scales. Thesen in der Ökologie, Frankfurt, Peter Lang.

1

Veröffentlichungsjahr: 2013

File attachments: Anhang



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Größe
404.35 KB

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