

Genetically engineered wheat shows unexpected ecological behaviour

Testbiotech calls for new concept in risk assessment
Monday, 26 July 2010
Munich

Recent research by Swiss scientists has shown some alarming effects in genetically engineered wheat. The wheat grew normally and had better resistance to a certain fungal disease in the greenhouse, but the metabolism of the plants went out of control after being exposed to environmental conditions. The plants were severely affected by the extremely toxic fungal disease (ergot disease) and yield was lowered by up to 50 percent. Testbiotech is calling for genetically engineered plants to undergo comprehensive 'stress tests' before they are released into the environment.

„The results from Switzerland show a huge gap in the risk assessment of genetically engineered plants. So far, we don't know enough about how these plants behave under certain environmental conditions such as climate change. The technically inserted gene sequences are not under the control of the plants' genome regulation. Their stability needs to be tested systematically under various conditions,“ says Christoph Then from the German expert group Testbiotech.

The observed effects are a general problem in genetically engineered plants. It is known that the regulation of a plants' genome can be disturbed by the invasive methods involved in genetic engineering. If these plants are exposed to environmental stress factors, their regulation can derail. Possible negative impacts can be a higher content of toxic or anti-nutritious compounds, a higher infestation of pests or loss of yield. So far very little has been published on the interrelation of environmental factors and possible unintended effects in genetically engineered plants.

Testbiotech does not agree with the Swiss researchers who are arguing for experimental field trials to explore the plants' reaction. As Christoph Then explains: "Field trials are not appropriate for systematic testing of the plants' reaction to defined environmental conditions. There are too many random factors, depending on certain circumstances. The change of extreme climatic conditions can be simulated much better under greenhouse conditions than by just growing the plants on some field sites." These tests should be mandatory for the risk assessment of genetically engineered plants. The expert group first defined their concept of what they call a 'crash test' in a publication in October 2009.

Publication Zeller S. et al (2010). Transgene × Environment Interactions in Genetically Modified Wheat: <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0011405> [1]

Report of Testbiotech about risk assessment and concept of 'Crash-Test':
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