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Bavarian Parliamentarians have to Admit 'A Cow Remains a Cow'

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Report Highlights:

In Bavaria, a government financed long term research project on animal feeding of Bt-corn revealed that biotech corn does not alter cows or their products. The research results gained a lot of attention in German media but are unlikely to reduce the German opposition against cultivation of biotech crops. Further research in Bavaria continues on biotech and soil organisms.

General Information:

Bavarian Parliamentarians have to admit 'A Cow Remains a Cow'

Summary: A 25-month feeding project of the Munich University (TUM) in cooperation with the Bavarian Agricultural Research Center (LfL – Landesforschungsanstalt fuer Landwirtschaft) has revealed that the feeding of biotech corn does not alter cows or their products. The research has been presented to the Bavarian Parliament; however, few feel that these results will temper the anti-biotech emotion in Bavaria. The research has been peer reviewed and is being published. Further research in Bavaria continues on biotech and soil organisms.

On March 25, 2009, the findings of a long term feeding research project with food producing animals were presented to the Bavarian Parliament. The study had been requested by the Bavarian parliamentarians back in 2005. The research originally was planned for only 18 months but continued due to requests from parliamentarians for a longer observation period. The lead researcher, Professor Heinrich H.D. Meyer, claims that this is the first long term study of biotech corn in food producing animals.

The Study Results

The study results are as expected. The researchers were surprised that the degradation of the MON810 protein and its DNA during the silaging process. In order to maintain a high level of protein in the feeding trail, dried plant material containing the MON-810 protein had to be added to the feed of the experimental group.

Specifically the reports conclusions are as follows.

- There are no differences in the nutritional composition and energy level of isogenous and transgenetic corn varieties.
- The feeding of MON 810 corn over a period of 25 months did not have any impact on the productivity and metabolic parameters of the dairy cows.
- The study did not provide any indication that the feeding of Bt-corn had any influence on animal health.
- The long term study supported the findings of already published short term studies regarding the use of Bt-corn in animal nutrition.
- The substantive equivalence of isogenous and transgenetic corn with the MON 810 event has been confirmed.
- DNA and Bt-protein of MON 810 are degraded considerably during the process of silage making.
- At the end of the project, the MON 810 protein and the relevant DNA were not found in the blood, urine and milk.
- Milk from cows fed with transgenetic corn is not different from milk coming from cows fed with isogenous corn.

The entire study and the conclusions are available at:

http://www.transgen.de/pdf/dokumente/fuetterungsstudie_bayern03-09.pdf .

Structure of the Feeding Trails

The goals of the research project were to check the influence of transgenetic corn on bovine health, fertility and productivity, on alterations in the digestive system and on milk quality and milk ingredients. In addition, the degradation processes of the Bt-protein in the corn silage, in corn cobs, kernels and in the gut system of the animals were researched. Over the two years a total of 38,000 samples of feed, blood, urine, feces and particularly milk were analyzed.

The project was conducted on two groups of 18 cows. Over the course of 25 months, one group was fed with MON810 corn silage and the other group was fed with conventional corn silage. The only difference in the feed was the presence of the Bt-protein and the Bt-DNA in the feed of the target group. The other genetics of the conventional and biotech corn varieties were identical. The corn was grown at different locations within Bavaria under the supervision of the State Research Center. Climatic, soil and nutrient conditions were equivalent for both feed consignments. Mycotoxin presence was within set limits.

Over the course of the project, nine cows in each group were replaced with young cows, which is common practice in commercial agriculture. In total, 27 cows in each group were tested.

Presentation in the Parliament and Media Reaction

The study was presented to the Bavarian Parliament by an official of the Bavarian Ministry of Agriculture before it was released to the public. Professor Meyer, the leader of the research project, reports that the parliamentarians asked many informative questions. The debate about the report was very unemotional. Some observers say that the parliamentarians “took note of the study” without commenting its usefulness.

During the discussion one parliamentarian raised the mice feeding study that was released in Austria in late 2008, and asked for the professor’s comment. Since this was one of several collected questions Professor Meyer gave some general remarks. He said in contrast to the Bavarian study the Austrian study has not been published nor peer reviewed according to his knowledge. Additionally, the feedstuffs used in the mice study were not fully equivalent across the reference groups.

Media Coverage

There was extensive German media coverage of the presentation and the report. More than 110 articles on the research appeared the next day in the German press. It was predominantly factual relating to the report results. Even the biggest German tabloid paper carried a short factual report with a picture of cows.

Publication of the Research

The authors indicate that the study has been peer reviewed and several portions of the data sets already have been published in international scientific journals, such as ABC – Analytical and Bioanalytical Chemistry and Analytica Chimica Acta.

Ongoing Study on Soil Organisms and Biotechnology

The University of Munich is conducting another long term study on the impact of Bt-toxin on soil organisms. This is a three-year study and the results will be available earliest by the end of 2010.

Comments

It is unclear what impact these results will have on the loud, ongoing debate about agricultural biotechnology in Bavaria and Germany as a whole. However, it is important to note that at least the University of Munich is contributing to the debate with science-based, peer-reviewed research. Nonetheless, Bavarian politicians will likely to continue, at least in the short run, to see the application of agricultural biotechnology as a election platform topic.