



USDA Foreign Agricultural Service

GAIN Report

Global Agriculture Information Network

Template Version 2.09

Voluntary Report - public distribution

Date: 2/2/2004

GAIN Report Number: AU4002

Austria

Biotechnology

Austrian Observations on Biotechnology in Food and Agriculture

2004

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Report Highlights:

Following is a summary of the criticisms and questions Austrian consumers and scientists raise while discussing Biotechnology. This was translated from an Austrian Power Point presentation. The Austrians are proud and protective of their mountain agriculture and their organic crop production. Until we can answer these questions, or sell Biotech products that provide immediate consumer benefits, the Biotech promotion issue in Austria, and neighboring countries, will be frustrated. Answers or replies to any of these observations, official or unofficial, are welcomed. Biotech opponents believe that the Biotech industry is unable to adequately respond to these observations.

Includes PSD Changes: No
Includes Trade Matrix: No
Unscheduled Report
Vienna [AU1]
[AU]

Critical Observations Regarding the Use of Genetic Engineering in Agriculture and Food

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Our knowledge of Biotechnology does not even amount to one pico-percent ...

DID YOU KNOW ...

- **... that all in all, only 10 scientific (peer-reviewed) studies have been published on the health effects of GM-food and feed (4 articles among these publications were published by the group around Arpad Pusztai and S. Ewen)?**

(Pryme I, 2003. In-vivo studies on possible health consequences of GM-Food a. Feed, Nutrition and Health, 2003, Vol. 17, pp. 1-8. Despite the fact that the world is full of scientific opinions on the non-hazardous nature of GM-food, "there is only very limited data on the safety of GM-food." (Domingo JL (2000), Health risks of genetically modified foods: many opinions but few data, Science, 288, 1748-1749)

- **... that in many cases, the form of integration of the various synthetic genetic constructions as well as their integration frequencies into the various different plant genomes are not exactly known, and that the stability of integration is more than questionable (e.g. jumping genes)?**

(Mae-Wan Ho, Transgenic Lines Proven Unstable, <http://www.i-sis.org.uk/TLPU.php>; Collonier C. et al., Characterization of commercial GMO inserts: a source of useful material to study genome fluidity. www.crii-gen.org)

- **... that we do not know the exact composition of the new proteins, let alone their folding, and that feeding attempts or various allergenicity tests have been carried out on the basis of the bacterial proteins only?**

(Cf. e.g. Kawata M., Pacific Ecologist, Nov. 2003:
<http://www.scoop.co.nz/mason/stories/HL0311/SOO113.htm>)

- **Regarding the evaluation of EU authorization dossiers: “Experimental toxicological investigations have only been carried out sporadically In none of the cases, potential toxicology-relevant effects of the insertion of genes were considered In none of the applications (for authorization) was the direct examination of the potentially allergenic properties of the genetically modified plant and/or the genetically modified plant product supported by experiments”**
(SPÖK A., HOFER H., VALENTA R., KIENZL-PLOCHBERGER K., LEHNER P., GAUGITSCH H.: Toxikologie und Allergologie von GVO-Produkten (Toxicology and Allergology of GMO-products), Monographien Band 109, UBA (Federal Environment Agency), Wien (Vienna) 2002.
- **... that particularly in connection with the use of herbicide-resistant plants such as the Roundup Ready soybean, Roundup has a toxic effect upon sperm in mammals and has a potential of damaging the hormone balance?**
(Yousef MI. et al., J Environ Sci Health B. 1995, July 30(4): 513-34; Walsh LP. et al., Roundup inhibits steroidogenesis by disrupting steroidogenic acute regulatory (StAR) protein expression, Environ Health Perspect. 2000, Aug. 108(8): 769-76)
- **... that 43 % of children reported by their parents as showing severe attention deficit disorders (ADD/ADHD) had fathers who applied “Phosphonamino” herbicide?**
(Garry VF. et al, Birth Defects, Season of Conception, and Sex of Children Born to Pesticide Applicators Living in the Red River Valley of Minnesota, USA, Environ Health Perspect. 2002, 110 Suppl. 3:441-9)
- **... that analyses of the Danish “Pesticide Leaching Assessment Programme” found glyphosate and its degradation products in groundwater above the warning concentration of 0.1 µg/l? Denmark has thus restricted the application of Roundup.**

GMOs cannot be contained - coexistence is impossible in small-scale farming structures!

DID YOU KNOW ...

- **... that in Western Canada, approximately 2.25 million hectares of Roundup oilseed rape (Canola) are cultivated randomly in terms of geographic distribution, and that on account of the broad application of Roundup by way of ploughless cultivation, the entire second growth as well as ruderal populations are extremely contaminated with GM-oilseed rape, and that double resistances (glyphosate, gluphosinate) are not uncommon?**

(Cf. e.g. R.C. Van Acker et al, GM/non-GM what co-existence in Canada: Roundup Ready what as a case study. http://www.agrsci.dk/gmcc-03/gmcc_proceedings.pdf)

- **If politics were to establish a threshold of 0.1 % of GMO-contamination, coexistence of GM and non-GM cultivation would not be possible. The consumer is practically expected to accept a constant minimum GMO-share in food of up to 0.09 % percent without being aware of it.**

(Cf. e.g. AEBC (2003), Coexistence and Liability Report, http://www.aebc.gov.uk/aebc/coexistence_liability.shtml)

The Precautionary Principle:

- Open questions: **Effects upon food: toxicology, nutritional physiology, immunology, allergenic potential, endocrine effect?**
- Open questions: **Effects upon the environment: e.g. outcrossings, non-target organisms?**
- Result: **There is no safe model of prognosis:**
Scientific opinions are extremely weakly founded, "... there is **no evidence** to indicate that the placing on the market ... **is**

(not) likely to cause adverse effects on human and animal health and the environment."

Even opinions of leading scientific bodies contain mistakes:

The opinion on T25 maize of the EU-SCP, for example, has been corrected:

"... and the herbicide tolerance trait should not transfer to any other varieties of cultivated maize" had to be removed, which is why the opinion was published twice. ("To err is human")

- Approaches: Rio Declaration of Principles, CBD, Biosafety Protocol, SPS Agreement

- Criteria contained also in the EU Treaty (Article 174) - Precaution and Prevention:

In developing its environmental policy, the Community takes into account

- the available scientific and technical data;
- the environmental conditions of the individual regions of the Community;
- the economic and social development of the Community on the whole as well as the balanced development of its regions.

Further Demands: proportionate; non-discriminating; harmonized with measures previously taken; based on cost-benefit evaluations; constantly examined as to the scientific background; clear regulations regarding the burden of proof; questions as to reversibility.

- Backgrounds - other criteria:
Hormone administration to farm animals, rBST, BSE (mad cow disease), ... but also the multi-dimensional structure of European agriculture and the multi-functional requirements, i.e. strong overlapping of agricultural and living spaces.

Prospects for non-GM Areas

- **Non-GM areas are necessary**

** in order to link the protection of biodiversity with sustainable agriculture (no release in nature protection zones; cf. FSE in GB)

** in order to provide development areas for organic farming

** in order to make available consolidated areas for non-GM seed production
** in order to guarantee a non-GM preservation of plant genetic resources
** as balancing and regeneration areas in case of unforeseen developments

- **“Polluter Pays” Principle has to apply to GMO-contamination:**

Letter by Tom Daschle (U.S. Senate Democratic Majority Leader, November, 2001) in the course of the ITPGR negotiations:

“Finally, any damages caused to farmers through lower prices, lost markets or contamination due to genetically modified products should be reimbursed by the company producing any such product.”