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Czech Republic

Agricultural Biotechnology Annual

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Report Highlights:
The Czech Republic maintains a scientific approach towards biotechnology. No major policy or legislative changes are foreseen.

Section I. Executive Summary:

The Czech Republic remains one of a few EU member states that have a scientific approach to biotechnology and that permits farmers to cultivate bioengineered crops. Coexistence rules are in place. The Czech Ministry of Agriculture is active with educational outreach programs targeting producers and general public on the use of biotechnology in agriculture.

Section II. Plant Biotechnology Trade and Production:

Production

The Czech Republic is one of a few EU member states with a rational approach towards biotechnology. Since 2005 Czech farmers have been growing bioengineered Bt corn MON 810 and in 2010 they started cultivating the newly approved bioengineered "Amflora" potato which produces a higher starch content

sought for industrial application. Bt corn is used in biogas production and in on-farm cattle feed, eliminating the need for commercial marketing of the product.

Currently, the Amflora potato is cultivated by farmers who then process it in on-farm starch processing facility. However, in 2011 and 2012, the Amflora potato will not be cultivated in the Czech Republic for processing because the BASF company is focusing on propagation of planting seed stock.

Acreage of GE Crops in the Czech Republic									
	2003	2004	2005	2006	2007	2008	2009	2010	2011 (estimate)
Bt corn MON 810	0	0	250	1,290	5,000	8,380	6,480	4,678	4,000
Amflora Potato	0	0	0	0	0	0	0	147	0

Crops under Development

The Czech Republic is in a consortium with USDA's Agricultural Research Service and several EU new member state research institutions that has developed a bioengineered plum tree, called *HoneySweet,* that is resistant to the plum pox virus. The consortium is now seeking EU deregulation to allow for commercial release of the genetic event. While many field trials have been successfully completed already, it is expected to take several years before the EU then member states give final approval.

Trade

Czech Republic imports bioengineered soybean meal, a main protein source for feed mixes. The majority of imports are trans-shipped through the main European ports in The Netherlands and Germany. In 2010, soybean meal imports totaled 469 thousand MT.

Food Aid

Czech Republic, not being a food aid recipient, consequently faces no issues related to biotechnology that would impede the importation of food aid donations.

Section III. Plant Biotechnology Policy:

Responsible Government Ministries

The Ministry of Environment (MOE) is the competent authority handling the notification and regulation of GMO use in the Czech Republic. MOE cooperates with the Ministry of Health (MOH) regarding address of potential risks to human health. The Ministry of Agriculture (MOA) is responsible for animal health, crops, feeds, and agricultural risks associated with GMOs. The MOE is advised by the Czech Commission for the use of GMOs and Genetic Products, an expert advisory body consisting of scientists, representatives from administrative authorities and non-governmental organizations.

The MOE is the Competent Authority relating to the Cartagena Protocol on Biosafety. The Czech Environmental Inspectorate is the Competent Authority with regards to state supervision of GMOs, cooperating with other state supervising bodies to complete this task.

The MOA is the Competent Authority in reference to food and feed enhanced through biotechnology and on rules for co-existence.

Biotech Policy

The Czech biotechnology policy is science based. The MOA is of the opinion that Czech farmers should have the opportunity to apply modern technology and the right to choose the type of production practice to apply - conventional, organic, or technology enhanced, subject to limits imposed under the EU regulatory framework.

Approved Biotech Crops, Food and Feed

For information regarding bioengineered crops approved for cultivation, food or feed use, please refer to EU-27 Biotechnology Annual Report.

Field Trials

Unlike most EU member states, Czech Republic permits and is conducting field trials involving several different bioengineered events. In 2010, the area of field trials totaled 23.4 hectares, including buffer zones. Bioengineered crops under field test included: potatoes with modified sugar content, potatoes with improved resistance to late blight, herbicide tolerant corn GA21, glyphosate and corn borer resistant corn NK603, glyphosate and selected coleopteran pests resistant corn 88017, and five other glyphosate tolerant corn varieties. Other crops tested include flax, tobacco, plum trees (Plum Pox Virus resistant) and peas.

Coexistence

The Czech Republic coexistence rules are defined by Act no. 252/1987 amended by Act no. 291/2009 and Decree no. 89/2006, and amended by Decree no. 58/2010 on conditions pertaining to the growing of genetically modified crops.

Legislation amendments were designed to remove administrative duplicities and to add guidance accommodating future situations (e.g. growing of GM soybeans). The primary changes included: Farmers are no longer required notifying MOA in writing prior sowing. However, more neighboring farmers now have to be informed prior to sowing. Farmers do not need to mark the area of the GM crop in the terrain anymore. Farmers will no longer have to send notifications to both MOA and MOE – from the next amendment of the relevant Decree. The MOA guidance on regulations and changes to farmers is available here.

Coexistence regulations require either:
1) a 70 meter buffer between fields with a conventional crop (i.e., corn) and genetically modified crop (i.e., Bt corn), or
2) a buffer zone of 25 rows of conventional crop around the genetically modified crop field with a 20 meter buffer between the genetically modified and conventional corn fields, or
3) omission of the isolation buffer (distance between fields) if a 35 row buffer zone of conventional crop around the genetically modified crop field.

For organic agriculture, a 200 meter isolation distance between the genetically modified crop (i.e., Bt corn) and organic crop (i.e., corn) or a buffer zone of fifty rows of conventional crop (i.e., corn), plus a hundred meter isolation distance.

Labeling

Packaged foods and feeds derived and/or containing biotechnology enhanced ingredients must be labeled. “Contains GMOs” is a typical example of a product label statement found on the Czech

market. Labeling is enforced by local authorities and follows EU labeling standards. For more information on EU biotechnology labeling requirements see the EU-27 Biotechnology Annual Report.

Section IV. Plant Biotechnology Marketing Issues:

Market acceptance

Farmers are facing difficulties with regards to the marketing of Bt corn therefore they primarily use that crop on-farm as a livestock feed or for Biogas production. However some retail buyers of meat and milk products are now requiring farmers guarantee that their livestock are not fed with GMOs. The acreage of Bt corn planted has slightly decreased in reaction the last few years. Another reason for the decline in Bt corn acreage is that the country's major export markets for agrarian products are neighboring GMO-free EU states, such as Austria and Germany.

Czech consumers in general do not have a problem buying food products containing GMOs. They are more concerned about other issues, such as price and origin of the product.

County specific studies

There have been no recent country-specific studies on marketing or acceptance of GMOs. However the recent EU-wide survey "Special Eurobarometer 341/ Wave 73.1 - TNS Opinion & Social: Biotechnology Report 2010" shows that Czech people in general have a liberal approach to the use of biotechnology and GMOs. Biotechnology and genetic engineering is supported by 65 percent of respondents while 36 percent of respondents agree with GMOs in food products, a high number compared to other EU member states. For more details please review the survey linked here.

The recent April 2011 European Commission document shows the Socio-economic implications of GMO cultivation. Follows is a non-exhaustive compilation of the contribution by Czech Republic:

Economic and social implications of the placing on the market of GMOs for cultivation

Impacts on upstream operators

- For 78 percent of respondents, GMOs had a positive effect on investment in plant research and a subsequent rising number of patents. 67 percent experienced a positive effect of GMOs on the employment in the R&D centers.
- 78 percent of respondents experienced that the research on GMOs accelerated the use of non-GM modern breeding techniques. Balanced use of GM and non-GM techniques is expected in the future.
- Both GM and non-GM seeds are available, but GM-seeds are more expensive. Dependence on major seed suppliers was reported by 74 percent of responding farmers.
- 90 percent of responding MON810 growers estimated yield increase to 10 percent (or higher, depending on pest pressure).
- 77 percent of responding farmers reported equal or lower production costs, resulting from lower (or none) insecticide treatments, lower handling and mechanization. 23 percent reported higher costs due to more costly seeds.
- Quality of harvest: all consultees cultivating GM corn reported higher quality (less mycotoxins).
- 56 percent of respondents reported conflicts with neighbors or mentioned threat of such conflicts.
- 77 percent of responding GM growers reported difficulties to sell the GM harvest (therefore GM

harvest is used as a feed in the own farm).

- 93 percent of responding farmers cultivating MON810 experienced reductions in the use of insecticides as well as fuel. No change in fertilizers or water resources use was recorded. The Czech Beekeeper Union acknowledged the reduction of use of insecticides.
- Respondents report significant gains in labor flexibility when pest pressure is high (less or no need for chemical treatment).
- For consultees cultivating GM corn, the effect of GM crops on livestock is positive – production of plants with lower mycotoxin content finally resulting in lower costs for veterinary care. No opinion on the issue was obtained from organic farmers.
- For 72 percent of consultees, health of labors improves due to reduced exposure to chemicals. 28 percent considered that the difference is minimal when chemical manipulation rules are respected.
- Representatives of organic farming consider that small farms cannot cultivate GM crops (isolation distances difficult to keep within and between small farms).
- For 53 percent of consultees, GM corn cultivation has no impact on the beekeeping industry. 18 percent of consultees and the Czech Beekeepers Union were of the opinion that Bt corn cultivation would positively influence beekeeping due to reduced use of insecticides. However, monitoring of long-term pesticide use development in GM crops is necessary.
- The Czech Beekeepers Union drew the attention to a possible consumers' reluctance to buy honey products contaminated with GM pollen.
- If GM cultivation significantly expands, difficulties to find sufficient cultivation areas for conventional seeds are expected, and risk of cross-contamination of non GM seeds during growing, harvesting or storage.
- Some respondents fear a monopoly development by international seed companies.

Impacts on downstream operator

- Lower levels of mycotoxin leads to higher quality products. However, GMO cultivation in higher quantities could decrease the diversity of non-GM products.
- 80 percent of respondents consider that GM crops cultivation had a positive effect on consumer information and protection. Obligation for labeling resulted in better consumers' awareness of given products while the right to choice has being kept.
- Segregation GM/non-GM complicates organization of work and increases costs and administrative burden for cooperatives and grain handling companies (activity records, labeling, and controls).
- The food/feed industry, with the exception of the organic industry would benefit from a wider range of products offered due to GM. Some producers of organic products claimed rise of costs for GM-free products marketing.
- Transport companies would face high segregation costs (physical separation, cleaning).
- No insurance product for GM growers exists, but it could be developed in the future.
- 60 percent of respondents assumed rise in costs for GMO analyses due to increased demand for inspections and enforcement by authorities, extension of personal capacities, development and/or of new detection methods provided that areas with GM crops enlarge.
- Public administration: extra costs would be faced by the Ministry of Agriculture (coexistence control activities ~ 11.500 EUR/year) and the Ministry of the Environment (GMO reference laboratories ~ 22.500 EUR in 2009).

Economic effect

- 42 percent of respondents assumed that placing on the market of GM seeds did not have any significant impact on the EU internal market on seeds (partly due to the very limited – and decreasing - areas sown with GM corn).
- Recent limited cultivation of GM crops in Europe does not enable a strong business competition; therefore an impact on monopolies cannot be quantified.

Agronomic sustainability

- Decrease in use of pesticides is anticipated by most respondents, as pest is spreading quickly in new localities of the Czech Republic. Organic farmers predicted increase in pesticides use in case of resistance development.
- According to 77.5 percent of consultees, introduction of GMOs does not put at risk crop varieties as limited to Bt for now. But sound scientific assessment of this potential impact if GM crops are more cultivated in future should be carried out.
- Protected species/migration routes/biodiversity: for a majority, there is no more danger with GMOs than for conventional crops if inappropriately cultivated. 21 percent of consultees considered that there is a lack of data to assess any of the mentioned categories for the moment.
- Extensive research carried out in the Czech Republic on impact of Bt corn on non-target organisms demonstrated positive impact on their diversity.
- No negative impact is anticipated on renewable resources. The real problem lies in bad farming practice (for both GM and conventional crops). Some consider that GMOs could also have a positive impact by increasing production of plants for biofuels.
- According to 38 percent of consultees, a positive impact on the use of non renewable resources is expected due to less treatment, i.e. less use of fossil fuels (tractors/production of biocides). But no macro scale impact due to the limited surface of cultivated in the Czech Republic.
- According to 86 percent of consultees GM crops could help fighting against extension of pest due to warming.

Other implications

- No answer.

Section V. Plant Biotechnology Capacity Building and Outreach:

On September 18, 2009, the Foreign Agricultural Service, in cooperation with the State Department, organized a Biotechnology Conference in Prague. A broad range of international speakers participated, including Jack Bobo, Senior Adviser on Biotechnology to the U.S. State Department, Jill Euken from the Iowa State University, Varel Bailey, U.S. Farmer, Andries Botha, South African farmer and Member of Parliament, and local government representatives and farmers. The conference was funded by the Department of State Biotechnology Outreach Funds and drew nearly a hundred participants.

FAS Pragues's outreach strategy remains supporting efforts of Czech scientists calling for a rational approach towards biotechnologies and for their attempts to dispel myths about the technology spread by NGOs like Greenpeace. The target audience remains the younger generation and students using new media.

Section VI. Animal Biotechnology:

Genetically Engineered animals are regulated in the same way as any other genetically engineered organisms in the Czech Republic. The basic national legal instrument is Act no. 78/2004 Coll., on the use of

genetically modified organisms and genetic products, as amended by the Act no. 346/2005 Coll., with the implementation of Decree No. 209/2004. The competent authority handling the notifications and regulation on the use of GMOs in the Czech Republic is the Ministry of Environment. The responsibility for regulation of food originating from genetically engineered animals comes from Ministry of Health and covers the area of "novel foods".

The state supervision authority on of the use of GE products is the Czech Environmental Inspectorate. In the Czech Republic there are no commercial applications approved for GE animals for food or feed use, and no notification of the use of GE animals for food use or other agricultural use has been filed with the EU. However, some GE animals or products are used for limited medical and pharmaceutical research purposes, most of them transgenic rodents.

The projects using GE animals that have been authorized in the Czech Republic so far fall under the scope of contained use. The authorized GE animals are classified as risk category 1 or 2 (minimal risk).
Authorization process: The entity that intends to use GE animals notifies the Ministry of Environment. The notification must include risk assessment, a description of proposed containment measures and handling of the GE products including their transport, storage, and disposal of waste.

Section VII. Author Defined:
Other Relevant Information

Related FAS reports on biotechnology in the Czech Republic are:

Released	Number	Title
12/1/2010	EZ1007	**Czech Ag Ministry Openly Promotes Advantages of GM Crops**
11/24/2010	EZ1006	**The First Hundred Days of the New Czech Minister of Agriculture**

For further information about the situation and regulatory framework for biotechnology in the EU please see a website dedicated to biotechnologies by the Foreign Agricultural Service U.S. Mission to the European Union based in Brussels.