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Report Highlights:

In Hungary there is both a deep-seated social distrust of biotech crops and the belief that Hungarian farmers profit from being a leading 'GMO-free' supplier of food and feed to European markets. Hungary has constitutionally banned genetically engineered plants from its agricultural sector and has recently amended its Act on Biotechnology. In 2011, non-transparent enforcement of new seed testing rules resulted in the destruction of corn fields and large fines for seed companies.

Section I. Executive Summary:

Hungary is a major European producer of corn, wheat, and rapeseed. Hungary opposed the use of genetically engineered (GE) plant varieties well before its EU membership in 2004. At the time, a main argument was the defense of Hungary's position as a non-GE supplier to the European corn and corn seed market. Maintaining an edge in European markets was also given as a reason for Hungary's 2005 moratorium on the planting of the EU-approved MON 810 corn variety. However, according to polls at that time, Hungarian consumers were not all against GE products and farmers were quite curious about the technology.

A major turn in came with elections in 2010 when a new coalition led by the Fidesz Party received a qualified majority in the Parliament. The new Parliament re-wrote the Constitution to include many new themes, including a ban on 'GMO' crops. The philosophy of the governing coalition has raised populist sentiments against globalization, foreign influence, and promised to re-establish traditional Hungarian values. In agriculture, this has led to a public emphasis on domestic plant and animal varieties, traditional production methods, and to a certain extent, campaigns against foreign technologies, foreign ownership, and foreign products. While the rhetoric has at times been strong, in practice there has been little change in the agricultural technologies used or crops chosen by Hungarian farmers since 2010.

Following the 2010 elections, the former Ministries of Environment and Agriculture were merged into the Ministry of Rural Development (MRD). This reflected the growing voice of the Hungarian "green" movement and resulted in further administrative opposition to GE crops and related enforcement measure.

A recent amendment of the Act on Biotechnology did not bring large new policy changes; however, enforcement of the law and the use of Ministry Orders give the government broad authority.

Section II. Plant Biotechnology Trade and Production:

No biotechnology crop varieties are produced in Hungary. The country is among the strongest opponents of agricultural biotechnology in the EU, in a category with Austria, Belgium, Greece, Italy, Latvia and Slovenia.

In the late 1990's, Hungary was active in the development basic GE crop science. However, the hostile regulatory and political environment has effectively discouraged domestic development of the technology. More recently, in cooperation with researchers from other countries, more attention has been given to environmental, food, and feed safety research.

Corn would be the most likely crop for the use of GE technology if it were not forbidden in Hungary. On January 20, 2005, the Government of Hungary imposed a moratorium on corn varieties containing the EU approved MON 810 corn event. Biotech opponents praised the European Union Council of Ministers for upholding Hungary's ban in February 2007 and March 2009.

Imports of biotech crops are a different matter. Like most other European countries, Hungary has a structural shortage of protein for animal feed. To meet demand, Hungary imports large quantities of soybean meal annually for use by the poultry, pork, and dairy sectors. Most imports are in the form of soybean meal that has been extracted from GE soybeans.

Hungarian Imports of Soybean Meal					
Metric Tons					
2006	2007	2008	2009	2010	2011
673,423	813,226	734,362	596,003	640,888	569,542

Source of Data: Eurostat, GTIS

Section III. Plant Biotechnology Policy:

Constitutional Basis

On April 25, 2011, Hungary adopted a new constitution, which entered into force on January 1, 2012. The the following parts relate to GE crops:

“Constitution, pg. 11, Chapter “Freedom and Responsibility”

Article XX

1. All have the right to physical and spiritual health.

(2)Hungary promotes the realization of the rights as stated in paragraph (1) by operating an agriculture free of genetically modified organisms, by providing access to healthy food and drinking water, by organizing labour safety and health care, by subsidizing sports and regular physical training and by ensuring protection of the environment.”

Responsible Government Organizations

While the Hungarian government does advocates for biotechnology in general a way to further economic development, it makes a clear differentiation between red biotech (which is encouraged) and green, “open air” biotechnology, which is thoroughly discouraged.

For matters relating to agricultural biotechnology, the Ministry of Agriculture and Rural Development (MRD) takes the lead regulating the cultivation, importation, and processing into food/feed of GE varieties. The National Food Chain Safety Office (NEBIH) is the top government organization handling the technical aspects of regulating GE crops such as inspection, testing, registering plant varieties etc. Decisions as the “biotechnology authority”, however, are made by the MRD.

The “independent” Biotechnology Body evaluates applications for biotechnology activities and products (new varieties, genes, etc.), although the approval is formally made by the Ministry. Members of the 17 strong Biotechnology Body are nominated by the Hungarian Academy of Science, Ministries, and NGOs. Civil Servants (government employees) are not members of the Biotechnology Body.

Ministries typically nominate scientists or experts from ‘think tanks’ belonging to their Department. Under a recent amendment to the Act on Biotechnology, Biotechnology Body members are obliged to report on any potential conflicts of interest with private industry.

Other Ministries (such as the Ministry of Human Resources and the Ministry of National Economy) are responsible for medical and pharmaceutical biotechnology and industrial strategy. (For more about the biotechnology in Hungary, see the Annual Report of the Hungarian Biotechnology Association www.hungarianbiotech.org).

Regulatory framework

The main piece of legislation governing biotechnology is the 1998 Act On Biotechnology (as amended by No. LXVII. of 2002, No. CVII. of 2006 and most recently by the Act No. LXXIV. of 2012).

The preamble to the amendment notes that a main reason for the amendment is to harmonize and update rules on coexistence. The goal is to prevent the unregulated entry into production of new GE plant varieties approved by the EU. The former Ministry of Environment merged with the Ministry of Agriculture in 2010 and this is also a reason why the entire approval system for gene technology activities had to be reviewed and updated.

Main features of the 2012 amendment, which came into force by July 1. , 2012, are:

- The Act refines the rules of non-commercial release of GE varieties (for research), gene technology activities, and the agricultural and food production aspects of thereof.
- The amendment give expanded powers to environmental, agricultural, and industrial biotechnology authorities. The new law mandates cooperation by GE variety owners with the Competent Authorities. For example, GE crop developers/owners are obliged to provide authorities with samples of genetic material. This rational given for this is that authorities may not only prescribe control or additional tests by the applicant but the office may also study ecological or other effects through research and testing by independent laboratories.
- For imports of food and feed containing GE materials for direct consumption, the Act orders the use of legal and administrative procedures corresponding to the European Union rather than requiring additional tests. [In practice, this serves to ensure uninterrupted importation of soybeans and soybean meal, which are critical sources of protein for Hungary’s meat and dairy sector. Most of the soybeans/soybean meal imported into Hungary are produced using GE varieties.]
- The Amendment also deals with ‘non-GMO zones’ set up by local, non-government initiatives, and the release of the public decisions in the official gazette of the gene technical authority (the Ministry of Rural Development).

It is important to note that detailed implementing rules for the amended Biotechnology Act have yet to be written by the relevant Ministries.

Biotechnology Research

Biotechnology research is conducted in several government-funded institutes, such as the Godollo Agricultural Biotechnology Center (www.abc.hu), the Biological Research Center (www.szbk.u-szeged.hu), and the Agricultural Research Institute at Martonvasar (www.mgki.hu). University knowledge centers and private companies are also involved in the basic research and applications in “closed system” genetic studies. Because of the hostile environment for crop gene technology, however, applied science programs of this kind are frequently masked as plant protection, environmental, or nutritional experiments.

Coexistence Regulation

The Hungarian Government approved its Coexistence Regulation on November 27, 2006 (See our report [HU6015](#)). This imposed a “de facto” ban on biotech production due neighbor consent requirements and excessive isolation distances.

For example, farmers seeking to plant a GM crop would need prior written consent from neighboring land owners. This is especially difficult in Hungary due to the post communist legacy of fragmented land ownership. Under the by1990’s era Cooperative Land Re-privatization program, larger fields often belong to numerous joint owners.

The isolation distance set by the Coexistence Regulation for corn is 400 meters, more than double that of the distance typically used in hybrid seed propagation (where genetic purity is a practical concern) and much larger than the required isolation distances in the few EU Member States producing biotech crops. For example, in Hungary, if a 30-hectare field was planted with biotech corn, then the 152 hectares surrounding it should be planted with other crops than corn.

The question of unnecessarily large isolation distance under Coexistence Regulation came up again in the summer of 2011 when fields planted with corn seed allegedly containing GE traces were ordered destroyed. The use of large segregation distances expanded the area for destruction far into the neighboring fields and significantly increased costs to private firms.

Labeling rules

Hungary follows EU labeling standards, although because of the stigma, no ‘GMO’ labeled foods are marketed. Detailed information on EU biotechnology labeling requirements is available in the [EU-27 Biotechnology Annual Report](#).

Testing

Seeds

Plant propagation materials (including seeds) go through sampling and laboratory analyses for the

presence of GE traits. Corn is the most common target of the government's GE testing efforts. Most hybrid corn seed and feed corn produced Hungary comes from genetics supplied and developed by American companies. These same U.S. companies form the backbone of the Hungarian corn industry and they have significant investments in seed processing facilities and long-term relationships with farmers to grow seed corn.

In late 2010 and in the spring of 2011, the Minister of Rural Development announced increased sampling of planting seed for traces of GE varieties. The measure was based on new rules¹ relating to biotech testing. Importantly, the policy was implemented during the seed distribution and planting season. Several months after sampling, after planting had occurred, the Hungarian government notified two foreign seed companies that monitoring had detected GE varieties in their conventional seeds. Subsequently, Hungarian authorities ordered the destruction of several thousand of hectares of corn and a smaller area of soybeans. The companies were forced to compensate farmers for the destroyed fields at a cost of millions dollars. In 2012, another foreign company also allegedly violated Hungary's zero tolerance for GE traces, resulting in the destruction of over 1,500 hectares of corn.

There have been serious doubts about the accuracy of sampling and tests conducted by Hungarian authorities and Hungarian officials have refused to share details of their sampling and testing programs related to alleged violations. In 2011, Hungarian officials also refused to consider independent sampling and testing results in its enforcement decisions. Moreover, the companies maintain internal ISO-certified testing processes that are supported by testing results from independent accredited labs throughout Europe.

In the fall of 2011, a new seed monitoring system was put into place and the sampling and evaluations are being conducted in a timelier manner. An amendment to the seed regulation, [No. 23/2012 [March 19] order of the MRD on the Production and Commercial Sale of Planting Seed of Row Crops] also seems to have provided a more solid legislative basis for seed inspection.

Processed Foods

For processed foods, because of the high costs and technical difficulties of GE testing, inspection tends to be through ad-hoc anti-biotech campaigns rather than by a formal sampling plan.

Labs

The accredited laboratory for biotechnology testing for commercial purposes is Biomi Kft., a joint venture between the Agricultural Biotechnology Center at Godollo and the Dr. E. Wessling Chemical Laboratory Kft. (www.biomi.hu).

Official testing for GE events is conducted by laboratories at the National Food Chain Safety Office (NEBIH).

Section IV. Plant Biotechnology Marketing Issues:

A few public opinion polls conducted by Hungarian agricultural magazines about five years ago

indicated that rural people and farmers are far less biased with GE crops than any other groups of consumers. More recently, a 2010 Eurobarometer [Report for the Commission](#) indicated above average positive opinions of Hungarians about biotechnology compared to other Europeans.

Recent results of a university study indicated, however, that the general judgment of people toward agricultural biotechnology turned more negative from 2006 to 2008. However, many respondents labeled the technology “superfluous” rather than “dangerous.” With regard to who is considered trustworthy on biotechnology, on a 1 to 5 scale, Hungarians gave the highest scores to the Academy of Science (4.25), food scientists (4.11), and international expert panels (4.10). The lowest scores were given to tabloid papers (1.96), food commercials (2.23) and the Minister of Agriculture (2.38). Mid-range institutions were the the Association of Food Processors (3.44) and the Ministry of Health (3.08).

The present Hungarian government plays an active role in portraying GE crops negatively. The government’s “Quality Hungarian Food” has made consumers cautious about anything “artificial,” whether it be additives, new processing practices, or GE.

While polling data is scarce, we consider Hungarian farmers to be divided about GE technology. Small farmers see it as a technology giving opportunities only for the large-scale corporate farms. More progressive farmers are not yet convinced by the benefits of the current generation of GE crops and consider changes from current technologies risky or not possible in Hungary. Corn, the major agricultural export, also receives above world market prices in EU countries such as Germany. [Note: Hungarian corn does not compete against U.S. corn in the European market because of prohibitions placed on U.S. corn due to the presence of GE varieties.]

Section V. Plant Biotechnology Capacity Building and Outreach:

The Office of Agricultural Affairs Budapest has been involved in several programs to encourage science-based regulations and to promote regulatory and market acceptance of GM crops grown by U.S. farmers. Activities have included visits of U.S. Government officials, scientists, and representatives from U.S. producer groups. Similarly, the office has facilitated visits to the United States by Hungarian professionals involved in biotechnology.

The Zoltan Barabas Agricultural Biotechnology Association, a non-government organization of scientists and companies involved in agricultural biotechnology, provides the general public with scientific and agronomic background information on agricultural biotechnology. The Association publishes a newsletter “Zold Biotechnologia” (Green Biotechnology) and maintains a website of the same title www.zoldbiotech.hu . In 2011, noted Hungarian scholars published a book in English and Hungarian titled, “Hungarian White Paper – Plain Facts about GMOs.” This publication may also be found in the USDA report [HU1102](#) titled, “Scientific Community Promotes Plain Facts on GMOs.”

In June 2006, the “Pannonian Region Agricultural Biotechnology Association” was established by scientists, plant breeders, and seed companies from Austria, the Czech Republic, Hungary, Slovakia, Slovenia, Romania, Croatia, Bosnia-Herzegovina, Serbia, and Ukraine. This group facilitates regional collaboration, information exchange, on agricultural biotechnology.

Section VI. Animal Biotechnology:

Several biotechnology companies, university knowledge centers, and bio-incubators located in four academic towns deal with research on genetically-engineered (GE) animals in Hungary.

These basic science programs are typically with transgenic rodents in support of medical and pharmaceutical programs. No commercial use of GE animals has been applied for and/or received in Hungary.

The animal biotechnology technique closest to practical applications are mainly related to livestock breeding, such as embryo transfer, progeny evaluation through marker assisted selection, and animal diagnostics.

All kinds of genetic engineering (gene technology): plant, microbe, animal are regulated by the same Act of 1998 On Biotechnology, as amended. The competent authority for animal biotechnology is the same as for plant biotechnology (the Ministry of Rural Development or other relevant Ministry covering basic science, health or other programs). The administrative body which receives and evaluates the GE applications is the Gene Technology Committee for animal biotechnology experiments.

GE animal research programs so far remain behind the walls of authorized biology laboratories. In contrast to GE field trials, these 'closed system' research programs do not need to be listed and evaluated by the Gene Technology Committee or approved.

Hungary is a significant importer of animal genetics, including dairy semen and embryos from the United States.

ⁱ Order number 16/2011 by the Minister of Rural Development amends order number 48/2004 on the Production and Commercial Distribution of Seeds of Field Crops. Under the prior regulation seed import lots were subject to random (GMO) testing paid for by the 'competent authority' (the Central Agricultural Office). Under the new rule, third country seed import lots were subject to mandated GMO testing paid for by the importer/distributor. Imported seed lots from other EU member-states must be accompanied by a negative GMO test from an EU accredited laboratory.