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Report Highlights:
Hungary is one of the strongest opponents of agricultural biotechnology in the European Union (EU). Maintaining the country's GE-free status is one of the Government's highest priorities and one of the main sticking points of negotiations on trade. At the same time, many plant breeding and scientific institutions in Hungary see the need for, and potential benefit of, innovative biotechnologies on the economy and sustainability.

Executive Summary

Hungary does not produce any genetically engineered (GE) crops, animals, or cloned livestock. The Government of Hungary (GOH) has an opposition stance to the use of any kind of GE products in agriculture. All political parties in Hungary hold an anti-GE position At the same time, many plant breeding and scientific institutions in Hungary see the need for and potential benefit of innovative biotechnologies on the economy and sustainability.

The GOH often regards its GE-free status as a marketing advantage since EU member states are the primary destinations for Hungarian planting seed and grain exports. Hungary developed its own system for labeling GE-free food and feed as the EU has no uniform rules and regulations for such labeling. Maintaining the country's GE-free status is one of the GOH's highest priorities and is one of their main sticking points in trade negotiations.

Hungary demanded to keep GE organisms out of all part of its territory under the directive (EU) 2015/412. In this respect, the present import and use of GE soybean meal in large quantities (currently 500-600 thousand MT/year) is considered controversial. Despite political efforts to reduce import dependence, only 15-20 percent of protein feed derives from domestic sources. Hungary's non-GE soybean production would only satisfy 50 percent of annual demand by 2020, according to the most optimistic scenarios. Currently, the country cannot reduce its import dependence of these GE agriculture products.

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PART A: PRODUCTION AND TRADE

a) PRODUCT DEVELOPMENT

In Hungary, there are neither GE plants being developed, nor plans to commercialize such in the near future. This is due to the anti-GE policy of the GOH and a ban on GE crop cultivation specifically outlined in the Hungarian constitution.

Institutes and universities conduct most of the research for agricultural biotechnology. For example, the Hungarian Agricultural Biotechnology Institute is studying how plant small RNA is involved in plant-microbe interactions. Additionally, there is research on plant genetics and metabolomics to optimize the CRISPR/Cas9 system for precision breeding. Other activities aim to identify new and conservative small regulatory RNA and plant factors influencing the development of economically important traits or plant development processes.

Since achievable results with traditional breeding techniques are limited and costly, companies and institutes have to decide whether developing products using either genetic engineering, innovative biotechnologies, or traditional breeding methods are the most effective and most profitable way to improve crops. Although there is an intense debate on and a legal uncertainty of innovative biotechnologies in the EU, many plant breeding and scientific institutions in Hungary see them as necessary and anticipate the positive impact these techniques may have on the economy and sustainability.

b) COMMERCIAL PRODUCTION

No GE crops or GE seeds on the market are produced in Hungary. The country's interests were fulfilled when a vote passed in the European Parliament allowing individual member states to ban the cultivation of GE crops. "It is an especially important strategic interest for Hungary, laid down in its constitution, to ensure a "GMO" (genetically modified organism)-free agriculture," the Ministry of Agriculture stated.

Under Directive (EU) 2015/412, Hungary demanded that all of its territory be shielded from pending applications to grow gene-altered crops in the bloc. Measures of the directive have been transposed into national law by the amendment of the Act No. XXVII of 1998 on Biotechnology Activities.

c) EXPORTS

There is no commercial production of GE crops in Hungary and the country does not export GE products. Hungary's GE-free status is often regarded as a possible marketing advantage because other EU countries are the primary destinations for planting seed and grain exports.

d) IMPORTS

Hungary's imports of biotech crops are controversial in terms of its asserted GE-free status. However, Hungary has a structural shortage of protein for animal feed. To meet demands, the country imports large quantities of soybean meal. The Hungarian livestock sector uses 500,000-600,000 MT of soybean meal annually, of which only 15-20 percent derives from domestic sources. The other 80-85 percent is

imported mainly from Brazil and in lower volume from Argentina as trans-shipped product from other EU countries, especially from Slovenia, Germany, the Netherlands, and Italy. This makes farmers and feed producers vulnerable to the external market movements. According to estimates, about 90 percent of the imported soybean meal is GE. Its replacement with conventional, non-GE products would result in an extra cost of about $29 million annually.

Considering this shortage of protein feed, the National Agricultural Research and Innovation Center (NARIC) signed two strategic cooperation agreements in August 2017 to help decrease the sector's import dependence. Agreements were reached among the NARIC, the Magyar Szója Nonprofit Kft – in Hungarian (Hungarian Soy Non-profit Ltd.), the Research Institute of Agricultural Economics and the Hungarian Grain and Feed Association – in Hungarian. The aim of these partnerships is to promote the cultivation of soybean and other protein crops within Hungary and help the more effective utilization of practical knowledge and innovation in the National Animal Feed Program and for agro-economic research.

e) FOOD AID

Hungary is not a food aid recipient country and its role as a supplier in international food aid programs is not significant. Occasionally, food aid consignments (processed, canned foods) are sent to the Hungarian population of the sub-Carpathian region of Ukraine. This aid does not involve any kind of GE food.

PART B: POLICY

a) REGULATORY FRAMEWORK

In Hungary, the Ministry of Agriculture takes the lead and makes decisions on biotech issues regulating GE crop cultivation, trade, and processing into food or feed. The National Food Chain Safety Office (NFCSO) is the top government organization handling the technical aspects of GE crops such as inspection, testing, and registering plant varieties.

In 2006, Hungary developed its GE-free strategy with an agreement of all the five parliamentary parties at the time [Parliamentary Resolution No. 53/2006 – in Hungarian]. Since then, the country adopted a new constitution (Basic Law) on April 25, 2011, which entered into force on January 1, 2012 and declared the need for Hungary's GE-free agriculture.

The Act No. LIII of 1996 on nature conservation was the first law in Hungary to include provisions on GE organisms. Today, the main piece of biotech-related legislation is the Act No. XXVII of 1998 on Biotechnology Activities. The goal was to prevent the production of unregulated entry of GE plant varieties. The act gives expanded powers to environmental, agricultural, and industrial biotechnology authorities. For direct consumption of imported food and feed containing GE materials, the act orders the use of legal and administrative procedures corresponding to the EU. . Rules for the implementation are detailed in the following legislation:

- Decree No. 82/2003. (VII. 16.) (in Hungarian) on documentation which shall be enclosed in the notification regarding the gene technological activity.

- Joint Decree No. 111/2003. (XI. 5.) (in Hungarian) on activities that shall be considered as gene technological activity as well as on authorities which are entitled to supervise the gene technological activity.
- Decree No. 128/2003. (XII. 19.) (in Hungarian) on the organization and the activity of the Gene Technological Advisory Committee.
- Decree No. 48/2004. (IV. 21.) (in Hungarian) concerning the production and marketing of seeds of agricultural crop species.
- Government Decree No. 132/2004. (IV. 29.) (in Hungarian) on the authorization procedure of the gene technological activity as well as on the liaison with the European Commission.
- Decree No. 142/2004. (IX. 30.) (in Hungarian) on certain rules of the gene technological activity in the field of agriculture and industry.
- Joint Decree No. 31 of 2006 (IV. 29.) (in Hungarian) on the import and distribution of certain genetically modified feeds.
- Decree No. 86/2006. (XII. 23.) (in Hungarian) on coexistence measures on the cultivation of genetically modified, conventional and organic plants.
- Parliamentary Resolution No. 47/2008 (IV .23.) (in Hungarian) on the adoption of the report on the implementation of the provisions included in Parliamentary Resolution No. 53/2006 (XI.29.) on various issues relating to gene technology activities, their use in agriculture and food production and the Hungarian strategy concerning them.
- Parliamentary Resolution No. 74/2011 (X. 14.) (in Hungarian) on joining the genetically modified organism-free Alps-Adriatic initiative.
- Parliamentary Resolution No. 6/2012 (II. 22.) (in Hungarian) on the adoption of the report on the implementation of the provisions included in Parliamentary Resolution No. 53/2006 (XI.29) on various issues relating to gene technology activities, their use in agriculture and food production and the Hungarian strategy concerning them for 2009 and 2010.
- Decree 53/2013. (VI. 17.) (in Hungarian) of the Ministry of Rural Development on the safeguard clause on the seeds of stems and hybrids of maize MON810

Hungary's legislation on GE crops and their products is fully harmonized with the EU, transposing directives into the national law. EU regulations pertaining to GE products are directly applied.

Since there are no uniform rules and regulation on labeling of GE-free food and feed within the EU, Hungary developed its own system. The Decree No. 61/2016 (IX. 15) (in Hungarian) of the Ministry of Agriculture on labeling GE-free products came into force on September 20, 2016. It was amended almost a year later by the Decree No. 27/2017. (V. 30.) (in Hungarian).

Beside the above-mentioned legislation, Hungary's soybean meal import dependence led to political intentions to reduce the importation and use of GE soybean meal in animal feed. Soybean producers may recieve extra support for grain legume production over the single area payments. Irrigation development programs could also help the production and result in higher yields. Despite the efforts, Hungary has no real alternative to substitute the imports of soybean meal. The country cannot considerably reduce its exposure and import dependence of such products.

b) APPROVALS

Regarding the imports of food and feed with GE content, Hungary applies EU-harmonized legislation. Although the Ministry of Agriculture formally makes approvals, the Gene Technology Advisory Committee (in Hungarian) evaluates biotech activities and products in Hungary. It provides professional opinions on applications submitted to gene technology authorities and makes recommendations on their acceptance or refusal. The Hungarian Academy of Sciences (HAS), Ministries and non-governmental organizations (NGOs) nominates the members of the Advisory Committee usually including scientists.

In Hungary, there are no GE plants approved for cultivation and it is constitutionally prohibited. Data on authorized experimental releases can be found on the Hungarian Biosafety Website.

c) STACKED EVENT or PYRAMIDED EVENT APPROVALS

Hungary follows the European Food Safety Authority's guidelines and the EU's legislation concerning stacked events.

d) FIELD TESTING

Since 2012, GE plant field tests have not been approved in Hungary according to the official database. Tests were mainly conducted in maize and in some cases in tobacco, potato, sugar beet, wheat, or barley only with scientific purposes, without commercialization.

e) INNOVATIVE BIOTECHNOLOGIES

According to Hungarian academicians, only those gene combinations that cannot occur in nature need to be regulated under the rules on "GMOs." Therefore, some Hungarian scientists believe that directed mutations should be exempted from the EU rules on GE products, similar to spontaneous and random genetic changes.

Although Hungary's position on GE products and research policy on green biotechnology has been criticized many times, there remains an openness to civil organizations; both the Biological Research Center and the Center for Agricultural Research of the HAS are leading members of the Association for Innovative Agricultural Biotechnology.

It is promising that the background research facility of the Ministry of Agriculture, the Agricultural Biotechnology Institute of the NARIC is also focused on optimizing the CRISPR/Cas9 system for precision breeding in its work.

Hopefully, similar approaches can be expected from the GOH in the future since the NRDI also regards biotechnology as a highlighted element of knowledge base development. According to Hungary's National Research and Development and Innovation Strategy (2013-2020), future technologies, e.g. the so-called "converging technologies," such as biotechnology, cognitive technologies, nanotechnologies and mathematics, play a privileged role in developing knowledge bases.

f) COEXISTENCE

The GOH approved its Coexistence Regulation in November 2006 (see report HU6015) by the amendment of the Act No. XXVII of 1998 on Gene Technology Activities. (Chapter III). This Act, as well as the Decree No. 82/2003 (in Hungarian) and the Decree No. 86/2006 (in Hungarian) prescribed

the common rules for coexistence of organic, conventional, and GE crops. These rules determine all the conditions that are designed to prevent the uncontrolled spread of GE crops and their crossing or mixing with non-GE products, including buffer distance(s), cleaning of machinieries, separate storage, etc.

Although Hungary legislated the national rules of coexistence, applying the law in this regard is not possible in practice as the country had used the Safeguard Clause (under Directive EC No. 2001/18) and bans the cultivation of EU authorized GE plants.

g) LABELING

A number of GE plant varieties are approved for industrial food use and as feed in the EU, and consequently, in Hungary. Hungary follows the EU's labeling standards. If GE content above 0.9 percent, it must be indicated on labels. If products derive from animals fed on GE feed, it is not required to be indicated.

Since there are no uniform rules and regulation on labeling of GE-free food and feed in the EU, Hungary developed its own labeling system (see Part B, a) Regulatory Framework for the specific legislation). This legislation provides special labeling of GE-free food and feed and processed products, as well as meat, fish, eggs and milk from livestock fed on certified GE-free feed and GE-free honey. The application of the "GMO-free" labeling is voluntary.

For a product to be labeled "GMO-free," it must meet the criteria that it should not contain any GE organisms, and it must not derive from livestock fed GE material. Labeling claims must be verified by the producers. Producers and traders of food labeled as being GE-free are obliged to ensure the traceability of the products including raw materials.

According to the national law, minute GE content (traces of GE material up to 0.1 percent, provided that it is adventitious or technically unavoidable) was permitted; product could still be labeled as "GMO-free." In 2017, Hungary amended their "GMO-free" labeling regulations via the Decree No. 27/2017. (V. 30.) (in Hungarian) partly because the permitted level of GE content was too low causing problems in technical implementiation. According to the amendment, feed can be used in GE-free production if it is not required to be labeled because of its GE ingredient content under the Regulation (EC) No. 1829/2003 on genetically modified food and feed. Practically, it means that the permitted GE content of 0.1 percent in "GMO-free" labeled products has been raised to 0.9 percent.

The "GMO-free" labeling cannot give the impression to customers that the product has special sensory and nutritional features and its effect on environment and health is better than the similar products. In addition, products that have no licensed GE version in the market cannot be labeled as "GMO-free."

h) MONITORING AND TESTING

Since Hungary is one of the major seed exporters, genetic purity of seeds is highly important. Plant propagation materials (including seeds) go through sampling and laboratory analyses for the presence of GE traits. Official control is both on Hungarian crops and on seeds from the EU and non-EU countries. Under the rules, third country seed import lots are subject to mandated testing for GE presence, paid for by the importers or distributors. Imported seed lots from EU member states must be accompanied by a negative GE test from an EU accredited laboratory.

Based on risk analysis, seed lots previously notified by producers or distributors are checked before sowing. Farmers can only use tested seeds that have been proven as GE-free products.

Corn is the most common target of GE testing efforts. The authorities carry out monitoring and testing continuously. Based on the inspections, about 6500 hectares of cornfields were destroyed over the past years because of the so-called "GMO contamination."

In 2017, the soy drinks were also tested by the NFCSO checking their lactose, gluten, protein (including milk protein), vitamin and calcium content as well as the presence of GE ingredients.

i) LOW LEVEL PRESENCE POLICY

Hungary, as a member state of the EU, has a zero tolerance policy for low-level presence of GE products in feed following the measures of the Commission Regulation (EU) No. 619/2011. This regulation lays down the methods of sampling and analysis for the official control of feed as regards presence of GE materials. The EU defined "zero" with a "technical solution" level of 0.1 percent.

j) ADDITIONAL REGULATORY REQUIREMENTS: N/A

k) INTELLECTUAL PROPERTY RIGHTS

In Hungary, there is no specialized intellectual property legislation for GE products. GE crops cannot be planted commercially. In general terms, the country is against the patents on genetic materials.

Application for national plant variety protection can be filed with the Hungarian Intellectual Property Office, while the application for EU plant variety protection can be submitted directly to the Community Plant Variety Office.

Hungary is an active participant of negotiations under the International Union for the Protection of New Varieties of Plants and the International Convention for the Protection of New Varieties of Plants.

l) CARTAGENA PROTOCOL RATIFICATION

The Hungarian Parliament ratified the Protocol on January 13, 2004. The ratification was promulgated by the Act No. CIX of 2004 – in Hungarian (on the publication of the Cartagena Protocol on Biosafety signed on May 24, 2000 in Nairobi) and came into force on April 12, 2004. The Government Decree 226/2008 (IX.11) – in Hungarian laid down the rules of the implementation of the Protocol in Hungary. The publication of the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety was by the Act No. CLXXI of 2013 – in Hungarian.

With respect to the Convention on Biological Diversity (CBD) (see the fifth national CBD report), Hungary created a new National Strategy for the Conservation of Biodiversity in 2015-2020 (NSCB). In order to comply with the Aichi Targets, the NSCB contains highlighted objectives to eliminate harmful effects on biological diversity.

Hungary's NSCB sets out the following measures needed between 2015 and 2020:

- "Introduction of safeguard clause procedures and/or urgency measures for GMOs that are permitted for production in the European Union and have harmful effects.
- Preparing a study of social, economic, and environmental reasons for banning the production of GMOs in general, a group of GMOs, or individual GMOs on a case-by-case basis (such as preserving environmental and landscape characteristics, habitats and ecosystems, as well as specific ecosystem functions and services).
- Active monitoring and testing of GMO contamination in plough-land located close to Hungary's borders.
- Contacting neighboring countries and concluding diplomatic treaties with them in order to keep the areas close to Hungary's borders GMO-free.
- Active monitoring of gene technology-related activities.
- Providing technical requirements and funding for environmental and health impact studies in Hungary concerning GMOs undergoing authorization procedure in the EU."

m) INTERNATIONAL TREATIES/FORUMS

Hungary is an active member of different intergovernmental and standard setting international organizations (e.g. Organization for Economic Co-operation and Development; World Trade Organization; Codex Alimentarius; Food and Agriculture Organization of the United Nations - International Plant Protection Convention; The European and Mediterranean Plant Protection Organization etc.). At meetings of these organizations, the country takes the opportunity to apply pressure by using its membership positions in Central Europe, the EU, and the Visegrad Group (V4).

The Hungarian Minister of Agriculture attended an International Ministerial Conference with the title "GMO-free agriculture: a chance for rural development in Central and South Eastern Europe." It was held in Vienna (Austria) on May 10, 2017 in close cooperation with the Regional Rural Development Standing Working Group in South-Eastern Europe and the Donau Soja (Danube Soy) Association. The participating governments, including Hungary, discussed the importance of rural development and GE-free agriculture. The outcomes of the discussions can be found in the final Chairman's Conclusions as well as in a summary of the Conference. The agriculture and environment ministers of ten Central European and Western Balkan countries accepted a joint memorandum at the meeting in which they declared that their countries would be harmonizing their "GMO policies."

The county is an active member of the Donau Soja association as well. Since Hungary is only 15-20 percent self-sufficiency in soybean meal, the country's participation in the Donau Soja program stimulates the region's non-GE soybean production and aims to reduce the large-scale dependence on imports.

At the EU Council meeting on June 12, 2017 on agriculture and fisheries, Hungary and Germany jointly submitted a proposal on the adoption of the European Soy Declaration . The ministers welcomed the initiative and underlined its potential role in boosting the production of GE-free soy in Europe and in reducing the dependence on imports. On July 17, 2017, the agriculture ministers of 14 EU member states officially signed the European Soy Declaration at Hungary's Permanent Representation in Brussels. The signatories agreed to develop sustainable soybean and other legume markets in Europe.

n) RELATED ISSUES

Recently, Hungary promoted the cultivation of non-GE leguminous plants for food industry and feed purpose at the China-Europe Soy Symposium as well. The Director-General of NARIC said that Hungary is a committed and consistent supporter of preserving GE-free agriculture by reinforcing science and research cooperation. He highlighted the fact that replacing GE soy currently used for feed is a major challenge, and accordingly cannot be realized without comprehensive cooperation on related European protein policies.

In September 2016, the Ministry of Agriculture launched a public debate on a draft of Hungary's long-term strategy for the food industry, valid until 2050. Since then, the strategy has been accepted, and it confirmed again the Government's complete rejection of GE products.

PART C: MARKETING

a) PUBLIC/PRIVATE OPINIONS

The 3rd Parliamentary Open Day on Genetically Modified Organisms was held on May 18, 2017. It had been announced as a professional event but many of the visitors found the event politically motivated. In addition to the scientific presentations, a number of political and ideological statements were made. From the point of view of experienced biotechnologists, the event reflected the anti-GE approach in Hungarian politics, where issues on genetic engineering became tools of enforcing business interests, and there is no place for debates on scientific fundamentals.

In contrast with vocal groups that oppose modern technologies, the Association for Innovative Agricultural Biotechnology (in Hungarian) represents all branches of green biotechnology. This association is very active in dissemination of new results of innovative biotechnologies, which can play an important role in global sustainability. Their mission is to help science based and objective approaches to genetic engineering, and that precision breeding contributes to the development of sustainable farming.

Hungarian consumers' attitude to GE products is under the pressure from negative campaigns. Overall, the Hungarian consumer, like that of many EU consumers, is under the crossfire of populist political messages, emotional statements, half-truths, well-founded analyses and conjectures, economic and market forecasts, as well as different interpretations of scientific achievements. Verified by political populism, the press often publishes negative opinions about GE ingredients in food and feed. At the same time, the number of pro-biotech publications and outreaches are increasing as well. More and more information is available to the public. Consumer choices and attitudes are influenced by price sensitivity, the awareness of new technologies, and the availability of related information and substitute products.

b) MARKET ACCEPTANCE/STUDIES

The Research Institute of Agricultural Economics (in Hungarian) conducted a study to determine whether the GE-free soybean meal based feeding can become a reality. According to the study, about 60 percent of Hungary's non-GE soybean production is exported to foreign markets and barely contributes

to the domestic supply. Analyzing changes in planted area and possible growth in production, it was established that the Hungary's soybean production would be able to satisfy only 50 percent of the annual demand of the domestic livestock sector by 2020.

However, several surveys tried to prove the increasing health awareness of domestic buyers, other studies considered the price as the most decisive criterion in Hungary. It is important to note that the replacement of GE soybean meal with non-GE (conventional) soybean meal would make food prices higher by 10-20 percent since there is no real feed alternative.

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART D: PRODUCTION AND TRADE

a) PRODUCT DEVELOPMENT

In Hungary, there is no commercial use of GE animals and clones for agriculture. Biotechnology for genetic improvement is mainly related to livestock breeding.

The Agricultural Biotechnology Institute of the NARIC and the Biology Research Center of the HAS are the most active research facilities in animal biotechnology. The Department of Animal Biotechnology at the Institute has three research groups such as the Applied Embryology and Stem Cell Research Group, the Ruminant Genome Biology Group and the Rabbit Genome Biology and Bio-model Group. These groups focus on exploring the genetics of bovine diseases and work on the adaptation and development of genome editing tools for precision breeding. They are also involved in the functional characterization of pluripotent stem cells, and the bio-model group is working on models for biotechnological applications.

b) COMMERCIAL PRODUCTION

Hungary does not produce any livestock clones, offspring of clones, GE animals, or products derived from animal biotechnologies.

c) EXPORTS

Hungary does not export GE animals, livestock clones, or products from these animals, including genetics.

d) IMPORTS

Currently, no legislation regulates the imports of semen or embryos from clones. Despite this fact, livestock clones or genetics from these animals are not likely imported into Hungary.

e) TRADE BARRIERS

One of the most sensitive issues in Hungary is the maintenance of the country's GE-free agriculture. The Government has an opposing stance to the use of GE crops and GE animals in agriculture. In this respect, all parties in Hungary hold an anti-GE position.

PART E: POLICY

a) REGULATORY FRAMEWORK

All kinds of genetic engineering are regulated by the Act No. XXVII of 1998 on Biotechnology Activities. The Ministry of Agriculture takes the lead and makes decisions regulating biotech issues. The NFCSO is the top government organization that handles technical aspects such as inspection and testing. The administrative body, which receives and evaluates GE applications for biotechnology experiments, is the Gene Technology Advisory Committee (in Hungarian).
Hungary has no country-level legislation related to the commercial use and trade of clones, their offspring, or products derived from these animals. The GOH supports the EU's efforts to create common EU legislation and institutions governing animal cloning. Hungary is still a vocal opponent of any kind of GE plant or animal products.

b) INNOVATIVE BIOTECHNOLOGIES

In Hungary, many breeding and scientific institutions see the necessity and the potential of gene editing, and publicly support such technologies. According to their opinion (declared at a conference on New Breeding Techniques in Budapest, Hungary), genetic modification has become a routine technology and significantly enlarged the circle of traits and genes that could be utilized for crop improvement.

c) LABELING AND TRACEABILITY

Hungary does not produce or trade in any livestock clones, GE animals and their offspring or products. Although, laboratory animals are used in animal biotechnology experiments, they are not released. Therefore, there is no policy for labeling and traceability related to livestock clones and GE animals.

d) INTELLECTUAL PROPERTY RIGHTS

There is no specialized intellectual property legislation for animal GE products. Applications for animal patents can be filed with the Hungarian Intellectual Property Office

e) INTERNATIONAL TREATIES/FORUMS

Hungary actively participates in the work of several multilateral and intergovernmental organizations such as the Food and Agriculture Organization of the United Nations, the World Organization for Animal Health and Codex Alimentarius related to animal health and food safety issues. In general, terms, the country is against GE animals, but there is no specified and noteworthy position on animal biotechnologies.

f) RELATED ISSUES: N/A

PART F: MARKETING

a) PUBLIC/PRIVATE OPINIONS

The Hungarian public is quite critical of products coming from advanced production technologies. Animal cloning and food products made from cloned animals are unpopular and trigger concerns. The

Hungarian population is quite skeptical of the necessity and usefulness of food made from cloned or GE animals. At the same time, the public opinion is quite positive about animal biotechnology used for medical purposes.

b) MARKET ACCEPTANCE/ STUDIES

Public views on animal products connected with cloning and genetic engineering are expected to be similar to those held for GE crops. These products are likely to be rejected by most of the Hungarian food retail chains.

Although several biotechnology companies, university knowledge centers, and bio-incubators deal with research on animal biotechnology in Hungary, market surveys on sale and use of GE animals and clones are not available. Biotech companies could gain ground mainly in the market of veterinary molecular diagnostics and marker-assisted selection.