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Date: 10/1/2018

GAIN Report Number: EZ1806

Czech Republic

Agricultural Biotechnology Annual 2018

Approved By:

Emily Scott, Agricultural Attaché

Prepared By:

Jana Mikulasova, Agricultural Specialist

Report Highlights:

The Czech Republic generally maintains a scientific approach towards biotechnology. For more than a decade, farmers planted genetically engineered (GE) corn. However, in 2017 and 2018 Czech farmers did not plant any Bt corn. This change in planting practices is a result of producers decided that this product is too difficult to market and sell. The Czech Republic has not imposed any bans on GE crops.

There were no legislation updates or regulatory changes in 2018. A new voluntary genetically modified organism-free (GMO-free) certification scheme was introduced last year.

Section I. Executive Summary:

The Czech Republic has been one of the few EU member states allowing commercial planting and field trials of GE crops. In recent years, however, their area has been declining. In 2015, Czech farmers planted only 997 hectares (HA) of Bt corn, in 2016 it dropped significantly to 75 HA, and 2017 is the first year in more than a decade, when they planted no Bt corn at all. Last time the area increased was in 2011, reaching 5,090 HA. Field trials in 2017 are conducted on an area slightly smaller than 1 HA, including buffer zones. In 2018 the field trial area reached 0.05 HA.

Czech scientists and farm groups are vocal in their support for more crop biotechnology. With its rational and scientific approach to biotechnology, scientists and academia do not hesitate to publicly dispel myths spread by some non-governmental entities. Czech scientists and academia are regularly involved in international biotechnology-related events (conferences, workshops) and projects.

Czech Ministries vote for new biotechnology events at the EU, both for import and for cultivation. Czechs however supported the option for other member states to impose biotech cultivation bans. They did so citing the Czech position of strict neutrality on such scientific issues and to support other members' decisions, as they expect support for their own decisions to plant the technology.

Section II. Author Defined:

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CHAPTER1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION AND TRADE

a) Product development:

The Czech Republic is in a consortium with USDA's Agricultural Research Service and several EU member state research institutions (like the French INRA) that developed a bioengineered plum tree, called *HoneySweet* that is resistant to the plum pox virus (Sharka). The consortium is seeking EU deregulation to allow for commercial release of the GE tree. While many field trials have been successfully completed, it is expected to take several years before the product gains final approval.

Czech Republic uses genetically engineered organisms (viruses, bacteria, parasites) for medical research. The goal of such projects is to develop/define prophylactic and therapeutic approaches, and to conduct a clinical trial. You can find more information at the Czech Republic's Biosafety Clearing House website: <https://www.mzp.cz/Biosafety/decisiones.html>.

b) Commercial production:

The Czech Republic is one of a few EU member states with a rational and pragmatic approach towards biotechnology. Beginning in 2005, Czech farmers planted bioengineered Bt corn MON 810 and in 2010 they cultivated the newly approved bioengineered "Amflora" potato which produces a higher starch content sought for industrial application. Until the discontinuation of planting Bt corn, it was used in biogas production and in on-farm cattle feed, eliminating the need for commercial marketing of the product.

From a high of 5,090 HA in 2011, Czech farmers planted only 75 HA of Bt corn in 2016. However, issues with marketing of the product resulted in Czech farmers not planting any Bt corn in 2017 and 2018, as major retail chains now require farmers to certify that cattle were not fed any GM feed. The cultivation of the GE potato Amflora stopped after BASF transferred its operations to the United States, due to the hostile political climate towards GE crops in Europe.

Area (HA) of GE Crops in the Czech Republic														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bt corn MON 810	250	1,290	5,000	8,380	6,480	4,678	5,090	3,050	2,560	1,754	997	75	0	0
Amflora Potato	0	0	0	0	0	147	0	0	0	0	0	0	0	0

The Czech Republic did not opt-out from planting GE seeds under the new EU Directive (2015/412). Nor does it impose national or regional bans on growing of GE crops.

c) Exports:

The Czech Republic does not export GE products.

d) Imports:

The Czech Republic has no bans on importing of GE crops and imported bioengineered soybean meal, a main protein source for feed mixes. In 2017, the soybean meal imports totaled 585,347 metric tons (MT). Major suppliers are Brazil, Argentina and United States. Most imports are trans-shipped through the main European ports in the Netherlands and Germany.

e) Food aid:

The Czech Republic is not a food aid recipient and consequently faces no issues related to biotechnology that would impede the importation of food aid donations. Food aid to other countries is typically done through large international organizations by financial contribution. When product is donated directly, there are no issues related to biotechnology, as vast majority of crops and products in the Czech Republic are from conventional production.

f) Trade barriers:

There are no trade barriers that would be specific to the Czech Republic or emanating from its policy that would negatively affect U.S. exports.

PART B: POLICY

a) Regulatory framework:

In the Czech Republic, the Ministry of Environment (MoE) is the competent authority handling the notification and regulation of agricultural biotechnology use in the Czech Republic. The MoE cooperates with the Ministry of Health (MoH) regarding potential risks to human health. The MoE also serves as a national focal point for the Cartagena Protocol on Biosafety as well as for the [Biosafety Clearing-House](#).

The Ministry of Agriculture (MoA) is responsible for animal health, crops, feeds, and agricultural risks associated with biotechnology. The MoE and MoA are advised by the Czech [Commission for the use of Genetically Modified Organisms and Products](#) (*CzC GMO, website available only in Czech language*), an expert advisory body consisting of scientists, representatives from administrative authorities and non-governmental organizations. The chair and the members of the Commission are nominated and designated by the MoE after consulting the MoH and MoA. The members are professionals from such organizations as the Academy of Sciences, universities and research institutes. The activities of the *CzC GMO* cover the risk assessment of contained use, deliberate release into the environment and placing on the market of living modified organisms (LMOs), and products containing or consisting of GE traits, to include such traits in export and import.

[The Czech Environmental Inspectorate](#) (*website available only in Czech language*) is the Competent Authority with regards to governmental supervision of bioengineered events, cooperating with other governmental supervising bodies to complete this task. The MoA is the Competent Authority for food

and feed enhanced through biotechnology and for rules for co-existence.

[The Scientific Committee on Genetically Modified Food and Feed](#) (*SCGMFF*, website available only in Czech language) was established in 2006 by the MoA to elaborate scientific opinions to all the applications submitted for new GE food and feed in the EU and to review how the European Food Safety Authority (EFSA) deals with Member States comments to these applications. The *SCGMFF* is an independent body, whose members are Czech experts on risk assessment, especially from the human and animal health disciplines. The *SCGMFF* closely cooperates with the *CzC GMO*.

Political factors that may influence regulatory decisions are mostly tied to local political fights between parties forming the coalition. Also, new ministers tend to take a more neutral position. However, the *CzC GMO* keeps a stable, scientifically based position and rational approach.

The Czech Republic is a member of the European Union and the EU regulations apply. For more information on the EU regulatory framework relating to biotechnology, please refer to our Agricultural Biotechnology Annual EU-28 report available at <http://gain.fas.usda.gov/Lists/Advanced%20Search/AllItems.aspx>.

Harmonized national legislation regulating this subject is Act 78/2004 on the Use of Genetically Modified Organisms and Genetic Products (Act on GMOs), as amended by Act 371/2016. The 2016 amendment eases administrative requirements for the 1st risk category: contained use of GE traits. It also incorporates EU Directive 2015/412 allowing national bans into national legislation. Detailed requirements stemming from the “Act on GMOs” (e.g. coexistence distances) are described in the implementation Decree 209/2004 (as amended by Decree 372/2016). The amended legislation came into force as of January 1, 2017. There are no new legislation updates in 2018. An English version of the Czech national regulatory framework related to biotechnology can be found on the Biosafety Clearing House website in English at: https://www.mzp.cz/Biosafety/acts_regulations_guidelines.html.

b) Approvals:

For information regarding bioengineered crops approved for cultivation, food or feed use, please refer to our Agricultural Biotechnology EU-28 Annual report available at: <http://gain.fas.usda.gov/Lists/Advanced%20Search/AllItems.aspx>, or directly to European Commission website: http://ec.europa.eu/food/dyna/gm_register/index_en.cfm as approvals are done on the EU level.

c) Stacked or pyramided event approvals:

The Czech Republic implements EU legislation, for more information please see the EU-28 Biotechnology Annual Report available at: <http://gain.fas.usda.gov/Lists/Advanced%20Search/AllItems.aspx>.

d) Field testing:

Unlike most EU member states, the Czech Republic permits and is conducting field trials involving several different bioengineered events. In 2018, the field trials shrunk further, from four to two genetically engineered crops. They are done for research purposes and include:

- Plum trees with a modification conferring virus-resistance (resistance to plum pox, also known as

- Sharka), notified by the Crop Research Institute;
- Soybeans with gene LTB, notified by the Institute of Experimental Botany.

The total area of the field trials including border rows is 0.05 HA.

e) Innovative biotechnologies:

Czech Republic's approach toward innovative biotechnologies (referred to as New Plant Breeding Techniques within the EU) is rather positive; positions are based on scientific opinions. However, the Czech Republic follows the EU regulatory framework and, thus, the July 2018 decision from the Court of Justice of the European Union to regulate such products under the GMO Directive.

The Czech Republic typically follows the EFSA opinions. In regard to innovative biotechnologies, the *CzC GMO* commented on three: cisgenesis, intragenesis, and zinc fingers, and agrees with the EFSA findings.

To date, no project aimed at a deliberate release of a product originating from innovative biotechnologies has been notified in the Czech Republic. Czech experts actively participated in the New Techniques Working Group at EU level and in the discussions under Cartagena Protocol on Biosafety.

In response to an industry enquiry, the *CzC GMO* adopted a position on a legal status of the oligonucleotide directed mutagenesis (ODGM or ODM). According to *CzC GMO*, this technique results in a genetic modification and the resulting organism falls under the scope of the biotech legislation. The *CzC GMO* has endorsed the applicability of the current risk assessment methodology in cases of two innovative biotechnologies (cisgenesis/intragenesis and site-directed nucleases).

f) Coexistence:

The Czech Republic coexistence rules are defined by Act on Agriculture no. 252/1997 amended by Act no. 441/2005 and 291/2009, and Decree no. 89/2006, amended by Decree no. 58/2010 and Decree no. 392/2016 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 biotech soybeans). The primary changes included: Farmers are no longer required to notify MoA in writing prior to sowing. However, neighboring farmers must be informed prior to sowing. Farmers no longer need to mark the area of the biotech crop in the terrain.

The updated coexistence regulation lists requirements for three different crops – potatoes, corn, and soybeans, in order to cover possible future situations. It introduces new isolation distance for planting of GE crops near the national border, which is 400 meters. In reality, it would be 450 meters, as the land register adds 50 m tolerance for technical purposes, i.e. national border adjustments. Isolation distances for growing Bt corn do not change significantly:

- A minimum buffer of 70 meters distance between fields with a conventional corn and a Bt corn
- If a field is located near the Czech national border, the isolation distance for GE crop is 400 m
- A minimum buffer of 200 meters distance between fields with an organic corn and a Bt corn

- One row of conventional corn with a minimum width of 70 cm around Bt corn can make up for 2 meters of a minimum isolation distance

g) Labeling:

Labeling is enforced by local authorities and follows EU labeling standards. 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. For more information on EU biotechnology labeling requirements see the EU-28 Biotechnology Annual Report available at: <http://gain.fas.usda.gov/Lists/Advanced%20Search/AllItems.aspx>.

On a national level, the Czech Republic, namely the Commodities and Feed Association, developed and introduced a new voluntary GMO-free (NON GMO) certification and labeling scheme in 2017. The Central Institute in Supervising and Testing ([UKZUZ](#)) conducts the oversight. Producers, traders, and transportation companies can use the certification, which was created to be compatible with the German and other EU GMO-free standards, and to help Czech producers market their products on the common market. More details and the label pictures can be found in the Labeling chapter of this report’s Animal Biotechnology section below.

h) Monitoring and testing:

Foods and feeds are tested in the Czech Republic regularly, for various contaminants, as well as transgenic trait presence. Testing methodologies are required from the developers. When unapproved product (or product containing unapproved genetically engineered events) is found on the market, it has to be withdrawn from the market, destroyed, and reported to the EU Rapid Alert System for Food and Feed (RASFF).

The Czech Environmental Inspectorate is the Competent Authority for government supervision of the use of bioengineered events. It covers contained use as well as deliberate release into the environment in both areas: commercial and research. It cooperates with other governmental supervision bodies responsible for specific areas:

- [Czech Agriculture and Food Inspection Authority](#) (CAFIA) – food inspections and control. CAFIA conducts testing based on their Annual Control Plan. Products that are listed in the Plan are typically those that often appear in the RASFF. Last year CAFIA tested 69 samples of food products containing or produced from corn, soy, flax seed, papaya, and rice for the presence of biotech material. The detection laboratories are able to check for genetic modification also in tomatoes, potatoes, and oilseeds.
- Central Institute for Supervising and Testing in Agriculture – seeds and feed supervision. They have been testing both domestically produced and imported seeds since 2006, namely corn, soy, and rapeseed for the adventitious presence of bioengineered events.
- State Veterinary Administration – supervision of animal origin products.
- State Institute for Drug Control – covers medicinal products.
- Custom Authorities – oversee exports and imports. Testing of imports is quite rare, as there are almost no direct imports to the Czech Republic. Commodities, feeds, and foods are typically transshipped through other EU countries, where testing and monitoring is conducted at the ports of entry.

- Regional Agricultural Agencies of the Ministry of Agriculture in charge of field control of cultivation (compliance with coexistence rules).

There are five authorized detection laboratories, including [The National Reference Laboratory for GMO Identification and DNA Fingerprinting](#), the Crop Research Institute, Prague available for these authorities.

i) Low level presence (LLP) policy:

The Czech Republic does not have a policy on LLP. It does follow the “technical solution” guidance of an allowance of 0.1 percent outlined in EU Regulation 619/2011. This regulation lays down the methods of sampling and analysis of official control of feed regarding the presence of genetically modified organisms for which an authorization procedure is pending or the authorization of which has expired. The Czech Republic has been open to imports with LLP of bioengineered events and at the time of the EU debate, unequivocally supported a resolution of the issue so that imports could be resumed.

j) Additional regulatory requirements: N/A

k) Intellectual property rights (IPR):

The Czech Republic adheres to EU legislation. The national regulation pertaining to protection of new plant varieties is Act 408/2000, which incorporates the principles of the International Union for the Protection of new Varieties of Plants ([UPOV](#)) system. The Central Institute in Supervising and Testing ([UKZUZ](#)) is the responsible body for this area. Czech agricultural associations and non-governmental organizations (NGOs) support the UPOV plant certificate system rather than the patent system.

l) Cartagena protocol ratification:

The Czech Republic has ratified the Cartagena Protocol in September 2003. All regulations of the Cartagena Protocol on Biosafety are in place. The MoE is the Competent Authority relating to the Cartagena Protocol on Biosafety. More details can be found at the Czech Republic’s Biosafety Clearing House website: <http://www.mzp.cz/Biosafety/index.htm>.

m) International treaties/forums:

The country has not been taking any significantly noteworthy positions within international fora. The international organizations Czech Republic has been a member of include the Plant Protection Convention (EPPO), the Codex Alimentarius Commission (CAC), International Union for the Protection of New Varieties of Plants (UPOV), Organization for Economic Co-operation and Development (OECD), UN Food and Agriculture Organization (FAO), and World Trade Organization (WTO).

n) Related issues: N/A

PART C: MARKETING

a) Public/private opinions:

Several NGOs have been active in the country, both for and against biotechnologies. The focus is mainly on the production and use of GE crops. The scientific community has been quite proactive and vocal, emphasizing rational approach and benefits of the technology by disseminating accurate information on the topic. In 2010 Czech scientists published the “White Book on Genetically Modified Crops,” with the goal in their own words to, “shorten the period of false apprehension of genetically modified crops in Europe.” The book calls for science-based, rather than politically influenced decision-making process regarding genetically engineered crops.

Pro-biotech NGOs in the country include the Czech Biotechnology Society and Biotrin. To the contrary, organizations like Greenpeace and some other green-oriented NGOs have published scandalous articles in order to threaten consumers. Czechs are known for being quite pragmatic, and when compared to other EU member states they appear as being rather liberal on this issue.

A June 2016 [survey](#) conducted by [The Public Opinion Research Centre](#) included a series of questions connected to GE food. The aim of the survey was to find out whether the respondents were interested in the issue and how familiar they were with it. Subsequently, they were asked how often they monitored GE food or product ingredients data found on product labels. The last part of the survey was a set of statements regarding the safety of eating GE food, scientific knowledge of their impact on human health, and their purchasing decisions on GE food. The report also offered comparison of the results with a [research](#) done by the Pew Research Centre in the United States. The same survey was repeated in June 2017.

The 2016 survey revealed, and the 2017 survey further confirmed, that most Czechs are simply not interested in the topic of GE foods (78 percent, in both years). More than half of consumers never check food labels for such information, one quarter of them check only seldom, 10 percent of consumers check for such info often, and only 4 percent check all the time. In 2017, as well as in 2016, Czechs consider consuming GE foods less safe, when compared to the U.S. consumers. In 2017, one quarter of Czech consumers (27 percent) evaluates consumption of GE foods as dangerous. On the other hand, 25 percent perceives it as problem-free. Information that the food is GE would influence purchasing decision in one quarter of consumers (25 percent). Out of these, 8 percent would definitely not buy such food. More than one in five (19 percent) consumers out of this group would hesitate whether to buy the food or not.

When asked about availability of information on the topic in 2016, 70 percent of respondents stated that there is definitely (34 percent) or rather (36 percent) lack of information on the topic. Only three percent think that there is definitely enough information on the topic available.

b) Market acceptance/studies:

Farmers face difficulties to market Bt corn, therefore they primarily used their GE crop on-farm as a livestock feed or for biogas production. However, retail buyers of meat and mainly milk products are now requiring farmers’ guarantee that their livestock are not fed with bioengineered events. As a reaction to this new requirement, the area of Bt corn planted has decreased in the last few years resulting in zero hectares of Bt corn planting in 2017 and 2018. Another reason for the decline in Bt corn acreage is that the country’s major export markets for agrarian products are neighboring EU countries, such as Austria and Germany, which are trying to not use biotech crops.

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

CHAPTER 2: ANIMAL BIOTECHNOLOGY

Cloning is an animal biotechnology that developers frequently utilize in conjunction with other animal biotechnologies such as genetic engineering and are therefore included in this report.

PART D: PRODUCTION AND TRADE

a) Product development:

In the Czech Republic there are no genetically engineered animals or cloning under commercial development. Animals approved and used for research purposes include: fruit fly (*Drosophila*), nematode (*Caenorhabditis*), hen, moth (*Bombyx*), laboratory mouse, laboratory rat, rabbit, pig, tropical frog *Xenopus Laevis*, tropical fish *Danio rerio* and *Orizyas latipes*.

The Czech Republic does not have a specific system in place to monitor imported genetics of clones. The EU blanket ban on cloning of farm animals is not seen as appropriate, as it may prevent farmers from preserving some valuable genetic material.

b) Commercial production:

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. Likewise, there are no commercial applications of animal cloning.

c) Exports: N/A

d) Imports:

Country imports genetics from other countries and some of them originate from clones.

e) Trade barriers:

Main trade barrier remains EU policies (see Policy section below).

PART E: POLICY

a) Regulatory framework:

The Czech Republic does not have a specific national legislation on cloning in place, and implements the EU legislation. Cloning is regulated on the EU level by regulation (EC) 258/97 on Animal Cloning and Novel Foods.

Genetically Engineered animals are regulated the same as any other GE organism in the Czech Republic. The basic national legal instrument is Act no. 78/2004 Coll., the “Act on GMOs,” as amended by the

Act no. 371/2016, with the implementation of Decree No. 209/2004. The competent authority handling the notifications and regulation on the use of GE traits/products in the Czech Republic is the MoE. The responsibility for regulation of food originating from GE animals comes from MoH and covers the area of “novel foods.”

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 MoE. The notification must include a risk assessment, a description of proposed containment measures, and a description of proposed handling of the GE products, which must include the transport, storage, and disposal of waste.

b) Innovative biotechnologies:

Several years ago, the Czech Authorities assessed a notification of a research project using DNA vaccines for treatment of animals. As the research was in an initial phase, it was decided to take precautions by considering the treated animals to be GMOs.

c) Labeling and traceability:

The Czech Republic has been following the EU regulations in this area. Recently, retail chains have required a certification that milk and meat they buy from their suppliers come from animals not fed GE feed. They are requiring this in order to label the product as “GMO-free.” This has resulted in a new voluntary certification scheme.

In September 2017, the Czech Association for Commodities and Feed (SPKK) with a support of the Ministry of Agriculture introduced a “NON GMO” standard that allows labeling of animal origin products as “GMO-free” and sets conditions and requirements. Not only producers, but also traders and transportation companies can use this voluntary certification scheme and labeling. The Central Institute in Supervising and Testing ([UKZUZ](#)) conducts the oversight. The “NON GMO” standard is compatible with similar schemes in other EU states. It was intended to help those farmers, who trade with neighboring states, mainly with Germany. Official recognition of the Czech certification scheme by Germany is still pending, however.

This new Czech voluntary standard was, according to information provided by the SPKK, approved by the EU. Detailed description and requirements are available in Czech at the SPKK [website](#) (*in Czech*). They are very similar to the German scheme. There are two types of labels used, one is solely for food, the other one for non-food products (feed):



d) Intellectual property rights (IPR):

Czech authorities are currently not considering preparing a legislation addressing specifically

intellectual property rights for animal biotechnologies on a national level.

e) International treaties/forums:

The Czech Republic has been a member of international organizations including the World Organization for Animal Health (OIE), Codex Alimentarius Commission (CAC), Organization for Economic Co-operation and Development (OECD), UN Food and Agriculture Organization (FAO), and World Trade Organization (WTO). The country has not been taking any significantly noteworthy positions within international fora.

f) Related issues:

N/A

PART F: MARKETING

a) Public/private opinions:

So far there have not been significant discussions on the topic of animal biotech or cloning that would divide the general public into distinctive opinion groups. The scientific community has been supportive, sometimes publishing popular science-based articles introducing and explaining basic facts on animal biotechnology.

b) Market acceptance/studies:

FAS Prague is not aware of any market studies related to animal biotechnology and genetically engineered animals.