USDA Foreign Agricultural Service
GAIN Report
Global Agricultural Information Network

Required Report - public distribution

Date: 12/2/2016
GAIN Report Number: TR6054

Turkey

Agricultural Biotechnology Annual

Turkey Agricultural Biotechnology Annual Report 2016

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Report Highlights:
Turkey published its Biosafety Law and implementing regulations in 2010. Ever since, this legislation has continued to disrupt Turkey's agriculture and food sectors due to inharmonious procedures and approvals. As of October 2016, there are only 32 (seven soybean and 25 corn) events approved for feed use in Turkey. No events are approved for food use or cultivation. Testing of imported products remains inconsistent and continues to be a considerable cost for importers. The unsuccessful coup attempt on July 15, 2016 and the following investigations within the Turkish government and academia may slow the approval processes and procedures.

EXECUTIVE SUMMARY:

Turkey's Biosafety Law went into effect on September 26, 2010. After publication of the law, the Turkish Ministry of Food, Agriculture, and Livestock (MinFAL) established an independent Biosafety Board to review genetically engineered (GE) food and feed import applications.

There are currently 32 approved GE soybean and corn traits allowed in Turkish animal feed, while 24 applications are still pending approval. However, GE presence in a food product has not been approved for use, and therefore it is illegal. No new GE traits were approved in 2016. The coup attempt on July 15, 2016 and the following investigations within the Turkish government and academia may temporarily slow the approval processes.

Most of Turkey's trade partners have encountered import problems due to Turkey's lags in approvals of GE traits compared to other importing and exporting countries (asynchronous approvals) for food and feed. The reversed decision by the High Court to suspend two biotech approvals, MinFAL's regulation amendment that defines "contamination", the reversal of a required GE-free certification for enzymes, as well as the new set of event approvals in 2015 brought a considerable decrease in violations in 2015 compared to the previous two years and this was reflected by an increase in trade. However, the unpredictable situation has increased corporate risk and costs, contributed to food price inflation, and led to increased public suspicion of GE products.

There is much misinformation in the Turkish media about GE products and their safety. This has resulted in a very skeptical public and widespread misunderstanding and fear about agricultural biotechnology. The Turkish government does not provide any facts or information to refute the false and unscientific information in the media nor does it provide any information on the safety of GE products.

Production of GE animals in Turkey is banned by the Biosafety Law. However, the law does not ban the import of GE animals. If in the future was an application for approval to import GE animals, the Biosafety Board has the authority to evaluate it. Production of cloned animals is not covered in the Biosafety Law or in any other regulation.

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ABBREVIATIONS :

Besd-Bir : Turkish Poultry Meat Procedures and Breeders Association
CPB : Cartagena Protocol on Biosafety
EU : European Union
EPPO : European and Mediterranean Plant Protection Organization
FAS : Foreign Agricultural Service of the United States Department of Agriculture
FAO : Food and Agriculture Organization of the United Nations
GE : Genetically Engineered
HPC : High Planning Council
IPPC : International Plant Protection Convention
LLP : Low Level Presence
MinFAL : Ministry of Food, Agriculture, and Livestock of the Turkish Republic
NGO : Non-governmental Organization
OECD : Organization for Economic Co-operation and Development
OIE : World Organization for Animal Health
TAGEM : Agricultural Research and Policies General Directorate
TUBITAK : Scientific and Technological Research Council of Turkey

CHAPTER 1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION AND TRADE

a. Product Development:

There are no GE plants under development for commercial purpose in Turkey.

b. Commercial Production:

Article 5(1)(c) of the Biosafety Law adopted on March 26, 2010, bans the production of genetically engineered animals and plants. Importation of transgenic seeds is also forbidden by the Law and by the seed circular, which is usually published every January by MinFAL.

c. Exports:

There is no commercial production of GE crops in Turkey and Turkey does not export GE crops to the United States or other countries, aside from transshipments. However, a significant quantity of animal feed material is redirected from Turkey to neighboring countries at discounted prices following Turkish import officials' rejection of shipments that contain unapproved traits.

d. Imports:

Due to insufficient domestic production and increasing demand, Turkey imports significant quantities of feed crops for its poultry and livestock sectors. The United States is among the top suppliers to the Turkish market, but imports fluctuate and are affected by the number of events approved and measures taken by MinFAL (see part B).

Soybean exports to Turkey have fluctuated each year, after a record high in 2012. Trade in other higher valued products such as supplements and pet food were also reduced by the impacts of the Biosafety Law, and some products were rejected due to their transgenic content, such as dust from biotech corn or soy.

The number of violations increased in 2014 following Turkey's High Court decision in December 2013 to suspend two biotech approvals (MON810 and MON88017xMON810). In 2014 an estimated 150 import violations of the Law were prosecuted, some under the charge of "biological terror", causing harm to Turkey's agriculture, feed, and food sectors. With the intention of reducing the instances of prosecution for LLP in imports, MinFAL amended the implementing regulation of the Biosafety Law to define "contamination" in May 2014. In May 2015, the High Court reversed its decision that rescinded the approval of biotech corn events. According to some sources, these changes appear to have had some impact in reducing overly harsh penalties such as imprisonment.

Another challenge was introduced in October 2014 when MinFAL began requiring a government attestation that imports of enzymes and microorganisms, and products that utilize them, are not obtained from GE sources. Due to this requirement, many shipments were detained at the Turkish customs, or could not be imported at all. In May 2015, MinFAL decided not to continue the requirement for importers to provide a certificate for biotech-free/GE free enzymes or for products that utilized enzymes in their manufacture. However, MinFAL continues to require a biotech-free/GE free certificate for the import of microorganisms.

As of December 2016, Turkey has approved 25 corn, and seven soybean events for feed. No GE traits have been approved for food use, so any GE presence found in food is therefore illegal. Most of Turkey's trade partners have encountered import problems due to Turkey's lag in asynchronous approvals for food and feed. As a result, trade has been severely restricted out of concern that dust or minor low-level presence (LLP) of GE traits in food products would lead to the rejection of shipments. Testing of imported products remains inconsistent and continues to be a considerable cost for importers. The unpredictable situation has fueled food price inflation, increased corporate risk and costs, and contributed to increased public suspicion of GE products.
On July 25, 2011, the Biosafety Board advised MinFAL of the implementation of the rules set by the Commission Regulation (EU) No 619/2011 of 24 June 2011 "laying down the methods of sampling and analysis for the official control of feed as regards presence of genetically modified material for which an authorization procedure is pending or the authorization of which has expired" in the official controls. Shortly after the submission of new GE applications on May 11, 2015, MinFAL started to implement the rules of the Commission Regulation (EU) No: 619/2011. This legislation allows trace amounts of unapproved biotech content in feed up to a "technical zero" level of 0.1 percent.

Commercial activities increased significantly in 2015 and 2016 compared to the previous couple years. This was a result of a number of amendments to the law such as the change in the definition of "contamination", and no more GE-free certification required for enzymes, as well as technical zero level definition of 0.1 percent for pending events. Additionally, the MON810 being re-allowed for import and new set of event approvals in 2015 partially eased market access for some commodities.

e. **Food Aid:**

Turkey is not a food aid recipient country. However, in September 2013, Turkey rejected a shipment of food aid wheat for Syrian refugees meant to be milled in Turkey. Turkey based its decision on the detection of a soybean or corn trait. This decision resulted in the redirection of the rejected wheat shipment to a different country.

f. **Trade Barriers:**

It is a point of pride for Turkey that the Biosafety Law is more restrictive than regulations in the European Union. Turkey has zero tolerance for the detection of unapproved GE traits, except for the 0.1 percent for feed which is only for detection of GE traits pending approval in the application process. The frequency of taking samples and testing them depends on a declaration issued by the competent authority of the loading or origin country which states that the food/feed in question does or does not include GE. Turkey does not accept point of origin testing. The Biosafety Law contains liability clauses that penalize non-compliance with large fines and five to twelve years in prison. The approval process for new traits is based on a risk assessment and socio-economic assessment of the committees under the Biosafety Board. Turkey also approves traits separately for feed, food, and industrial products, which have led to instances of LLP and prosecution under the Biosafety Law's liability provisions.

PART B: POLICY

a. **Regulatory Framework:**

Turkey's regulation of agricultural biotechnology is governed by the Biosafety Law (Law No: 5977), adopted on March 26, 2010, and related implementing regulations. Imports of transgenic agricultural products are only allowed after approval of each event for each use; for example: food, feed, industrial (and products for specific industrial applications, such as: lubricant, ink, paint, and biofuel). The Law bans inclusion of GE ingredients in baby food and supplementary foods for young children, bans cultivation/production of GE plants and animals, and the planting of GE seeds.

Following the adoption of the Biosafety Law, MinFAL established a Biosafety Board. MinFAL's Agricultural Research and Policies General Directorate (TAGEM) acts as the secretariat of the Board. The Board has nine members who may serve two consecutive three-year appointments. The Board members review applications for the approval of transgenic events. Most of the Board members are high-level bureaucrats from MinFAL, the Ministry of Health, the Ministry of Science, Industry and Trade Technology, the Ministry of Environment and Urbanization, the Ministry of Forest and Water Affairs, and the Ministry of Economy. The Ministers of each ministry appoint a member of their staff to serve on the Board. Two non-governmental Board members are appointed by the Minister of MinFAL, and are selected from qualified experts from a university and from a related association (such as agricultural engineers or food engineers). Article 10-(1) of the Law states that "the Board is independent in the performance of its duties. No organization, office, body, or person can issue orders or instructions to the Board."

Approval can only be granted after a detailed application (dossier) is submitted and reviewed by the Risk Assessment and Socio-Economic sub-committees, and then is approved by the Biosafety Board. The Biosafety Board publishes decisions in the Official Gazette.

Each application is reviewed separately. For every application, the Board establishes Risk Assessment and Socio-Economic Committees from a "List of Experts". The law says that where required, the Board will also establish an Ethical Committee. However, an Ethical Committee has yet to be established. The members of the committees are confidential. However, the List of Experts is public and currently contains 349 experts from academia and the Scientific and Technological Research Council of Turkey (TUBITAK).

MINFAL published two implementing regulations of the Biosafety Law on August 13, 2010. These are "Regulation on genetically modified organisms (GMO) and Products" and "Regulation on Working Principles of the Biosafety Board and the Committees".

According to the Law, either the gene owning technology companies or importers of GE crops are allowed to submit applications for the approval of a GE event. The Board should inform MinFAL within 90 days whether or not the application is accepted and also the type of the evaluation procedure (simplified or regular) will be followed. A request for the simplified review procedure is evaluated by the Biosafety Board. In order to apply under the simplified procedure, besides the rules to be set by MinFAL, the following conditions should be met:

- Taxonomy and biology of the gene source and the receptor live organism should be known.
- Sufficient information should be available regarding the possible effects on the human, animal, and environmental health and biological diversity.
- Previous risk assessments that can be used regarding the relations of the GE with other live organisms should not have indicated any negative effects.
- Detailed methods and data should be available to enable the definition of the transferred genetic material and its identification within the live organism where it is transferred.

Unlike the regular procedure, decisions made using the simplified procedure are not published in the Biosafety Information Exchange Mechanism, so the time required for a decision is typically shorter.

Once an application dossier is accepted and a review procedure is determined by the Board, then in principle, the regular procedure reviews are completed within 270 days after that. Note that this time is counted while the Board is doing the assessments. The 270 day clock stops when additional information or documents are requested from the applicant, so in practice, the approval time for an application can take much longer than 270 days.

In the past, MinFAL had pressured the international companies that have developed agricultural GE traits to submit applications under the Law as quickly as possible in order to avoid trade problems. These companies expressed concerns about the severe yet unclear liability provisions in the Law, as well as the vagueness of the application procedures. As a result, Turkish agriculture industry associations submitted the dossiers and paid the application fees to the Turkish Government so they could import the feed needed for the sector.

The liability provisions of the Law include harsh penalties that may involve lengthy jail terms for unspecified "related parties". It lacks explicit guidance about what documents are required and how the Board will evaluate the applications. Furthermore, it contains onerous labeling and traceability requirements once the product arrives in Turkey. Turkey requires an approval in the country of

production before an application can be submitted in Turkey, which guarantees asynchronous approvals.

In May 2014, with the intention of reducing the instances of prosecution for LLP in imports, MinFAL amended the implementing regulation of the Biosafety Law to define "contamination" in a product and established a 0.9 percent threshold at and under which products are considered as "contaminated", but, for example, can still be used for feed purposes if the GE trait found under 0.9 percent threshold was approved for feed use. However, the amendment does not clearly explain how "contamination" changes the ability to market products or commodities with unapproved GE traits. For detailed information, please see GAIN report TR4017 on "Turkey Amends Biotechnology Regulation" dated 5/29/2014.

Beginning in late October 2014, MinFAL began requiring a certificate from the producer's or exporter's government authority that issues a health certificate (plant health), veterinary health certificate (animal health), or certificate of free sale indicating that for:

- the import of microorganisms, a certificate issued by the authorities of the country of origin or the country of loading or an analysis report issued by an internationally accredited laboratory providing evidence that the microorganism is not genetically modified; and,
- the import of enzymes, a certificate issued by the authorities of the country of origin or the country of loading providing evidence that that the organism from which the enzyme is obtained, is not genetically modified.

For detailed information, please see GAIN report TR4039 "Turkey Requires GE-Free Attestation for Enzymes and Microorganisms" dated 10/28/2014.

On May 5, 2015, MinFAL discontinued the requirement for importers to provide a GE-free certificate for enzymes or for products that utilized enzymes in their manufacture. The requirement for a biotech-free/GE free certificate for the import of microorganisms remains.

The High Planning Council (HPC) of Turkey adopted the "Biotechnology Strategy and Action Plan" in June 2015 to be implemented in the period of 2015-2018. The Plan is the first adopted document which covers all aspects of biotechnology (agricultural, health, industrial) in one document and owned by a very high-level government authority. The HPC is chaired by the Prime Minister and the members are from the Cabinet such as ministers from MinFAL, Ministry of Development, Ministry of Finance, Ministry of Environment and Urbanism, Ministry of Transport, Maritime and Communication, Ministry of Energy and Natural Resources, Ministry of Science, Industry and Technology, Ministry of Forest and Water Affairs, and all interested parties such as related government agencies, private sector and academia.

The Plan states the vision is "to improve the level of technological information, increase the number of products with added value, and take place amongst the leading countries within the field of biotechnology." It was prepared by the Ministry of Science, Industry and Technology in cooperation with universities/academia, business sector, and related government agencies. General targets of the plan are:

- to regulate the legal and administrative structure
- to improve technical infrastructure
- to increase production capacity of products from GE components

- to improve agricultural, health and industrial biotechnology sectors

Specific targets of it related to agricultural biotechnology are:

- to amend the Biosafety Law and other related legislation
- to determine the rules and principles of allocating "specifically controlled fields" to scientists for Research & Development and field trials

The Biosafety Board took this specific target related to the allocation of "specifically controlled fields" in its agenda and has been working on the principles and rules of allocating of specifically controlled fields for Research & Development activities. This might be the only agricultural output of the Plan in 2015 and 2016. It is expected that MinFAL and other related parties will concentrate more on the targets of the Plan in detail in the coming years.

MinFAL organized the first international workshop on the "GMO" - Risk Assessment, Socio- economic Assessment, and Risk Management in December 2015. Participants included Biosafety Board members, Scientific and Socio-economic Committees members, government agencies, members of non-governmental organization (NGOs) (representing consumers, chambers, sector), as well as representatives and experts from regulatory bodies in other countries. It was the first activity hosted by MinFAL in which all national interested parties and international participants participated. At the end of the workshop, there was consensus that GE technology is based on sound science and the current Biosafety Law should be amended (or a new law should be adopted) according to the scientific facts and Turkey's needs.

Research

Turkey's Biosafety Law permits the regulated study and development of plant biotechnology. The cumulative disincentives in the forms of quarantine control, approvals, liability, and prohibition on the cultivation of agricultural biotechnology have discouraged product development though. According to the Law and the implementing regulations, an application or permit is not required for agricultural biotech research. The researcher must inform MinFAL TAGEM about the research activity and its result(s). Researchers must apply to TAGEM for permission to import GE material and derived products for the purpose of research, development, and training/educational activities. The amount of GE material and derived products to be imported is determined by TAGEM. The Law requires TAGEM to finalize the permit procedure within 15 days.

Many academics agree that the procedures and requirements of the Law discourage research. Universities, however, are still teaching marker assisted breeding in biotechnology courses. The Law's prohibition on cultivation and commercialization also discourages the private and public sector from pursuing the development of transgenic products.

b. **Approvals:**

Either the gene-owning technology companies or importers of GE crops may apply for approval of a GE trait in Turkey. Applicants are required to provide a dossier containing technical information and data on the trait to be approved, and pay the application fee of 50,000 Turkish Lira (TL) per event (around US $16,000) for 2016. If the event is approved in an OECD member country, then the application fee is 15,000 TL (around US $ 4,750) per event. The application fee is updated at the beginning of each year. To date, none of the technology-owning companies have submitted an

application to be reviewed by the Biosafety Board. Instead, industry associations have made the applications.

Currently, there are 32 (seven soybean and 25 corn) events approved in Turkey for feed. Please see the current list of approved events given Table-1 below.

Table-1: Approved events in Turkey (for feed)

No	Commodity	Event	Approval Date
1.	Soybean	A2704-12	1/1/2011
2.	Soybean	MON40-3-2	1/1/2011
3.	Soybean	MON89788	1/1/2011
4.	Corn	Bt11	12/24/2011
5.	Corn	DAS1507	12/24/2011
6.	Corn	DAS59122	12/24/2011
7.	Corn	DAS1507xNK603	12/24/2011
8.	Corn	NK603	12/24/2011
9.	Corn	NK603 x MON810	12/24/2011
10.	Corn	GA21	12/24/2011
11.	Corn	MON89034	12/24/2011
12.	Maize	MON89034xNK603	12/24/2011
13.	Corn	Bt11xGA21	12/24/2011
14.	Corn	59122x1507xNK603	12/24/2011
15.	Corn	DAS1507x59122	12/24/2011
16.	Corn	MON88017XMON810	12/24/2011
17.	Corn	MON88017	4/21/2012
18.	Corn	MON810	4/21/2012
19.	Corn	59122xNK603	4/21/2012
20.	Corn	MIR604	7/16/2015
21.	Corn	MON863	7/16/2015
22.	Corn	T25	7/16/2015
23.	Soybean	MON87701	7/16/2015
24.	Soybean	MON87701xMON89788	7/16/2015
25.	Soybean	356043	11/5/2015
26.	Soybean	A5547-127	11/5/2015
27.	Corn	Bt11xMIR604	11/5/2015
28.	Corn	MIR162	11/5/2015
29.	Corn	MIR604xGA21	11/5/2015
30.	Corn	MON863xMON810	11/5/2015
31.	Maize	MON863xNK603	11/5/2015
32.	Maize	MON89034xMON88017	11/5/2015

Timeline of Approvals:

In 2010, the Turkish Feed Millers Association submitted dossiers for the approval of three soybean events (feed use only) that are already approved in the European Union (number 1-3 in the chart above). The Biosafety Board decided to review the applications under the simplified procedure.

In January 2011, the Turkish Feed Miller's Association submitted applications for 22 corn events to the Biosafety Board for feed use and they were reviewed under the regular procedure. All of these events are already approved in the European Union. The Biosafety Board approved 16 corn events on December 24, 2011 and on April 21, 2012. The Board rejected six corn events. Because of rejections, corn trade has virtually ceased due to the difficulty in segregating the approved and rejected biotech GE events in the supply chain.

In January 2011, the Federation of the Food and Beverages Associations submitted applications for all EU-approved soybean, corn, canola, and potato events for food use. However, because of intensive pressure from NGOs and the media, the Federation withdrew their applications for all events for food use. Therefore, currently, there are no approved events for food use in Turkey.

On April 25, 2013, the Board rejected 22 GE corn varieties to be used in the ethanol sector, three GE rapeseed varieties to be used in the feed sector, and one GE sugar beet variety to be used in the feed sector.

On December 24, 2013, MinFAL acted on a decision by Turkey's High Court to suspend the approval of MON810 (approved and cultivated in Europe) for animal feed. MinFAL implemented the High Court decisions and revoked the approval of MON810 and additionally MON88017xMON810 in animal feed products. They also withdrew these traits from the market and banned the import of the products that contain these traits. On May 25, 2015, the High Court reversed its decision on MON810 maize and subsequently, MinFAL directed the Provincial Directorates, which implement the Biosafety Law at the ports, to implement the High Court's retraction decision for both MON810 and MON88017xMON810.

On May 11, 2015, Besd-Bir submitted dossiers to the Biosafety Board for the approval request of 37 traits (nine soybean, 14 corn, four canola and 10 cotton) for feed use only (Please see Table-2 below).

Table-2. Full Applications made on May 11, 2015 (for feed use only)

Commodity	No	Event	Approval Date
Soybean	1	A5547-127	11/5/2015
	2	356043	11/5/2015
	3	MON87701	7/16/2015
	4	MON87701 x MON89788	7/16/2015
	5	MON 87705	Pending
	6	MON 87708	Pending
	7	MON 87769	Pending
	8	305423	Pending
	9	BPS-CV127-9	Pending
	1	T25	7/16/2015
	2	MON863	7/16/2015

Corn	3	MON863 x NK603	11/5/2015
	4	MON863 x MON810	11/5/2015
	5	MIR604	7/16/2015
	6	MON863xMON810xNK603	Pending
	7	MON89034 xMON88017	11/5/2015
	8	MIR604 xGA21	11/5/2015
	9	Bt11xMIR604	11/5/2015
	10	Bt11xMIR604xGA21	Pending
	11	MIR162	11/5/2015
	12	MON89034x1507xMON88017x59122 MON89034×1507×MON88017 MON89034×1507×59122 MON89034×MON88017×59122 1507×MON88017×59122 MON89034x1507 MON89034x59122 1507xMON88017 MON88017x59122	Pending
	13	MON89034×1507×NK603	Pending
	14	MON 87460	Pending
Cotton	1	MON1445	Pending
	2	MON15985	Pending
	3	MON531	Pending
	4	MON531 x MON1445	Pending
	5	LLCotton25	Pending
	6	GHB614	Pending
	7	281-24-236x3006-210-23	Pending
	8	T304-40	Pending
	9	MON 88913	Pending
	10	GHB614xLLCotton25	Pending
Canola	1	GT73	Pending
	2	MS8, RF3, MS8xRF3	Pending
	3	T45	Pending
	4	MON 88302	Pending

The Board has accepted these applications to review under the simplified procedure, and established the scientific and socio-economic committees for the assessments. The assessments of the remaining 24 traits are still pending. Following the unsuccessful coup attempt on July 15, 2016, the Turkish government declared a State of Emergency, removed thousands of civil servants from their government positions, and seized businesses which had a suspected connection with the organization the Turkish government believes to be behind the coup attempt. The State of Emergency and subsequent dismissals have interrupted some government operations and processes, and may slow down the speed of biotech trait approvals.

c. **Stacked or Pyramided Event Approvals:**

Turkey treats stacked events as novel and requires their approval separate from the approval of each individual event in the stack. The Committees follow the same assessment procedures followed for individual events.

d. **Field Testing:**
Currently Turkey does not have any field testing of products derived from agricultural biotechnology. However, one of the specific targets of the HPC Action Plan related to agricultural biotechnology is to allocate "specifically controlled fields" to scientists for Research & Development field trials. The Biosafety Board is working on the principles for this target.

e. **Innovative Biotechnologies:**
Turkey has not determined a regulatory status of innovative biotechnologies in plants or plant products of said biotechnologies.

f. **Coexistence:**
Since the Biosafety Law prohibits the cultivation of agricultural biotechnology, there is no coexistence policy in place in Turkey.

g. **Labelling:**
According to the Biosafety Law and regulations, any imported food or feed containing, consisting or deriving from GE crops above the labeling threshold set by the Ministry (in January 2011 this threshold was given as 0.9 percent via an internal Agriculture Ministerial Directive) must be labeled. Traceability clauses in the Law and implementing regulations require that records be kept for a minimum of 20 years, detailing the unique identifier of the gene, quantity, supplier, and purpose of use, each time a product is processed or handled, from the time of import to the time of distribution to the market.

The implementing regulations also require that "genetically modified organisms and products thereof are processed and stored in separate lines. In the event that this is not possible, the production lines and storage facilities must be cleaned by the interested parties in a manner to prevent any contamination with genetically modified organisms and products thereof and the circumstance must be committed to records."

h. **Monitoring and Testing:**
Before June 2016, it appeared that MinFAL tested imports from GE producing countries that contain ingredients derived from GE commodities at a rate of one hundred percent without taking any declaration into consideration. Since June 2016, the frequency of taking samples and testing by MinFAL seems to depend on a declaration issued by the competent authority of the loading or origin country which states that the food/feed in question does or does not include GE. Commodities declared as not containing GE, are subjected to less testing frequency. If there is no GE-free declaration, then a commodity is subjected to analysis at the rate of 100 percent.

Turkey utilizes a rapid response PRT tests to detect 35S promoters and NOS terminators. Designated local official laboratories conduct import tests and the National Reference Laboratory in Ankara retests when results are contested. Under the authority of a local prosecutor an undesignated university laboratory tested at least one sample unofficially. Although this occurrence was not part of official procedures, it is a potential risk to imports. Products that receive a positive detection prior to customs clearance may be sent to another country (provided several conditions are met; please contact FAS/Ankara for more details, as the conditions are fluid). The importer of a shipment found to contain an unapproved trait after clearing customs is prosecuted for violating the Biosafety Law.

According to the Biosafety Law and its implementing regulation, for the purpose of monitoring of GE products placed on the domestic market, the business operator (any person at each stage of business such as importer, distributor, wholesaler, retailer etc.) must submit the documents which contain information related to GE product in question to MinFAL and keep them for 20 years.

i. **Low Level Presence (LLP) Policy**:
Turkey has a zero tolerance for unapproved LLP in food and industrial products, subject to the liability provisions of the Biosafety Law. On May 29, 2014, MinFAL published a change to the regulation that implements the Biosafety Law to define "contamination" and established a threshold of 0.9 percent for approved genes in their intended use. Because genes are approved only for feed use, the threshold does not provide any utility to detections in food. MinFAL has yet to clarify the implementation of the definition or threshold. MinFAL intends for the definition and threshold to provide some measure of security from prosecution as "contamination" which means unintentional and beyond the control of the domestic party involved (importer, wholesaler, distributor, retailer).

After the 37 GE new applications were submitted in May 2015, MinFAL started to implement the rules of the Commission Regulation (EU) No: 619/2011. For all *pending* applications trace amounts of unapproved biotech content in feed up to a "technical zero" level of 0.1 percent are allowed.

j. **Additional Regulatory Requirements:**
Article 5(1)(d) of the Biosafety Law prohibits the use of GE and products thereof in baby foods and infant formulas, follow-on formulas and cereal-based supplementary foods for babies and young children.

Article 3(10) of the Regulation on Genetically Modified Organisms and Products thereof requires MinFAL's permission for each transit passage of products containing GE.

k. **Intellectual Property Rights (IPR):**
The cultivation of GE crops is prohibited under the Biosafety Law.

l. **Cartagena Protocol Ratification:**
Turkey ratified the Cartagena Biosafety Protocol on October 24, 2003 and entered it into force on January 24, 2004. MinFAL is responsible for the implementation of the Cartagena Protocol on Biosafety (CPB).

m. **International Treaties/Fora:**
Turkey is a member of several international organizations dealing with plant protection and plant health. These include the European and Mediterranean Plant Protection Organization (EPPO), the Organization for Economic Co-operation and Development (OECD), the Food and Agriculture Organization (FAO), International Plant Protection Convention (IPPC) and Codex. Turkey is not actively participating in discussions related to GE plant or seed varieties with international organizations. MinFAL only participates at the CPB meetings on an irregular basis regarding GE issues.

n. **Related Issues:**

Turkey's Biosafety Law requires approval for use of products derived from agricultural biotechnology, excluding only pharmaceuticals and cosmetics. Therefore, industrial uses of products derived from plant biotechnology must be approved separately. In April 2013, Turkey rejected all corn traits for use in the production of ethanol.

PART C: MARKETING

a. **Public/Private Opinions:**
Due to anti-GE campaigns and one-sided reporting in the media, public and private opinion in Turkey are dominated by misinformation on possible hazards from the consumption of products derived from agricultural biotechnology. The public commonly accepts a link between genetic engineering and cancer.

b. **Market Acceptance/Studies:**
The fear of biotechnology by the Turkish public, producers, retailers, and consumers continues. This is mainly due to anti-GE campaigns run by local and international NGOs such as the Chamber of Agricultural Engineers, Greenpeace and the Friends of the Earth, since 2008. Although public sentiment is resoundingly anti-GE, Turkey is import-dependent for plant-based protein for animal feed. However, the restrictions on the use of GE soybeans prevented industry from crushing (soybean oil cannot be used for any purpose but animal feed), which resulted in a decrease in soybeans and an increase in soybean meal imports in 2013 and 2014. Later, amendments in the regulations and implementations and also new approvals in 2015 have had a positive impact on soybean imports. Despite recent misleading health stories in the news that chicken fed from GE crops would have negative health consequences, consumption of chicken did not decline.

To date, Post is unaware of any marketing studies that have evaluated Turkish consumer sentiment towards products derived from agricultural biotechnology. Graham Brookes of PG Economics in Great Britain published the study "Economic impacts of the Biosafety Law and Implementing Regulations in Turkey on the Turkish importing and user sectors" in May 2012. The study concludes "…the on-going annual cost can reasonably be expected to be between $0.7 billion and $1 billion and could be higher."

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART D: PRODUCTION AND TRADE

a. **Product Development:** Article 5 of the Biosafety Law (Law No: 5977), adopted on March 26, 2010, bans the production of genetically engineered animals and plants. Turkey does not produce animal clones.

b. **Commercial Production:** GE animal production is banned.

c. **Exports:** Not applicable

d. **Imports:** The Biosafety Law does not ban GE animal import. If there was an application, the Board would have the authority to evaluate it though there has not been an application for the import of GE animals.

e. **Trade Barriers:** Not applicable.

PART E: POLICY

a. **Regulatory Framework:** Turkey's regulation of agricultural biotechnology is governed by the Biosafety Law (Law No: 5977), adopted on March 26, 2010, and related implementing regulations. Import of transgenic agricultural products (and this applies to GE animals) is only allowed after approval of each event for each use. For more information, please see Section II /Chapter I/ Part B (a). There are no regulations in Turkey regarding animal cloning.

b. **Innovative Biotechnologies:** There is no regulatory status of animals or animal products derived from innovative biotechnologies.

c. **Labelling and Traceability:** Products derived from approved GE animals would require a label indicating that it is or contains GE content.

d. **Intellectual Property Rights (IPR):** Not applicable.

e. **International Treaties/Fora:** Turkey is a member of World Organization for Animal Health (OIE), and Food and Agriculture Organization (FAO), which deals with animal health. Turkey is not actively participating in discussions related to GE animals with international organizations.

f. **Related Issues:** Not applicable.

PART F: MARKETING

a. **Public/Private Opinions:** Turkish public opinion is skeptical of benefits from new agricultural technologies in general.

b. **Market Acceptance/Studies:** Not applicable.

Further Information

For the most up-to-date reports on Turkey's agriculture situation and policies, use the search function at http://gain.fas.usda.gov/ or visit our website: http://www.fas.usda.gov/.