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## **Thailand**

### **Agricultural Biotechnology Annual**

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**Report Highlights:**

TH7161. Thailand's regulations restricting the cultivation of genetically engineered crops remain unchanged. The Thai Food and Drug Administration (TFDA) is considering adopting a mandatory food safety dossier submission for genetically engineered events.

## **Executive Summary:**

Thailand's regulations restricting the cultivation of genetically engineered crops remain unchanged. Similarly, Monsanto Thailand has not made any progress in conducting field trials for genetically engineered corn. The National Legislative Assembly (NLA) prepared a draft Biosafety Law which was forwarded to the Ministry of Natural Resources and Environment (MONRE). MONRE may modify the NLA's draft Biosafety Law before sending it to the Cabinet for approval.

The Thai Food and Drug Administration (TFDA) is considering adopting a mandatory food safety dossier submission for genetically engineered (GE) events. However, no specific timeframe for finalizing this mandatory regulation has been set.

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## **PLANT AND ANIMAL BIOTECHNOLOGY**

### **CHAPTER 1: PLANT BIOTECHNOLOGY**

#### **PART A: PRODUCTION AND TRADE**

- a. **PRODUCT DEVELOPMENT:** Although there were field trials for several transgenic plants varieties in the 1990s, the Thai government issued a blanket ban in 2003 on further field trials after public opposition. In 2007, the Cabinet gave permission for GE crop field trials to be conducted in Thailand under certain restrictions. However, despite the change in regulations, no GE crop field trials have been conducted in Thailand since the 2003 ban. Although Monsanto Thailand planned to conduct a field trial for herbicide-resistant NK603 corn in 2013, this field trial has not taken place after Naresuan University changed its mind on hosting the project. Monsanto has not yet found another organization to take Naresuan University's place. Syngenta Thailand and Pioneer Thailand have reportedly discontinued their projects to conduct greenhouse trials of GE corn seeds.
- b. **COMMERCIAL PRODUCTION:** Thailand has a de facto ban on GE crop cultivation.
- c. **EXPORTS:** As there is no legal domestic cultivation of GE crops, Thailand does not officially export GE products. However, according to the EU Rapid Alert System for Food and Feed (RASFF) report, more than 40 shipments of papayas originating from Thailand were detected of

GE contamination and rejected from 2013-2017. In 2014, the DOA regulated that all fresh/dried papaya or food products containing papaya exported to the EU and Japan are subject to a GE detection test prior to shipping. In 2016, the Department of Agriculture (DOA) set up formal criteria that exporters of Thai fresh papaya must meet in order to export fresh papaya to the European Union, Switzerland, Norway, Iceland, China, and Japan.

- d. **IMPORTS:** Thailand limits the importation of GE plants to processed food, soybean and corn for feed and industrial uses, and cotton lint. It is estimated that 95 percent of total soybean imports and 80-90 percent of cotton imports in 2016 came from GE plants. In 2016, according to the Thai Customs Department, Thailand imported U.S. \$1.2 billion of soybeans and U.S. \$433 million of cotton from all sources. U.S. cotton and soybean imports in 2016 totaled U.S. \$540 million.
- e. **FOOD AID:** Thailand is not a food aid recipient and does not provide food aid on a regular basis. Rice has occasionally been used for disaster relief in other neighboring countries.
- f. **TRADE BARRIERS:** Currently, there are no additional biotechnology-related trade barriers. However, some trade associations have expressed concern that the TFDA may revise GE food labeling regulations to be more restrictive. This could potentially cause trade disruptions for processed foods containing GE plant materials. Further details are discussed in the 'Labeling' paragraph that follows.

## PART B: POLICY

Thailand's biotechnology policies have not changed from the 2016 Annual Report.

- a. **REGULATORY FRAMEWORK:** Four main government agencies are involved in the regulation of agricultural biotechnology. They are the: 1) Department of Agriculture (DOA), Ministry of Agriculture and Cooperatives (MOAC); 2) National Center for Genetic Engineering and Biotechnology (BIOTEC), Ministry of Science and Technology (MOST); 3) Ministry of Natural Resources and Environment (MONRE); and 4) Food and Drug Administration (FDA), Ministry of Public Health (MOPH). In addition, the National Bureau of Agricultural Commodity and Food Standards (ACFS) under MOAC represents the Thai Government in negotiating all SPS issues in international organizations (i.e., Codex, OIE, etc.), including food safety in GE products.

The National Biosafety Committee (NBC) was established in 1993 to serve as a coordination body with Institutional Biosafety Committee (IBC), to develop national biosafety guidelines, to oversee imports of living organisms, to review and direct research methodologies, etc. According to sources, the NBC is no longer active. As a result, the review of any biosafety issues for GE plants and animals is currently being conducted by the Technical Biosafety Committee (TBC), an ad hoc technical advisor of BIOTEC.

According to the Cabinet's agreement in 2007, the proposed Biosafety Act legislation will provide the legal framework regulating the use of agricultural biotechnology including research, field trials, and commercialization. In November 2015, after receiving approval from the Cabinet, the draft Biosafety Act was rejected by the Prime Minister, stating that he did not see

the legislation providing any benefit to Thailand.

In early 2016, the NLA's Committee on Science, Technology, and Communication appointed a sub-committee to revive the Biosafety Act legislation. The sub-committee based its work on the previous draft, however, the final draft contained several potential trade hindering elements such as a prominent role for NGOs and political actors in the approval process and the use of positive lists.

On September 26, 2016, the Biosafety Act Drafting Sub-Committee met with public stakeholders and agreed that the NLA's Science, Telecommunication, and Public Communication Committee should establish a new drafting taskforce to review the revised legislation.

On November 1, 2016, the Chairman of NLA's Science, Telecommunication, and Public Communication Committee endorsed a new sub-committee on the Biosafety Act. The sub-committee, called Taskforce of Reviewing the Draft Biosafety Law, consisted of 17 members, as compared to 10 members in the previous sub-committee. A revised draft was completed on December 27, 2016. The NLA approached MONRE with approving the draft and moving forward for Cabinet review. However, sources reports that MONRE may instead revise its own draft Biosafety Law to submit to the Cabinet for approval. It is unclear at this time what version of the Biosafety Act will be submitted to the Cabinet. MONRE's timeline for review and submission of the Biosafety act is also unknown.

- b. **APPROVALS:** Currently no GE crops have been approved for cultivation nor have any field trials been undertaken.
- c. **STACKED or PYRAMIDED EVENT APPROVALS:** No GE crops with stacked or pyramided event have been approved for cultivation thus far. Thailand currently lacks a specified regulatory framework for the approval of cultivation of GE stacked/pyramided events. The BIOTEC published its guidelines for food safety assessment of GE stacked/pyramided events in 2014, but these guidelines have not been officially adopted by the TFDA which is a responsible agency for food use approval. Further details are discussed in the 'Labeling' paragraph that follows.
- d. **FIELD TESTING:** According to the 2007 Cabinet's criteria, all field trials must be located on government properties, hold public hearings prior to implementation, and obtain approval from the Ministerial Cabinet.
- e. **INNOVATIVE BIOTECHNOLOGIES:** There has been no research study on gene editing in Thailand. Also, Thailand does not have any regulatory framework for plant and animal developed by this technology.
- f. **COEXISTENCE:** Thailand has not established any framework or guidelines regarding coexistence with non-GE crops.
- g. **LABELING:** The TFDA under the MOPH enforces the labeling requirement for processed foods containing GE plant materials. Effective in 2002, the MOPH lists 22 food products which

are subject to labeling requirements when their contents exceed the five percent threshold. The labeling requirements are: (a) food containing only one main ingredient should include a statement of “genetically modified” in conjunction with, or in close proximity to, the name of foods such as “genetically modified corn,” or “tofu produced from genetically modified soybean,” etc.; (b) for multi-ingredient foods, labels should include a statement of “genetically modified” in conjunction with, or in close proximity to, or under the names of top three main ingredients of the food product such as “genetically modified corn starch,” etc. However, the regulation is not applied to small producers who produce and directly sell to consumers. The products subjected to labeling requirements are:

1. Soybeans
2. Cooked soybeans
3. Roasted soybeans
4. Bottled or canned soybeans or soybeans contained in retort pouch
5. Natto
6. Miso
7. Tofu or tofu fried in oil
8. Frozen tofu, soybean gluten from tofu or its products
9. Soybean milk
10. Soybean flour
11. Food containing product(s) from (1) to (10) as main ingredient
12. Food containing soybean protein as main ingredient
13. Food containing green soybean as main ingredient
14. Food containing soybean sprout as main ingredient
15. Corn
16. Popcorn
17. Frozen or chilled corn
18. Bottled or canned corn or corn contained in heat-treated pouch
19. Corn flour or cornstarch
20. Snack foods deriving from corn as main ingredient
21. Food containing product(s) from (15) to (20) as main ingredient
22. Food containing corn grits as main ingredient

On the other hand, there is currently no requirement for safety assessments of biotech food products. However, the TFDA is considering adopting a mandatory food safety dossier submission for food ingredients derived from GE plants. .

The National Technical Biotechnology Committee (TBC) has been assigned to be the TFDA’s technical arm for developing guidelines on the minimum requirements for conducting a food safety assessment for food ingredients derived from GE plants. In August 2017, the TBC submitted its guidelines to the TFDA. The guidelines propose that approval of GE events should be based on molecular characterization, nutrition, toxicity, and allergenicity. In general, the recommended guidelines align with international standards. For example, the guidelines do not require a full assessment of “stacked” events if each single GE event has already passed a safety assessment.

The TFDA is supposed to take the recommended guidelines into consideration as they proceed with their rulemaking process. Although no specific timeframe for finalizing this mandatory regulation

has been set, trade expects this regulation may be finalized and implemented in 2018. Before being implemented any regulations will need to receive public comments and be reviewed by stakeholders. This creates uncertainty that any regulation adopted by TFDA will be the same as the guidelines proposed by TBC.

If these regulations are implemented, the Thai FDA is expected to create a positive list of approved GE events that would be allowed to be used in food ingredients. The timeline for the creation of a positive list is not yet known nor whether GE events that are commonly used in food ingredients will be grandfathered in.

- h. **MONITORING AND TESTING:** Although Thailand has laboratory facilities to test GE products, sources indicate that officials do not closely test/monitor manufacturers' compliance of the biotech food labeling requirements.
- i. **LOW LEVEL PRESENCE (LLP) POLICY:** Thailand has not established any framework or guidelines regarding low level presence.
- j. **ADDITIONAL REGULATORY REQUIREMENTS:** None.
- k. **INTELLECTUAL PROPERTY RIGHTS (IPR):** Seed developers believe that the current Thai Plant Variety Protection Act (PVP) does not fairly protect patents for a new plant varieties derived from genetic engineering. In particular, the PVP regulates that the use of foreign plant varieties to develop new breed seed in Thailand, including GE crop seeds, is subject to a requirement of benefit sharing for local communities. The Thai Seed Trade Association (THASTA) and other stakeholders have been working with MOAC in the past couple years to revise these provisions under the Act to align the PVP Act with the International Union for the Protection of New Variety of Plants (UPOV)'s guidelines.

Copyright protection for GE crops is covered under Trademark Act (No.2) B.E. 2543 (2000), which is regulated by the Ministry of Commerce's Department of Intellectual Property.

- l. **CARTEGENA PROTOCOL RATIFICATION:** Thailand signed the Convention on Biological Diversity (CBD) in 1992. Thailand signed the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety in March, 2012.
- m. **INTERNATIONAL TREATIES and FORUMS:** Thailand regularly participates in international organization conventions such as the International Plant Protection Convention (IPPC) and the Codex Alimentarius (Codex). However, Thailand has not taken any clear positions on issues relating to GE crops and related products.
- n. **RELATED ISSUES:** The Thai government, especially the Ministry of Agriculture and Cooperatives, promotes agricultural organic production and self-sufficient agricultural production. Most Thais perceive organic crops as being safer than GE crops and view farmers who adopt self-sufficiency in agricultural production as being less dependent on expensive agricultural practices.

## PART C: MARKETING

- a. **PUBLIC/PRIVATE OPINIONS:** The latest survey on this issue available is from 2010. According to the 2010 survey, 66 percent of the 340 surveyed respondents said they would not purchase GE foods. On specific health risks, 40 percent of respondents believed that consumption of GE foods could create an allergic reaction and 56.2 percent believed that consumption could lead to antibiotic resistant diseases. On consumption benefits, 59.7 percent felt that GE foods could enhance food traits while 54.4 percent believed that consumer could pay less for GE foods. Regarding the environment, 68.3 percent believed that GE crops could cause an unbalanced ecosystem while 75.1 percent agreed that the flow of GE crops into other traditional crops could occur.
- b. **MARKET ACCEPTANCE/STUDIES:** In general, Thai producers, retailers, and consumers remain misinformed about the safety and use of transgenic plants or related foods. Contrary to public perceptions, Thailand consumes large amounts of biotech crops either directly (such as soybean oil) or indirectly (through the garments, meat, and processed foods that use biotech inputs). Although mandatory labeling is required for food products with more than five percent GE content, unpackaged products or products packaged in bulk are exempt from the rules.

## **CHAPTER 2: ANIMAL BIOTECHNOLOGY**

### **PART A: PRODUCTION AND TRADE**

- a. **PRODUCT DEVELOPMENT:** Thailand does not engage in the development or production of genetically engineered animals. Cloning research in cattle, buffalo, goats, and pet animals has been conducted in some universities such as Chulalongkorn University, Kasetsart University, and Suranaree University of Technology, but Post is unaware of initiatives to develop this technology for commercial purposes.
- b. **COMMERCIAL PRODUCTION:** None.
- c. **EXPORTS:** None.
- d. **IMPORTS:** None.
- e. **TRADE BARRIERS:** Although no regulatory framework on trade has been established, trade of GE animals is subject to a de facto import/export ban.

### **PART B: POLICY**

- a. **REGULATORY FRAMEWORK:** The Technical Biosafety Committee (TBC), an ad hoc technical advisor of BIOTEC, has responsibility for the review of biosafety issues for GE animals.
- b. **INNOVATIVE BIOTECHNOLOGIES:** There has been no research study on gene editing in Thailand. Also, Thailand does not have any regulatory framework for plants and animals developed by this technology.

- c. LABELING AND TRACEABILITY: None.
- d. INTELLECTUAL PROPERTY RIGHTS (IPR): None.
- e. INTERNATIONAL TREATIES and FORUMS: None.
- f. RELATED ISSUES: None.

PART C: MARKETING

- a. PUBLIC/PRIVATE OPINIONS: None.
- b. MARKET ACCEPTANCE/STUDIES: None.

End of Report.