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Thailand

Agricultural Biotechnology Annual

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Report Highlights:

TH5088. Thailand made some progress in 2015 on laying out a draft regulatory framework on adopting agricultural biotechnology. Thai biotech proponents are likely to gain more support from policy makers in both government and parliament. However, it may take a few years to revoke a ban on biotech field trails in the country.

Section I. Executive Summary:

Thailand made some progress in 2015 on laying out legal regulatory framework on adopting agricultural biotechnology. Thai biotech proponents are likely to gain more support from policy makers in both government and parliament. However, it may take a few years to revoke a ban on biotech field trials in the country. Thailand has not deregulated any genetically engineered (GE) plants for cultivation, but it has allowed the importation of GE plant products (i.e., soybeans, soybean meal, cotton, and corn) for processed foods, feed, and industrial use. Thailand's imports of U.S. soybeans and cotton in 2014 totaled \$582 million. While expecting the Biosafety Law as a core legal framework for biotech deregulation, Monsanto Thailand continues efforts to utilize the 2007 Cabinet's agreement to conduct field trials. In addition, there are several outstanding requests to allow imports of genetically engineered (GE) corn seeds for greenhouse trials.

Section II. The Situation of Plant and Animal Biotechnology in Thailand

Chapter 1: Plant Biotechnology

Part A: Production and Trade

a) Product Development: Thailand has not deregulated any genetically engineered (GE) crops for cultivation. In early 2013, Monsanto Thailand submitted an application to the Thai government to consider allowing a field trial of herbicide-resistant NK603 corn, but has been waiting for the Department of Agriculture (DOA) to provide guidelines. Sources from the DOA recently report that the final draft of the guidelines is currently considered by the DOA's Director General. In addition, requests by Syngenta Thailand and Pioneer Thailand to import genetically engineered (GE) corn seeds for greenhouse trials are also pending in DOA.

b) Commercial Production: There is no official commercial agricultural biotech production in Thailand, but there has been agricultural biotech research done in the past 20 years. This included field trials for several imported transgenic plants and local plant varieties. The first field trials conducted in 1994 involved Flavr Savr tomato, a delayed ripening tomato. Subsequently, field-testing was conducted for Bt cotton, Bt corn, Round-up ready cotton, Round-up ready corn, Antisense RNA tomato, and the ring-spot virus resistant papaya. The safety and potential that Monsanto's Bt cotton demonstrated during the trial period led to expectations of it becoming the first transgenic crop to be approved for commercial planting in Thailand. However in 2003, the Thai government issued a blanket ban on further field trials to avoid political fallout from non-governmental organizations (NGOs). The opposition was initiated by BioThai and the Organization of the Poor. The NGOs' actions stalled the implementation of effective policies to regulate biotechnology at the time.

So far in 2015, Thailand has made some progress in laying out a legal regulatory framework on adopting agricultural biotechnology. Thai biotech proponents are likely to gain more support from policy makers in both government and parliament.

- A final draft of the Biosafety Law, which has been pending for several years, is scheduled to be submitted to the National Legislative Assembly (NLA) by the end of 2015. Once in place, it would provide regulations for field trials and commercialization of biotech crops. A group of

biotech proponents, including farmers and scientists, are engaged with the Agriculture Committee in NLA. The proponents are advocating a need for Thailand to adopt the new agricultural technology in agricultural production in Thailand and, as a result, a need to speed up law the legislative process.

- Ministry of Agriculture and Cooperatives (MOAC), National Science and Technology Development Agency (NASDA), and Thai Seed Trade Association (THASTA) signed Memorandum of Understanding (MOU) in August 2014 to jointly cooperate in developing a national strategy promoting Thailand as an international seed hub.
- A task force was appointed to study the possibility of agricultural biotechnology adoption in Thailand. The task force recently concluded that the Biosafety Act should be the national guidelines to conduct the biotech crop field trial and commercialization. It also suggested that the field trial for research is important and should be conducted under the 2007 Cabinet rule.
- An Agricultural Reform Sub-Committee under National Reform Committee (NRC) appointed a Task Force on Proactively Disseminating Scientific-Based Facts about Biotechnology Crop and Biosafety to the Public in December 2014. The task force convened in mid-February 2015 and agreed on speeding up the legislation of the Biosafety Act and to determine a strategy and a roadmap for public communication on agricultural biotechnology. The report was recently submitted to a Sub-Committee with the following recommendation:
 1. Thailand must have clear policies on R & D on biotech crops including on commercial production;
 2. Thailand must review and amend any law and regulation that hinders conducting R&D and utilizing biotech crops;
 3. Thailand must manage production systems on a coexistence basis;
 4. Thailand must establish a responsible organization in regulating and overseeing all activities related to biotech crops in the future.

c) Exports: Thailand does not officially export GE products. However, in 2012, the EU Rapid Alert System for Food and Feed (RASFF) reported finding samples of GE papayas originating from Thailand. Genetically modified vegetables and papaya from Thailand were also detected in a shipment to Switzerland during routine controls at that time. Anti-biotech groups publicized the news through the Thai media and attacked the Thai Government for its inability to control biotechnology planting. They claimed that GE papaya seeds were widely distributed among Thai farmers and grown in several provinces in Thailand. Since that time, the MOAC has tested all exported food products containing papaya.

d) Imports: In regards to trade, the Thai government allows the importation of transgenic plants for processed foods, soybean and corn feed, and industrial uses. In addition, there have been no restrictions on biotech cotton lint imports in Thailand. In 2014, according to the Thai Customs Department, Thailand imported US \$1.08 billion of soybeans and US \$572 million for cotton. It is estimated that 95 percent of total soybean imports in 2014 were biotech soybeans while 60-70 percent of total cotton imports were also biotech. The imports of U.S. soybeans and cotton in 2014 totaled \$582 million.

e) Food Aid Recipients Countries: Thailand is not a food aid recipient country.

Part B: Policy

There has been no change in Thailand's biotechnology policy since the previous annual report.

a) Regulatory Framework: Four main government agencies are involved in the approval 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.

Government Agencies	Role	Responsibilities
National Center for Genetic Engineering and Biotechnology (BIOTEC), Ministry of Science and Technology (MOST)	- Research and development - Supporting institute	- Research and development on genetic engineering - Technical advisory - Funding agency - DNA technology laboratory
Department of Agriculture (DOA), Ministry of Agriculture and Cooperatives (MOAC)	- Competent national authority - Research and development institute emphasizing on plants	- Regulate imported GE seed for planting - Conduct research and development on plant genetic engineering and risk assessment
Food and Drug Administration (FDA), Ministry of Public Health (MOPH)	- Regulate trade on GE food products	Regulate and monitor the use of GE food including labeling
Ministry of Natural Resources and Environment (MONRE)	- National focal point - Coordinators for risk assessment on environmental aspects	- Act as the national focal point for Convention on Biological Diversity (CBD) and Cartagena Protocol on Biosafety (CPB) - Fully responsible for drafting the National Biosafety Law

b) Approvals: Government and private sector stakeholders have voiced concerns about the lack of a functioning biotech approval process. Thus far, no field trials have been approved. Even before any Cabinet action can be taken, the vague procedures for public hearings allow biotech opponents to shut down meaningful debates using unsubstantiated claims. In 2007, a Thai Cabinet agreement indicated the need to develop sound guidelines for field trials under a Biosafety Law. The development of the Biosafety law, however, has gone very slowly.

c) Field Testing: All field trials must be conducted under restrictive controls and surveillance, which include confining trials to government properties, conducting public hearings prior to initiating new field trials, and the most challenging criteria, obtain approval from the Ministerial Cabinet.

d) Stacked Event Approvals: Thailand has not established any framework or guidelines regarding

stacked event approvals.

e) Additional Requirements: N/A

f) Coexistence: Thailand has not established any framework or guidelines regarding coexistence with non-GE crops.

g) Labeling: As for processed food containing GE plant materials, the Ministry of Public Health lists 22 food products which are subject to labeling requirements when the contents exceed the five percent tolerance 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. These products are as follows:

1. Soybeans
2. Cooked soybean
3. Roasted soybean
4. Bottled or canned soybean or soybean 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

h) Trade Barriers: Thailand prohibits the planting of agricultural biotech crops which officially blocks imports of biotech seed.

i) Intellectual Property Rights (IPR): The Thai Plant Variety Protection Act (PVP) protects patents for a new plant variety derived from genetic engineering. Copyright protection for GE crops are not covered by the PVP law, but trademark protection is covered under Trademark Act (No.2) B.E. 2543

(2000), which is regulated by the Ministry of Commerce's Department of Intellectual Property.

j) Cartagena 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.

k) International Treaties/Fora: Thailand regularly participates in international organization conventions such as the International Plant Protection Convention (IPPC) and the Codex Alimentarius (Codex). However, it has not taken any clear positions on issues relating to GE crops and related products.

l) 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.

m) 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.

n) Low Level Presence: Thailand has not established any framework or guidelines regarding low level presence.

Part C: Marketing

a) Market Acceptance: 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 5 percent GE content, unpackaged products or products packaged in bulk are exempt from the rules.

b) Public/Private Opinions and c) Marketing Studies: The latest survey regarding GE awareness and acceptance was conducted in 2010. Out of 340 consumers surveyed, 66 percent of the 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.

Part D: Capacity Building and Outreach

a) Activities: Between 2013-2015, the U.S. government conducted several capacity building and outreach activities, some of which were funded by the U.S. Department of Agriculture (USDA). These included:

- The Biotechnology Alliance Association (BAA) in Thailand invited Dr. Clive James, Founder and Chair of the International Service for the Acquisition of Agri-biotech Application (ISAAA) to give his annual presentation titled “Global Status of Commercialized Biotech/GM Crops.”
- USDA/FAS funded two representatives from the Department of Agriculture (DOA) and the National Center for Genetic Engineering and Biotechnology (BIOTEC) to attend a workshop organized by the APEC High Level Policy Dialogue on Agricultural Biotechnology (HLPDAB) in Indonesia in June, 2013 and one from the DOA to attend a weeklong workshop in the Philippines in June, 2015.
- USDA/FAS sponsored a group of Thai biotech participants under the auspice of Cochran Fellowship Program to understand biotechnology development and regulatory framework in the United States in June 2015.
- Biotechnology Alliance Association in Thailand is scheduled to conduct an outreach activity focusing on biotech crop commercialization in Vietnam in mid-August 2015. The activity will educate Thai farmers, parliamentarians, journalists, government officials, and scientists about Vietnam’s first ever biotech crop commercialization.
- USDA/FAS/Bangkok in Thailand assisted the University of Missouri to nominate three key decision makers to attend a two-week Biotechnology Regulation Course (BRIC) in Missouri in August 2015. In addition, U.S. Grains Council plans to organize a one-week BRIC workshop in Bangkok, Thailand, in late 2015.
- Cornell Alliance for Science is scheduled to organize a two-week course on Strategic Planning and Effective Grassroots Organizing in Thailand in January 2016.

b) Strategies and Needs: Agricultural biotechnology outreach in Thailand remains challenging, particularly as policymakers remain unwilling to address the issue. Support for biotechnology outreach has come primarily from industry and academic stakeholders.

Biotech proponents need more support in order to overcome the challenges in Thailand. Greater engagement with government officials and politicians is also needed. It would be valuable for Thai policymakers to understand how other countries in the SE Asia region, such as Vietnam, the Philippines, and most recently Indonesia, are helping their agricultural sector by utilizing these new technologies.

Chapter 2: Animal Biotechnology

Thailand has not engaged in the development of genetically engineered animals, however, it has conducted animal cloning for research purposes only.

Part A: Production and Trade

a) Product Development: Thailand does not engage in the development of genetically engineered animal research and production. Cloning research in cattle 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.