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Thailand

Agricultural Biotechnology Annual

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Report Highlights:

TH3062. Thailand has not made any changes to its biotech policies.

Section I. Executive Summary:

Thailand has made little, if any, progress to allow the commercialization of agricultural biotech crops since the last update. All of the regulations for agricultural biotechnology remain the same. The only recent development in agricultural biotechnology in Thailand involves a request by Monsanto to conduct a field trial of herbicide-resistant NK603 corn. The Thai Government has yet to consider the request. If approved, it will be the first time since 2001 that a biotech field trial will be conducted in Thailand. Syngenta Thailand and Pioneer Thailand have also requested to import genetically engineered (GE) corn seeds for greenhouse trials in 2013. The request is being reviewed by the Department of Agriculture (DOA).

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 planting. In early 2013, Monsanto Thailand submitted an application to the Thai Government to consider allowing a field trial of herbicide-resistant NK603 corn. The company's application is currently being reviewed by the Department of Agriculture's (DOA), Ministry of Agriculture and Cooperatives (MOAC). If approved, it will be the first time since 2001 that the biotech field trials will be conducted Thailand. The Thai Cabinet must also endorse the field trials before they can proceed.

Two companies (Syngenta Thailand and Pioneer Thailand) also requested to import GE corn seeds for greenhouse trials in 2013. The request is also being reviewed by the DOA.

b) Commercial Production: There is no commercial agricultural biotech production in Thailand, but there has been agricultural biotech research done in the past 20 years such as the completion of 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, Antisent 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, due to environmental and human health concerns, the Thai Government issued a blanket ban on further field trials to avoid political fallout from non-governmental organizations (NGO'S). The opposition was initiated by BioThai and the Organization of the Poor. The NGO actions stalled the implementation of effective policies to regulate biotechnology and currently there is no legal production of biotech crop in Thailand. Government approval for biotech field trials may take years, thus, no commercialized GE planting is expected within the next 4-5 years.

c) Exports: Thailand does not 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. 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. In response, the MOAC requested that the anti-biotech group identify planting locations and officials promised to test the papaya grown in those areas.

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 only. In addition, there have been no restrictions on biotech cotton lint trade in Thailand. In 2012, according to the Thai Customs Department, Thailand’s imports of soybeans and cotton totaled US \$1.23 billion for soybeans and US \$754 million for cotton, respectively. It is estimated that 95 percent of total soybean imports in 2012 were biotech soybeans while 60-70 percent of total cotton imports were also biotech.

e) Food Aid Recipients Countries: Thailand is not a food aid recipient country and has not accepted food aid containing GE products in the past.

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	- National focal point	- Act as the national focal point for

Environment (MONRE)	- Coordinators for risk assessment on environmental aspects	Convention on Biological Diversity (CBD) and Cartagena Protocol on Biosafety (CPB) - Fully responsible for drafting the National Biosafety Law
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b) Approvals: Government and private sector stakeholders have voiced concerns about the 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. Government sources indicate that the legislation has cleared legal scrutiny, but the Thai Cabinet has not set any time frame to consider the measure.

In 2012, anti-biotech groups tried, as they did several years ago, to have the government classify agricultural biotechnology as “potentially hazardous to a community’s well-being.” However, the Federation of Thai Industry and a number of academics were successful in having the initiative tabled.

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, thus, U.S. biotech seed exports are prohibited.

i) Intellectual Property Rights (IPR): Under Thai law, the Thai Plant Variety Protection Act (PVP) protects patents for a new plant variety derived from genetic modification. 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 became a member of the Cartagena Protocol on Biosafety in February 2006 and officially stated that government follows the principles and rules of the CBD. The policy includes eight elements: 1) public awareness, education and participation; 2) sustainability; 3) risk assessment and management; 4) risk characterization; 5) risk communication; 6) precautionary principle; 7) freedom of choice; and 8) capacity building. These elements were drafted as a response to the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety. Thailand signed this Supplementary protocol 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 that farmers who adopt self-sufficiency in

agricultural production will reduce their dependency on expensive agricultural practices like biotechnology.

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:** In 2011-12, 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:

- Two-day workshop in 2011 titled "Risk Communication in the Context of Biotech GM Plant Field Trials" in conjunction with a local biotechnology organization and Asia BioBusiness Pte. Ltd. (ABB). The activity built on a previous risk communication workshop in 2009, which helped participants develop the ability to present their views in TV and radio interviews, public hearings, debates, and briefings to government officials. As a part of the workshop, Dr. Zhu Zhen, Institute of Genetics and Development Biology, Chinese Academy of Sciences, shared his presentation entitled "The Status of Agricultural Biotechnology in China."
- In 2012 and 2013, the Biotechnology Alliance Association (BAA) in Thailand invited Dr. Clive James, Founder and Chair, International Service for the Acquisition of Agri-biotech Application (ISAAA) to give his annual presentation that provided a "Global Status of Commercialized Biotech/GM Crops."

- Risk communication workshop to support GE corn field trials. This was organized by the Thai Society for Biotechnology (TSB) in January 2012.
- The U.S. Embassy in Thailand in cooperation with the Chiang Mai University and other stakeholders (including FAS/Bangkok) organized a “Life Sciences Innovation Conference” in June 2012 to discuss issues involving biotechnology innovation in Thailand. The conference consisted of discussions regarding agricultural biotechnology, medical biotechnology, and medical systems.
- USDA/FAS funding for 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 from June 25-28, 2013.

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. As already noted, the Thai industry and academics formed a unified front to oppose a move that would have defined biotechnology as a “hazardous” material.

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 not aware of initiatives to develop this technology for commercial purposes.

b) Commercial Production: None.

c) Exports: None.

d) Imports: None.

Part B: Policy

- a) Regulation: Thailand has not established any regulations for GE and cloned animals.
- b) Labeling and Traceability: None.
- c) Trade Barriers: Genetic engineering of animals is prohibited.
- d) Intellectual Property Rights (IPR): There is no specific law or regulation governing patent and copyrights protection for GE or cloned animals. However, trademarks may be protected under the current Trademark Act (No.2) B.E. 2543 (2000).
- e) International Treaties/Fora: None.

Part C: Marketing

- a) Market Acceptance: Post is not aware of any survey done to measure Thai consumers' perspective on GE or cloned animals.
- b) Public/Private Opinions: None.
- c) Market Studies: None.

Part D: Capacity Building and Outreach

- a) Activities: USDA funded travel for Thai Government officials to a GE Animal Workshop organized by the Government of Argentina in September 2011. The workshop was sponsored by the International Centre for Genetic Engineering and Biotechnology (ICGEB) and the United Nations University-program for Biotechnology in Latin America and the Caribbean (UNU-BIOLAC). The objective of the workshop was to educate participants on the food and environmental safety assessment of GE animals, as well as enhance cooperation and provide capacity building.
- b) Strategies and Needs: Given the strong resistance against the commercialization of plant biotechnology, it will be difficult to convince government officials to consider approving activities involving genetically engineered animals. Although cloning animal development may be more feasible than GE animals, the adoption of this technology for commercial purposes is unlikely to happen in the near future due mainly to a lack of a legal framework, lack of support from both private and government sectors, and more significantly, consumer resistance.