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Indonesia

AGRICULTURAL BIOTECHNOLOGY ANNUAL

Biotechnology

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Report Highlights:
The National Agency of Food and Drug Control (BPOM) has released its regulation on the guidelines of food safety assessment for transgenic products. There are no transgenic seed products approved for release in Indonesia at this time. However, it's reported the RR corn seed, which has passed the bio-safety assessment process, is being assessed for its food safety.

Section I. Executive Summary:

Advances in Indonesian approval, use, or regulation of transgenic products do not appear to be a priority for the Government of Indonesia (GOI). Notable indicators include ratification of the Cartagena Protocol in October 2004, with little progress toward promulgation of implementing regulations; approval on the environmental side for planting of Bt cotton, but none for food safety; issuance of food labeling requirements, but no enforcement. The Government issued a regulation for Bio-safety of Transgenic Products (No. 21/2005), but implementation is not a priority for the GOI. The committee that will set the guidelines for transgenic products has not been formalized. There is no compelling evidence that this situation will change in the intermediate term.

The United States exported over $1 billion of transgenic products to Indonesia in 2008, including Bt cotton, herbicide tolerant soybeans and meal, Bt corn and a variety of food products derived from transgenic crops. With the exception of certain soybean products - such as soy flour - the GOI has not introduced or enforced any trade constraints based on transgenic origin.

Section II. Biotechnology Trade and Production:

Indonesia does not produce any crops that involve transgenic processes, but does produce and commercialize some seedlings using tissue culture techniques. Among these are:

- tree seedlings (eucalyptus, acacia, mangrove) designed for domestic reforestation
- certain flower species for export, primarily to the EU
- teak (*tectona grandis*),
- banana (*musa sp*) cultivars of cavendish, raja bulu, kepok and barangan
- zodiac (*evodia suapeolens*)
- satoimo (*colocacia esculenta var. antiquorum*)
- black velvet (*alocasia reginula*)
- silver velvet (*alocasia sp.*)
- *philodendron lynette*
- dragon scale
- *cuprea sp.*
- pineapple (*ananas comusus*)
- potatoe (*solanum tuberosum L.*)
- orchid
- *asparagus sp.*
- nilam (*pacholi cublin*)
- strawberry (*duchesnea indica L.*)
- pulai pandak (*rauvolfia radix*).

It is unlikely that Indonesia will be able to multiply transgenic seed or commercialize any transgenic crop in the coming year.

The government of Indonesia confined field-testing to transgenic rice, transgenic sugar cane, transgenic cassava, and transgenic potato. However according to the Government Regulation on Bio-safety of Transgenic Products, commercialization of transgenic rice, a GOI priority, still is a distant event. Transgenic rice already tested in 22 locations throughout Indonesia, yet it requires further testing in another 16 locations before receiving approval from The National Seed Agency for licensing.

Additional GOI research projects on transgenic plants such as virus resistance for tomatoes and potatoes, delayed ripening for papaya, sweet potato pest resistance, drought tolerant rice,

and pest resistant soybeans, are still ongoing, albeit at a relatively modest pace.

Bt corn, Bt cotton, RR corn, and RR soybeans seeds have passed the bio-safety assessment process. In addition, Ronozyme-P and Finase L and P (as protein enrichment for feed) are reported to be in the pipeline. The tables shows the crop types/events and its approval status.

Table 1. Transgenic crops types

Plant	Trait	Gen	Source	Transfer Technique	Event
Cotton	IPR	Cry1 AC	Bacillus thuringensis subsp kurstaki	Agrobacterium tumefaciens	MON531/757/1076
Cotton	HT glyphosate	CP4 EPSPS	A. tumefaciens strain CP4	Agrobacterium tumafaciens	MON1445/1698
Soybean	HT glyphosate	CP4 EPSPS	A. tumefaciens strain CP4	Particle gun method	GTS 40-3-2
Corn	HT glyphosate	EPSPS	Corn	Particle gun method	GA 21
Corn	IPR	Cry1 Ab	Bacillus thuringensis subsp kurstaki	Particle gun method	MON810

Source: BB Biogen (2008)

Table 2. The approval status of the transgenic products

No	Transgenic Product	Bio-safety Committee Recommendation	Government Approval Status
1.	Bt Cotton Variety Bt DP 90 B (identical 90 BE 60023) & PM 1560 B (identical 1560 BE 72022) Event MON 531/757/1076 (MON-ØØ531-6, MON-ØØ757-7)	Safe towards environment and biodiversity (1999)	Limited release based on the Decree of Minister of Agriculture Decree in 2001, 2002, and 2003
2.	Roundup Ready Cotton Variety DP 5690 RR (identical 1220 RRA 68022) & DP 90 RR (identical 90 RE 60012) Event MON 1445/1698 (MON-Ø1445-2)	Safe towards environment and biodiversity (1999)	Approval letter by the Chairman of National Bio-safety Committee
3.	Roundup Ready Soybean Variety Cristalina RR & Jatoba RR Event GTS 40-3-2 (MON-Ø4Ø32-6)	Safe towards environment and biodiversity (1999)	Approval letter by the Chairman of National Bio-safety Committee
4.	Roundup Ready Corn Variety RR-1 & RR-2 Event GA 21 (MON-ØØ21-9)	Safe towards environment and biodiversity (1999)	Approval letter by the Chairman of National Bio-safety Committee

5.	Bt Corn Variety Bt MON 810-1 & Bt Mon 810-2 Event MON 810 (MON-ØØ810-6)	Safe towards environment and biodiversity (1999)	Approval letter by the Chairman of National Bio-safety Committee
6.	Ronozyme-P (probiotic feed)	Safe towards environment and biodiversity (2001)	-
7.	Finase-P and Finase-L (probiotic feed)	Safe towards environment and biodiversity (2001)	Bio-safety Recommendation from the Director General of Agriculture Research and Development Agency, Ministry of Agriculture

Source: Indonesia Bio-safety Clearing House (2009)

It's reported that one company has applied the environmental safety for their other Bt corn seed (which the event is different with Bt corn event MON810) and the food safety for their RR corn seed.

The U.S. exports of transgenic products to Indonesia in 2008 were valued at $1.2 billion. Among these are Bt cotton, herbicide tolerant soybeans and meal, Bt corn, and a variety of food products derived from transgenic crops. Indonesia also imported significant volumes of presumptive transgenic soybeans and meal from other origins. With the exception of certain soybean products - for example soy flour - no trade constraint based on transgenic origin has been introduced or enforced. The restrictions on soy flour do not seem to be a major constraint to current trade.

At present Indonesia is not a recipient of USDA-funded food aid.

Section III. New Technologies:

Indonesia currently doesn't produce or commercialize transgenic animals, although the regulation of transgenic animals is in place,. The general consensus is that the application of transgenic animals in Indonesia is still in the distant future. However, some research institutions and universities have conducted studies, to inlcude research on genetic animals using gen marker; identification of animal characteristics to heat tolerance and feeding utilization; and transgenic chicken (resistance to New Castle disease) using simple breeding method.

Reportedly, two local companies have requested approval to import avian influenza vaccines that were produced using biotechnology. For assessing the request, the bio-safety technical team is in the stage of limited trials.

Section IV. Biotechnology Policy:

With the issuance of the Regulation on Bio-safety of Transgenic Product in 2005, the present committee that has been in place since 1999 should be discontinues. In order to implement the regulation, the President must sign the Government Regulation on Establishing the

Committee of Bio-safety on Transgenic Products. This new committee – intended to replace the present committee - will have 15 members from a variety of stakeholders, including government ministries, NGOs, universities, and professional associations. However, the expected date for establishing the committee has been delayed several times and is still subject to change. To avoid the vacuum period prior to the establishment of the new committee, the present committee is still actively conducting evaluations on bio-safety of transgenic products with assistance from the bio-safety technical team.

After more than three years, the National Agency of Food and Drug Control (BPOM) released its new regulation concerning the guidelines for food safety assessment for transgenic products in July 2008. However, the government does not seem to consider this a priority as the regulation has yet to be publicly announced. In addition, the guidelines don't cover the threshold level of GMO content in the product as expected. Reportedly BPOM - together with the bio-safety committee - are revising the labeling regulations for packaged retail foods that contain transgenic products. The guidelines are needed to bring Indonesia into compliance with the Cartagena Protocol on Bio-safety.

In 2004, Indonesia ratified the Cartegena Protocol with Government Regulation No. 21/2004 concerning Bio-safety to the Convention on Biological Diversity.

At present, there are no imported or locally developed commercial transgenic seed varieties approved for planting in Indonesia. Nevertheless, research activity at a relatively low level (for example: second replication of containment trials) continues. Also continuing is GOI research and development at the agricultural institute in Bogor.

Notwithstanding some confusion in the existing Indonesian regulatory framework for biotechnology, the general impact is relatively benign, especially with respect to imports of living modified organisms and processed food products. Indonesia imports over a billion of dollars of transgenic products from the United States annually, significant quantities of which are for direct consumption. This trade is currently not regulated with respect to transgenic content. A government regulation issued in 1999 requiring a label and a special logo to be on packaging of food containing transgenic ingredients has yet to be enforced. Reportedly the government will only require labeling of food products containing more than five percent content derived from transgenic processes. Local development, multiplication and use of transgenic seed continue to be hampered by the current regulatory system. This, plus additional confusion in the IPR sector, are major impediments to increased investment in Indonesian biotechnology activities.

Given the current situation, forecasting likely outcomes for the Indonesian biotech sector is problematic. It exposed on the variety workshops and seminars that biotechnology can play its role in supporting food security in Indonesia, yet the GOI has lack of commitment to develop the technology, since it seems to become political issue. The immediate risk with respect to U.S. agricultural trade interests is that GOI regulatory functions could intrude negatively on trade. This could be especially damaging to the hundreds of millions of dollars of U.S. soybean exports to Indonesia. Certain sections of the GOI are actively pursuing non-tariff barriers to trade to protect Indonesian agriculture producers. Should this approach be applied more generally throughout the GOI, transgenic products are potential targets.

Section V. Marketing:

To date, Indonesian importers, retailers, and consumers have not expressed serious concerns about importation, sale, or use of transgenic products. For example, Indonesia imports

hundreds of millions of dollars annually of soybeans, most with transgenic content. The soybeans are for direct human consumption in the form of *tofu* and *tempeh*, and there is little mention in the local media about the production process that brings this important protein source to Indonesians.

In 2006 there was a survey to determine public acceptance of transgenic products. The survey targeted students at a well-known agriculture university in Indonesia. The research showed that the students lack knowledge of transgenic foods, even if they had a class in biology. The study also found that students: (1) are somewhat willing to consume transgenic foods if transgenic products reduce the amount of pesticides applied to crops, (2) are very willing to consume transgenic foods if the foods were more nutritious than non-transgenic foods, (3) will avoid consuming transgenic foods if the foods posed a risk of causing allergic reactions for some people, (4) consider ethical and religious concerns as very important to purchasing decisions, (5) had mixed reactions on the importance of price when making the decision to purchase transgenic foods, (6) feel labeling of transgenic foods should be mandatory even though it will affect the price, and (7) think the government regulation on food safety remains poor.

Section VI. Capacity Building and Outreach:

FAS Jakarta has actively recruited Cochran Fellows and participants for other USDA-sponsored events since 1998. Following is a list detailing participants from Indonesia.

Cochran Fellowships from Indonesia Related to Biotechnology:

- GMO Biotech 1998
  2 Cochran Fellows

- Regional Program for Decision Makers and Journalists 2000
  4 Cochran Fellows

- MSU - Food Safety Program 2000
  4 Cochran Fellows

- MSU - Food Safety Program 2001
  3 Cochran Fellows

- Biotechnology Training 2002
  3 Cochran Fellows

- MSU - Food Safety Program 2003
  2 Cochran Fellows

- MSU – Biotechnology Training 2003
  2 Cochran Fellows

- MSU – Biotechnology Training 2004
  1 Cochran Fellow

Additional Biotechnology "Capacity Building" Events Sponsored by USDA

APEC HIGH LEVEL POLICY DIALOGUE ON AGRICULTURAL BIOTECHNOLOGY – MEXICO CITY,

MEXICO
February 24, 2002
1 Indonesian attendee

- 2ND APEC HIGH LEVEL POLICY DIALOGUE - CHIANG RAI, THAILAND
  February 14-15, 2003
  2 Indonesian attendees

- FARMERS WORKSHOP IN AGRICULTURAL BIOTECHNOLOGY – MANILA, PHILIPPINES
  2-6 December 2003
  1 Indonesian attendee

- 3RD APEC HIGH LEVEL POLICY DIALOG - SANTIAGO, CHILE
  February 29 – March 1, 2004
  3 Indonesian attendees

- APEC BIOTECH INVESTMENT SEMINAR - KUALA LUMPUR, MALAYSIA
  December 7-9, 2004
  2 Indonesian attendees

- 4TH APEC HIGH LEVEL POLICY DIALOGUE - SEOUL, KOREA
  March 1-3, 2005
  2 Indonesian attendees, 1 speaker

- BIOSAFETY POLICY OPTIONS IN APEC – MANILA, THE PHILIPPINES
  January 16-18, 2006
  1 Indonesian attendee, 1 speaker

- 5TH APEC HIGH LEVEL POLICY DIALOGUE – HANOI, VIETNAM
  February 25-27, 2006
  2 Indonesian attendees

ASEAN – U.S. ROUNDTABLE ON AGRICULTURAL BIOTECHNOLOGY POLICY AND STRATEGY – BANGKOK, THAILAND
April 4-5, 2006
5 Indonesian attendees, 2 speakers

- 6TH APEC HIGH LEVEL POLICY DIALOGUE – CANBERRA, AUSTRALIA
  January 19 – 21, 2007
  2 Indonesian attendees

LIABILITY REDRESS ISSUES RELATED TO THE CARTEGENA PROTOCOL ON BIOSAFETY – HANOI, VIETNAM
September 19 – 21, 2007
2 Indonesian attendees

LIABILITY REDRESS ISSUES RELATED TO THE CARTEGENA PROTOCOL ON BIOSAFETY – TOKYO, JAPAN
February 13 – 14, 2008
2 Indonesian attendees

7TH APEC HIGH LEVEL POLICY DIALOGUE – LIMA, PERU
February 26 – 28, 2008
2 Indonesian attendees

ROUND TABLE DISSCUSSION ON LOW LEVEL PRESENCE - SINGAPORE
February 17 – 18, 2009
1 Indonesian attendee

8TH APEC HIGH LEVEL POLICY DIALOGUE - SINGAPORE
February 19 – 21, 2009
1 Indonesian attendee

BIOTECH LABELLING OUTREACH WORKSHOP - SINGAPORE
February 22 – 23, 2009
3 Indonesian attendees

Additional Biotechnology "Capacity Building" Events Sponsored by FAS Jakarta

2nd Meeting of the ASEAN Task Force on The Harmonization of Regulations for Agricultural Products Derived from Biotechnology, 2000

Round Table Discussion with GOI, industries, scientists, NGOs and ASEAN officials, September 21-22, 2000

ASFARNET Workshop on Biotechnology Promotion and Exchange on Agricultural Technology, November 28 – December 1, 2004

Indonesia has significant capacity to promulgate but limited capability to enforce regulations with respect to food safety and bio-safety of transgenic-origin products. GOI regulation of such products is not expected to advance expeditiously.

Section VII. Author Defined:

Useful websites:
- Indonesia Biosafety Clearing-House: http://indonesiabch.org
- Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (ICABIOGRAD), Ministry of Agriculture: http://biogen.litbang.deptan.go.id/cms/
- Clearing House Mechanism of National Biodiversity: http://bk.menlh.go.id/?&lang=en
- Indonesian Biotechnology Information Center (IndoBIC): http://www.indobic.or.id/