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Taiwan

Agricultural Biotechnology Annual

2012 Annual Report

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Report Highlights:

As of September 2012, Taiwan has granted registration approvals for a total of 23 single biotech events, including 7 soybean and 16 corn events, as well as 32 stacked events. New approvals include high-oleic soybean and drought-tolerant corn stacked events. In 2011, Taiwan was the sixth largest export market for U.S. food and agricultural products, including \$1.7 billion of U.S. corn, soybeans and cotton.

Section I. Executive Summary:

Taiwan authorities recognize that agricultural biotechnology is a potential tool for addressing food security concerns resulting from climate change and population growth. However, Taiwan regulators remain very cautious about domestic commercialization of biotech food products. Coexistence farming among organic, biotech and conventional crops is a sensitive topic, especially given the fact that the average farm size in Taiwan is just over one hectare, and Taiwan's arable land accounts for only about one-fourth of the total land area. While there is considerable ongoing biotech research in Taiwan, environmental release for commercial cultivation is unlikely in the near future, and only biotech products for non-food or ornamental use are likely to be approved. Taiwan is expected to commercialize its first biotech product, a fluorescent ornamental fish, within the next few years.

In 2011, Taiwan was the sixth largest export market for U.S. food and agricultural products, of which biotech products such as corn, soybeans and cotton accounted for 46 percent share of the total export value of \$3.73 billion. To date, Taiwan has continued to grant premarket approvals for imports of biotech corn and soybeans in timely fashion, and there have been no disruptions in trade.

Section II. Plant Biotechnology Trade and Production:

Commercial Production of Biotechnology Crops

Despite several promising events developed in local laboratories and tested in field trials, Taiwan has yet to commercialize a single biotech crop. Some of the reasons for the delay are political, but others are related to insufficient capacity building. Researchers in Taiwan academic institutions lack experience in putting an event through the regulatory process, and regulations for risk management in the cultivation of biotech crops are still under development, with coexistence and liability/redress being the major concerns.

Taiwan is very cautious about coexistence farming among organic, biotech and conventional crops especially given the fact that the average farm size is just over one hectare, and Taiwan's arable land is only about one-fourth of the total land area. While there is considerable ongoing research in Taiwan, environmental release for commercial cultivation on the island is unlikely in the near future, and only biotech products for non-food or ornamental use are likely to be approved.

The environmental release for cultivation and marketing of any unapproved biotech product would be in violation of the Taiwan Plant Varieties and Plant Seeds Act. The Regulation on Field Trials of Biotech Plants was promulgated on June 29, 2005, based on Article 52 of the Plant Varieties and Plant Seeds Act. However, the regulation governing propagation and production of GM crops is still in drafting stage. In other words, field trials may be conducted under a permit scheme, but commercialization is still not allowed according to the current regulatory system.

Biotechnology Crops under Development

Although permits for conducting field trials have been granted for several rice, fruit and vegetable events, no domestic biotech crop is anticipated to enter commercial channels in the near future. Taiwan has allowed public field trials at Council of Agriculture (COA) affiliated research institutes. COA

celebrated the grand opening of its very first biotech plant field trials facility at the Taiwan Agriculture Research Institute (TARI) located in central Taiwan in late April 2007. There are now an additional four COA-certified field trials facilities for biotech plants at the National Chung Hsing University, Academia Sinica, the World Vegetable Center (former AVRDC) and one private research facility.

Imports of Biotechnology Crops/Products

In 2011, Taiwan was the sixth largest export market for U.S. food and agricultural products. U.S. exports to Taiwan totaled US\$3.73 billion, of which biotech products accounted for nearly half of this trade. Taiwan was the fifth largest export market for both U.S. corn (\$781 million) and U.S. soybeans (\$763 million), and the twelfth largest export market for U.S. cotton (\$187 million).

Taiwan's existing biotech food regulations only regulate biotech corn and soybeans and their products. Non-food products such as cotton are not required to apply to the Taiwan Food and Drug Administration (TFDA) for premarket approval.

Given its unique political status, Taiwan cannot sign the Cartagena Protocol on Biosafety (CPB). However, Taiwan has implemented some international standards and has incorporated Cartagena guidelines into its Regulations Governing Transboundary Movements of Living Modified Organisms (LMOs.) The COA's Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) is the lead agency on the biotechnology issues. In July 2005, BAPHIQ promulgated the "Regulations for Approving Import/Export of Transgenic Plant" on the basis of the "Plant Varieties and Seeds Act". The regulation stipulates that all LMOs must be submitted to BAPHIQ for import/export approvals for environmental release. In addition, the regulation governing propagation and production of aquatic plants and animals (fish) also stipulates that LMOs of aquatic plants and animals must be submitted to the COA Fishery Administration for a permit for trans-boundary movement. To date, only a few import/export records of LMOs have been reported for experimental purposes. The COA has recently established a surveillance program for internal movement of LMOs. The first LMO internal movement surveillance target is GM papaya with batch-by-batch inspection for each commercial papaya seedling transaction and a two (2) percent tolerance level.

Food Aid

Given its ample domestic supply of staple rice and its overall economic strength, Taiwan is not currently and is not likely to become a food aid recipient under existing economic conditions. To the contrary, Taiwan is an important cash market for U.S. biotech products such as corn, soybeans and cotton.

Production of Biotechnology Crops That Were Developed Outside of the United States

At present, Taiwan does not permit the commercial production of any biotechnology crop from any origin because there is currently no legal framework for commercializing biotech products. A regulation for the domestic propagation and production of GM crops is still in drafting stage.

Section III. Plant Biotechnology Policy:

Regulatory Framework for Agricultural Biotechnology

Taiwan has adopted a U.S. style interagency coordination approach to regulate biotechnology. The Department of Health's (DOH) Food and Drug Administration (TFDA) resembles the U.S. FDA and is responsible for food safety assessment for premarket approval and GM food labeling for packaged food products while the COA is in charge of biosafety assessment for animal feed use. The COA also administers trans-boundary movement of LMOs (living modified organisms). TFDA conducts mandatory import inspections and market surveillance inspection on biotech soybeans and corn and their products. The National Science Council (NSC) supervises the overall safety of laboratory work in biotechnology. The final authority for Taiwan's biotechnology regulatory system resides with an appointed minister-without-portfolio who serves as the convener of the advisory committee for GM products and also oversees the office of Science and Technology Advisory Group (STAG) under the Executive Yuan. The STAG office serves as the Secretariat to the interagency advisor for GM products.

Biotechnology Crops Approved for Food, Feed and Processing (FFP), but Not for Environmental Uses

The existing biotechnology regulations enforced by the TFDA stipulate that all bioengineered varieties of soybeans and corn must be registered and granted pre-market approvals for FFP use. No bioengineered soybeans or corn may be produced, processed, prepared, packed, and imported or exported unless registered. The TFDA registration is valid for five years and renewal registration is required before its expiry.

As of August 10, 2012, Taiwan has granted registration approvals for a total of 23 single biotech events, including 7 soybean and 16 corn events, as well as 32 stacked events, including one two-way stacked soybean and 31 stacked corn events (14 two-way, 9 three-way, 6 four-way, and 2 five-way). New approvals include high-oleic soybean and drought-tolerant corn stacked events. The current approval list is included at the end of this report. For the most current list, please visit the Taiwan FDA website.

Although the COA has not yet amended its Feed Control Act to regulate ingredients derived from biotechnology, it is highly likely that the COA will adopt a policy that all approved products for food use are also eligible for animal feed use. As a practical matter, TFDA currently approves biotech events for both food and feed use.

Field Trials

Taiwan promulgated its field testing regulation governing GM plants on May 6, 2005. A total of nine events were granted permits for conducting field trial testing at COA-accredited field trial facilities. To date, nine events have been granted permits and completed field trial testing, of which a GM ring spot virus-resistant papaya was conditionally approved in July 2003, even before the regulations were in place, and a phytase rice variety was disapproved in June 2006 due to concerns about the high risk of gene outflow to conventional rice crops.

The remaining seven events listed below are still pending final biosafety reviews:

1. Sweet rice for processing (developed by Academia Sinica)
2. Lactoferrin rice (developed by National Chung Hsing University)

3. Delay-ripening broccoli (developed by Academia Sinica)
4. Phytase potato (developed by Academia Sinica)
5. Cucumber mottle mosaic virus-resistant tomato (developed by the World Vegetable Center)
6. Eucalyptus for pulping (developed by COA-affiliate Taiwan Forestry Research Institute)
7. Ring spot and leaf distortion mosaic virus-resistant papaya (developed by National Chung Hsing University)

Additionally, one ornamental calla lily event initially applied for field-testing, but the application process was not completed.

Stacked Events

Starting from May 6, 2008, Taiwan implemented stacked event registration on the basis of the "Guideline for Food Safety Assessment of Foods Derived from GM plants with Stacked Traits". The guideline applies only to foods produced from GM plants with stacked traits obtained through conventional breeding of single events already approved in Taiwan. The submission of a dossier for any new stacked event will not be accepted by TFDA unless the single events are already approved in Taiwan.

Taiwan's Policy on Co-existence between GM and non-GM Crops

Currently Taiwan does not allow the production of GM crops outside of accredited field trial facilities. However, Taiwan has drafted regulations governing the commercial production of biotech plants, animals, and aquatic plants and animals. All draft regulations for domestic cultivation are still pending approval with the exception of the regulation on propagation and production of fish and aquatic plants, which was promulgated on April 13, 2011.

GM Labeling Guidelines

Beginning in January 2005, all food made from biotech soybean or corn must be labeled. The labeling threshold level is 5%. The labeling regulations do not apply to products that do not contain pieces of transgene(s) or protein such as cornstarch, corn syrup, corn oil, soy oil, and soy sauce. Soybean or corn food products that are not packaged for retail sale are not subject to the GM food-labeling requirement. This includes the large volume of products sold in wet markets, small specialty shops or by street vendors.

However, on March 25, 2009, the TFDA announced a new labeling requirement for foods in bulk packaging. Starting on January 1, 2010, all food products in bulk packaging for retail sale should indicate product name and the country of origin on a card, logo (label), sign board, or some other means of prominently displaying this information in retail venues so that the product can be clearly identified by consumers. This was Taiwan's first initiative requiring this kind of labeling for marketing food in bulk. So far, this regulation seems to have had no apparent impact on biotech soybeans and corn products sold in bulk because freshly baked and cooked products served for direct consumption at dining places are excluded. In Taiwan, it is customary to have freshly milled and cooked soy milk at breakfast shops.

However, the labeling requirements have increased Taiwan's demand for non-GM foods for the small but growing segment of Taiwan's population that demands alternative, natural-grown or organic products as part of a larger movement for healthier eating/lifestyle.

Soybean and corn food products made of non-GM materials can be labeled as “Non-GM” or “Not-GM”. However, if there is no biotech alternative available, a product may not be labeled “Non-GM”.

Codex

Given Taiwan’s unique political status, it is not a member of Codex. However, Taiwan generally follows CODEX guidelines with regard to agricultural biotechnology. Taiwan authorities drafted low-level presence guidelines based on the Codex Annex on low level presence safety assessment, but Taiwan has not yet implemented the guidelines.

Potential Trade Barriers

Despite incidences of commingled biotech events such as StarLink corn, LibertyLink rice and Event 32 corn, there have been no trade disruptions of U.S. biotech corn exports to Taiwan. However, the LLRice incident did result in Taiwan's suspension of imports of U.S. long grain rice.

Taiwan’s approval process has become increasingly efficient. The Genetically Modified Food Advisory Committee (GMFAC) has tried to overcome meeting and scheduling problems and has enhanced communication among committee members, government and industry groups. However, many stacked events and their component new concept single events are entering the regulatory pipeline. The TFDA recruited new GMFAC members in January 2012, and it will take some time for the new committee members to become familiar with the approval process. Risk assessment capacity building for new committee members is essential according to TFDA authorities.

Intellectual Property Rights

Taiwan does not grant patent protection to technology for development of GM plants and animals based on Article 24 of the Patent Act, which stipulates that "an invention patent shall not be granted in respect of any of the following: animals, plants, and essential biological processes for the production of animals or plants, except processes for producing microorganisms; and that animals and aquatic plants and fish are not protected under this Act."

Section IV. Plant Biotechnology Marketing Issues:

Market Acceptance

Consumer Perception: With the exception of organic food advocates, there appears to be little consumer concern about GM products. Nevertheless, sales of non-biotech processed foods such as soymilk and tofu are gradually increasing because some local food companies are using non-GM promotion purely as a marketing tool to create the image that their non-GM food products offer better value or taste. Several high-profile food safety incidents in recent years have raised consumer food safety awareness. However, in some cases, consumers have been misled to believe that non-GMO is equivalent to organic.

Producers/Importers: Current labeling regulations require labeling for processed food products that contain GM soy or corn, so some local food processors are now promoting foods made of non-GM corn or soybeans.

Retailers: Except for specialty organic food shops, most retail stores have remained relatively neutral with regard to GM-derived food products and sell diverse brands or types of food products, including both biotech and non-biotech.

Market Surveys

Taiwan's Department of Health conducted two consumer surveys in 2000 and 2002. Based on the results of these surveys, which revealed some consumer concerns about biotech products, Taiwan authorities promulgated the biotech food labeling regulation in 2003 to accommodate consumers' right to choose. Life science companies conducted a follow up consumer survey in 2011 that indicated an increase in consumer awareness and somewhat more positive view of biotech food products.

Section V. Plant Biotechnology Capacity Building and Outreach:

- **September 15-16, 2011 - Risk Assessment Workshop for Products of Agricultural Biotechnology (U.S. government co-sponsored):**

AGR/AIT co-sponsored a Biotech Assessment Case Study Workshop in Taipei with about 50 Taiwan regulators and academia exchanging experiences on biotech risk assessment and regulation. Four visiting U.S. regulators explained to the audience how biotech products are reviewed and regulated in the United States, helping to provide a better understanding of the U.S. regulatory system. Participant agencies are seeking opportunities for future bilateral exchanges under their respective regulatory portfolios.

- **September 20, 2011 - Seminar on Risk Management of Food Derived from Biotechnology (Taiwan government co-sponsored):**

A seminar co-sponsored by Taiwan authorities was held in Taipei, attracting 50 people from government agencies and academia. Mr. Paul Green of the Global Agricultural Policy Coalition gave a talk on Low Level Presence, and Mr. David Yeh, representing Crop Life Taiwan (CLT), talked about Industries' Excellence through Stewardship. "Low Level Presence" policy has an important role in preventing international agricultural trade interruptions.

- **November 4, 2011 - Symposium on Research, Development & Regulation of GM Plants with Abiotic Stress Tolerance (Taiwan government co-sponsored):**

This symposium was held in Taipei, drawing more than a hundred attendees. The target audience included regulators, academia and students from research and educational institutes. The symposium was designed to provide updates on technology in terms of biotech risk management. Dr. Wayne Parrott of University of Georgia and Dr. Bruce Chassy of University of Illinois were invited along with Taiwan scholars to deliver respective speeches on gene engineering and relating food safety of advances abiotic stress tolerant engineered plants.

- **June 28, 2012 - Seminar on Current Regulatory Perspectives on Stacked Events (Taiwan**

academic society co-sponsored):

This seminar was also held in Taipei. Dr. Parrott was again invited back to Taiwan, along with biotech food reviewers from Australian and Japan, to make presentations on the principles of risk assessment for stacked events.

Section VI. Animal Biotechnology:

GM Animals

Several pharmaceutical applications for domestically developed biotech animals are currently in laboratory trials. Transgenic pigs, cows, goats and chicken for biopharmaceutical uses have been or are being developed, but none of them have undergone field testing. Taiwan has a field trials center at the Animal Technology Institute Taiwan (ATIT), a non-profit and government-supported body, for transgenic pig, cow, chicken and goat field testing. The center has also established Standard Operation Practices (SOP) for field-testing and has already been granted accreditation for operating field-testing.

Taiwan has set its research focus on biopharmaceutical uses, using biotech animals as molecular ranches. The ongoing research is using the mammary gland of transgenic-cloned goats as a bioreactor to produce coagulation factor VIII for hemophilia A treatment. Similar research is being conducted on transgenic pigs to produce human factor IX. Taiwan has successfully transferred the technology for transgenic pigs with Human factor IX gene to a private company for continued development.

GM Fish

The Council of Agriculture accredited the first field trials facility for transgenic fish in September 2011. The field trial facility was established at the COA affiliated Mariculture Research Center of the Fisheries Research Institute in Tainan (southern Taiwan). The regulation governing field trials on GM fish and aquatic plants was first promulgated on April 2009 and revised in May 2012. The regulation stipulates that all current existing biotech aquatic plants and fish shall apply for field testing within two months from the date the revised regulation and complete field testing within two years from the issuance date of the permit for conducting field testing.

Taiwan's transgenic fish research is focused on ornamental fish, in particular, fish. Currently, two private companies have received ownership of GM fluorescent fish production techniques through technology transfers from public research institutes. These domestically developed fluorescent fishes are all infertile and are intended for ornamental use only. However, if the biotech fluorescent ornamental fish currently available in the market do not undergo and complete the regulatory process in a timely fashion as is now required, the fish must be recalled and destroyed.

**Section VII. Approval List of Biotech Products for Food, Feed, and Processing
(as of August 10, 2012)**

Single Events:

	UNIQUE IDENTIFIER	PRODUCT	NAME	EVENT	APPLICANT	DATE OF APPROVAL	DATE OF EXPIRATION
1	MON-Ø4Ø32-6	Soybean	Glyphosate tolerant Roundup Ready Soybean	40-3-2 (RRS)	Monsanto Far East Ltd., Taiwan Branch	July 22, 2002	July 22, 2017
2	MON-ØØ81Ø-6	Corn	Insect-resistant YieldGard Corn	MON810	Monsanto Far East Ltd., Taiwan Branch	October 15, 2002	October 15, 2017
3	MON-ØØ6Ø3-6	Corn	Glyphosate tolerant Roundup Ready Corn	NK603	Monsanto Far East Ltd., Taiwan Branch	April 11, 2003	April 11, 2013
4	SYN-BTØ11-1	Corn	Insect-resistant & Glufosinate tolerant Corn	Bt11	Syngenta Taiwan Ltd.	June 2, 2004	June 2, 2013
5	SYN-EV176-9	Corn	Insect-resistant & Glufosinate tolerant Corn	Event176	Syngenta Taiwan Ltd.	June 2, 2004	June 2, 2013
6	ACS-ZMØØ3-2	Corn	Glufosinate tolerant Corn	T25	Bayer Taiwan Ltd.	August 16, 2002	August 16, 2017
7	DAS-Ø15Ø7-1	Corn	Insect-resistant & Glufosinate tolerant Corn	TC1507	DuPont Taiwan	November 17, 2003	November 17, 2013
8	MON-ØØ863-5	Corn	Insect-resistant, YieldGard Rootworm Corn	MON863	Monsanto Far East Ltd., Taiwan Branch	October 16, 2003	October 16, 2013
9	DAS-59122-7	Corn	Insect-resistant & Glufosinate tolerant Corn	59122	DuPont Taiwan	December 21, 2005	December 21, 2015
10	MON-88Ø17-3	Corn	YieldGard Rootworm/ Roundup Ready Corn	MON88017	Monsanto Far East Ltd., Taiwan Branch	March 20, 2006	March 20, 2016
11	ACS-GMØØ5-3	Soybean	Glufosinate tolerant Soybean	A2704-12	Bayer Taiwan Ltd.	May 1, 2007	May 1, 2017
12	SYN-IR6Ø4-5	Corn	Insect-resistant Corn	MIR604	Syngenta Taiwan Ltd.	October 22, 2007	October 22, 2017
13	MON-89788-1	Soybean	Roundup RReady2Yield Soybean	MON89788	Monsanto Far East Ltd., Taiwan Branch	December 28, 2007	December 28, 2012
14	MON-	Corn	Glyphosate	GA21	Syngenta	July 23,	July 23,

	ØØØ21-9		tolerant Corn		Taiwan Ltd.	2008	2013
15	MON-89Ø34-3	Corn	Insect-resistant Corn	MON89034	Monsanto Far East Ltd., Taiwan Branch	July 25, 2008	July 25, 2013
16	SYN-IR162-4	Corn	Insect-resistant Corn	MIR162	Syngenta Taiwan Ltd.	Apr 20, 2009	Apr 20, 2014
17	DP-356Ø43-5	Soybean	Glyphosate and Acetolactate Synthase (ALS)-Inhibiting Herbicides Tolerant Soybean	DP-356043-5	DuPont Taiwan Ltd.	May 11, 2009	May 11, 2014
18	DP-3Ø5423-1	Soybean	High Oleic Soybean	DP-305423-1	DuPont Taiwan Ltd.	July 23, 2010	July 23, 2015
19	SYN-E3272-5	Corn	α-Amylase Corn	Event 3272	Syngenta Taiwan Ltd.	Jul 26, 2010	Jul 26, 2015
20	ACS-GMØØ6-4	Soybean	Glufosinate tolerant Soybean	A5547-127	Bayer Taiwan Ltd.	Aug 31, 2010	Aug 31, 2015
21	MON-877Ø1-2	Soybean	Insect-Protected Soybean	MON87701	Monsanto Far East Ltd., Taiwan Branch	July 6, 2011	July 6, 2016
22	MON-8746Ø-4	Corn	Drought Tolerant Corn	MON87460	Monsanto Far East Ltd., Taiwan Branch	November 3, 2011	November 3, 2016
23	DAS-4Ø278-9	Corn	DAS-40278-9 Corn	DAS-40278-9	Dow AgroSciences Taiwan Ltd.	November 7, 2011	November 7, 2016

Stacked Events:

	UNIQUE IDENTIFIER	PRODUCT	NAME	EVENT	APPLICATION	DATE OF APPROVAL	DATE OF EXPIRATION
1	MON-89Ø34-3 x MON-88Ø17-3	Corn	YieldGard VT Triple PRO Corn	MON89034 x MON88017	Monsanto Far East Ltd., Taiwan	February 17, 2009	February 17, 2014

					Branch		
2	MON-89Ø34-3 x MON-ØØ6Ø3-6	Corn	YieldGard VT PRO x Roundup Ready Corn 2	MON890 34 x NK603	Monsanto Far East Ltd., Taiwan Branch	February 17, 2009	February 17, 2014
3	MON-88Ø17-3 x MON-ØØ81Ø-6	Corn	YieldGard VT Triple Corn	MON880 17 x MON810	Monsanto Far East Ltd., Taiwan Branch	February 17, 2009	February 17, 2014
4	MON-ØØ81Ø-6 x MON-ØØ6Ø3-6	Corn	YieldGard x Roundup Ready Corn 2	MON810 x NK603	Monsanto Far East Ltd., Taiwan Branch	February 17, 2009	February 17, 2014
5	MON-ØØ863-5 x MON-ØØ81Ø-6x MONØØ6Ø 3-6	Corn	YieldGard Plus x Roundup Ready Corn 2	MON863 x MON810 x NK603	Monsanto Far East Ltd., Taiwan Branch	March 04, 2009	March 04, 2014
6	MON-ØØ863-5 x MONØØ6Ø 3-6	Corn	YieldGard Rootworm x Roundup Ready Corn 2	MON863 x NK603	Monsanto Far East Ltd., Taiwan Branch	May 25, 2009	May 25, 2014
7	MON-ØØ863-5 x MON-ØØ81Ø-6	Corn	YieldGard Plus Corn	MON863 x MON810	Monsanto Far East Ltd., Taiwan Branch	July10, 2009	July10, 2014
8	SYN- BT011-1 x SYN- IR604-5	Corn	Bt11 x MIR604 maize	Bt11 x MIR604	Syngenta Taiwan Ltd.	August 3, 2009	August 3, 2014
9	SYN- BT011-1 x MON- ØØØ21-9	Corn	Bt11 x GA21 maize	Bt11 x GA21	Syngenta Taiwan Ltd.	August 3, 2009	August 3, 2014
1 0	SYN- IR604-5 x MON- ØØØ21-9	Corn	MIR604 x GA21 maize	MIR604 x GA21	Syngenta Taiwan Ltd.	August 3, 2009	August 3, 2014
1 1	SYN- BT011-1 x SYN- IR604-5 x MON- ØØØ21-9	Corn	Bt11 x MIR604 x GA21 maize	Bt11 x MIR604 x GA21	Syngenta Taiwan Ltd.	August 3, 2009	August 3, 2014
1 2	MON- 89Ø34-3 x DAS- Ø15Ø7-1 x MON-	Corn	MON89034 x TC1507 x MON88017 x DAS-59122-7 Corn	MON890 34 x TC1507 x	Monsanto Far East Ltd., Taiwan Branch	October 12, 2009	October 12, 2014

	88Ø17-3 x DAS-59122-7			MON880 17 x DAS-59122-7			
1 3	MON-89Ø34-3 x DAS-Ø15Ø7-1 x MON-88Ø17-3 x DAS-59122-7	Corn	MON89034 x TC1507 x MON88017 x DAS-59122-7 Corn	MON890 34 x TC1507 x MON880 17 x DAS-59122-7	Dow AgroScien ces Taiwan Ltd.	October 12, 2009	October 12, 2014
1 4	DAS-Ø15Ø7-1 x MON-ØØ6Ø3-6	Corn	TC1507xDAS-59122-7 Maize	TC1507 x DAS-59122-7	DuPont Taiwan Ltd.	December 02, 2009	December 12, 2014
1 5	Ø15Ø7-1 x DAS-59122-7	Corn	TC1507xNK603 Maize	TC1507 x NK603	DuPont Taiwan Ltd.	December 15, 2009	December 15, 2014
1 6	DAS-59122-7 x DAS-Ø15Ø7-1 x MON-ØØ6Ø3-6	Corn	DAS-59122xTC1507xNK603 Maize	DAS-59122 x TC1507 x NK603	DuPont Taiwan Ltd.	December 15, 2009	December 15, 2014
1 7	DAS-59122-7 x MON-ØØ6Ø3-6	Corn	DAS-59122xNK603 Maize	DAS-59122 x NK603	DuPont Taiwan Ltd.	Jan 3, 2011	Jan 3, 2016
1 8	MON-ØØ6Ø 3-6 x ACS- ZMØØ3-2	Corn	NK603xT25	NK603 x T25	Monsanto Far East Ltd., Taiwan Branch	May 30, 2011	May 30, 2016
1 9	DAS-Ø15Ø7- 1 x DAS-59122- 7 x MON-ØØ81Ø-6 x MON-ØØ6Ø3-6	Corn	TC1507xDAS-59122-7 xMON810xNK603	TC1507 x DAS-59122-7 x MON810 x NK603	DuPont Taiwan Ltd.	May 30, 2011	May 30, 2016
2 0	DAS-Ø15Ø7- 1	Corn	TC1507xMON810xNK603	TC1507 x	DuPont Taiwan	May 30, 2011	May 30, 2016

	x MON-00810-6 x MON-00603-6			MON810 x NK603	Ltd.		
2 1	SYN-BT011-1 x SYN-IR162-4 x SYN-IR604-5 x MON-00021-9	Corn	Bt11xMIR162xMIR604xGA21	Bt11 x MIR162 x MIR604 x GA21	Syngenta Taiwan Ltd.	May 30, 2011	May 30, 2016
2 2	SYN-BT011-1 x SYN-IR162-4 x MON-00021-9	Corn	Bt11xMIR162xGA21	Bt11 x MIR162 x GA21	Syngenta Taiwan Ltd.	May 30, 2011	May 30, 2016
2 3	MON-89034-3 x DAS-01507-1 x MON-00603-6	Corn	MON89034xTC1507xNK603	MON890 34 x TC1507 x NK603	Dow AgroSciences Taiwan Ltd.; Monsanto Far East Ltd., Taiwan Branch	August 22, 2011	August 22, 2016
2 4	SYN-E3272-5 x SYN-BT011-1 x SYN-IR604-5 x MON-00021-9	Corn	3272xBt11xMIR604xGA21	3272 x Bt11 x MIR604 x GA21	Syngenta Taiwan Ltd.	September 5, 2011	September 5, 2016
2 5	SYN-BT011-1 x SYN-IR162-	Corn	Bt11xMIR162xTC1507xGA21	Bt11 x MIR162 x	Syngenta Taiwan Ltd.	October 14, 2011	October 14, 2016

	4 x DAS-Ø15Ø7-1 x MON-ØØØ21-9			TC1507 x GA21			
26	DAS-Ø15Ø7-1 x SYN-IR6Ø4-5 x MON-ØØ6Ø3-6	Corn	TC1507xMIR604xNK603 Maize	TC1507 x MIR604 x NK603	DuPont Taiwan Ltd.	December 1, 2011	December 1, 2016
27	DP-3Ø5423-1 x MON-Ø4Ø32-6	Soybean	DP-305423-1 x 40-3-2 Soybean	DP-305423-1 x 40-3-2	DuPont Taiwan Ltd.	June 11, 2012	June 11, 2017
28	MON-8746Ø-4 x MON-ØØ6Ø3-6	Corn	MON87460xNK603Corn	MON8746 0 x NK603	Monsanto Far East Ltd., Taiwan Branch	July 27, 2012	July 27, 2017
29	MON-8746Ø-4 x MON-89Ø34-3 x MON-88Ø17-3	Corn	MON87460xMON89034xMON88017 Corn	MON8746 0 x MON8903 4 x MON8801 7	Monsanto Far East Ltd., Taiwan Branch	July 27, 2012	July 27, 2017
30	MON-8746Ø-4 x MON-89Ø34-3 x MON-ØØ6Ø3-6	Corn	MON87460xMON89034xNK603 Corn	MON8746 0 x MON8903 4 x NK603	Monsanto Far East Ltd., Taiwan Branch	July 27, 2012	July 27, 2017
31	SYN-BTØ11-1 x DAS-59122-7 x SYN-IR6Ø4-5 x DAS-Ø15Ø7-1 x MON-ØØØ21-9	Corn	Bt11xDAS-59122-7xMIR604xTC1507xGA21	Bt11 x DAS-59122-7 x MIR604 x TC1507 x GA21	Syngenta Taiwan Ltd.	July 27, 2012	July 27, 2017

3 2	DAS- Ø15Ø7-1 x DAS- 59122-7 x MON- ØØ81Ø-6x SYN- IR6Ø4-5 x MON- ØØ6Ø3-6	Corn	TC1507xDAS-59122- 7xMON810xMIR604xNK603	TC1507 x DAS- 59122-7 x MON810 x MIR604 x NK603	DuPont Taiwan Ltd.	July 27, 2012	July 27, 2017
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