



BIOTECH COUNTRY FACTS & TRENDS

Philippines

Around 470,500 small, resource-poor farmers in the Philippines planted 642,000 hectares biotech maize in 2017.

The Philippines became the first country in Southeast Asia to plant a biotech crop after maize commercialization started in 2003. In 2017, the Philippines ranked 13th in biotech crop area among 24 countries.

The area planted to biotech maize in the Philippines in 2017 decreased to 642,000 hectares from 812,000 hectares in 2016. Biotech maize area and adoption rate decreased because according to industry analysts, there was a proliferation of counterfeit biotech maize seeds in the country.

The adoption rate of biotech maize in 2017 was 46.5%, compared to 65% in 2016.

The number of small resource-poor farmers, growing an average 2 hectares of biotech maize in the Philippines in 2017 was estimated at 470,500.

BIOTECH CROP ADOPTION

Biotech maize is the only biotech crop commercialized in the



Philippines. The area occupied in 2017 by the stacked insect resistant/herbicide tolerant (IR/HT) maize was 607,000 hectares or 94.5% of the total area planted for biotech maize; and 5.5% for herbicide tolerant maize at 35,000 hectares.

A total of 13 biotech maize events have been approved for commercial planting in the Philippines since 2002: 3 single Bt, 4 single HT, 2 pyramided Bt genes, and 4 Bt/HT stacked trait. In addition, a total of 88

biotech crops and products are currently approved for direct use as food, feed, and for processing in the Philippines that include alfalfa, canola, cotton, maize, potato, rice, soybean, and sugar beet.

Since the Supreme Court of the Philippines ruled in December 2015 that the Administrative Order No. 8 is invalid, no new approval has been granted by the Department of Agriculture's Bureau of Plant Industry for cultivation.

COUNTRY SITUATIONER

New biotech crop products are being developed by national and international institutions in the Philippines.

The *fruit and shoot borer resistant Bt eggplant* project led by the Institute of Plant Breeding of the University of the Philippines at Los Baños (IPB-UPLB), was a royalty-free technology donated by the Maharashtra Hybrid Seed Company (Mahyco) through a sublicense agreement. The proponents already completed field trials of promising hybrid varieties in the approved multi-location trial sites in Luzon and Mindanao in 2012. In July 2016, the the Supreme Court unanimously reversed its December 2015 decision and granted all motions for reconsideration by the proponents and interested parties. Since then, the team has continued its collaboration with Cornell University, and published results from field trials.

Golden Rice is a beta carotene-fortified rice being developed by the Philippine Rice Research Institute (PhilRice) and the International Rice Research Institute (IRRI).

Two seasons of confined field testing of Golden Rice have been completed in early 2016 under the strict monitoring of prescribed government bodies. The proponents have filed an application to secure a Food, Feed, Processing (FFP) permit for direct use. FFP application was also sent to the US Food and Drug Administration (US FDA), Health Canada, and Food Standards Australia New Zealand (FSANZ). So far, Golden Rice has received approval from all three government bodies.

Biotech papaya with delayed ripening and papaya ring spot virus (PRSV) resistance, by IPB-UPLB, has already been tested in confined field trials in 2014. The



technical advisory team of the Department of Agriculture Biotech Program Office recommended a second field trial in 2017. The dossiers are currently being prepared for the contained trial and its eventual varietal registration.

Bt cotton is being developed by the Philippine Fiber Development Administration (PFIDA, formerly the Cotton Development Authority). The technology, provided by Nath Biogene Ltd. and the Global Transgene Ltd. from India was tested for the first time in a confined field trial in 2010, and started multi location field trials in 2012. The data to complete regulatory dossiers were obtained in 2015, as well as related laboratory experiments done in 2017.

Experts from the Departments of Agriculture, Science and Technology, Environment and Natural Resources, Health, and Interior and Local Government, crafted a Joint Department Circular (JDC) entitled “Rules and Regulations for the Research and Development, Handling and Use, Transboundary Movement, Release into the Environment,

and Management of Genetically-Modified Plant and Plant Products Derived from the Use of Modern Biotechnology”. On March 8, 2016, after a series of consultations and several revisions, the DOST-DA-DENR-DOH-DILG JDC No. 1, Series of 2016 was approved, and took effect April 15, 2016.

BENEFITS FROM BIOTECH MAIZE

The farm level economic benefit of planting biotech maize in the Philippines in the period 2003 to 2016 is estimated to have reached US\$724 million. For 2016 alone, the net national impact of biotech maize on farm income was estimated at US\$82 million. These immense economic gains continuously benefit Filipino farmers and their families in the last 14 years of biotech maize commercialization in the Philippines.

SOURCE

ISAAA. 2017. Global Status of Commercialized Biotech/GM Crops in 2017: Biotech Crop Adoption Surges as Economic Benefits Accumulate in 22 Years. *ISAAA Brief* No. 53. ISAAA: Ithaca, New York.

For more information, contact:

ISAAA SEAsiaCenter
GS Khush Hall, IRRI
Los Baños, Laguna 4031 Philippines
Telefax: +63 49 5367216
Email: knowledge.center@isaaa.org



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