



BIOTECH COUNTRY FACTS & TRENDS

Philippines

Around 470,500 small, resource-poor farmers in the Philippines planted 630,000 hectares biotech maize in 2018.

The Philippines became the first country in Southeast Asia to plant a biotech crop after maize commercialization started in 2003. In 2018, the Philippines ranked 13th in biotech crop area among 26 countries.

The area planted to biotech maize in the Philippines in 2018 decreased to 630,000 hectares from 642,000 hectares in 2017. Biotech maize area and adoption rate decreased due to drought, typhoons, and the proliferation of counterfeit biotech maize seeds in the country.

The adoption rate of biotech maize in 2018 was 49.7%, compared to 46.5% in 2017.

The number of small resource-poor farmers, growing an average 2 hectares of biotech maize in the Philippines in 2018 was estimated at 470,500.

BIOTECH CROP ADOPTION

Biotech maize is the only biotech crop commercialized in the



Philippines. The area occupied in 2018 by the stacked insect resistant/herbicide tolerant (IR/HT) maize was 614,000 hectares or 97.5% of the total area planted for biotech maize; and 2.5% for herbicide tolerant maize at 16,000 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, the country has granted

a total of 218 approvals for food, feed, and cultivation for 105 events. 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. Field trials of promising hybrid varieties have been completed in 2012. The Bt Eggplant Project team has published results from these field trials and collaborated with experts in preparing a regulatory package for submission according to the new guidelines.

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. In February 2018, Food Standards Australia and New Zealand (FSANZ) determined that there are no public health or safety concerns for GR2E Golden Rice. Health Canada also released a positive assessment for Golden Rice in March 2018, followed by a similar declaration from USFDA in May 2018.

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. 2018. Global Status of Commercialized Biotech/GM Crops in 2018. *ISAAA Brief* No. 54. ISAAA: Ithaca, New York.

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