For more information, contact:
Tamara Webb
713-513-9514
tamara.webb@fleishman.com

Eighteen Million Farmers in 27 Countries Chose Biotech Crops in 2013, Global Plantings Increase by 5 Million Hectares

Inaugural plantings of biotech drought-tolerant maize in U.S.; further developments in drought-tolerance technology across the world

BEIJING **(Feb. 13, 2014) —** The International Service for the Acquisition of Agri-Biotech Applications (ISAAA) today released a report which indicates more than 18 million farmers in 27 countries planted biotech crops in 2013, reflecting a five million, or three percent, increase in global biotech crop hectarage. 2013 also marks the first-ever commercial plantings of drought-tolerant biotech maize in the United States.

Global biotech crop hectarage has increased from 1.7 million hectares in 1996 to over 175 million hectares in 2013. During this 18 year period, more than a 100-fold increase of commercial biotech crop hectarage has been reported. The United States continues to lead global biotech crop plantings at 70.1 million hectares or 40 percent of total global hectares.

"Accumulated hectarage of biotech crops planted worldwide to-date stands at 1.6 billion hectares or 150 percent of the total landmass of China," said Clive James, author of the report and ISAAA Founder and Chairman Emeritus. "Each of the top ten countries planting biotech crops during 2013 planted more than one million hectares, providing a broad foundation for future growth."

According to the report, more than 90 percent, or 16.5 million, of farmers planting biotech crops are small and resource-poor. Of the countries planting biotech crops, eight are industrial countries and 19 are developing countries. For the second year, developing countries planted more hectares of biotech crops than industrialized countries, representing confidence and trust of millions of risk-averse farmers around the world that have experienced the benefits of these crops. Nearly 100 percent of farmers who try biotech crops continue to plant them year after year, the report notes.

Two new drought-tolerant crops

Given the importance of drought on crop productivity, exacerbated by climate change, drought tolerance is judged to be an important development. In the United States, approximately 2,000 farmers in the drought-prone Corn Belt planted about 50,000 hectares of the first biotech drought-tolerant maize. Also, Indonesia, the fourth most populous country in the world, developed and approved planting of the world's first drought-tolerant sugarcane (the first biotech sugarcane to be approved globally) and plans to commercialize it for planting in 2014.

"Biotech crops are demonstrating their global value as a tool for resource poor farmers who face decreased water supplies and increased weed and pest pressures – and the effects of climate change will only continue to expand the need for this technology," said James.

Biotech drought-tolerant maize technology has been donated to Africa through the Water Efficient Maize for Africa (WEMA) project, a public/private partnership by Monsanto and BASF, funded by the Gates and Buffet foundations and implemented through the International Maize and Wheat Improvement Center (CIMMYT) in Mexico and Kenya-based African Agricultural Technology Foundation (AATF). Planting of biotech drought-tolerant maize in Africa is expected in 2017. Drought is the biggest constraint to maize productivity in Africa on which 300 million Africans depend for survival.

Status and opportunities for biotech crops in China
China, with a population of 1.3 billion, is the most populous country in the world. Between 1996 and 2012, biotech cotton in China generated economic benefits valued at over $15 billion, with $2.2 billion occurring during the past year. Biotech crops also provided important benefits to farmers and the environment in China, with insecticide use decreasing by 50 percent or more on biotech cotton.

"China has already experienced the benefits of biotech cotton for fiber, and could also benefit from biotech maize through increased and improved grain production for animal feed," said James. "China could also benefit from the approval of biotech traits for rice, the staple food crop in Asia."

Some observers speculate China might be paving the way to approval of a major biotech crop, like the phytase-maize that received biosafety clearance in 2009, when two biotech rice traits were also approved. The feed demand of sustaining China's 500 million swine and 13 billion poultry is causing the country to become increasingly reliant on imported maize, to supplement the 35 million hectares of maize it grows.

Increased hectarage in developing countries
Growth in developing countries continues to expand. Latin American, Asian and African farmers collectively grew 54 percent of global biotech crop hectares (up two percent from 2012), thereby increasing the hectarage gap between industrial and developing countries from approximately 7 to 14 million hectares between 2012 and 2013, respectively.

South America collectively planted 70 million hectares or 41 percent; Asia collectively planted 20 million hectares or 11 percent; and Africa collectively planted just over 3 million hectares or two percent of the global biotech hectarage.

"Growth in industrial countries and mature markets in developing countries continued to plateau in 2013 as adoption rates were sustained at 90 percent or more, leaving little room for expansion," said James. "During the past year, growth was led by developing countries, namely Brazil, which posted an impressive 3.7 million hectare or 10 percent increase, reaching 40.3 million total hectares. During the next year, growth is expected to continue in developing countries – and Brazil will continue to lead the way, consistently closing the gap with the United States."

Success in developing countries can often be attributed to public/private partnerships. For example, Brazil, in cooperation with BASF, has developed and approved a herbicide-tolerant soybean that is ready for commercialization, having successfully completed all steps necessary for development and deployment of the product. Such partnerships instill pride which generates confidence and incentive necessary for success.

EMBRAPA in Brazil, using entirely national resources, has also developed and achieved approval of virus-resistant beans, which is an important contribution to sustainability.

Breaking the impasse to approve biotech crops
Developing countries are continuing to push forward with biotech research/development and commercialization, and have demonstrated the political willpower to approve new biotech crop traits, the report noted. Approvals in 2013 include:

- Bangladesh approved its first biotech crop, biotech eggplant (Brinjal), developed through a public-private partnership with an Indian company, Mahyco. Bangladesh serves as an exemplary model for other small and poor countries – it broke the impasse of the approval process to commercialize biotech eggplant in both India and the Philippines. Bangladesh is also pursuing approval of Golden Rice and biotech potato.
- Indonesia approved drought tolerant sugarcane for food use, with plans to cultivate in 2014.
- Panama approved planting of biotech maize.

Continued developments in biotech crop technology combined with increased adoption by small and poor farmers are important factors in the future of global biotech crop adoption. Substantial developments in 2013 include:

- In Africa, Burkina Faso and Sudan increased biotech cotton hectarage by an impressive 50 percent and 300 percent, respectively. Also, seven additional countries are conducting biotech crop field trials as the

penultimate step to approval for commercialization. These countries include: Cameroon, Egypt, Ghana, Kenya, Malawi, Nigeria and Uganda.
- The Philippines is nearing the completion of its field trials with Golden Rice.

The lack of appropriate, science-based, cost- and time-effective regulatory systems continues to be the major constraint to adoption in Africa (and across the world).

Status of biotech crops in the European Union
The modest hectarage in the European Union (EU) was up 15 percent between 2012 and 2013. Five EU countries planted 148,013 hectares of biotech maize, up 18,942 hectares from 2012. Spain led the EU with a record 136,962 hectares of biotech maize, up 18 percent since 2012. Romania maintained the same hectarage as 2012. Portugal, Czechia and Slovakia planted fewer hectares of biotech maize than 2012, which the report attributed to burdensome EU reporting procedures for farmers.

Biotech crops benefit food security, sustainability and the environment
Between 1996 and 2012, biotech crops have made positive contributions through: decreased production costs and increased productivity (estimated at 377 million tons) valued at US $117 billion; environmental benefits by eliminating the need for 497 million kg (a.i.) of pesticides; reduced CO2 emissions by 27 billion kg in 2012 alone (equivalent to removing 12 million cars from the road for one year); conserving biodiversity by saving 123 million hectares of land from being placed in agricultural production during the period 1996 to 2012; and alleviating poverty for 16.5 million small farmers and farm families, totaling more than 65 million people.

By the numbers
- United States continued to be the lead country with 70.1 million hectares, with 90 percent adoption across all crops.
- Brazil ranked second for the fifth consecutive year, increasing its hectarage of biotech crops more than any other country – an impressive record increase of 3.7 million hectares or 10 percent from 2012.
- Argentina retained its third place with 24.4 million hectares.
- India, which displaced Canada for the fourth place, had a record 11 million hectares of biotech cotton with an adoption rate of 95 percent.
- Canada was fifth at 10.8 million hectares with decreased plantings of canola but maintained a high adoption rate of 96 percent.

For more information or the executive summary, visit www.isaaa.org.

About ISAAA:
The International Service for the Acquisition of Agri-biotech Applications (ISAAA) is a not-for-profit organization with an international network of centers designed to contribute to the alleviation of hunger and poverty by sharing knowledge and crop biotechnology applications. Clive James, Emeritus Chairman and Founder of ISAAA, has lived and/or worked for the past 30 years in the developing countries of Asia, Latin America and Africa, devoting his efforts to agricultural research and development issues with a focus on crop biotechnology and global food security.