For more information, contact:
Mollie Lastovica
713-513-9524
mollie.lastovica@fleishman.com

Biotech Crops Show Continued Growth, Benefits in 2014, Global Plantings Increase by 6 Million Hectares

Eggplant and Potato Approvals Address Consumer Concerns

BEIJING (DATE.) In 2014, a record 181.5 million hectares of biotech crops were grown globally, an increase of more than six million hectares from 2013, according to a report released today by the International Service for the Acquisition of Agri-Biotech Applications (ISAAA). With the addition of Bangladesh, a total of 28 countries grew biotech crops during the year. The 20 developing and eight industrial countries where biotech crops are produced represent more than 60 percent of the world's population.

"The accumulated hectarage of biotech crops grown in 1996 to 2014 equals, roughly, 80 percent more than the total land mass of China," said Clive James, ISAAA Founder and report author. "Global hectarage has increased more than 100-fold since the first plantings of biotech crops."

Since 1996, more than 10 food and fiber biotech crops have been approved and commercialized around the world. These range from major commodities such as maize, soybean and cotton, to fruits and vegetables like papaya, eggplant and, most recently, potato. The traits of these crops address common issues affecting crop benefits to the consumer and production rates for farmers, including drought tolerance, insect and disease resistance, herbicide tolerance and increased nutrition and food quality. Biotech crops contribute to more sustainable crop production systems and provide resilient responses to the challenges of climate change.

According to the report, the United States continues to lead production at 73.1 million hectares. Up 3 million hectares – a growth rate of 4 percent – from 2013, the United States recorded the highest year-over-year increase, surpassing Brazil, which has recorded the highest annual increase for the past five years.

The report also highlighted key benefits of biotechnology, including alleviation of poverty and hunger by boosting the income of risk-averse small, resource-poor farmers around the world. Latest global provisional information for the period 1996 to 2013 shows that biotech crops increased production valued at US$133 billion; in the period 1996 to 2012 pesticide use decreased significantly saving approximately 500 million kg of active ingredient. In 2013 alone, crop plantings lowered carbon dioxide emissions equivalent to removing 12.4 million cars from the road for one year.

These findings are consistent with a rigorous meta-analysis, conducted by German economists, Klumper and Qaim (2014), which concluded that GM technology has, on average, reduced chemical pesticide use 37 percent, increased crop yields 22 percent, and increased farmer profits 68 percent during the 20 year period of 1995 to 2014.

Bangladesh: a model for success
One of the smallest and poverty-stricken countries in the world, Bangladesh approved *Bt* brinjal/eggplant in October 2013. Less than 100 days post-approval commercialization began in January 2014 when 120 farmers planted 12 hectares of the crop throughout the year. *Bt* brinjal/eggplant not only brings financial opportunity to poor farmers in the country, but also drastically decreases farmer exposure to pesticides on the food crop by 70 to 90 percent.

"The timely approval and commercialization of *Bt* brinjal in Bangladesh speaks to the power of political will and support from the government," said James. "This lays the foundation as a model of success for other small, poor countries to quickly introduce the benefits of biotech crops."

The case of Bangladesh in 2014 reconfirms the value and success of public-private partnerships. The *Bt* biotech trait for brinjal – one of the most nutritious and important vegetables in Bangladesh – was donated by Mahyco, an Indian company.

"Public-private partnerships continue to increase the probability of timely delivery of approved biotech crops at the farm level," James said. "They will remain essential in the years to come."

The Water Efficient Maize for Africa (WEMA) Project is another example of a public-private partnership at work. Beginning in 2017, select African countries are scheduled to receive the first biotech drought tolerant maize, a food staple depended on by more than 300 million poor Africans. The donated biotechnology trait is the same as the DroughtGard™ variety used in the United States, which increased 5.5-fold in planted hectares from 2013 to 2014. This demonstrates strong farmer acceptance of the biotech drought tolerant maize.

New approvals address consumer concerns

In the United States, approval of the Innate™ potato was granted in November 2014. The Innate potato decreases production of acrylamide, a potential carcinogen, when potatoes are cooked at high temperatures. Furthermore, it increases consumer satisfaction while precluding up to 40 percent yield loss as the potato will not discolor when peeled and has fewer bruising spots. These attributes will have meaningful impact on food security as food waste continues as an important factor in the discussion of feeding 9.6 billion people in 2050 and approximately 11 billion in 2100.

Potatoes represent the fourth most important food staple in the world. As such, a continuous effort is being made to improve the potato and combat losses due to diseases, insects and weeds, and other constraints.

Biotech-based control of the fungal disease late-blight, the most important disease of potatoes in the world, is already being field-tested in Bangladesh, India and Indonesia. Late-blight caused the 1845 Irish famine, which resulted in 1 million deaths. Biotech control of virus diseases and the Colorado beetle, the most important insect pest, are already available, but not deployed.

Status of biotech crops in Asia

In Asia, China and India continue to lead developing countries growing biotech crops at 3.9 million hectares and 11.6 million hectares planted in 2014, respectively.

The adoption rate of biotech cotton in China increased from 90 to 93 percent in 2014, while virus resistant papaya plantings increased approximately 50 percent. More than 7 million small farmers in the country continue to benefit from biotech crops and the latest economic data available indicates farmers in the country have gained US$16.2 billion since the introduction of biotech in 1996.

According to the report, India cultivated a record 11.6 million hectares of *Bt* cotton with an adoption rate of 95 percent. British economists Brookes and Barfoot estimate that India enhanced farm income from *Bt* cotton by US$ 2.1 billion in 2013 alone.

Developing countries Vietnam and Indonesia granted approval for commercialization of biotech crops to begin in 2015. This includes several hybrids of biotech maize for importing and planting in Vietnam and drought tolerant sugarcane for planting as a food crop in Indonesia.

Growth continues in Africa and Latin America

Having cultivated 2.7 million hectares in 2014, South Africa ranks as the leading developing country to grow biotech crops in Africa. Sudan increased *Bt* cotton hectarage by approximately 50 percent in 2014 and several African countries including Cameroon, Egypt, Ghana, Kenya, Malawi, Nigeria and Uganda conducted field trials on several pro-poor crops including the food crops rice, maize, wheat, sorghum, bananas, cassava and sweet potato. These crops can contribute to resilience and sustainability in the face of new climate change challenges.

In Latin America, Brazil ranked second, behind only the United States, for biotech crops planted in 2014. At 42.2 million hectares, this represents an increase of 5 percent from 2013.

Biotech crops impact food security, sustainability and the environment
From 1996 to 2013, biotech crops have increased crop production valued provisionally at $US133 billion; helped alleviate poverty for more than 16.5 million small farmers and their families – more than 65 million people, collectively – some of the poorest people in the world; and decreased the environmental impact of food and fiber production by reducing pesticide use, increasing land savings and reducing CO_2 emissions.

According to Brooks and Barfoot, had the additional 441 million tons of food, feed and fiber produced by biotech crops from 1996 to 2013 not been produced, an additional132 million hectares of conventional crops would have been required to produce the same tonnage. This required increase in hectares could have negative implications for biodiversity and the environment due to an increased need for cultivated acres.

By the numbers

- United States continued as the lead country with 73.1 million hectares, a year-to-year increase of 4 percent, equal to 3 million hectares.
- Brazil ranked second for the sixth consecutive year, increasing its hectarage by 1.9 million hectares from 2013.
- Argentina retained third place with 24.3 million hectares.
- India and Canada both recorded 11.6 million hectares. India had an adoption rate of 95 percent for biotech cotton. Canola and soybean hectares increased significantly in Canada.

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.