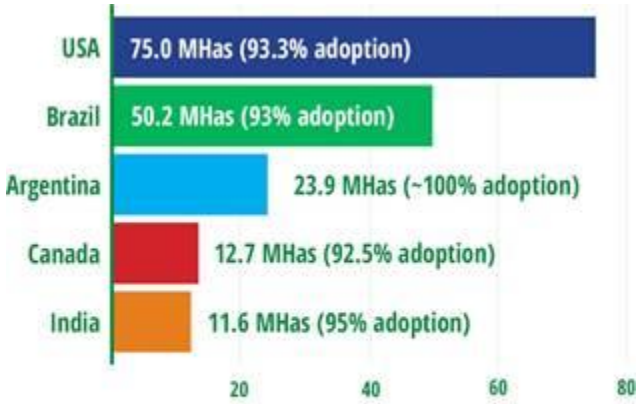
HIGHLIGHTS OF THE 2018 ADOPTION OF BIOTECH CROPS

- **High adoption of biotech crops continued in 2018 with 191.7 million hectares worldwide.**

On the 23rd year of commercialization of biotech/GM crops in 2018, 26 countries grew 191.7 million hectares of biotech crops – an increase of 1.9 million hectares (4.7 million acres) or 1% from 189.8 million hectares in 2017. Except for the 2015 adoption, this is the 22nd series of increases every single year; and notably 12 of the 18 years with double-digit growth rates.

- **The adoption rates of the top five biotech crop-growing countries reached close to saturation.**

The average biotech crop adoption rate in the top five biotech crop-growing countries increased in 2018 to reach close to saturation, with USA at 93.3% (average for soybeans, maize, and canola adoption), Brazil (93%), Argentina (~100%), Canada (92.5%), and India (95%). Expansion of biotech crop areas in these countries would be through immediate approval and commercialization of new biotech crops and traits to target problems related to climate change and the emergence of new pests and diseases.



TOP 5 COUNTRIES THAT PLANTED BIOTECH CROPS IN 2018 (AREA AND ADOPTION RATE)

Source: ISAAA, 2018

- **Biotech crops increased ~113-fold from 1996 with accumulated biotech area at 2.5 billion hectares; thus, biotechnology is the fastest adopted crop technology in the world.**

Global area of biotech crops has increased ~113-fold from 1.7 million hectares in 1996 to 191.7 million hectares in 2018 – this makes biotech crops the fastest adopted crop technology in recent times. An accumulated 2.5 billion hectares or 6.3 billion acres were achieved in 23 years (1996-2018) of biotech crop commercialization.

- **A total of 70 countries adopted biotech crops – 26 countries planted and 44 additional countries imported.**

The 191.7 million hectares of biotech crops were grown by 26 countries – 21 developing and 5 industrial countries. Developing countries grew 54% of the global biotech crop area compared to 46% for industrial countries. An additional 44 countries (18 plus 26 EU countries) imported biotech crops for food, feed, and processing. Thus, a total of 70 countries in total have adopted biotech crops.

- **Biotech crops provided more diverse offerings to consumers in 2018.**

Biotech crops have expanded beyond the big four (maize, soybeans, cotton, and canola) to give more choices for many of the world's consumers and food producers. These biotech crops include alfalfa, sugar beets, papaya, squash, eggplant, potatoes, and apples, all of which are already in the market. Two generations of Innate® potatoes with non-bruising, non-browning, reduced acrylamide, and late blight resistant traits as well as non-browning Arctic® apples were already planted in the USA. Brazil planted the first insect resistant (IR) sugarcane; Indonesia, the first drought tolerant sugarcane; and Australia planted the first high oleic acid safflower for R&D and seed propagation. Various trait combinations were also approved including high oleic acid canola, isoxaflutole herbicide tolerant (HT) cotton, stacked herbicide tolerant and high oleic acid soybean, HT and salt tolerant soybean, IR sugarcane, and biotech maize with various IR/HT combinations in stack. Additionally, biotech crop research conducted by public sector institutions include rice, banana, potatoes, wheat, chickpea, pigeon pea, and mustard with various economically-important and nutritional quality traits beneficial to food producers and consumers in developing countries.

- **Biotech soybeans covered 50% of global biotech crop area.**

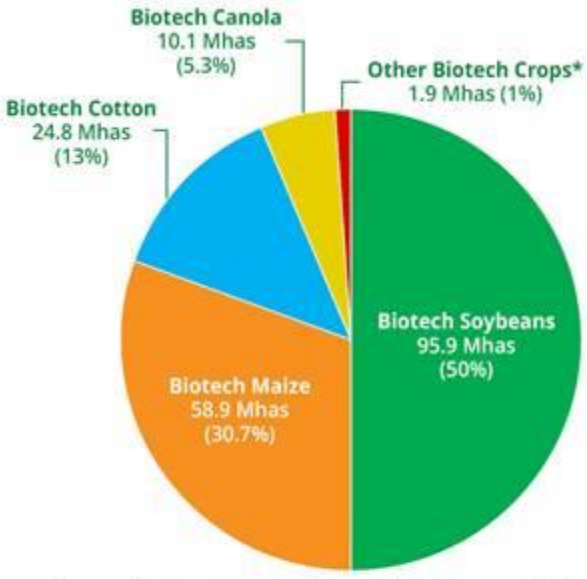
The four major biotech crops -- soybeans, maize, cotton, and canola -- in decreasing area, were the most adopted biotech crops by 26 countries. Soybeans lead at 95.9 million hectares at 50% of the global biotech crop adoption, a 2% increase from 2017. This is followed by maize (58.9 million hectares), cotton (24.9 million hectares), and canola (10.1 million hectares). Based on the 2017 FAO global crop area for individual crops, 78% of soybeans, 76% of cotton, 30% of maize, and 29% of canola were biotech crops in 2018.

- **The area planted to biotech crops with stacked traits increased by 4% and occupied 42% of the global biotech crop area.**

Stacked traits with insect resistance and herbicide tolerance increased by 4% and covered 42% of the global area, a testimony to farmers' adherence to smart agriculture with no till and reduced insecticide use. Herbicide tolerance in soybeans, canola, maize, alfalfa, and cotton has consistently been the dominant trait, which in 2018 covered 46% of the global area – a decrease of 1% compared to 2017.

- **The top five countries (USA, Brazil, Argentina, Canada, and India) planted 91% of the global biotech crop area of 191.7 million hectares.**

The USA led the biotech crop planting in 2018 at 75 million hectares, followed by Brazil (51.3 million hectares), Argentina (23.9 million hectare), Canada (12.7 million hectares), and India (11.6 million hectares) (Table 1) for a total of 174.5 million hectares, representing 91% of the global area. Thus, biotechnology benefitted more than 1.95 billion people in the five countries or 26% of the current world population of 7.7 billion.



** Biotech sugar beets, potatoes, apples, squash, papaya, and brinjal/ eggplant.*

BIOTECH CROPS IN 2018 (AREA AND ADOPTION RATE)

Source: ISAAA, 2018