

HERBICIDE TOLERANCE

During the 20-year period 1996-2016, herbicide tolerance (HT) has been the dominant trait, deployed in soybean, maize, canola, cotton, sugar beet, and alfalfa. HT crops are planted in 86.5 million hectares or 47% of the 185.1 million hectares of biotech crops planted globally.

STACKED TRAITS

Stacked traits for herbicide tolerance and insect resistance (IR/HT) were deployed in cotton and soybean, as well as in maize (Bt/Bt/IR, Bt/HT, and Bt/Bt/HT).

The Bt/Bt/IR stack refers to different Bt or other IR genes that code for different insect resistant traits.

Stacked traits increased from 58.5 million hectares in 2015 to 75.4 million hectares in 2016, an increase of 16.9 million hectares equivalent to 29%.

Stacking is a very important feature of the technology with SmartStax™ comprising eight genes coding for three traits, launched in the USA and Canada in 2010, as well as in Innate™ potato generation 2 which was

approved for cultivation in 2015 in the USA and in Canada in 2016.

The deployment of stacked traits is most prevalent in the USA and Brazil which had approximately 43% of the 75.4 million hectares “stacked traits” in 2016.

In 2016, a total of 14 countries deployed stacked traits, they were: USA (32.1 million hectares), Brazil (32.0 million hectares), Argentina (6.1), South Africa (1.3), Canada (1.2), and smaller hectarages in Paraguay, Philippines, Australia, Uruguay, Colombia, Chile, Vietnam, Honduras, and Mexico.

INSECT RESISTANCE

Insect resistance (IR) is deployed in maize, cotton, and eggplant. Hectarage featuring IR decreased by 8% from 25.2 million hectares in 2015 to 23.1 million hectares in 2016.

BENEFITS FROM BIOTECH TRAITS

Distribution of economic benefits at the farm level by trait, for the first 20 years of commercialization of biotech crops 1996 to 2015 follows:

all herbicide tolerant crops at US\$68.8 billion and all insect resistant crops at US\$98.6 billion, with the balance of US\$0.3 billion for other minor biotech crops.

For 2015 alone, the benefits were: all herbicide tolerant crops at US\$6.43 billion, and all insect resistant crops at US\$8.96 billion plus a balance of US\$0.01 billion for the minor biotech crops for a total of ~US\$15.1 billion.

SOURCE

ISAAA. 2016. Global Status of Commercialized Biotech/GM Crops: 2016. *ISAAA Brief No. 52*. ISAAA: Ithaca, New York.

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