



**In 2017, South Africa planted 2.73 million hectares of three major biotech crops: maize, soybeans, and cotton.**

The year 2017 marked two decades of successful biotech crop commercialization in South Africa, having planted its first biotech crop in 1998.

In 2017, the total area planted to biotech crops in South Africa was 2.73 million hectares, comprised of maize, soybean, and cotton – a 2.6% increase from the reported biotech crop area of 2.66 million hectares in 2016. The average biotech crop adoption rate in South Africa increased to 93% in 2017.

The area planted to biotech maize in South Africa in 2017 was estimated at 1.96 million hectares at an adoption level of 85% of the 2.3 million hectares total maize area. Out of the total area planted to biotech maize, 66% was stacked insect resistance/herbicide tolerance (IR/HT), and the rest contain single IR and HT traits in equal proportions.

Herbicide tolerant soybeans were planted on 736,535 hectares in 2017, which is 95% of the total soybean area in

South Africa. The country has seen an increase in production and 2017 was remarkable with the quick recovery from the dip experienced in 2015/2016 season due to drought. This increase was due to increasing food and feed requirements even though production is still below the demand.

In 2017, biotech cotton area in South Africa increased by 315%, and adoption reached 100%. A total of 37,406 hectares were planted to biotech cotton, compared to only 9,000 hectares in 2016.



## BIOTECH CROP APPROVALS AND ADOPTION IN SOUTH AFRICA

South Africa planted insect resistant cotton, its first biotech crop, in 1998. Insect resistant maize was planted in 2000, herbicide tolerant soybeans in 2001, and herbicide tolerant maize in 2003.

Since 1998, the 70 events approved for planting in South

Africa include 5 Argentine canola, 10 cotton, 42 maize, 1 rice (for food), and 12 soybeans.

The GMO Act and applicable implementing regulations and biosafety framework govern the regulation of biotech crops in South Africa.

The Department of Agriculture houses the GMO Secretariat and all decision-making is managed by the Executive Council comprising Agriculture, Environment, Labor, Health, Trade and Industry, and Science and Technology.

The GMO Act requires applications and approval of permits for all GMO activities, from plants to animals, microbes, and vaccines, and covers imports/exports, contained field trials, seed and commodity trade, food, and animal feed.

In 2016-2017, 723 permits were granted for biotech crops, an increase from 628 in 2016. Biotech maize had the highest at 694 (96% of total number of permits), followed by soybeans with 15 permits, and cotton with 14 permits.

### **PUBLIC PERCEPTION ABOUT BIOTECHNOLOGY IN SOUTH AFRICA**

A study conducted by Gastrow *et al.* (2018) reveals that South Africans are more positive about the health implications of GM food, less critical about the environmental impact of GM food, and more positive about the economic consequences of GM food than Europeans.

A nationwide survey in 2017 states that the familiarity of South Africans with biotechnology and awareness of GM food have increased over the last decade. Knowledge about biotechnology is positively correlated with younger age, higher educational



attainment, and higher living standards.

### **BENEFITS FROM BIOTECH CROPS IN SOUTH AFRICA**

It is estimated that the economic gains from biotech crops for South Africa for the period 1998 to 2016 was ~US\$2.3 billion and US\$330 million for 2016 alone (Brookes and Barfoot, 2018).

A 2016 study that focused on gender-aggregated benefits conducted by Gouse *et al.* found that female smallholder farmers and household members in South Africa value GM herbicide tolerant maize higher than their male counterparts do because of the technology's labor-saving benefit.

The researchers found that females in HT maize seed adopting households saved 10-12 days of manual weeding per hectare, compared to their conventional and GM IR maize planting, and traditional manual weeding counterparts. Interestingly, females spent most of their extra time doing housework (cleaning and cooking) and working in their own or community vegetable gardens.

### **SOURCE**

ISAAA. 2017. Global Status of Commercialized Biotech/GM Crops in 2017: Biotech Crop Adoption Surges as Economic Benefits Accumulate in 22 Years. *ISAAA Brief* No. 53. ISAAA: Ithaca, New York.

For more information, contact:

ISAAA *SEAsia*Center  
GS Khush Hall, IRRI  
Los Baños, Laguna 4031 Philippines  
Telefax: +63 49 5367216  
Email: [knowledge.center@isaaa.org](mailto:knowledge.center@isaaa.org)



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