



Genetically Modified Organisms as Imported Food Crops

Why in News

The [Food Safety and Standards Authority of India \(FSSAI\)](#) in a recent order has set 1% threshold for [Genetically Modified Organisms \(GMO\)](#) in food crops imported into India.

- Earlier in August 2020, FSSAI had issued the order that 24 food crops the country imports would need a '**non-GM-origin-cum-GM-free certificate**' issued by a competent authority.

Key Points

- **Genetically Modified Organisms (GMOs):**
 - These are **living organisms whose genetic material has been artificially manipulated** in a laboratory through **genetic engineering**.
 - This creates combinations of plant, animal, bacteria, and virus genes that do not occur in nature or through traditional crossbreeding methods.

- **Genetically Modified Crops: //**

What is a GM crop?

A crop which has a gene artificially inserted into it from another species, even unrelated, to give it some desired properties. GM crops are mostly either pest-resistant or herbicide-tolerant

Are there other GM crops in India?

No, the government has not approved commercial cultivation of other GM crops, though efforts have been made for brinjal and mustard

GM CROPS IN INDIA A PRIMER

When did India get its first GM crop?

The first GM crop variety approved for commercialisation was Bt cotton. Bollgard-I, which provided immunity against the pink bollworm and developed by Monsanto, was given the go ahead in 2002. Monsanto released Bollgard-II in 2006. India has become the world's largest producer of cotton partly due to Bt cotton, which accounts for over 90% of the total cotton acreage in the country

- Conventional plant breeding involves crossing of species of the same genus to provide the offspring with the desired traits of both parents.
 - Genus is a class of items such as a group of animals or plants with similar traits, qualities or features.
- **Bt cotton** is the only Genetically Modified (GM) crop that is allowed in India. It has alien genes from the soil bacterium *Bacillus thuringiensis* (*Bt*) that allows the crop to develop a protein toxic to the common pest **pink bollworm**.
- **Herbicide Tolerant Bt (Ht Bt) cotton**, on the other hand is derived with the insertion of an additional gene, from another soil bacterium, which allows the plant to resist the common herbicide glyphosate.
- In **Bt brinjal**, a gene allows the plant to resist attacks of fruit and shoot borers.

- In **DMH-11 mustard**, genetic modification allows cross-pollination in a crop that self-pollinates in nature.

▪ **Legal Position of GM crops in India:**

- In India, the **Genetic Engineering Appraisal Committee (GEAC)** is the apex body that allows for commercial release of GM crops.
- Use of the unapproved GM variant can attract a jail term of 5 years and fine of Rs. 1 lakh under the **Environment Protection Act, 1986**.

▪ **Regulation of Imported Crops:**

- The task of regulating GMO levels in **imported consumables** was **initially with the Genetic Engineering Appraisal Committee (GEAC)**.
- Its role was diluted with the enactment of the **Food Safety and Standards Act, 2006** and **FSSAI was asked to take over approvals of imported goods**.

Source: DTE

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