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Genetically Modified Organisms as Imported Food Crops

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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