

# **Genetically Modified Mustard**

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Why is in news? Is there a compelling reason for GM mustard; will it not affect environment, asks SC

Mustard is one of India's most important winter crops which is sown between mid-October and late November.

The Indian mustard (Brassica juncea) is a member of the Brassicaceae family.

Mustard is cultivated by around 6 million farmers in around 6.5-7 million hectares of land across the states of **Rajasthan, Haryana, Punjab and Madhya Pradesh**.

Currently, India has a **deficit of edible oils** by almost 55-60 per cent of the total consumption. India desperately requires an increase in the productivity of oilseed crops grown in the country. The average mustard yield in India is 1.0-1.3 tonnes/hectare.

Globally, yields of rapeseed have considerably increased with the introduction of hybrids. More than 90% of the rapeseed crop in Canada, grown in around 8.7 million ha, is under hybrids. Most of the rapeseed grown in China and Europe is also hybrids.

In October 2022, the **Genetic Engineering Appraisal Committee (GEAC)** recommended the environmental release of the genetically-modified (GM) **mustard (Brassica juncea) variety DMH (Dhara Mustard Hybrid)-11** for the development of new generation hybrids, paving the way for the **commercialisation of the country's first GM food crop.** 

The decision to release GM mustard will **encourage more research and innovations** to reduce the environmental footprints of agriculture, develop climate resilient crops, and thereby assure food and nutritional security of the country.

It will also accelerate breeding efforts to **produce new high yielding disease and pest resistant hybrids** using this new technology cleared by the Government of India.

Australia has recently on 19 October, released herbicide tolerant GM Indian mustard to meet the increasing global demand of edible oil.

The GEAC said that the commercial use of DMH-11 hybrids will be subject to the **Seed Act, 1966**, and related rules and regulations.

According to South Asia Biotechnology Centre (SABC), the GM Mustard is so helpful in honey industry.

In GM mustard, hybrid DMH-11 is fully fertile with pollen viability similar to the parental line Varuna and has fully developed nectaries.

Around **50-60 per cent of the total production of honey in India is mustard honey**, which makes the crop vital for the survival of the honey industry.

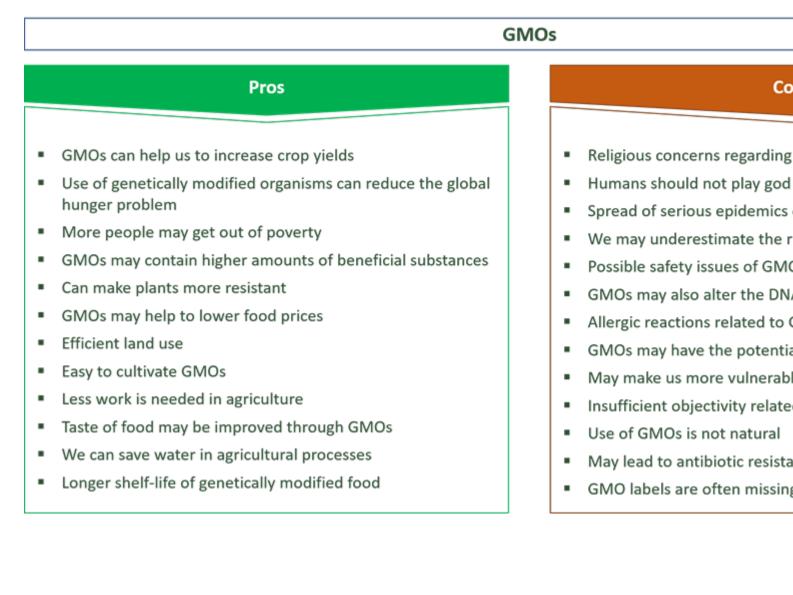
### Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040 Phone: 044 4353 9988 / 98403 94477 / Whatsapp : 09710729833 The DMH-11 mustard variety is **herbicide tolerant**, allowing farmers to spray over the crops with weed killer without harming the crops. This has raised fears that farmers may resort to **excessive use of toxic herbicides** which can **lead to weeds becoming resistant to them and the emergence of so-called superweeds**. Critics are also concerned about herbicide residue on GM crops.

## **Genetic Engineering Appraisal Committee:**

Genetic Engineering Appraisal Committee (GEAC), established under the Ministry of Environment and Forest and Climate Change (MoEF&CC), is the **apex body**, notified under Rules 1989, of the **Environment Protection Act 1986** for approval of activities involving large-scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental safety angle.

The GEAC is also responsible for the **approval of proposals relating to release of genetically engineered organisms and products into the environment** including experimental field trials (Biosafety Research Level trials-I and II also known as BRL I and BRL II).



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