



KAMARAJ IAS ACADEMY
Only IAS Academy by Grandson of "Perunthalsivam Kamarajar"

GM Mustard

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Why is in news? A push for GM mustard disregarding science, the law

GM crops are quite different from conventional varieties and hybrids, such as those developed by farmers, agricultural research institutions and companies.

Biotechnologists insert select genes at a random location in the DNA of a plant to develop a GM crop. The insertion makes a GM crop express traits that it ordinarily would not.

Dhara Mustard Hybrid- 11(DMH- 11), was developed by Deepak Pental of Delhi University, through transgenic technology, in 2002.

DMH – 11 was created through transgenic technology, primarily involving the **Bar, Barnase and Barstar** gene systems.

DMH-11 by crossing a popular Indian mustard variety 'Varuna' (the barnase line) with an East European 'Early Heera-2' mutant (barstar).

DMH-11 is claimed to have shown an **average 28% yield increase over Varuna in contained field trials** carried out by the Indian Council of Agricultural Research (ICAR).

GM Mustard is Necessary – Why?

India's **import of edible oils is on continuous rise** to meet the domestic demand. It ultimately led reduction forex. GM Mustard is essential to reduce the forex drain on Agri-import.

Productivity of oilseed crops viz., soybean, rapeseed mustard, groundnut, sesame, sunflower, safflower and linseed **in India is much lower than the global productivity of these crops.**

Crossing of genetically diverse parents results in hybrids with increased yield and adaptation

Concerns:

Can cause Unpredictable side effects

Impact the health of the people consuming it.

It is environmentally unsustainable and does not suit Indian agricultural conditions.

Lead to over use of herbicides.

Not accessible to every poor farmers.

Problem with Intellectual property rights

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Benefits of GM Mustard:

GEAC has recently given a green signal for taking a decision on commercialization.

Indigenously developed seeds, the patent remains with government unlike with cotton it remains with corporates.

India Plans for food fortification to achieve SDG, this will help to achieving its goal.

Yields are expected to rise by up to 30 per cent.

India imports 15 million tonnes (Mt) of edible oils worth almost \$11 billion annually, Mustard oil production from this variety of crop will save a lot on Foreign exchange exchequer.