



On the GM rice controversy

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(Mains GS 3 : Major crops-cropping patterns in various parts of the country, bio-technology and issues relating to it.)

Context:

- The export of rice from India has triggered an uproar in several European countries on the grounds that it was genetically modified (GM) rice.
- This emerged during a check by the European Commission's Rapid Alert System for Food and Feed that was testing rice flour by the French company Westhove.

About GM technology:

- GM is a technology that involves inserting DNA into the genome of an organism.
- The characteristics of all living organisms are determined by their genetic makeup and its interaction with the environment.
- The genetic makeup of an organism is its genome, which in all plants and animals is made of DNA.
- The genome contains genes, regions of DNA that usually carry the instructions for making proteins. It is these proteins that give the plant its characteristics. For example, the colour of flowers is determined by genes that carry the instructions for making proteins involved in producing the pigments that colour petals.
- Genetic modification of plants involves adding a specific stretch of **DNA** into the plant's genome, giving it new or different characteristics.
- This could include changing the way the plant grows, or making it resistant to a particular disease.
- The new DNA becomes part of the **GM plant's** genome which the seeds produced by these plants will contain.

The controversy:

- In June, France had issued a notification for unauthorised **GM rice flour**, identifying India as the point of origin, and alerting Austria, Belgium, the Czech Republic, Germany, Italy, the Netherlands, Poland, Spain, the U.K. and the U.S. as the possible destination of products made with the flour.
- So in August, the American food products company Mars, fearing GM contamination, announced that it was recalling four of its product lines of 'Crispy M&M'.

Commercial cultivation of rice:

- GM-free rice that is tagged as 'organic rice' is among India's high-value exports worth ₹63,000 crore annually.
- India does not permit the commercial cultivation of GM rice, but research groups are testing varieties of such rice in trial plots.
- So the suspicion is that rice from some of these test-plots may have "leaked" into the exported product.
- The Indian government has denied this possibility with a Commerce Ministry spokesperson alleging that the contamination may have happened in Europe "to cut costs".
- However, India has indicated that it will commission an investigation involving its scientific bodies.

Historical perspective:

- India's history of crop modification using GM is one of test-plants finding their way to commercial cultivars before they were formally cleared.
- Thus, Bt-cotton was widely prevalent in farmer fields before being cleared.
- Though they have not been cleared, Bt-brinjal and herbicide-tolerant cotton varieties too have been detected in farmer fields.

Involvement of states:

- Though the Genetic Engineering Appraisal Committee is the apex regulator of GM crops, it is mandated that trials of GM crops obtain permission from States.
- Because of the close connections between farmers and State agriculture universities, there is a possibility that seeds may transfer within plots.
- State agriculture universities are continuously testing new varieties of crops employing all kinds of scientific experiments ranging from introducing transgenes to other non-transgenic modification methods.

Conclusion:

- India must move to ensure that research into all approaches either GM or non-GM should not become a casualty in matters of export-quality compliance.

- Because many Indian farmers are dependent on European imports, the Centre must rush to assuage importers that India's produce is compliant with trade demands.