EU Ruling on Gene Editing

Why in news?

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The European Court of Justice recently ruled that organisms obtained by mutagenesis are also GMOs within the meaning of the GMO Directive.

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What is the ruling?

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- The guidelines on genetically modified organisms (GMOs) will apply to plants bred using gene editing technology (mutagenesis).
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- The techniques of mutagenesis should alter the genetic material of an organism in a way that does not occur naturally.
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- These organisms will come, in principle, within the scope of the GMO Directive.
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- They are subject to the obligations laid down by that directive.
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- The ruling, however, leaves out other mutagenesis techniques like irradiation.
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- It's because these have a proven track record and need not be considered under the same bracket.
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What is gene editing?

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- Genetic modification involves the introduction of foreign DNA into an organism.
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- On the other hand, gene editing involves editing of the organism’s native genome.
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- CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) is a gene editing technology.
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- CRISPR was talked about recently for its successful use in human embryos.
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- This is done by introducing a protein (Cas9) containing the code of a defective gene.
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- The protein then seeks out parts of the defective DNA that match this code.
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- It then attaches itself to it, cuts it out, and then the DNA is allowed to repair itself by getting rid of the defect.
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What are the benefits?

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- Along with GMOs, gene-edited crops are considered to play an important role in increasing productivity.
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- With gene editing, under appropriate regulations and policy, product development would be faster.
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- It can be used to tackle specific traits by creating mutations.
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- It is hoped that gene editing technologies would find wider acceptance than GM which faced opposition.
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- As, gene editing does not involve introducing a foreign element into the plant’s genetic code.
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- **Concerns** - Questions over the efficiency of gene editing and its potential to disrupt the natural order exist.

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- Also, the new ruling will affect research, with over 14,000 papers on gene editing having been published in 2017 alone.
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What is the case with India?

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- Indian experience with gene editing technology is mainly confined to research and not the field.
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- Today India does not have any regulations on CRISPR as it does on GMO crops.
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- But the Department of Biotechnology and Indian Council of Agricultural Research are in talks in this regard.
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- There are demands from various sides for regulation on gene editing, for bio-safety.
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- There is a need for a regulatory framework that does not take long processes for approval.
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- India, instead of following the EU model of regulation, should take up models followed in the US, Australia and Canada.
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- As, regulation has traditionally been stricter in Europe than in the US and Canada.
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Source: Indian Express

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