

New R&D norms to fast-track research on genome-edited crops

SOPs issued by DBT less stringent than the norms for GM crops.

Sandip Das | October 5, 2022



The environment ministry, in a notification in March 2022, had exempted certain types of genome-edited crops from the stringent biosafety regulations applicable to genetically-modified (GM) crops. (IE)

The department of biotechnology (DBT) on Tuesday issued standard operating procedures (SOPs) for research and development (R&D) on certain types of genome edited plants, which is expected to accelerate crop yields and agricultural productivity.

The environment ministry, in a notification in March 2022, had exempted certain types of genome-edited crops from the stringent biosafety regulations applicable to genetically-modified (GM) crops. The ministry had exempted site directed nuclease (SDN) 1 and 2 genomes from rules 7-11 of the Environment Protection Act, thus avoiding a long process for approval of genetically modified (GM) crops through the Genetic Engineering Appraisal Committee (GEAC). So a large area of research on genome edited crops will now be freed from the stricter regulatory norms meant for GM crops.

The SOPs, issued in line with the notification, provide for a regulatory road map and requirement for R&D to meet the threshold for exemptions of genome edited plants under the SDN1 OR SDN 2 categories.

These SOPs for R&D under contained conditions were prepared by an expert committee set up by the DBT and include protocol to show that the genome edited plants are free from exogenously introduced DNA.

“This technology will fast track the development of genome edited crops which would help save natural resources and improve efficiency in use of agro-chemicals,” K C Bansal, former director, National Bureau of Plant Genetics Resources, told FE.

Bansal who was also part of the expert committee constituted to draft SOPs for genome edited crops said that the conventional breeding technique takes 8–10 years for development of new agricultural crop varieties, while through genome-editing, the new varieties could be developed in two to three years.

Scientists at the Indian Council for Agricultural Research has said the technology has great promise and emphasis is needed on improving oilseed and pulse crop varieties resistant to diseases, insects or pests, and tolerant to drought, salinity and heat stresses.

Scientists say that genome-edited plants are different from genetically-modified organisms (GMO) technology. Genome editing is a group of technologies that gives scientists the ability to change an organism’s DNA.

Recently, on the gene editing technology, Johannes D Rossouw, head, vegetables (research and development), Bayer Crop Science, had told FE, “we can get that to a point where seed companies, including us, have the ability to use that in their breeding programmes, to again accelerate the products we develop to improve the profitability for growers.”

According to Bhagirath Choudhary, founder and director, South Asia Biotechnology Centre, Jodhpur said having a regulatory system in place after a decade of deliberation on genome edited plants would pave a way for advancement such products relevant for India’s need to cope up with climate vagaries, drought and submergence, disease resistance, quality and biofortification.

Choudhary had stated that the SOP aligns and harmonizes India’s regulatory framework on genome editing with other major food producing countries from Latin America, North America, Africa and Asian countries.

Last year, a group of scientists wrote to the PM, for ease of release of the technology.

In the case of GM technology, applicants have to apply to the GEAC, which follows time-consuming testing methods along with states. Till now, cotton is the only GM crop that has been approved for commercial cultivation in the country.

Source: <https://www.financialexpress.com/economy/new-rampd-norms-to-fast-track-research-on-genome-edited-crops/2700607/>