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Experts deliberate on scope of genetically modified crops in aquaculture

Fisheries and biotechnology experts emphasised the need to bust the myths associated with the use of genetically modified (GM) crops as feed ingredients in India's aquaculture sector.They were of the view that GM crop-based products (mainly non-living genetically modified organisms) have huge scope in enhancing the supply of feed ingredients in aquaculture, thereby promoting growth, disease resistance and reduction of input costs in aquaculture production. The experts were speaking at an awareness workshop on the use of GM crops and their derivatives for the aqua-feed sector organised by the Biotech Consortium India Limited (BCIL) in association with ICAR-Central Marine Fisheries Research Institute (CMFRI).The workshop highlighted that the introduction of GM crops in the aqua-feed sector would also help reduce the mounting pressure on fishmeal and fish oil and maintain a sustainable aquaculture industry.

Dr Vibha Ahuja, Chief General Manager of BCIL said that GM crops come with several desirable traits such as insect resistance, disease resistance and herbicide tolerance, and hence using these would be beneficial to boost the yield. "Cost analysis showed that the use of dried distillers grains with soluble (DDGS), a co-product from cereals in the distillery industry, can help reduce shrimp feed prices. Most of the DDGS produced in the world are however of GM-corn origin and Indian feed producers can capitalize on the economic benefits, if they are open to use them as feed ingredients," said Ahuja.

Allaying various concerns over GM crops, Ahuja pointed out that in the last 25 years, no confirmed report of adverse effects was reported from approved GM crops. "Systemic regulations are in place to ensure the safe use of GM crops which are monitored by internationally accepted safety assessment methodologies. Hence, an approved GM crop is as safe as that of its non-GM counterpart", added Ahuja. In India, Bt Cotton, a GM crop, is being cultivated from 2002 onwards with significant increase in production and commensurate economic benefits for the farmers.The Government of India in October 2022 approved the environmental release of GM Mustard for its seed production and testing as per the existing ICAR guidelines.Globally, 71 countries use GM crops and their products for food, feed and processing.

Dr A. Gopalakrishnan, director of CMFRI said one of the primary benefits of GM crops in the aqua sector is their ability to increase the nutritional value of the feed."GM soybeans can be engineered to produce omega-3 fatty acids, which are important for the growth and health of farmed fish. That feed constitutes 50-55 per cent of total input cost in aquaculture. It is essential to develop streamlined regulatory efforts with careful considerations for the ethics and risks associated with using GM plant ingredients in aqua feeds," said Gopalakrishnan.The deliberations of experts decided to have an interface among scientists working on fish nutrition, genetics, microbiology and molecular biology and identified potential multi-disciplinary researchable issues .