

## GM Mustard debate heats up

19 January 2016 | Features | By Rahul Koul Koul

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A fresh controversy on the possible approval of genetically modified mustard has been stoked by the recent turn of events. To begin with, there has been an online petition against its approval by Dr Vandana Shiva, the well-known anti-GM Crops activist. That was followed by protests from groups like Swadeshi Jagran Manch.

Activists claim that the non-transgenic seeds too provide higher productivity, and that the genetically modified seeds will pose severe health hazards like male sterility and other problems to both people and the environment. They call it losing of seed sovereignty and paving the way for backdoor entry of MNCs that are into GM crops.

At the same time, the biotech industry under the banner of Association of Biotech Led Enterprises-Agriculture Group (ABLE-AG) has been vocal on pro-GM Mustard stance. Besides that many farmer groups too have voiced their support. The argument here is that the science can't be stopped and the agriculture has to be empowered through technology to prepare for future.

"The protest by some of these ill-informed groups implies that they do not even want a scientific review of the research. All we are saying is that let GEAC make a decision. Protesting against a technology without letting the regulators review the efficacy and safety is not right. In any case, we would like to highlight that genetically modified food has been consumed for over two decades across the world and not even a single case of adverse effect has been reported," says Dr Shivendra Bajaj, executive director, ABLE-AG.

Meanwhile, the union government clearly appears to be again walking on a tightrope. The agriculture ministry and science and technology ministry have been voicing their open support but the final decision on environmental clearance lies with the concerned ministry.

### Decoding the issue

The researcher who has been spearheading the work on GM mustard indigenously is Dr Deepak Pental, geneticist and former vice chancellor, Delhi University. These GM mustard seeds called the Dhara Mustard Hybrid 11 (DMH-11) have been developed by his team in collaboration with various organizations after 19 years of research. Close to Rs 90 crore has been spent on the project which also includes development of some non-transgenic hybrid mustard crops and setting up of a research facility. Of this, about Rs 50 crore came from National Dairy Development Board (NDDB) while the rest came from the department of biotechnology (DBT) and smaller grants. Earlier Genetic Engineering Appraisal Committee (GEAC) had given go ahead to Centre for Genetic Manipulation of Crop Plants (CGMP) at Delhi University for large-scale BRL (Biosafety Research Level) II trials.

As per the statements of Dr Pental which are on record, the transgenic mustard hybrid variety will provide a 30 per cent higher yield than other varieties and the costs for these seeds will be lower. As per him, the safety of GM Mustard had been proven by the continued cultivation, sale and export of Canola oil in Canada since 1995 and in the US since 2002, which is based on similar transgenic technology.

As per Dr Pental, "India's poor are mostly consuming palm oil and hydrogenated oils - both not very healthy. A GM-based pollination control mechanism for producing hybrids is being confused with ill-conceived "Terminator technology. Use of a common gene does not transform a pollination control technology into a Terminator technology. Yes, GM mustard uses a gene conferring resistance to herbicide Glufosinate. It is also correct that all herbicides kill plants, especially weeds. But the truth ends there, the rest is mischief."

The matter has again got heated due to the allegations that the research team hasn't revealed the data generated from the field trials. The reasons cited to the GEAC by the team are that there are commercial considerations and the same have been accepted by the committee.

Meanwhile, after the research team submitted the data to GEAC in May, 2015 which was followed by a dossier in mid-September, there has been no decision by it yet on allowing the commercial cultivation which of course has to be later ratified by the environment ministry.

#### **Where does govt stand on this?**

The state governments under pressure from local groups have expressed their reservations. While Rajasthan withdrew its permission in 2012, during November, 2015, the Punjab government issued directions to the Punjab Agricultural University (PAU) not to conduct further field trials of GM mustard following the concerns expressed by civil society groups.

At the same time, the union government has not accepted the moratorium recommendations of the technical committee constituted by the Supreme Court on the basis of the facts that current regulations and protocols followed in biosafety assessment are as per international best practises. It has also accepted the argument by researchers that field trials are an integral part of biosafety assessment and trials are necessary to generate biosafety data. Further, the government's official position has made it clear that any ban on GM crop field trials would stop all research activities in the country which may have long term implications on food security issues. However, there have been no clear decisions.

#### **Way forward**

Finally, the question remains that whether the GM mustard too would meet the same fate as Bt Brinjal. However, before putting any ban again, it is important to note that about 60 percent of our edible oil needs are imported each year at an annual cost of up to \$10 billion which is India's third-biggest import item after crude oil and gold. Therefore, the enough clarity on technology through information has to be provided equally to supporters and bashers of the technology for better understanding. Whatever the reasons be, that is not possible when there is no clear date on when the GEAC is meeting and the minutes too are unavailable.

Also, this issue has been mostly debated through the media but now the time has come when there is a need for a proper discussion between two warring sides. However, a middle way that is acceptable to both sides could be carved and for that the policymakers will have to play their part well. . The government too cannot afford to avoid the issue any longer as its various ministers too have in recent past reaffirmed confidence in the technology. Decisiveness is what is required here.