

## 10 REASONS TO SAY NO TO DELHI UNIVERSITY'S GM MUSTARD

Do you remember how citizens collectively ensured that GMOs (Genetically Modified Organisms) like Bt brinjal, which are unneeded, unwanted and unsafe, do not enter our food plates or our farms back in 2010? That was when the Government of India placed an indefinite moratorium on the release of this Bt brinjal, a GM food crop, taking cognizance of the many reasons why it should not be allowed to be sold for commercial cultivation. Now, five years later, there is another GM food crop which is being pushed for commercial cultivation approval. This is Delhi University's GM mustard (GM mustard hybrid DMH 11/Dhara Mustard Hybrid11). Here, we give you ten important reasons why you should say NO to this GM mustard.

- 1. Transgenic technology is unsafe:** Genetic Engineering is an unnatural and imprecise breeding technology with living organisms, and results in unstable, unpredictable, irreversible and uncontrollable technologies being deployed in our food and farming systems. This then has implications for our health and environment. Riskiness in agriculture, lack of choices for farmers and consumers, market rejection are all consequences of the environmental release of GMOs. More on the adverse impacts of GM crops/foods available as a compilation of scientific papers at: <http://indiagminfo.org/?p=657>
- 2. This GM Mustard is a Trojan horse:** This GM mustard is being pushed as a public sector GMO, as though when it comes to biosafety, public sector GMOs will automatically become safer than private sector GMOs! Public sector GMOs are as unsafe as private sector GMOs. Given huge public opposition to GMOs in our food and farming, it is apparent that corporations like Monsanto which were far ahead in the regulatory pipeline with their products like GM maize have withheld their applications to allow this GM mustard to be approved first on this "public sector" sentiment, so that there is easier entry for all other GMOs in the pipeline. We recognize DU's GM mustard for what it is: a Trojan horse! The so-called regulation of this transgenic mustard so far has been highly secretive and opaque. It is unclear what the regulators are trying to hide, and to protect whom.
- 3. DU's GM Mustard is similar to Bayer's GM Mustard that was rejected by Indian regulators in 2002:** In 2002, a similar GM Mustard, with bar, barnase and barstar genes, in a hybrid line, was rejected by Indian regulators when Bayer's subsidiary Pro Agro sought a commercial cultivation approval for the same on several grounds: the ICAR (Indian Council of Agricultural Research) declared that it was not satisfied with the testing that the GMO underwent and the results; it was also noted there was no safety testing on mustard as a vegetable (it is not just an oilseed – seeds and leaves are directly consumed in our food). Regulators also could not answer questions around how to regulate the spread of GM mustard to regions where it is not needed. Most importantly, it was acknowledged that ProAgro's mustard was a herbicide tolerant mustard, though the crop developer kept saying that herbicide tolerance was only used as a marker technology and that was not the primary reason for commercialization of the GM mustard – the regulators rightly recognized that it would still be a problem since end-use regulation of illegal herbicide use on this GMO would be impossible. All these reasons apply equally with DU's GM mustard!
- 4. State Governments, including leading mustard-growing states, do not want even field trials:** Major mustard growing states in India like Rajasthan, Madhya Pradesh and Haryana did not want even field trials of this GM mustard to take place in their states. In India, agriculture being a State Government subject as per the Constitution, this is an important factor to consider when discussing approvals related to GMOs. It was one of the main factors behind the Bt brinjal moratorium too.
- 5. India is a Centre of Diversity for Mustard:** As was seen in the case of Brinjal, India happens to be a Centre of Diversity for Mustard. There are scientists who argue that India is the Centre of Origin too. Starting from the 2004 report of an Agriculture Ministry's Task Force led by Dr Swaminathan, to the 2013 report of a Supreme Court Technical Expert Committee, there are express recommendations against dabbling with those

crops for which we are the Centre of Origin/Diversity. This was one of the main reasons for the government's moratorium on Bt brinjal.

6. **Containment of GM mustard impossible – Contamination inevitable:** Numerous instances from all over the world, as well as the statements of the GM mustard crop developer himself, are evidence that containment of this GM mustard will be impossible, and contamination inevitable. Biological as well as physical contamination will be the consequence from allowing this GM mustard into our farms. This also has serious implications for organic farmers and their organic status, amongst other issues like persistence, weediness, superweeds emerging etc.. It is worth noting that the Supreme Court of India, in one of its Orders in 2007 in a Public Interest Litigation (WP 260/2005) related to GMOs has instructed the government to prevent contamination.
7. **DU's GM Mustard is herbicide tolerant, though being promoted only as a yield-enhancing GM hybrid:** The promoters are choosing to discount the fact that DU's GM mustard also has herbicide tolerant genes – the regulators however cannot ignore this. In India, many credible agencies have recommended against the entry of herbicide tolerant GM crops, since this not only has health and environmental implications, but socio-economic implications for agricultural labourers, mainly women, who are engaged in manual de-weeding of crops for the meagre employment opportunities provided therein. Given the many valid reasons, HT GM crops should have no place in Indian agriculture. This GM mustard will open doors for other HT crops in India.
8. **Genes used in GM Mustard make it a GURT (Genetic Use Restriction Technology):** Through the use of GE, a barnase gene to confer male sterility has been inserted in one of the parental lines of the GM mustard hybrid that is sought to be commercialized now. India's Protection of Plant Varieties & Farmers' Rights Act describes GURT as a technology that is injurious to the life or health of human beings, animals or plants.
9. **Mustard is used in Ayurveda:** Mustard is used both as food and medicine in Ayurveda. Mustard seeds and oil are used singly as well as in various formulations for a variety of treatments. The impact of GM mustard on such uses is unstudied and unclear.
10. **GM mustard will impact honey bees and industry adversely:** This GM mustard has potential adverse impacts on honey bees. Studies (sponsored by GM seed industry at that!) from elsewhere indicate this. This will impact crop production in general and also honey production. It is seen that honey industry is a sunrise industry in India, and mustard is one of the major sources for Indian bee keepers. Bee keeping with mustard creates a win-win situation by increasing yields of mustard by about 20-25%, even as it supports honey production and additional income for the beekeeper.

While GM canola area is declining globally in the recent past, India is contemplating this GMO's commercialization! There is now conclusive evidence on the impact of herbicides on our health and environment. Much more evidence has emerged in the recent past, after the Bt brinjal moratorium in India, on the various adverse impacts of GMOs in our food and environment. Meanwhile, no biosafety information on this particular GM mustard has been put out in the public domain, despite express Supreme Court orders to the regulators. In the past, our regulators have compromised on testing related to public sector GMOs, and there is nothing since then to instill greater confidence about the regulatory regime and the regulators. There is no additional reason for us to trust them to keep our health and environment protected from unsafe and risky technologies.

**Say NO to this GM Mustard. Let us keep our food and environment safe from GMOs!**

Issued in Public Interest by the Coalition for a GM-Free India.  
Visit [www.indiaqminfo.org](http://www.indiaqminfo.org) for more information and a more detailed Briefing Paper on DU's GM Mustard.