

In India, Ditching Science for Corporate Inspired Spin in Push for Genetically Modified Mustard

Scientific Fraud and Regulatory Delinquency. The Role of India's National Academy of Agricultural Sciences

By [Colin Todhunter](#)

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Theme: [Biotechnology and GMO](#), [Poverty & Social Inequality](#), [Science and Medicine](#)

*The case surrounding the approval of genetically modified (GM) mustard in India is coming to a head on the back of the Genetic Engineering Appraisal Committee (GEAC) recommending approval. The final decision now rests with **Harsh Vardhan**, minister of the environment. As India's first commercial GM food crop, the concern is that it is in effect a [Trojan horse crop](#) and an unlawful attempt to impose GM food crops on the country. At present, the only GM crop planted in India is cotton.*

The government has stated that it would await the verdict of a case currently before the Supreme Court (SC), although given how things are moving, this seems doubtful. As the lead petitioner **Aruna Rodrigues** has petitioned the SC to acquire "a moratorium on the release of any genetically modified organisms (GMOs) into the environment pending a comprehensive, transparent and rigorous biosafety protocol in the public domain conducted by agencies of independent expert bodies, the results of which are made public." No such protocols are currently in place.



Dr. Harsh Vardhan (Source: [Dr. Harsh Vardhan](#))

If GM mustard is approved, it would involve the side-lining of four high-level reports advising against the adoption of these crops in India:

- the 'Jairam Ramesh Report' of February 2010, imposing an indefinite moratorium on Bt Brinjal;
- the 'Sopory Committee Report' [August 2012];
- the 'Parliamentary Standing Committee' [PSC] Report on GM crops [August

2012];

- and the 'Technical Expert Committee [TEC] Final Report' [June-July 2013]).

Rodrigues contends that the processes surrounding the testing, assessment and now approval of GM mustard have been based on outright [scientific fraud and regulatory delinquency](#) and have been subverted as a result of serious conflicts of interest. There is much concern about why GM mustard is being pushed through in such a manner, especially as it is [not wanted or needed](#) in the first place.

On 27 May, some public sector scientists, fellows of the National Academy of Agricultural Sciences (NAAS) in India, [sent a letter](#) to **Prime Minister Modi** “complimenting” the GEAC for approving mustard based on “comprehensive deliberations and stringent appraisal of scientific data”, urging him to lend his weight to the required approval by the central government of herbicide tolerant (HT) mustard (hybrid) DMH 11.

Their letter is little more than pro-industry corporate-inspired spin. There have been no stringent appraisal or comprehensive deliberations. Data has been hidden, deliberations have been kept from the public and the science has been manipulated. Aruna Rodrigues has submitted an [additional affidavit](#) to the SC contending that the letter is most unfortunate and disquieting, given that the facts based on hard data and science have not just been ignored but twisted round to present the opposite case.

In their letter, the scientists argue that genetic engineering is essential to high output agriculture. They assert that this technology will be vital for ensuring sustainable higher yields, improved nutritional quality and resilience in the face of climate change.

It is alleged that GM crops have helped to alleviate poverty and conserve biodiversity. In India, they argue that Bt cotton has been a resounding success, with pesticide use having decreased and cotton production having doubled. They advocate this ‘success story’ must be repeated with other crops, not least mustard.

They also argue about the need to increase oil seed production to decrease the import bill in the face of what they argue is the slow and sluggish yields of oil seed crops in India.

The letter is a blend of wishful thinking, misrepresentations and spin. Each one of the assertions made has already been challenged and shown to be bogus (see [this](#), [this](#) and [this](#)). The lawyer **Prashant Bhushan** has [expressed deep anxiety](#) about the opaque and unscientific regulatory oversight of GM mustard. He has outlined the flawed approval for commercialisation by the GEAC.

The need for this mustard has not been proven, and, both as a GMO and a herbicide tolerant crop, it will pose serious dangers to people, soil and biodiversity. Bhushan argues that the type of regulatory delinquency (mirroring what happened in the previous case of GM brinjal) we have witnessed is not merely due to slippages, oversight or human error but is indicative of collusion of the worst kind: gross cover-up and misconduct.



GM mustard clears hurdle in India but more remain (Source: Investing.com)

Bhushan also dismisses the assertion that this GM mustard will displace imported edible oil seeds in a significant way (and reduce the oil seeds bill). Such an assertion is ludicrous, [entirely lacking any semblance of logic](#). Moreover, the nearest equivalent to Indian mustard (brassica juncea) is rape-seed oil (canola), imported from Canada (which is essentially GMO) and represents just 2% of India's edible oil imports.

He concludes that the stated regulatory intent is to deregulate HT DMH 11 as a policy agenda, based on no science, and to convert India's mustard agriculture in a massive and dangerous experiment to (GM) HT hybrid mustard, (variants of DMH 11).

Professor P C Kesavan [has written](#) to the president of the NAAS outlining his concerns about its resolution to approve the commercialisation of this mustard, which underpinned its letter to the PM.

The NAAS presently comprises 625 fellows. It is noted that the resolution was adopted at the Annual General Body Meeting of the Academy on 5 June 2017.

Kesavan writes:

"There are two pertinent points: the first is that I was not informed of this important resolution that was planned by NAAS and presumably the other members were not informed either and second, how many fellows happened to attend this meeting and were a party to the resolution? I would appreciate your reply to these two points."

In his letter to NAAS, Kesavan then proceeds to address the points raised. As far as the much-touted 'success' of Bt cotton is concerned, he provides a great deal of data to debunk the claim that it has been a success in India ([see this](#) as well). He states:

"I am therefore somewhat surprised that the failure of Bt cotton to perform in yield and sustainability is being converted, somehow, into a myth of its great success."

Is the NAAS deliberately attempting to mislead the PM and political leaders? As Kesavan points out, political leaders understandably accept the authority of scientific institutions like NAAS. In other words, they would hope to receive valid information and not be misled.

Kesavan then debunks the claim that GM crops are a sustainable technology by drawing on

various sources. He notes the emergence of weed resistance (superweeds), the increasing use of herbicides and a treadmill of even more toxic herbicides. He adds that glufosinate (DMH11 is designed to be resistant to this chemical) is a neurotoxin that is banned in the EU. Moreover, he states that HT crops are unsuitable in a country like India with its smallholder farming.

Apparently, such concerns are to be brushed aside. According to food and trade policy analyst and agricultural scientist [Devinder Sharma](#):

“The GEAC has also denied that the GM Mustard is actually a herbicide-tolerant crop in disguise. It was shocking to know that some GEAC members had even told a group of civil society representatives that they know DMH-11 will push in herbicides but since the chemicals are expensive they expect farmers will refrain from purchasing the herbicides. If this is a scientific explanation, please tell me what is unscientific?”

To anyone who has been following this case, they will be aware that Kesavan is not the first to have raised these concerns. Previous submissions to the SC by Aruna Rodrigues have presented a good deal of evidence to support these assertions. Numerous other points are raised which again have been addressed by others, not least the fact that contamination of India’s mustard germ plasm is a real concern: India is a centre of genetic diversity for mustard.

Kesavan refers to the experience with the Bt brinjal biosafety dossier (Bt brinjal – what would have been India’s first GM food crop – eventually failed to make it to market). He says international experts critiqued different aspects of the raw data. Their critiques exposed deep incompetence, including regulatory incompetence and a lack of basic understanding of genetically engineered crops.

So, what should we expect from a still secret biosafety dossier on GM mustard, asks Kesavan? It’s a dossier kept out of the public domain and the critical gaze of independent scientists. The promoters of this crop have not even established the first step of need.

The NAAS’s impassioned plea to Modi to approve GM mustard gives “a wink and a nod to the regulatory delinquency that denies transparency is in contempt of the constitution, democratic polity and SC court orders,” says Keshavan, who concludes

“It is quite simply a false notion bereft of agri sense and science that we should even consider that India’s mustard agriculture be converted to hybrid DMH II and its variants.”

It might seem perplexing that the current Modi-led administration seems to be accelerating the drive for GM given that the BJP manifesto [stated](#):

“GM foods will not be allowed without full scientific evaluation on the long-term effects on soil, production and biological impact on consumers.”

Yet none of this has occurred.

See [this](#) to access the author's numerous articles on the issue of GM mustard in India.

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About the author:

Colin Todhunter is an extensively published independent writer and former social policy researcher. Originally from the UK, he has spent many years in India. His website is www.colintodhunter.com
https://twitter.com/colin_todhunter

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