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Genetically Modified (GM) Mustard in India: "Fudged Data," "Unremitting Fraud" and "Monumentally Bogus"

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The case of genetically modified (GM) mustard in India has reached the Supreme Court. The government has said it will bow to the court's eventual ruling. That ruling could green-light GM mustard as first commercial GM food crop. If this goes ahead, there will be wide-ranging implications for Indian food and agriculture.

Environmentalist Aruna Rodrigues has petitioned India's Supreme Court, seeking 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.

As the lead petitioner, Rodrigues' case is that, to date, serious conflicts of interest, sleight of hand, regulatory delinquency, cover-ups, lies and scientific fraud has tainted the entire appraisal process concerning GM mustard. Moreover, the case is made that there is a general lack of rigour and expertise and overall incompetency where India's assessment and regulation of GMOs is concerned.

In a response to the petition, the government (Ministry of Environment, Forests and Climate Change) has issued a Reply Affidavit, which Rodrigues now says (in a rejoinder affidavit) is an astonishing filibustering, copious response that clearly reflects a high degree of scientific and technical incompetence in the regulatory oversight of HT Mustard DMH 11 (GM mustard). She says that the 'Reply' is brazen, misleading and weak in its interpretation of available data and facts.

In a 7,000-plus word response (read the Rejoinder Affidavit here: rejoinder-affidavit--mustard-final-dmh-8th-nov-2016ia) response to the government's Reply Affidavit, Rodrigues goes into a fair amount of technical detail. She argues that that HT Mustard DMH 11 and its two HT parental lines that are before the Genetic Engineering Appraisal Committee (GEAC) for commercial approval are funded by the regulators, promoted by them and regulated by them. This is, she argues, simply unacceptable: the evidence shows the outcome of such hand-in-glove, subterranean regulation that seeks to hide the data from scientific and public scrutiny and release HT mustard to the detriment of India.

She states that the regulators acquiescent role in the fudging of field trail data invites "a charge of criminal conduct and intent to deceive, with inestimable ramifications of harm to our nation. A criminal investigation is required into these processes."

The Rejoinder Affidavit argues that, counter to the arguments set out in the 72-page Reply Affidavit by the government, the following is the actual reality underpinning GM mustard in India.

1) Field trial data was fudged.

2) HT DMH 11 and its two parental line GMOs are scientifically and unambiguously herbicide tolerant (HT) crops.

3) India is indeed a centre of diversity/domestication of mustard with a rich germplasm. Contamination from commercialised HT DHM11 of India's mustard germplasm is a certainty.

4) Field trails of the GM mustard discarded scientific norms wholesale and are invalid.

5) HT Mustard DMH 11 remains unproven on scientific grounds as a superior hybrid-making technology.

6) The cumulative evidence is that HT DMH11 (and its GMO parental lines) are a monumental and dangerous bluff and the nation has been fooled into believing that it will reduce imports of oilseeds because it will provide high-yielding hybrids.

Fudged data and invalid field tests

Rodrigues presents various field trial data and goes into much technical detail to make the case for how data was fudged to present GM mustard in a favourable light. Readers are urged to consult the Rejoinder Affidavit for the details.

Made for Bayer?

While there appears to be an attempt to confuse the issue in the government's Reply Affidavit, Rodrigues argues that the gene for glufosinate herbicide resistance will be present in GM mustard hybrids, making the crop resistant to (Bayer's) herbicide. And while the government argues "there is no proposal to use this herbicide in the farmers' field," such arguments, according to Rodrigues "smack of ignorance and carelessness of how a HT GM crop can be possibly used and more dangerously, approved for commercialisation by the GEAC."

In other words, the government's argument in the matter of DMH 11 is "a blatant misrepresentation of facts, expedient policy and scientifically untenable."

Contamination and the crucial importance of centres of genetic/biological diversity

Rodrigues cites examples to highlight that a 20-year history of GMOs in various countries shows that GMO Contamination of non-GMO crops is a biological certainty and is irreversible. Such contamination leads to a loss of native varieties that contain important genetic diversity needed for future traits. These traits are bred into crop varieties through traditional breeding techniques that genetic engineering has failed to match.

GM crops themselves must rely on nature's genetic diversity to supply what is required in traits of parental lines to meet new problems and diseases. India holds a rich store house of

genetically diverse germ plasm and plant traits that is vital for future food security and well-being.

The case of Bt brinjal is referred to. India has the world's greatest brinjal diversity of 2,500 varieties and this is in large part why the indefinite moratorium was imposed in 2010. An assessment by several leading international scientists revealed the great malaise of Indian GMO regulation at the time and exposed the rot. Rodrigues argues that the regulatory oversight of HT mustard DMH 11 overtakes the regulatory shambles connected with Bt brinjal.

Bogus claims and a "monumental bluff"

Various arguments are then put forward to discount many of the other claims made by the government, and Rodrigues takes issue with the fact that HT Mustard DMH 11 remains unproven on scientific grounds as a superior hybrid-making technology. She makes the case that GM mustard is a monumental and dangerous bluff and the nation has been fooled into believing that HT DMH 11 will reduce imports of oilseeds because it will provide high-yielding hybrids.

However, as described here, the government's own admission s that GM traits in mustard would not be responsible for increased yields. Moreover, the issue of oilseeds imports has nothing to do with the supposed low productivity of Indian oilseed agriculture and everything to do with trade policies which has seen India become a dumping ground for subsidised imports.

Supporters of GM have cynically twisted this situation to call for the introduction of GM mustard to increase productivity. But if HT Mustard DMH 11 will not enhance yields and if the real cause of rising edible oils imports is not the result of poor productivity within India, what is the point of this GM mustard? We need look no further than the geopolitics of food and energy that derive from certain corporate-written trade deals.

Rodrigues also questions the efficacy (and, by implication, the politics) of hybrid seeds, especially as farmers must purchase them every year to obtain the properties of the hybrid. Becoming dependent on the seed industry (which is becoming increasingly consolidated in the hands of a few major transnational corporations) can again lead to loss of native varieties that contain important genetic diversity needed for future yield gains, pest resistance and responses to climate change and could increase farmer costs (Bt cotton is a case in point).

The evidence is far from conclusive with regard to the superiority of hybrids, and Rodrigues cite examples of non-GM mustard hybrids currently on the Indian market. When there are also so many conventional mustard hybrids available, the case for GM mustard looks even more shaky to say the least.

What Rodrigues has set out to show is a lack of logic and hard science in the Reply Affidavit by the government. In fact, she calls out the government for relying on statements based on "pure spin" and concludes that the case in favour of GM mustard in India relies on "unremitting regulatory fraud," is "ethically deviant" and defies "democratic processes."

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