



Salim Ali Foundation
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www.salimalifoundation.org

Dr. V. S. Vijayan
Honorary Chairman
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31 December 2022

Dr. Himanshu Pathak,
Secretary (DARE) & Director General (ICAR)
Krishi Bhavan,
New Delhi 110 001.

Dear Dr. Pathak

I have just seen your press release of 23 December 2022 on GM mustard DMH 11 and its parental lines.

I must say that the tone of your letter, especially of the third para ending with **“subjectable to any administrative procedures required in public interest”** has a threatening connotation which is quite unbecoming of a person of your stature. I believe you would not have noted that. I quote below the entire para for more clarity.

“This Statement is therefore being issued in public interest to clarify that any opinion or article published on the subject by anyone not authorized or former employees of the Indian Council of Agricultural Research (ICAR) different from the stated documentations and decisions made by the regulatory authorities functioning under the EPA (1986) are not endorsed by the Council and are subjectable to any administrative procedures required in public interest.”

It certainly hurts me and I understand many more of our colleagues. I note this is applicable to the retired scientists of ICAR which makes the issue more complicated.

Salim Ali Foundation working with a mission: **“biodiversity conservation, food security and sustainable development”** views GM in a totally different way which is succinctly expressed in a letter sent to the Late Mr. Anil Dave when he was the minister of MOEF &CC. I am attaching below the same.

Hope you would reconsider your views

Wishing a very happy and creative NEW YEAR 2023

V. S. Vijayan

(Dr. V. S. Vijayan is an Indian environmentalist, wildlife biologist, ornithologist and the **Founder Director** of the Salim Ali Centre for Ornithology and Natural History (SACON), a Centre of Excellence of the Government of India. He was a member of Western Ghats Ecology Expert Panel (WGEEP) known as Gadgil Committee and former **Chairman of Kerala State Biodiversity Board**. He was also closely associated with Bombay Natural History Society. He is currently the **Chairman** of the Salim Ali Foundation and **Secretary** and **Member Secretary** to Salim Ali Centre for Sustainable Development)

A plea to Shri Anil Madhav Dave,

Honourable Minister for Environment, Forests & Climate Change

Sálim Ali Foundation

Thrissur, Kerala

www.sálimalifoundation.org

We are shocked to learn from the media that the GEAC (Genetic Engineering Appraisal Committee) of the Ministry of Environment, Forests & Climate Change, has recommended the commercial release of the genetically modified (GM) mustard, named Dhara Mustard Hybrid 11 (DMH11), developed by the Centre for Genetic Manipulation of Crop Plants (CGMCP), University of Delhi South Campus (UDSC), New Delhi.

People of this country have already rejected GM technology in food crops and it was made amply clear during the nationwide public consultations held by the MoEF in 2010 to seek opinion on the introduction of genetically modified brinjal (Bt brinjal).

1. The Sálim Ali Foundation strongly objects introduction of the GM mustard and for that matter any GM crop in the country on the following grounds:
 - i. GM crops have not resulted in substantial increase in yields. Ten years of Bt cotton farming in India has shown this unmistakably.
 - ii. The GM crops have attracted new pests requiring more pesticides and fertilizers, although the claim was otherwise. The herbicide tolerant GM crops (introduced in many countries) have resulted in the emergence of unmanageable super weeds and also pose threats to insects and other biodiversity of the area.
 - iii. It is more expensive than either organic or chemical farming, the former with desi seeds was cheaper.
 - iv. GM crops have adverse health impacts and in India it created numerous health problems for the people working in the cotton fields and also for cattle that fed on it.
 - v. Feeding trials with GM food have shown adverse impacts on trial animals in most cases; positive results are rare.
 - vi. GMOs cause genetic contamination of local varieties by cross pollination and cause irrevocable damage to biodiversity.
 - vii. GMOs cause genetic contamination of local varieties by cross pollination and cause irrevocable damage to biodiversity.
 - viii. Huge amounts have to be paid to the patent holder of the GM seed.
 - ix. GM crops threaten the food security and sovereignty of the country.
 - x. There is absolutely no need for GM crops, as it does not increase the productivity substantially and there are better, cheaper, healthier methods to increase productivity.
 - x. Export potential is bright for organic products, whereas genetically modified products are unacceptable in many markets.

2. All these issues stand true for the proposed GM mustard also, except for the food sovereignty issue, provided it is proved beyond doubt that the gene claimed to have been developed by the Delhi University is completely their own. However, it is now reported by the media that the gene responsible for herbicide tolerance (HT) has been developed by the MNC Bayer CropScience. In 2002 these HT crops were rejected by Indian regulators. The onus of rejecting or accepting Bayer's involvement in the issue is left with the Delhi University.

The yield argument

3. The productivity of GM mustard is claimed to be 25 – 30 percent more than that of the non-GM mustard.
4. Latest reports show that the Sardar Krushi Nagar Agriculture University in North Gujarat, one of the major mustard research centres in India, has developed a hybrid mustard which has outdone the yield claimed by the promoters of the GM mustard produced by the Delhi University South Campus.
5. For that matter, there are also other better yielding varieties, the yields of which surpass those of the GM mustard. Therefore, there was no case for the GEAC to even entertain their application.
6. The very question of the necessity of GM mustard in the guise of improved yield should be seen with the welcome reality that mustard production in the country is increasing at a fast pace. From around 0.76 million tonnes in 1950-51, over the past decades it has touched 7.96 million tonnes in 2013-14.
7. Moreover, according to one analysis, if we consider the norms of ICMR for the intake of edible oil of a family per month, we are already producing 35% excess of what is required for the Universal PDS. Therefore, the need for additional edible oil for internal consumption does not arise. If it is aimed at export, there is not much demand for genetically modified products.
8. However, it is important to have a fresh needs assessment, whether the GM mustard is unavoidable to meet the current and future requirements, if any. This should also be combined with a socio-economic impact assessment along with a study on the possible impacts on the health of humans and animals.

Introduction of an herbicide tolerant crop

9. The proposed GM Mustard engineered with three genes is an herbicide tolerant (HT) crop and has not been evaluated for its impact. Herbicide tolerance trait has been problematic world over due to its negative impact on ecology, creation of unmanageable super weeds and deleterious impact on rural health. In the Indian context this will also impact rural livelihoods. So, to introduce an HT crop would be very dangerous and risky.

Impact on honey bees and honey trade

10. Mustard is a major forage crop for honey bees. Honey from GM crop fields will be rejected by consumers, both within and outside the country, thereby devastating the honey trade. In addition, honey bees are adversely impacted by GM crops, which will not only decrease the honey production but also crop yields in mustard and other crops.

Genetic Use Restriction Technology (GURT)

11. This GM mustard contains three genes of which two are for creating male sterility and restoring male sterility. This is GURT technology. 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 and the Act does not register any such varieties.

Safety trials and transparency of regulators

12. It is reported that the multi-location trials were conducted under the aegis of Indian Council of Agricultural Research. While the BRL I trials (Biosafety Research Level I) took place since 2010 in Rajasthan, the second year trials of BRL I were stopped by the Rajasthan state government. It had asked for the destruction of trials fields in one of the trials.
13. Quite contrary to recommendations from various high level committees, field trials of GM mustard were conducted without making the regulatory system fool-proof. Additionally, when the same inadequacy prevails in the regulatory system as at the time of declaring moratorium on GM crops in 2010, permission is being sought for commercial release of GM mustard!
14. It is quite perturbing that the proponents of the GM mustard (Delhi University) have refused to put out the biosafety reports on the trials made so far.
15. It is a matter of serious concern that even after completing two trials (BRL II), no biosafety data has been put on the websites maintained by the regulators. It casts suspicion over the regulators and generates fear, rightfully so, that the results obtained could certainly be negative. This is despite the orders of the Supreme Court made while hearing a Public Interest Litigation on GM crops.
16. It is particularly inevitable to have data on the impact of Genetically Modified mustard on experimental animals which are fed with mustard vegetable and oil in appropriate form. It is not sure whether such a study was done and if so, why is that the report is not made available to the public?
17. The impact of GM crops on the therapeutic values of the particular vegetable or seed must be assessed before taking any decision on GM mustard, as mustard is one of the important items in the Ayurveda treatment.

18. Since experimental studies conducted elsewhere on animals fed with GM food have shown negative impacts on liver, pancreas, kidney, reproductive system and alter the hematological, biochemical, and immunologic parameters, there is a genuine concern that the GM mustard and for that matter all other GM plants will have deleterious effect on human and animal health.
19. Since plants form the base for Ayurveda medicine, if they are genetically modified, it would certainly have adverse impact on the Ayurveda treatment systems and medicine, especially in Kerala where Ayurveda is a major industry attracting significant amount of foreign exchange.
20. We must recall that it is not too long back that the prestigious medical journal "Lancet" issued a warning that GM foods should never have been allowed into the food chain. It should also be recalled that Britain's Medical Association with 100,000 physicians and Germany's Medical Association with 325,000 physicians issued similar statements.

High level reports and recommendations against GM crops

21. *It must be recalled that the Parliamentary Standing Committee on Agriculture in its report submitted to the Parliament on 9 August 2012, on examination of the pros and cons of the GM thoroughly and on wide consultations, unequivocally recommended banning of even field trials of GM crops for various reasons.*
22. In addition, and more importantly, the Supreme Court's Technical Expert Committee, in its majority report (of five independent scientists out of six members), asked for GM research to be stopped for all those crops for which India is the Centre of Origin and/or Diversity. Further, it recommended banning of herbicide tolerant GM crops and, suggested that unless gaps in the regulatory system are addressed in totality, ***it would not be advisable to conduct more field trials.***
23. The strong stand of the Sálím Ali Foundation in this context is that even if the regulatory system is however tightened to make it fool-proof, one cannot assess the full impact of GM crops in the open environment in a short period. It would take decades to assess the impacts of a particular GM crop on agro biodiversity by cross pollination and its deleterious effects on human and animal health.
24. It may be recalled that even as far back as in 2004, M.S. Swaminathan Task Force Report on Application of Agricultural Biotechnology which was accepted by the Government of India, cautioned against transgenic in crops for which India is the Centre of Origin and/or Diversity. It further stated that the transgenic approach should be *"resorted to when other options to achieve the desired objectives are either not available or not feasible"*.

25. In the case of Bt brinjal, Dr. Swaminathan, India's tallest agriculture scientist, recorded his apprehensions quite clearly against it.
26. More than everything else, the International Assessment of Agricultural Science, Technology and Development (IAASTD), a study sponsored by the World Bank in partnership with the UN Food and Agriculture Organisation, the UN Environment Programme, the UN Development Programme, the World Health Organisation, has come out with the inevitable finding that ***"such techniques as genetic engineering is no solution for soaring food prices, hunger and poverty."*** And, recommends organic/ecological farming. It is to be noted that it is the learned opinion of 400 agriculture scientists from 150 countries including India.
27. In addition, a progressive country like India which believes in advancement of science for development and social uplift cannot be blind on the 500 and odd scientific papers published in peer reviewed journals on the various adverse impacts of GM crops.

Second major intervention in agriculture

28. We must not in any case forget the continuing deleterious effects on biodiversity, environment and health of human beings from the Green Revolution in the 1960s. Remember, this was the first major intervention in the field of agriculture which has indisputably killed our soil, biodiversity, contaminated the water, air and food. Of course the number of hospitals increased many times with ultramodern facilities along with the progress of the Green Revolution!
29. Therefore, one must be doubly sure of the safety of the second major intervention in agriculture field in the country, GM crops.
30. We must also realise that we have committed the greatest blunder of not consulting farmers, who toil in the field and gained vast experience through decades, before introducing the green revolution. Such a blunder should not be repeated in the case of GM crops where the damage is proved to be irrevocable and irreversible.

Denying Farmers' Rights

31. We must also realise that we have committed the greatest blunder of not consulting farmers, who toil in the field and gained vast experience through decades, before introducing the green revolution. Such a blunder should not be repeated in the case of GM crops where the damage is proved to be irrevocable and irreversible.
32. Farmers' worry about the fate of various mustard varieties developed by them over decades in the context of commercialisation of the GM mustard is quite genuine. It has to be recalled that Protection of Plant Varieties and Farmers' Right Act, 2001, ensuring Farmers' right to save, use, exchange and sell farm saved seeds still prevails. Introduction of GM mustard, for that matter any GM crop, will jeopardise them all, beyond the shadow of any doubt.

The country is against GM crops

33. There is already a moratorium on GM crops (Bt brinjal), declared by the MoEF in February 2010, a moratorium “until such time independent scientific studies establish, to the satisfaction of both the public and professionals, the safety of the product from the point of view of its long-term impact on human health and environment”. The situation has hardly changed since then, and there is no rationale to reconsider another GM crop.
34. Most States in India have already taken a decision against introduction of GM crops in their respective States. Kerala has already declared it as a GM free State.

Irrational haste in introducing GM crops

35. What is beyond comprehension is that when the world itself is debating over the GM issues, and many countries who introduced them are banning it progressively (in Europe itself, 17 countries have banned it till recently), why is this tearing hurry to introduce the same technology in India, that too without making a proper impact study?

The Sálím Ali Foundation, whose mission is ***biodiversity conservation, food security and sustainable development***, considering the unpredictability and irreversibility of GM as a technology, deleterious effects of the GM crop on biodiversity (especially uncontrollability in cross pollination from GM crops to native varieties, once released), incontrovertible evidence of potential risks to human and animal health and to environment, indisputable data on economic loss to the farmers, and its societal impacts, plead the Government of India to reject out-rightly the recommendations of the GEAC.
