

Response to EC –II

Response to the Honorable Minister's call seeking public response to EC II of the GEAC with regard to the decision on Bt brinjal, from Sreedevi Lakshmikutty, 2103 Phoenix Towers, Lower Parel , Mumbai .

I have lived and studied in the United States and had the privilege of working with small farmers and local food issues in the US state of Kentucky, one of the farming states, and experienced the sorrow of watching the demise of small farming due to noxious and strangulating corporate control. My experiences in the US with regard to GM food, the corporate control over agriculture, and corporate hegemony in food retailing was a scary experience. The absolute helplessness that we felt as consumers and the fear among small farmers and the inability and fear to speak up against food issues due to their food libel laws¹ was truly something I do not want to see in our country. That is one of the primary reasons that I am following the Bt brinjal issue seriously since I returned two years back

The Bt cotton decision in India and the imminent Bt brinjal decision will only succeed in taking us closer to that devastating reality of US small farmers and their population, who are facing increasing hunger on one hand and an unprecedented obesity epidemic on the other! A good beginning to address the issue would be to do an **independent** review about the Bt cotton situation, now, six years after its approval and analyze that before taking any decision on Bt brinjal.

My response is categorized into three sections

1. General objections to the reductionist and one-dimensional approach in accepting GMOs without taking into account social, economic, ecological and cultural aspects and ignoring the experiences of countries like the US and Argentina with regard to widespread use of GMO crops.
2. Issues with GEAC decision-making and conflict of interest, lack of transparency and disregard for independent opinion and total disregard for the voice of the Supreme Court appointee.
3. Specific objections to some areas of EC-II, I am a social scientist and a reasonably aware consumer, therefore my analysis focuses on the glaring omissions and the socio-economic aspects, however that does not mean that there are no concerns regarding the scientific part of the report.

General and fundamental objections to the way GMOs are being introduced and the faulty premises based on which the decision is being forced on us.

1. The whole decision regarding GM crops and Bt brinjal was and is based on a reductionist view of science being the solution to higher productivity disregarding the bad experience with pesticides. The fundamental questions of who decides on this solution, how was it arrived at? Who does it benefit? These and many other such questions have not been examined at all. The decision on whether we need

¹ http://en.wikipedia.org/wiki/Food_libel_laws

- GM crops at all should have been debated at a much broader and wider level rather than have a few multinational companies arrive in India with their technology, buy stakes in Indian companies and then sell it to our decision-makers, this is not the way a democracy should function.
2. Middendorf and others have elucidated this in their article titled “New agricultural biotechnologies: the struggle for choice”². The article talks about this conundrum and also details about how the Scandinavian countries engage in public debate before any major policy decisions like these are taken. I quote, “***A key principle of these efforts is that society must democratically define its priorities; only then should it ask how technologies might help to achieve those goals. This challenges the common assumption in science policy of a positive, linear relationship between scientific advance and social progress. Another guiding principle is that since all citizens experience the effects of science and technology, and since citizens ordinarily expect to have a voice in decisions that will affect the way they live their daily lives, they should be involved in deciding the direction of science and technology policy.***”
 3. If GM seeds are so beneficial a technology why is that it has not been publicly debated, why have farmers not been part of the whole decision making process, where are the consumers and citizens in this process? Why is it all behind closed doors and all about trade secrets of companies³ rather than about public concerns, farmer issues, health issues and ecological and other impacts?
 4. United States, the model we seem to be emulating, has a situation of unseemly corporate control over the all branches of agriculture related business with less than 10 companies controlling more than 50% of market share for pesticides, seeds, grains, meat, poultry and of course a single company Monsanto controlling a shocking 90% of all genetically modified traits⁴. Let us not forget that Bt brinjal is Monsanto technology and the technology fees on the sale of every packet of Bt brinjal seeds will add to its bottom line. Adopting this mode of agriculture will leave us a legacy very similar to that of the US (with disastrous results); small farming in the US is almost decimated. We are already seeing this control in Bt cotton in India.
 5. GM technology is being sold and pushed as a panacea against hunger and to increase productivity, then why is that the United States, Argentina –the biggest adopters of GM crops- experiencing unprecedented hunger? At the last count 49 million Americans are hungry, almost 14.6% of the population⁵.

² http://findarticles.com/p/articles/mi_m1132/is_n3_v50/ai_21031835/

³ GEAC response to the RTI commissioner when test data of Bt brinjal sought through RTI-
<http://www.financialexpress.com/news/make-bt-brinjal-data-public-cic/242771/>

⁴ <http://www.desmoinesregister.com/article/20091214/BUSINESS01/912140321/1001/NEWS/Seed-deals-show-clout-Monsanto-wields-over-U.S.-supply>

⁵ <http://obamafoodorama.blogspot.com/2009/11/unsettling-wake-up-call-for-america.html>

6. Why trust Monsanto⁶ – the most dreaded, feared and distrusted agri-business corporation- with our food and seed security? It is almost single handedly responsible for the soybean devastation of Argentina and the US small farmer crisis. This company produces more PCBs, defoliants, herbicides, dangerous chemicals, and drugs than any other company and has a track record of not paying damages for the harm caused and has enormous lobbying power with the US government. Are we so desperate or so naïve to believe them or are our farmers so dispensable?
7. Today due to recession, food scares and food contamination incidents homestead gardening in the US is seeing resurgence and along with it awareness about the stranglehold of Monsanto over vegetable seeds, they own the largest vegetable seller in the US –Seminis. People are realizing that due to monopoly control the number of varieties of seeds in the market is steadily being reduced by the company (as part of business decision) –biodiversity falling prey to business greed! Slowly this is dawning on the Americans after a decade and slow grassroots movement is growing to boycott Monsanto seeds by homestead gardeners. All the more reason for Monsanto to enter Indian vegetable seed market!
8. Today we are being sold Bt technology in the name of reducing pesticide use, with the companies sounding very holy about making food less poisonous, if so why are these same seed companies selling us so many toxic pesticides? It is a fact that in the **top ten** agrochemical and seed companies, **four companies (Monsanto, DuPont, Syngenta & Bayer)** are in both lists⁷; this shows the level of nexus between the two industries.
9. How is it that we can accept GMO technology (unpredictable, irreversible) without independent testing and market it without labeling in the name of “substantial equivalence” while the company selling it earns thousands of crores a year in technology fees by patenting the GMO to be a “ substantial transformation” ?
10. Seed sovereignty of the farmers, how is it that by inserting an alien gene into a plant it becomes the sole property of the company which pays for it and the farmer rights and natural evolution which has contributed in the last 10,000 years become alienated? If we are all about property rights and patents, isn't the fundamental right over a food crop that of the traditional farmer, who has nurtured it and brought it to the current stage over 1000s of years?
11. A technology cannot and should not stand on its own; it should be juxtaposed within the social, ethical, moral and economic stand points of the society it is introduced into, which is something that has clearly not happened in the case of the introduction of GMOs into India!

⁶ <http://topdocumentaryfilms.com/the-world-according-to-monsanto/>

⁷ http://www.etcgroup.org/upload/publication/707/01/etc_won_report_final_color.pdf

Issues with GEAC decision-making and conflict of interest, lack of transparency and disregard for independent opinion and total disregard for the voice of the Supreme Court appointee

1. There has been no independent testing of Bt brinjal and all testing has been commissioned and all data has been from the promoter company, which in itself makes the whole decision suspect for me as a consumer. Time and again we have had corporates claim that something is safe (pesticides, trans-fats, DDT, high fructose corn syrup, various prescription drugs in the market and so on) and then years later go back on it with impunity without paying damages for the harm caused in the interim. There is nothing in the approval process of Bt brinjal which provides me confidence to believe that this will not happen!
2. The unseemly conflict of interest within the GEAC is galling and unacceptable and all the more unpalatable is the fact that the government sees nothing wrong in crop developers sitting in GEAC and reviewing their own work. This conflict of interest has been detailed in the CNN-IBN report⁸ and report from Down to Earth⁹ magazine. Conflict of interest in the GEAC has been a recurring affair with CD Mayee¹⁰ the previous chair and many members also being members of industry sponsored bodies while functioning as regulators. In addition the head of the EC-II has said that he was under tremendous pressure to approve Bt brinjal. All this makes the decision invalid. An independent regulator has to be INDEPENDENT; otherwise we as the public can't accept their decisions in full faith. For this alone in principle I oppose this EC-II report!
3. The constitution of GEAC is very lopsided with the heavy presence of biotechnologists (to review the technology they themselves work on) with hardly any farmers, consumers, social scientists, ecologists being part of the decision making. GMOs are not merely about inserting a gene into a plant it is much more fundamental decision about changing our way of farming and eating with far reaching impact. It is a decision which affects every member of the public, as we all eat, and thereby the need for as broad based a decision making body as possible.
4. The Supreme Court has nominated Dr. Pushpa Bhargava to the GEAC to be our representative, his scientific and academic credentials places him amongst the best of the best in the world. However we find that his opinions, suggestions and questions have been blithely ignored by GEAC. This is not an acceptable situation, where the respected scientist who represents us and takes up concerns in public interest is not listened to. Dr. Bhargava's interviews and articles in the media post the approval of Bt brinjal by GEAC clearly states that he was not

⁸ <http://ibnlive.in.com/news/controversy-continues-over-bt-brinjal-approval/106190-3.html> &

<http://ibnlive.in.com/news/bt-brinjal-tests-inadequate-how-safe-is-it/106477-3.html>

⁹ http://www.downtoearth.org.in/full6.asp?foldername=20091231&filename=news&sec_id=4&sid=3

¹⁰ http://www.tehelka.com/story_main37.asp?filename=Ne160208uneven.asp

happy with the process, he is dissatisfied with the amount of due diligence done and he believes that the decision was pre-mediated and not impartial.

5. It is deeply distressing and suspicious that the report when analyzing the conclusions of independent scientists seems to be brushing off every concern raised by them with a trivial “not applicable”, “not relevant” kind of replies and at places is even disrespectful of these scientists and tries to discredit them. This only diminishes the value of the EC-II report and questions its credibility and impartiality rather than of the scientist!
6. From beginning to end the process looks like the GEAC wants to approve this product and it is only RTI queries or civil society outcry which compelled them to do some due diligence –totally contrary to what is expected of an “independent regulatory body”. As the name suggests GEAC seems to be put together only to approve GMOs after some cursory discussions rather than regulating GMOs. One of its major failings is to treat GMOs merely as a technology rather than a fundamental issue! ECII report is a prime example for this reductionist approach.
7. The EC-II seems to have met just twice in the 10 month period to supposedly review, evaluate and discuss voluminous findings and prepares a 105 page report on their comments and to approve Bt brinjal based on all this, this seems too short a timeframe to have done a thorough job!
8. It would be pertinent to know where the EC-II document (a 105 page power point presentation) was prepared. Is it by the EC-II members? Or with external help? As per the document the author of that ppt or the name of the user of the computer is “Vibha”, clearly not the name of an EC-II member (hopefully an office staff?). In the interest of transparency it would be relevant to know who prepared the report.

Specific objections to some areas of ECII

1. My objections to EC II begin with basic premise, what was decided as the terms of reference for the expert committee were blatantly changed as is evident from the two texts below. This prima facie makes the EC-II invalid as the terms have been narrowed and reduced to merely reviewing rather than evaluating for adequacy of bio safety and toxicity!

Below is the text from GEAC meeting minutes of January 14th ¹¹

After detailed deliberations, the Committee decided to set up a Sub-committee comprising of representatives from the Ministry of Health and Family Welfare, NIN, ICMR, CFTRI, CCMB, IIVR, NDRI, CFIE, MoEF DBT, TNAU and UAS Dharwad with the following terms of reference:

- to review the adequacy of the biosafety data on Bt brinjal
- to review the adequacy of the toxicity and allergenicity protocols

¹¹ <http://www.envfor.nic.in/divisions/csurv/geac/decision-jan-91.pdf>

- to suggest further studies, if any, based on the review of the international practices in biosafety assessment and representations received by the GEAC.
- based on such reviews make suitable recommendations for consideration of the GEAC.

Below is the text from EC –II report

The terms of reference of the EC-II are:

- to review the findings of the data generated during the large scale trials;
 - to review the bio safety data of Bt brinjal in light of the available scientific evidence, reports from international/national experts and representations from NGOs and other stakeholders;
 - to make appropriate recommendations for consideration of the GEAC based on the above review.
2. *As Bt brinjal plants have an inbuilt mechanism of protection against targeted pests, the protein produced by the plants does not get washed away nor is destroyed by sunlight unlike externally applied pesticides.(page 11 of EC-II)*

This is a significant problem as Bt toxin is a known allergen and there have been cases of people exposed to even the Bt sprays being affected, and people carry Bt in their tissues,. In addition the “Journal of Pesticide reform” fact sheet states that, “researchers know so little about the ecology and genetic stability of Bt that the potential ecological effects of these transgenic organisms are impossible to predict with certainty”¹². In this context the above statement in the EC-II is abundant cause for worry.

3. *As per point (i) in table 2.2 in page 23 of the report regarding the “Status of Compliance to the conditions in the permit letter issued by GEAC” there was a stipulation that “food/feed safety assessment should include any possible foliage/shoot toxicity study in goats. This condition was stipulated in view of the apprehensions that there were sheep deaths in Andhra Pradesh due to grazing on Bt cotton fields.”*

GEAC decided to dispense with it based on (RCGM recommendation) for trivial reasons including that sheep deaths were unsubstantiated, and that goat feeding studies are not part of the protocol. As far as I understand the EC-II **was constituted to address these and many other concerns raised by people** and scientists from different parts of the world and if these concerns are brushed aside blithely, then the EC-II has not done its job and has only tried to put together a document to lead up to their already pre-decided conclusions. The sheep deaths are not unsubstantiated, they were confirmed by the AP government (which had even put up cautionary notices to farmers)and the GEAC can’t ignore what a state government has publicly acknowledged and declared and refuse to do further assessments. This is a recurring pattern seen in the report -to discount anything that doesn’t suit the authors of the report!

¹² Journal of pesticide reform/fall 1994 vol 14, No 3

4. As per point (j) of table 2.2 in page 23 of the report regarding the “*Status of Compliance to the conditions in the permit letter issued by GEAC*” there was a requirement for skin sensitization test.

Here again based on RCGM recommendations this has been waived stating it has no relevance as “bt toxin has been found to be safe in feeding studies”. This is a genuine concern as Bt allergy has been reported in the bt cotton areas among the cotton farmer and cotton picking workers. Bt allergies have been reported from different parts of the world and cases are well documented. When that is the situation to ignore this in the case of Bt brinjal is irresponsible and unacceptable.

5. As per point (l) page 24 in table 2.2 it has been mentioned that socio-economic assessment of bt brinjal *has been initiated* ., clearly it is no where near completion.

It belies logic how a technology which is unpredictable and irreversible can be unleashed on people without doing the basic due diligence regarding its socio-economic benefits. Also let us not assume and start with a bias, the study should be about the “socio-economic impacts”. It is a known fact that the sub-committee constituted in the first instance (to do socio-economic evaluation) had raised serious concerns, to which GEAC had made no response. After that a unilateral decision seems to have been taken to re-assign the study to NCAP. In this context it is required in the interests of transparency to inform us what the concerns raised by the first committee were, and why a different committee was chosen. In addition a full socio-economic impact report should be obtained and analyzed before any decision is taken regarding commercial cultivation of Bt brinjal

6. The EC-II mentions in page 28 that “*the Bt protein is neither known to be allergenic nor has sequence homology with any known allergen*”

The same as in response to point (2) Bt toxin is a known allergen and there have been cases of people exposed to even the Bt sprays being affected, and people carry Bt in their tissues,. In addition the “Journal of Pesticide reform” fact sheet states that, “researchers know so little about the ecology and genetic stability of Bt that the potential ecological effects of these transgenic organisms are impossible to predict with certainty”¹³. In this context the above unsubstantiated statement in the EC-II is not acceptable.

7. As per point 3.2.1 in page 36 EC-II has discussed the implication of pollen flow/out crossing to neighbouring non Bt brinjal fields and states that , “ *the members opined that in view of the relatively short distance that the pollen could travel, it is evident that the isolation distance or differences in planting time can help in minimizing the potential for any unwanted out crossing of transgenic brinjal to the conventional brinjal varieties, as may be required in cases of seed production (breeders, foundation or certified seeds), organic farming etc. Further, the EC-II opined that*

¹³ Journal of pesticide reform/fall 1994 ol 14, No 3

even if there is a very small influx of pollen originating from Bt brinjal varieties, it is not of any consequence, as the Bt protein has been extensively tested for its safety to the environment and food/feed and thus pollen transfer to other cultivated brinjal would not pose any safety risk.”

There are many issues with this conclusion of the EC-II, they suggest difference in planting time to “minimize out crossing” which means (1) they cant be sure that there will not be out-crossing (2) in another response they say that the non-Bt farmer has to maintain the isolation distance and (3) there is no onus on the GM crop grower to do it as per GEAC (4) if there is contamination who is liable? Will the farmer whose fields are contaminated be compensated? (5) How will a non-Bt or organic brinjal farmer know if any of his neighbours are cultivating Bt brinjal? (6) whether bt is safe or not the organic farmer will lose his certification if his fields are contaminated, what is the remedy for that? And (7) and why should non-Bt farmers have to take additional responsibility for all these risks?

This goes against the farmers fundamental right to have his crops uncontaminated and to be able to grow food safely and in makes it more expensive and maybe unviable for organic farmers to continue their farming activity.

8. As per sub section v in section 3.3.3 in page 49 it says that all analysis has been done in cooked brinjals.

This is not acceptable as a consumer to me as I would be constantly worried if I have cooked it enough and **would not consume a vegetable** which has a toxin within and has been tested only in the cooked form. The toxicity and other tests for Bt brinjal should be conducted on raw brinjals as well to ensure what the impact of it is on human health. In the current situation if my child bites into a Bt brinjal I might want to rush to a doctor!

9. Section 5.4 issue 10 in page 60 of the report is very dismissive of organic farming and its proponents and its ability to grow brinjal and the EC-II suggests that, *“the section of farmers who have a preference for organic farming can do so by following established agronomic practices such as maintaining isolation distance, differences in flowering time etc. for preventing cross contamination and ensuring identity preservation for organic produce. As described earlier, the rate of cross pollination from one field to other is quite low, and the frequency of such occurrence decreases with increasing distance from pollen source.”*

It is preposterous that the EC-II imposes the burden of isolation distance, different planting time etc on organic farmers, whereas it is the Bt farmers “who are supposedly going to have economic benefits” out of this crop and clearly they are the ones who are using a genetically modified variety. (1) How is this acceptable in terms of equity? (2) It violates the rights of organic farmers (3) The EC-II is going beyond its mandate by instructing what organic farmers should do to avoid contamination while the onus should be clearly on the Bt farmers on the well established “polluter pays” principle. (4) this is also an indicator of the pro-Bt leanings of the EC-II (5) and preserving bio-diversity, maintaining identity preservation should not the unpaid job of the organic farmer, it is a national responsibility and the EC-II should take that into account while they approve

GM crops (6) here clearly the responsibility to maintain distance, different planting time and avoiding contamination SHOULD in all fairness be the responsibility of the BT farmer.

10. In section 5.4 issue 15 (a) and (d) on page 80/82 the EC –II states in response to the concern raised regarding contamination through cross-pollination and other physical means of contaminations during physical transfer, transportation, due to sharing of workers and tools between Bt and non-Bt farms, during storage etc. The EC-II has responded thus to this concern, *“Pollen flow is a natural phenomenon in plants, which cannot be controlled and thus its impact needs to be evaluated. Issues related to dissemination mentioned by the reviewer are external factors, several of which can be controlled and the extent to which this aspect needs to be monitored is a trade related issue and not a part of environmental risk assessment. The EC–II concluded that the pollen flow studies for four years as well as other environmental safety studies provide enough evidence of the safety of Bt brinjal to the environment. Other issues raised by the reviewer are hypothetical and out of the scope of the environmental risk assessment”*

This response raises many issues (1) the decision on Bt brinjal is not a scientific silo where a few scientists sit together and decide on what is good for the whole nation, it has to be a holistic approach (that’s why we need people from all segments in GEAC) and has to take into account all aspects before final go ahead is given and (2) considering the response of EC-II , this reason alone is sufficient to hold the decision pending while as aspects of the approval are analyzed. (3) Here again the EC-II is silent on whose responsibility is it to monitor and control these factors, and considering that Indian agriculture is small holder based and considerable sharing happens at all levels how are these risks going to be mitigated? Obviously we all agree that we can’t afford to discover these problems after Bt brinjal has been released into the environment. The other methods of contamination are not “hypothetical” as disingenuously stated by EC- II, because the world over there has numerous cases of contamination (some of them infamous like the Starlink corn, the Bayer rice case etc) and the source and method of contamination is debatable!

Conclusion:

I have taken this effort to go through the report and express my views in the hope that comments from the public will be read, evaluated and taken seriously in this decision making process.

Please acknowledge receipt

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