

Mr. Jairam Ramesh
Union Minister for State for Environment and Forests (i/c)
Government of India
New Delhi

Dear Mr. Ramesh,

I held up my no. placard for close to two hours to draw your attention to let me speak in the time allocated for "scientists" and also in other time slots. As I was with my two little boys, I was unable to do more to draw your attention.

I am a Statistician (Game Theorist) who has worked in statistical clinics In the Univ. of Minnesota on issues relating to testing agricultural products. I have subsequently worked with Indian Statistical Institute (Blore), Indian Institute of Management (Blore) and Gallup.

I hope a statistician's opinion of the kind of analysis undertaken by Mahyco in promoting Bt Brinjal would be assistance to you in formulating your final decision. Here are some quick comments. In case you need a detailed critique of the statistical analysis claimed as the basis of approval by GEAC of Bt Brinjal, please let me know and I will offer my help free of cost - to ensure that our country is not subordinated by bad statistical analysis.

Note:

The statistics of the report "Biosafety Data of Bt. Brinjal containing cry1Ac (EE1) event developed by M/s Maharashtra Hybrid Seeds Company Limited" beginning from the design of experiments to analysis and interpretation of results is seriously flawed. It has been done in an extremely incompetent manner, without proper scientific rigour, nor application of mind, and thus must be rejected as invalid. Evidently, the DBT regulations which Mahyco claims to adhere to are also seriously flawed and must come in for a complete overhaul.

Some points to consider are as follows:

- In good statistics, any sample should be representative of the population under consideration. According to th University of Agricultural Sciences, Bangalore, there are 10 agro-climatic zones in Karnataka alone. In Mayco's field trials, there were only a maximum of 11 locations - clearly not representative of the country's agro-climatic zones.
- The pollen flow study was done only in two locations, again not representative of the country's agro-climatic zones.
- The pollen flow study was conducted over only two seasons, again not representative of seasonal variations in climatic conditions.
- India has a population of over a billion, but was represented in Mayco's toxicity study by only 12 rats, 6male. and 6 female!!! Any sane person would find this totally unacceptable.
- Moreover, Mayco's claim that healthy rats which are 90 - 110 days of age are equivalent to 21 - 25 years of healthy human age is plain stupid. And even if it were so, this would mean that children, teenagers, older adults and the elderly, not to mention the sick and invalid did not even get a chance to be represented by rats!
- In fact, out of twelve rats, a few did get diarrhoea during the 90 days, but this was conveniently attributed to ear infections.
- Good statisticians know that with small sample sizes, the power of the test is also small, that is,

if there is no significant observed difference between the control and test group, we can not automatically accept the null hypothesis of no difference. For a sample of size 12 the probability of not detecting deleterious effects is close to 40%!

- For the skin irritation test, only three rabbits 'represented' the country!

There are hundreds of such inadequacies in the report, making it invalid, unscientific trash.

Yours Sincerely,

Dr. Lakshmi Nilakantan

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