

# Montsanto Genetically Modified Cotton

Pushing Indian Farmers into a Death Trap

By [Global Research](#)

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## PRESS CONFERENCE

**‘This is in reality the greatest scientific fraud to have hit Indian science.’ - from the front page of the Rediff.com, India’s biggest news portal — ‘Bt cotton will kill farmers, financially and literally’**

**Devinder Sharma has been a vocal critic of the government’s stand on genetically modified food. Sharma chairs an independent collective in New Delhi, called the Forum for Biotechnology & Food Security.**

**The forum is a collective of policy makers, agriculture scientists, economists, biotechnologists, farmers and environmentalists. They examine and analyse the implications of policy decisions.**

**Cotton farmers all over the country are panicking. Thousands of them have used the Bt (bacillus thuringiensis) cotton seed which has been genetically modified. Suddenly, the government has sat up to take note of how thousands of acres are now under cultivation all over the country.**

**The realisation came after activists raised a hue and cry of the harmful effects it could ultimately have.**

**The government initially said that farmers had grown the variety as it was pest resistant, but later when experts warned that pests would develop a resistance to it, it backtracked saying that states like Gujarat should burn the crop. But farmers have already sold the cotton.**

**Dr Devinder Sharma talks to Ramesh Menon about the perils that stare the Indian cotton farmer in the face.**

### Excerpts:

\*Dr Manju Sharma, Secretary, Department of Biotechnology, Government of India, has recently said that the first genetically modified crop -Bt cotton — will formally be approved for commercial cultivation in a month or so. How do you view this?

Devinder: This is not only shocking, but scandalous. First of all, Dr Manju Sharma has no business saying this. She is merely the head of India’s biotechnology department. The actual approval has to come from the Genetic Engineering Approval Committee, an apex body constituted by the Ministry of Environment & Forests. How can she pre-empt the

decision of the GEAC?

Secondly, even before the research trials for Bt cotton began in India, Dr Manju Sharma has been making public statements about its utility and effectiveness. How does she know the outcome of the research trials before they were actually being conducted and finalised? Isn't it scandalous?

The way she has been going about singing praises for an untested and risky technology looks as if she is on the board of directors of Mahyco-Monsanto, the company which is promoting the genetically manipulated cotton seed.

\*What about the research trials? After all, they were conducted scientifically.

Devinder: No, not at all. In fact, scientific norms were thrown to wind and for obvious reasons. And this is what I call scandalous. This is in reality the greatest scientific fraud to have hit Indian science.

The entire expenditure for research on nine genetically modified crops, including cotton, amounts to Rs 600 million. And it is entirely being borne by the industry. How can you trust that data?

\*Why do you say this?

Devinder: For three years, the crop trials were conducted by Maharashtra Hybrid Seeds Company Limited and Monsanto. The data so compiled was never made public. Why, what is so secretive about it? After all, it is not national security that is at stake. The seed has to be ultimately used by farmers. Why shouldn't they know what they are being asked to buy?

Secondly, the data was never scrutinised by an independent team of experts and representatives from the civil society and various other groups from different walks of life.

If you look at the composition of the three committees that evaluate the data at three stages, the Department of Bio Technology has very cleverly stuffed the committees with pro-industry scientists and farmers. The conclusions of these committees was therefore known to us even before they met...

\*But what about the scientific trials?

Devinder: Yes, let us come to the scientific fraud aspect. There are norms that are clearly laid out for agricultural experiments. As an agricultural scientist myself, I was appalled to learn that for the three years of research trials, the crop was not once sown in time.

For instance, it was sown as late as two to three months last year. Yet, the department says that the crop yields were as high as 50 per cent.

Manju Sharma even mentioned that the yields were as high as 80 per cent! This is something that Monsanto doesn't claim.

\*How can the research data from such trials be accepted?

Devinder: Actually, when the crop is sown late, it escapes the insect attack which is at its peak in the first two months. With no insect attack, the crop losses are minimal. So where's

the great success?

Moreover, if sowing late by three months gives a higher yield why doesn't the government advise farmers to also sow the crop three months late?

But scientists were looking for data on pest control and so how does the date of sowing becomes important?

That is right. If that be so then why not ask agricultural scientists working with 31 agricultural universities and the 81 national centres of the Indian Council of Agricultural Research also to follow the same criteria? Why make an exception only for Mahyco-Monsanto?

If the crop is sown late and it escapes the major pest attack what kind of data has been collected? Doesn't it put a question mark on the whole exercise? Isn't it a scientific scam?

The GEAC was completely wrong when it asked the company Mahyco-Monsanto to repeat the research trials for one year. In fact, as per scientific norms the research trials should be re-conducted for another three years considering that the data so far collected is incorrect.

Even the ICAR had asked for two years of more research trials. Mahyco-Monsanto had objected and therefore a compromise for one year was reached at. We have started compromising on science too.

\*How about the environmental and health risks? There is a lot of public concern about its environmental fallout.

Devinder: That is right. In its undue haste to promote a risky technology, environmental, animal and human health risks have been ignored. A year earlier, the ICAR had pointed to eight to nine areas of concern where additional research needs to be conducted.

Interestingly, the Department of Biotechnology is happy with one year of data on these aspects. This is against all scientific norms. No research is conclusive without a minimum of three years' data.

Take the case of gene flow, for instance. Gene flow is the term that denotes the distance to which the pollen can fly. The DBT says that gene flow in Bt cotton is two metres. Mahyco-Monsanto says that it is 15 metres and the US Department of Agriculture says that it is three miles.

We still don't know what will be the impact on human health once the genetically modified seed gets into the food chain. So why take a risk when there is no cause for desperation?

\*But isn't there desperation? Cotton alone consumes more than 50 per cent of the pesticides sprayed in the country.

Devinder: It is true that cotton alone consumes more than 50 per cent of the pesticides. But it is also true that these very agricultural scientists had all these years said that there was no escape for cotton farmers but to use more potent pesticides.

These scientists were actually promoting the pesticides industry's interest all these years. They were not looking for more sustainable and farmer-friendly options.

The same class of agricultural scientists are now backing the genetically modified cotton. In essence, once again they are promoting the industry's commercial interests. This time it is the biotechnology industry which has more money to sponsor research and other activities.

In the bargain, cotton farmers are being asked to get out of the 'pesticides treadmill' and get into a hitherto unknown and more dangerous 'biological treadmill', the consequences of which can be disastrous.

\*The farmers seem happy with Bt cotton. They want it and have even gone and sowed it again this year despite all this controversy.

Devinder: Yes, you are right. This is exactly what had happened when the fourth generation pesticides synthetic pyrethroids were introduced in the country less than 20 years ago. And since then over 10,000 cotton growers have committed suicide.

Synthetic pyrethroids are fourth generation pesticides, which were introduced in India sometimes in mid-1980s as the answer to the bollworm pest problem in cotton.

I had at that time warned against its use saying that the pest would develop resistance against it and then what would be the answer. But the scientists as well as the farmers were very happy with the results for the first two to three years and then the insect started developing resistance.

The pest-host relationship became so hostile that farmers were a dismayed lot and then began the spate of suicides....

\*The suicides were a result of the cotton pest problem?</b>

Devinder: Exactly. The suicides began when farmers were unable to control the American bollworm pests which in turn devoured the crop. The farmers were also under heavy debt and the only option for nearly 10,000 of the estimated 15,000 farmers in the past few years was to take the fatal route to escape the humiliation that comes along with indebtedness.

\*Is this a small price for the experiments that agricultural scientists keep on conducting to prop up the commercial interests of the companies?

Devinder: Who is accountable for these deaths? Why shouldn't the agricultural scientists be held responsible for such a massive human tragedy, perhaps the greatest in the history of independent India?

What will happen when the insect develops resistance to Bt cotton? What will happen when farmers once again start committing suicides? Who will be responsible for those poor families whose only bread-earner passes away? Already the pest has started developing resistance to Bt gene in Australia and China.

\*This sounds serious. What do you think is the answer?

Devinder: We have to bring accountability in scientific decisions. I think the government should make it clear that the agriculture minister as well as the minister for science and technology would be held responsible for any deaths as a result of the introduction of Bt cotton in the country.

If that happens, I can assure you no one will have the cheek to push in an untested and unproven technology at the cost of the farming community.

And since necessity is the mother of invention, you will see the focus of research shifting to environment-friendly and sustainable farming practices.

\*But isn't there a viable alternative?

Devinder: Yes, the only viable alternative is to ban the use of pesticides on cotton. But this will not happen for two reasons.

First, it requires political will since the pesticides lobby industry is a strong one. And second, agricultural scientists will resist because this will mean that they spend more time in the crop fields rather than in air-conditioned laboratories.

American bollworm, the dreaded cotton pest, actually has 27 natural enemies or predators in the same crop field. They are the first one to get knocked down once the pesticides sprays begun. By the time the bollworm appears on the scene, the field is bereft of its natural enemies.

It then multiplies and merrily devours the crop and in the process develops immunity against the chemicals.

\*Would cotton production fall as a result of not using pesticides? </b>

Devinder: No, not at all. It has been conclusively demonstrated both within and outside the country of much better yields and much-cleaner environment as a result of not using pesticides on cotton. We don't want to talk about it because such practices are not backed by industrial interests.

\*Low productivity of cotton is being cited as the reason for the introduction of Bt cotton.

Devinder: This is a completely wrong argument. Cotton productivity or yields in India are amongst the lowest in the world not because we do not have high-yielding varieties.

In fact, the first cotton hybrids were evolved in India. What is not know is that in the past 20 years, cotton farmers have been deliberately paid 20 per cent less every year by way of administered price to keep the textile industry afloat. Which means, that our cotton farmers subsidised the industry. If they had received an attractive price, they would have produced more.

Now, the government has allowed cotton import. This will result in further fall in yield as there will be imports of cheap and highly subsidised cotton. Farmers will be faced with an unprecedented crisis of protecting their livelihoods.

\*So cotton imports will kill farmersÖ

Devinder: Yes. Cotton farmers are opposing the imports. Under the World Trade Organisation defined rules, India will have to allow the import of cheap and highly subsidised cotton.

Ironically, the sad aspect is that the same textile industry which was subsidised by the

cotton farmers all these years has bunked the domestic farmers at the first given opportunity. They are asking for cheaper imports.

The introduction of Bt cotton will also rob the cotton farmers of whatever little they could benefit from. More and more cotton farmers will get into the spiral suicide dance.

### **TEXT OF LETTER TO THE INDIAN PRIME MINISTER**

**At a press conference in New Delhi Thursday the Director of The Ecological Foundation, Dr Devinder Sharma, released the text of a letter to the Prime Minister of India, Mr Atal Bihari Vajpayee, warning of the potentially devastating impact GE cotton seeds could have on farmers in India and the scientific fraud involved in the way the research trials have been conducted and monitored - perhaps "the biggest scientific scam" to have ever hit India.**

**We have previously reported aspects of how this scam has been carried out, with the field trials for Bt cotton sown two months late in 1999. The attack of the American bollworm, the relevant insect pest for Bt cotton, is in the first two months of the crop being sown, so by sowing the crop late the entire insect profile is changed. In 2000 the crop was sown late once again. The resulting data has been hyped as showing wonderful results! [Those following the UK's farmscale trials be warned!]**

**It is vital that the truth gets out as there has been a massive pro-industry campaign underway on the back of the crisis in India over the large scale plantings of illicit Bt cotton and industry is trying to use the current confused situation, and the general public and governmental sympathy for the Indian farmers caught in the middle of the scandal, to promote the early introduction of Monsanto's Bt cotton.**

**12 December 2001**

**Shri Atal Bihari Vajpayee Hon'ble Prime Minister, New Delhi-110 001.**

### **GENETICALLY MODIFIED COTTON --- PUSHING FARMERS INTO A DEATH TRAP ?**

**Respected Prime Minister,**

The Ministry of Environment and Forests as well as the Department of Biotechnology under the Ministry of Science & Technology is currently reviewing the procedural norms for the controversial genetically modified cotton, popularly called Bt cotton. The decision on its commercial approval, expected to be formalised by February 2002, will have profound consequences for farmers, human health and environment.

Perhaps no other scientific decision since India's independence generated so much of heat and debate as the likely introduction of Bt cotton has. Add to it the illegal introduction of Bt cotton seeds in over 10,000 hectares in Gujarat, ostensibly to create a suitable environment for the immediate release of the genetically modified cotton, shows how crucial science policy decisions are being manipulated for the sake of 'profit security' of a few private seed companies.

Amidst the heat and din that has been raised by the pro-industry scientists and the critics of

the unproven and risky technology, what is very conveniently being pushed under the carpet is the damming impact Bt cotton seeds will have on farmers. We have been told that the cotton farmers who grew the transgenic cotton on the sly (in Gujarat) are visibly happy with the results. We are also being told that since the farmers are happy the country should waste no further time in approving transgenic cotton for commercial cultivation.

I am sure your Government, which has always stood for human dignity, and is striving hard to 'wipe every tear from the eyes of the poor and downtrodden', will not like to add on to the misery of the small and marginal farmers. The BJP-led coalition will surely not like its saffron flag to be sprinkled with blood of the poor and toiling farmers. I am sure your Government will not take any decision in undue haste that eventually pushes thousands of farmers into a virtual death trap.

Why I am saying so is because a faulty decision in the mid-1980s to introduce fourth generation chemical pesticides synthetic pyrethroids has so far resulted in the death of an estimated 10,000 cotton growers throughout the country. The spiral death dance that began from Andhra Pradesh, first in 1987 and then again in 1998-99, has so far taken a heavy toll. The suicides by cotton farmers had subsequently spread to Karnataka, Maharashtra, Gujarat, Rajasthan, Haryana and Punjab. Perhaps the large-scale suicides by cotton growers would rank amongst the biggest man-made tragedies in independent India.

These suicides, if one were to examine the reasons, were spurred by the resistance the American bollworm insect developed to all kinds and cocktails of pesticides. Some 15 years back, cotton growers and agricultural scientists had rejoiced for the first two and three years as the potent chemical killed the insects. We had even then warned that spraying more deadly chemicals is not the answer to the menace of American bollworm. And no sooner the insect began developing resistance, farmers once again became a victim of the circle of poison or what is called the 'pesticide treadmill'.

Bt cotton is no different from other chemical pesticides. It too will cause a temporary reduction of pesticides in the first few years and then the insect will develop resistance to the toxin gene. If the past experience is any lesson, the resulting 'biological treadmill' will force farmers again to commit suicides. Dear Prime minister, who will be responsible for those families whose only bread-earner will prefer to end his life? Isn't the death toll from the cotton conundrum already too high for the nation to draw a lesson from its past follies? How long should cotton farmer continue to give their lives for the 'experiments' that agricultural scientists and now the department of biotechnology continues to conduct in their name?

The insect has already begun to develop resistance to Bt gene in cotton in Australia and China where genetically modified cotton was introduced in a large-scale. Farmers are now being advised to increase the number of sprays of chemical pesticides on the genetically manipulated cotton. In case of India, the chances of the insect developing immunity against the Bt gene are still more considering the small land holdings and the resulting management problems. Agribusiness companies are now inserting two Bt genes to keep the insect under check and it would not come as a surprise to find companies using genes from scorpion and snakes to ward off pests in future.

Equally more distressing is the way the department of biotechnology conducted the 'scientific' research trials. In fact, what is more baffling is despite your Government's commitment to bring in the right to information, the department of biotechnology has

maintained complete secrecy over the research trials results and the lack of transparency in itself is an indication that the trials were not conducted in a scientific manner. It is with lot of pain and anguish that we would like to bring to your notice the fraudulent manner in which the research trials have been conducted and monitored. This may go down in contemporary history as the biggest scientific scam to have hit the country.

\* Even before the limited research trials first began in November 1997, the secretary department of biotechnology, Mrs Manju Sharma, has been saying that Bt cotton will soon be introduced in the country. Even last week, she told Reuters that procedures for the commercial release of Bt cotton are being streamlined and the genetically modified crop would be approved for farmers planting by December 2001. Interestingly, the approval for the genetically modified crops have to come from the Genetic Engineering Approval Committee (GEAC) an apex body constituted by the Ministry of Environment & Forests. This raises the obvious question as to why is Mrs Manju Sharma so keen to push the genetically modified crops? Is she on the board of directors of the multinational seed company or the head of the government's main regulatory body?

\* It is primarily for this reason that the research data from faulty trials has been accepted. In none of three years of the crop being sown for research, was the Bt cotton sown even once in time. Last year, in 2000, the crop was sown as late as two months late and yet the results have not only been accepted but the secretary DBT has gone on record saying that the yields were as high as 80 per cent. This is completely untrue for the simple reason that first of all such research data has to be summarily rejected. Secondly, when the crop is sown late by two to three months, the crop escapes the peak insect attack. And when the insect attack is not there, Bt cotton would obviously look to be very effective. Thirdly, if the crop yields so high after being sown so late why doesn't the government advise cotton growers also to sow the crop two to three months late?

\* In June 2001, the Indian Council of Agricultural Research (ICAR) had asked GEAC for two more years of research trials. Mahyco-Monsanto, the promoter of the genetically modified seed, had objected to this saying that the data so compiled by them was correct. Interestingly, a compromise was then reached and the company was asked to go in for one more year of trials. This may perhaps be the first case when a compromise has been reached in scientific research !!

\* It is clear that the research so far conducted is completely 'unscientific' and should be rejected out rightly. Why is the DBT still legitimising the data and that too in the name of scientific research? In any case, the entire expenditure for research into nine genetically modified crops, amounting to Rs 60-crore, has been incurred by the private companies. How can such data be accepted at its face value?

\* Worse is the scientific inadequacy when it comes to environmental and human health risks. In the case of gene flow, which measures the distance the pollen flies, the DBT says that it is only two metres. The company says that it is 15 metres and latest studies by the US Department of Agriculture ascertain that it is three miles. Perhaps the DBT is not aware that there is quite a massive gap between two metres and three miles, which obviously casts doubts about the efficacy and credibility of the research so far conducted. Moreover, the plot size was so small that pollen dispersal data from such plots cannot be accepted.

\* There are no creditable and conclusive studies conducted on the nutritional impact on buffaloes and cows to ascertain whether transgenic cotton and transgenic cottonseed has



any effect on animal health, milk production and quality of milk, which in turn affects human health. This can only be established on the basis of long-term studies and the DBT unfortunately is willing to go ahead on the basis of inconclusive data from one year of trials.

\* Studies on the development of resistance of other plant pests, toxicity studies on other animal species like poultry and fish, studies on the gene flow and pollen dispersal and an assessment of the impact of such migration on non-transgenic crop have not been studied. Nor has the DBT studied the stability of the Bt gene.

Sir, you will agree that in view of the glaring flaws that have been deliberately overlooked, and since genetic engineering involves big companies and mega-bucks, the manner in which the so-called 'scientific' research trials have been conducted is not only deplorable but shocking. This also has put a big question mark on the credibility of Indian science and the regulatory authorities. We shall therefore be grateful if you can order a CBI inquiry into the whole sordid affair.

**Thanking you,**

**Sincerely yours,**

**Devinder Sharma,**

**Director, The Ecological Foundation,**

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