

## **Toxic Genes and Toxic Papers : IFPRI covering up the link between Bt. Cotton and Farmers Suicides**

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The financial meltdown that started in September 2008 was a result of the investments based on “toxic” paper - worthless financial instruments traded for super profits, even while they failed to reflect any value in the real economy. “Toxic Assets” and “Toxic Paper” do not refer to the business of companies of trade in deadly toxics. It still means deadly, but deadly to financial institutions and banks because of these inherent risks.

There are similar “toxic papers” being generated in the defense of GM crops, especially Bt. Cotton. Like the toxic papers of Wall Street they have no grounding in reality. They assume false number crunching can be a substitute for truth. And they are deadly for food and agriculture security, and farmers livelihoods.

A recent paper from IFPRI “Bt Cotton and Farmers Suicides in India” falls in this category of a doubly toxic paper because it covers up the risks of toxic genes and is detached from reality. Yet it is aimed at shaping public opinion about GM crops by using every trick in the trade to separate the impact of GM crops on farmers from the seed monopoly and the technology of producing non-renewable, toxic seeds through genetic engineering.

Bt. Cotton is the only GM crop approved for commercial planting in India to date.

The majority of farmers suicides in India are a harvest of toxic genes of Bt. Cotton. The Bt. Gene is literally a toxic gene. It produces a high dose toxin. The Bt. In the genetically engineered crops is substantially different from the Bt in the naturally occurring soil organism, *Bacillus Thurengensis*. A false principle of “Substantial equivalence” assumes that because natural Bt. Sprays are safe, genetically engineered Bt. Crops such as Bt. Cotton are safe. This assumption is not justified. Bt. sprays do not cause allergic reactions, Bt. crops do. Further the Cry proteins in Bt. Sprays break down within a fortnight upon exposure to UV light. This does not happen in Bt crops since the Bt toxin is produced internally in grains and other plant tissues. Further, the Bt. spray is used only once or twice in a season, whereas the Bt. Toxin in GM crops is released all the time, by every part of the plant, thus increasing the risks from chronic exposure. Finally, Bt. sprays are composed of endo toxins in an inactive crystalline form. They only become toxic in the guts of particular insects which processes the crystal into a protoxin and then an active toxin. On the other hand, Bt. Crops are genetically engineered to produce the Bt. Toxin which is active. The Bt toxin in GM crops is

thus harmful to a wide range of species as the study on the Monarch butterfly from Cornell, and animal deaths reports from India indicate.

However the toxicity of Bt. Crops is much deeper and wider than the toxicity of the gene.

Bt. Cotton was introduced to control the American Bollworm, which is why Monsanto's trade mark for Bt. Cotton is "Bollgard". The argument was that by engineering the Bt. Toxin into the plant, the plant would be pest resistant. However, the bollworm has evolved resistance to the Bt. Toxin and new pests have emerged. The non target pest infestation has led to an increase in the use of pesticides. Our field studies in Vidharbha show a thirteen fold increase of pesticide use by farmers since Bt. Cotton was introduced in 2004.

While the reality shows that Bt. Cotton fails to control pests and has in fact led to increase in pest occurrence and pesticide use, the "toxic" paper from IFPRI states that Bt. Cotton reduces the number of pesticide sprays by 32 – 40 percent, reduces pesticide costs by 30 – 52 percent, increases the total cost of production by 32 – 40 percent, has no clear effect on seed cotton prices, increased yields by 34 – 42 percent, and raises net returns by 52 – 71 percent".

Every claim in this statement is false. The high costs of Bt. Cotton seed is not just reflected in farmers indebtedness and suicides, it is confirmed by the case brought to the Monopoly and Restrictive Trade Practices (MRTP) Commission by the Government of Andhra Pradesh (AP) in which our foundation also intervened.

On June 26, 2006 the A.P Government filed a case of contempt against Monsanto – Mahyco Biotech (India) Ltd for not obeying the commission order on reducing its royalty which Monsanto charges as "trait – value" of Rs. 1750 per pack of 450 gms of seed. Since Monsanto introduced, Bt. Cotton in India before India's patent laws allowed patents on GM seeds, it cannot formally claim royalty.

The corporation buys the seed from farmers at Rs. 300/- per pack of 750 grams and then claims the right to sell it back to farmers at exorbitant prices.

The A.P Government's contention was that the high price of the Bt. Cotton is one of the reasons for distress among farmers. When the case was filed, more than 3000 farmers had committed suicide in A.P and most of them were cotton farmers.

The A.P petition demanded a reduction of "trait value" from Rs. 1750 to Rs. 750 per 450 gm pack and a return of Rs. 4 billion to farmers for over charging them. Monsanto lost the case and was forced to reduce its price.

The MRTP case exposes the false claim by IFPRI that there is "no clear effect on seed cotton prices" in Bt. Cotton. It also exposes the bias in the narrow base of

literature used. Research sponsored by Monsanto and the Biotech industry forms the basis of the “peer reviewed” literature. Government orders, Court Orders, independent studies are totally ignored.

The IFPRI report is also toxic in terms of contradictions and inconsistency. The report admits increase in costs of production. This translates into lower incomes for farmers. Yet in spite of farms spending more, IFPRI claims upto 71% higher net returns.

This claim to higher returns is also falsified by multiple field surveys. A 2008 survey by Navdanya comparing Bt. Cotton with organic cotton showed that organic producers earn nearly ten times more than Bt. Cotton farmers.

#### **Cost Benefit Analysis of Bt. Cotton and Organic Cotton**

	Bt. Cotton (Rs. / acre)	Organic Cotton (Rs. / acre)
a) Expenses – Seeds, pesticides, fertilizer, irrigation etc.	8164	3788
b) Output Value	8876	10075
Net Income (a - b)	714	6287

Our earlier studies in A.P, M.P and Karnataka also show that non-Bt. Cotton farmers have higher net incomes than Bt. Cotton farmers.

#### **Input / Output Bt. / non-Bt. / Desi Cotton Per Acre**

	<b>Bt. Cotton</b>	<b>Non Bt. Hybrids</b>	<b>Desi Varieties</b>
Expenditure Input (seeds, fertilizers, pesticides, irrigation etc)	Rs. 9700/-	Rs. 5750/-	None
Total Yield	2 quintals	10 quintals	5 quintals
Output Value	Rs. 3300/-	Rs. 16500/-	Rs. 8250/-
Loss / Profit per acre	Loss – Rs. 6400/-	Profit – Rs. 10750/-	Profit – Rs. 8250/-

#### **Cost Benefit Analysis – Madhya Pradesh**

	Bt. Cotton	Non Bt. Varieties
Expenditure input (seeds, fertilizers, pesticides, irrigation, labour)	Rs. 6675/-	Rs. 7005/-
Expected total yield	4.01 quintals	7.05 quintals
Output Value	Rs. 7218/- (Rs. 1800/- quintal)	Rs. 12690/- (Rs. 1800/- quintal)
Profit per acre	Rs. 543/-	Rs. 5685/-

### Cost Benefit Analysis – Karnataka

	Bt. Cotton	Non Bt. Varieties
Expenditure input (seeds, fertilizers, pesticides, irrigation, labour)	Rs. 8925	Rs. 10250/-
Expected total yield	3.82 quintals	7 quintals
Output Value	Rs. 7640/- (Rs. 2000/- quintal)	Rs. 14000/- (Rs. 2000/- quintal)
Loss / Profit per acre	Loss of Rs. 1285/-	Profit of Rs. 3750/-

A study by the Andhra Pradesh Coalition in Defense of Diversity (APCIDD) showed how biased the results of the Monsanto sponsored A.C Nielson study was.

#### Monsanto commissioned versus independent study

State	Bollworm Reduction	Pesticide Usage Reduction		Yield increase		Increase in Net Profit
		Rs	%	Quintals / Acre	%	
Andhra Pradesh	%	Rs	%	Quintals / Acre	%	Rs / Acre
Monsanto Study	58%	1856/-	24%	1.98	92	5138/-
Andhra Pradesh APCIDD Study	14%	321/-	2%	0.09	(-)9%	(-) 750/-

Since the IFPRI study is biased in its selection of literature, its claims are also biased. Just as securitization of mortgages did not secure peoples homes but merely piled up trade in toxic paper IFPRI's manipulated paper does not secure farmers survival, it merely piles up toxic papers on toxic Bt. Cotton.

The IFPRI paper is totally contradictory in its defense of Bt. Technology. Where the cotton crop fails or pests increase or farmers commit suicide, the cause is farmers stupidity or the fault of the varieties into which Bt is introduced. As the study states "The loss observed in some studies is largely due to the lack of adequate Bt. Varieties (particularly for rainfed conditions under draught), the lower quality of cotton of some of these varieties, the high price of seed compensating for the reduction in pesticide use, the improper use of the technology associated with the limited knowledge of the technology among cotton growers. In other words, the technology represented by the Bt trait, should not be blamed, instead, the conditions in which it was introduced, sold and used explain some of the observed losses in specific regions of India".

When the Bt. Cotton performs well it is "the technology". When it does badly, it is "the context". This opportunistic separation of "technology" and "context" when convenient is at the heart of IFPRI's false argument that Bt. Cotton and farmers suicides are not related. As it states "In specific regions and years, where Bt.

Cotton may have indirectly contributed to farmer indebtedness (via crop failure) leading to suicides, its failure was mainly the result of the context or environment in which it was introduced or planted; Bt. Cotton as a technology is not to blame". This argument is toxic. All technologies are embedded in context. There are no dis-embodied technologies, except in ideology.

Bt. Toxins in a crop are embodied in a seed, a seed is planted in the soil. Bt. Technology does not exist independent of the seed, and hence it is pure ideology to talk of Bt. Cotton as a technology independent of the seed and soil. The seed has been sold to farmers as a "magic bullet" at super profits. When Monsanto collects royalties as "trait value", it collects from the rainfed farmer and the irrigated farmer, it collects from companies using different hybrids for introducing the Bt. Trait. It cannot own the trait to collect royalty, and disown it for the negative consequences of putting toxic genes into plants to create a toxic agriculture where farmers are pushed to commit suicide.

Just as the toxic papers brought Wall Street down, the toxic papers Monsanto sponsors to protect its interests will bring agriculture down. But unlike the bail out of banks, when the last seed is "terminated" and the last farmers is gone, there will be no bail out possible.

That is why we need to create GMO freedom now. And that also includes freedom from toxic papers that manipulate truth while farmers die.