

THE ECONOMICS OF BT COTTON

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I was travelling through some villages in Wardha district recently, talking to farmers. Wardha is situated in the cotton growing belt of Maharashtra and its farmers are quite aware about agricultural developments, at least compared to their counterparts in many other parts of the country. We talked about the situation of cotton farmers of the region, and the talk quickly turned to Bt cotton, both the new genetically engineered hybrids sanctioned by the government as also the Bt cotton crop planted by the illegal seeds supplied by Navbharat seed company last year. Several interesting points came up during the discussion, many pertinent to the economics of cultivating the Bt cotton varieties of Mahyco-Monsanto.

At present, farmers in Wardha and other regions of Vidarbha, predominantly grow hybrid cotton. Some continue to grow the 'desi' or local cotton but these are a minority. The principal source of the hybrid seeds is private companies although there are some varieties supplied by the Punjab Rao Deshmukh Agricultural University located in Wardha and by the Gujarat government. All the hybrid seeds available are priced between Rs. 300 to Rs. 450 per 450 gm bag. This odd size is standard here although packages of 750 gm. are also sold.

Working out the economics of cotton cultivation, the farmers explained that they need about 1 kg of seed per acre which works out to a cost of Rs. 700 to Rs. 900 per acre depending on the variety. For our calculations, let us take an average of Rs. 800 per acre. Pesticide sprayings work out to another Rs. 1000 per acre. Wardha and almost all of Vidarbha is rainfed so the yields are lower compared to the irrigated areas in Punjab and Haryana. The average cotton yields are around 3 quintals per acre in this region. The farmers here are demanding a monopoly pricing system because cotton prices have been plummeting these past few years, the whole situation being exacerbated by the government's ad hoc decisions to import cotton, causing cotton prices to crash further.

In this situation, two new varieties of cotton, one legal and the other illegal have become available to farmers. The Mahyco –Monsanto varieties are to be priced at Rs. 1600 per bag. The economics in this case, will work out like this: Cost of seed per acre will go up to Rs 3200. If pesticide use is reduced because of the Bt toxin, say even by as much as a dramatic 60 % , savings on pesticide will work out to Rs. 600 per acre. The yield will not be affected much since Bt cotton has not been bred to confer a yield advantage but the advantage of disease resistance. The main reason the yields will not go up in any significant way is because of the lack of irrigation facilities. So the economics of Mahyco-Monsanto's Bt cotton look very unfavourable for the farmer. A total outlay of Rs. 3600 (3200 for seed + 400 for pesticide) as against Rs. 1800 per acre in the old system (800 for seed + 1000 for pesticide). This means an increased net outlay of Rs. 1800, which is exactly double! This increased cost can not be made up by higher yield, for the reasons explained above.

Rumours are rife in the villages of this cotton belt. The propaganda and rumours through the local grapevine have many interesting, if tragic aspects. The farmers are being told that yields will go up phenomenally and the higher seed costs will be more than offset by higher volumes of cotton produced per acre. This still does not solve their problem of getting a decent price but it sounds attractive! Others had heard that the government had made it compulsory to buy the Monsanto cotton and seed of other varieties would only be supplied if the Monsanto variety were also bought. In some villages we heard the farmers describing that credit would be available only for the Mahyco –Monsanto seeds. Another variation on this was that if farmers did not buy the Monsanto seed, their credit lines would be blocked. All these rumours point to one unhappy fact, the perception that the government was adamant on pushing the Mahyco-Monsanto hybrids at all costs. This will have repercussions in various ways later.

On the other hand, is the availability of the cotton seed being supplied from Gujarat by those farmers who had harvested their crops planted with Navbharat's illegal seeds last year. Eleven thousand acres of the illegal crop have yielded a lot of seeds. Since the Genetic Engineering Approval Committee (GEAC) in a spectacular display of incompetence had failed over a period of several months, to take any action when Navbharat's transgressions came to light, the market is awash with the illegal, unregulated cotton variety, making a public mockery of India's ability to regulate and direct the use of this new and controversial technology. Not just in Maharashtra, these illegal seeds are being sold openly this season in Andhra Pradesh, Punjab, Haryana and of course, Gujarat. Although the reports from Tamil Nadu have not yet been confirmed but chances are high that Navbharat's seeds are available there too.

Let us look at the economics in this case. Navbharat seeds are selling at Rs. 100 per bag since they are illegal. A little like selling on the black market, at a lower cost. Cost of seed works out to Rs. 200 per acre and there will be some savings on pesticide costs. Certainly a better return than with the officially sponsored Monsanto varieties! For a few seasons at any rate, the farmer will have access to a cotton variety with favourable economics. After that when the variety fails, nobody is responsible and the victim as always, is the farmer, left alone to cope with disasters heaped upon his head without his knowledge. Any one who has seen the field will tell you that non-standard seeds of indifferent quality are one of the biggest problems facing cotton farmers. The failure of the GEAC to regulate or to take punitive action against Navbharat has emboldened every fly-by-night seed operator to take the farmer for a ride.

After the Gujarat harvest, large volumes of Navbharat's Bt seed have arrived in the market. Reports are coming in of hole-in-the-wall companies, often one-man operations that are selling magical Bt cotton seeds through advertisements. Many of these phoney operators are not even aware of what Bt means or what its supposed actions are. One source out of Gujarat supplying to gullible farmers in Punjab, claimed he had bred his own Bt cotton. Another sent out leaflets to farmers about the 20 other Bt cotton varieties that would soon be available through other seed companies. As this mayhem plays out, there is not one single action taken by the government. No rebuttals of the crazy claims are being made, no damage control exercise, no information campaign to warn the farmer against fake seed

operators out to fleece him. The farmer, as so often before, is being readied once again for the slaughter, this time almost with the complicity of the government.

In this utterly confused scenario where both science and policy have been thrown to the winds, there are those who are arguing that so what if the varieties fail in a few years, why not let the farmers enjoy a few good harvests. The other argument goes that if the farmer finds out (after growing the crop and indebting himself) that the variety is not profitable; he will abandon it by himself. Both these arguments can only be made by city people. If the farmer finds out after the harvest that he has lost money and can not repay his debt, who bails him out then? And when the variety fails because the bollworm has become resistant to Bt, like the mosquitoes did to DDT, what solutions are there to offer the farmer so that he can continue growing cotton? At that time these armchair theorists will be hard to find.

As for implementation, the farmers do not see any reason to leave a 20 % refuge if they were to grow Monsanto's genetically engineered cotton. The hype extolling the variety has been so excessive and so assiduously promoted by the scientific community and the government departments that almost unrealistic expectations have been built up. If this cotton is so super, why, argue the farmers, should they deny themselves the benefit from the remaining 20 % of their land? The scientific community and the administration have concentrated solely on promoting the new varieties. They have not bothered to educate the farmers about the drawbacks of the technology, its prescribed methodology and the dangers of not following proper procedure, for instance, of not leaving a non-Bt refuge for the bollworm to retain susceptibility to Bt varieties.

Faced with defiant farmers who do not see the logic of 'wasting ' 20 % of their land, the government is now finding it difficult to convince farmers that this fantastic technology they were promoting all along , does indeed have a downside. Scientists and agriculture departments are already admitting that they have a problem on their hands since the farmers do not intend to follow any instructions about demarcating insect refuges. To make matters worse, populist farm leaders with political ambitions are playing low level vote politics and making dramatic pronouncements about how nobody will tell the farmers what to do. The farmers will decide what to grow and how to grow it! Little knowledge is indeed a dangerous thing. The government must recognise the chaos it has created and take corrective steps. For instance, a new, more competent and transparent GEAC must be set up immediately, technologies must be relevant to the needs of small farmers and should be introduced only after educating them. India, which has significant technical skills in the field of agriculture, must develop self-reliance in technology. There is no reason for the Indian establishment to function as the purveyors of MNC technologies, specially with their incumbent baggage of patents.