

‘BT COTTON CONTROVERSY’

Paradoxes that Remain

KAVITHA KURUGANTI

It seems to be the norm with Gopal Naik, Martin Qaim, Arjunan Subramanian and David Zilberman ‘Bt Cotton Controversy: Some Paradoxes Explained’, (April 9, 2005) to bring in data they have from the past to explain something in the present. While governments, the company involved and independent agencies are discussing Bt cotton performance data from kharif 2004, these authors are undertaking a ‘current discussion’ based on primary data from 2002. In 2002, when the rest of the interested groups were discussing the performance of the first season of approved commercial cultivation, the authors chose to portray the excellent potential of Bt cotton based on company-supplied data from field trials prior to 2002.

Coming to the present article, the authors decide to question studies based on all three years of commercial cultivation by independent agencies as well as government bodies, questioning their projection of Bt cotton as a failure, by presenting data from their own field survey from 2002. How is their data more correct than data from other sources? How can the paradoxes inherent in all studies be explained from a study that they have done in one year which according to them shows agronomic benefits, when other studies do not have such findings? In any case the conclusion about heterogeneity amongst farmers and germ plasm effects on production is known and logical and applies to any new seed/technology introduced in agriculture and its subsequent performance. By stating the obvious, the authors

cannot wish away the findings from other studies.

How about taking on board other studies which have also considered heterogeneity as a factor and have shown that across heterogeneous groups of farmers also, in even the most resource-intensive situation, the technology has failed (the DDS/APCIDD reports, for instance?). There are a few things to be discussed in this short paper (i) yields in connection with germ plasm and yields in connection with saving in crop loss due to pests; (ii) pest control costs and efficacy of Bt cotton on what it is purportedly brought in for.

Yields

If the whole issue rests so much on germ plasm, why hype up the technology – why not give credit to higher yield potential of some existing hybrids and teach farmers how not to lose these yields to pests by adopting non-pesticidal, sustainable practices? Or even allow for a small margin of yield loss, by using a high-yielding conventional hybrid to begin with. We all knew that a large factor behind yield is of course the germ plasm – why did the company also not say so in the first year? Why insert the gene in non-performing varieties, charge higher seed prices and realise its mistake at the expense of farmers' incomes, even if we were to assume that the pest control technology works?

That issues like market prices are affected by staple length and so on is already well known. Naik et al should instead question the marketing gimmicks of the companies involved which promise a uniform yield across varieties to a heterogeneous group of farmers who purchase Bt cotton seeds but obviously fail to deliver. For instance, longer staple length and higher yields were indeed promised in the company's propaganda without making a distinction between varieties or without explaining what 'increased yields' would mean here. Why should protection against crop loss be misrepresented as 'increased yields'? In a year where crop loss is minimal, farmers and their supporters are indeed right to question the undelivered promise of increased yields.

While talking about yield increases over-compensating the higher expenditure on Bt cotton, the authors deliberately choose to ignore even official data (from agricultural universities) that talks about stress intolerance of Bt cotton varieties, where no yields have been obtained by thousands of farmers in some locations

for two of the three years. Why are there no references to such data? Why is this brushed off as something not relatable to the technology?

Pest Control Costs

In any case, the decrease in pesticide sprays has not been dramatic since the incidence of secondary pests not only remains but grows – as farmers' experience collected through many other studies show, as also university and agriculture department data in some states show and as experience elsewhere shows. Why is such data not taken on board?

On the other hand, we wonder if they would have included the extremely questionable data put out by a company-commissioned report from 2004, if their *EPW* article was to have come a week later? Monsanto-Mahyco Biotech (MMB) chose to commission a study on Bt cotton performance in 2004 through IMRB, just as they had done with A C Nielson the earlier year (2004).

MMB seems to be under great pressure to show that Bt cotton is an effective pest management strategy and that pesticide sprays are progressively decreasing in Bt cotton, probably to counter the experiences of farmers that bollworm resistance is in fact building up, in their observation. The IMRB survey has put the pesticide costs of non-Bt hybrid users at around Rs 1,412 in spite of an average use of 6.24 sprays per acre. This finding seems highly inconsistent with data from other sources on the matter, and given that farmers use high-value, low-volume pesticides these days.¹ Such an inconsistency is also reflected in the average pesticide cost of a meagre Rs 275 per acre for 1.73 sprays per acre on Bt cotton. This data is further inconsistent with MMB's own survey of last year (the AC Nielsen study, 2004). In AP, in the second year (Kharif 2003), mere bollworm control costs in Bt cotton were reported to be Rs 1,369 per acre as per AC Nielsen/ORG-MARG. For Kharif 2004, it

is inexplicable how the total cost of pesticides in Bt cotton works out to Rs 283 per acre.

Other Questions

- (i) It needs to be asked why the authors did not show us their original data analysis on heterogeneity amongst farmers before arriving at Table 5? What was the profile of farmers that they studied in terms of capturing heterogeneity? For what kind of farmers do they finally recommend Bt cotton as an answer? How many such farmers exist in India, according to the authors?
- (ii) What do the authors want to make of the high standard deviation values of Bt cotton and its gross margin of Rs 5,294 as per their own analysis?
- (iii) The authors further show from their data that Bt cotton adopters in Karnataka and Tamil Nadu realised the biggest net benefits. They also argue for the success of Bt cotton based on increasing acreage under the transgenic varieties. If that is the case, why is the extent of Bt cotton in Tamil Nadu now reducing (from 19,000 acres in Kharif 2003 to 13,000 acres in 2004)?
- (iv) If increasing demand is an indicator of a technology's effectiveness or performance, how do the authors explain the increasing demand for pesticides? Does increasing demand automatically imply higher efficacy, successful experience and so on? Or does it also have elements of hyped up propaganda? Does increasing demand also justify the use at the expense of other concerns? [\[EW\]](#)

Email: kavitha_kuruganti@yahoo.com

Note

- 1 Farmers usually use two pesticides by the brand names of 'Tracer' (spinosad pesticide) and 'Avaunt' (Indoxacarb) to control heliothis. For 75 ml of Tracer, which can be used for one spray over one acre, the cost is Rs 850 per container. The effect is supposed to last for 15-20 days; Avaunt, another pesticide in a 200 ml container, costs Rs 680. A 200 ml container is supposed to be used for one spray over one acre to control heliothis. This is supposed to be effective for 7-10 days.

For the Attention of Subscribers and Subscription Agencies Outside India

It has come to our notice that a large number of subscriptions to the *EPW* from outside the country together with the subscription payments sent to supposed subscription agents in India have not been forwarded to us.

We wish to point out to subscribers and subscription agencies outside India that all foreign subscriptions, together with the appropriate remittances, must be forwarded to us and not to unauthorised third parties in India.

We take no responsibility whatsoever in respect of subscriptions not registered with us.

MANAGER