
Transgenic Crops – Positive Benefits for Producers and Consumers Proven.

Conclusive proof is now starting to emerge indicating that transgenic crops such as Roundup Ready (RR) Cotton and Soybeans and Bt Cotton are both profitable to grow and increase on-farm efficiency, as indicated by papers published recently by the AgBioForum <http://www.agbioforum.org/index.htm>

Production and Marketing Characteristics of Adopters and Nonadopters of Transgenic Cotton

Varieties in California by Wolf, Gelke, Lindo, Doub, and Lohse <http://www.agbioforum.org/v5n2/v5n2a05-wolf.htm> studied the production of cotton in California (which produces 13% of US cotton), the uptake of Bt cotton varieties and the effects of the adoption of this technology on the producers using it.

Wolf et al found, in 2000, 57% of Californian cotton growers planted Bt cotton on 44% of cotton area planted. They found that 75% of farmers using the transgenic cotton generated more profit per acre and 87% of those who planted Bt varieties planned to do so the following year, on the basis that the technology enhanced profitability, the authors commented *“Early adopters experienced a lower cost of fuel per acre and a lower labour cost per acre than non-adopters, pointing to some potential sources of efficiencies from transgenic varieties”*.

Farmers who grew transgenic cotton were more likely to get technical advice from their seed supplier, a farm advisor, farmer organisation or the web than non-growers who showed a preference for gaining information from other growers. This could indicate a higher level of business sophistication in the farmers who are earlier adopters of the transgenic varieties.

The second paper, **The Payoffs to Transgenic Field Crops: An Assessment of the Evidence**, by Marra, Pardey and Alston <http://www.agbioforum.org/v5n2/v5n2a02-marra.htm> compiles farm level evidence of transgenic crop production, from both US and international sources.

The share of RR soybeans sown in the US between 1997 and 2002 has increased from 1.9% to 74%. In some states this figure approaches 90%. Over the same period, the area sown to Bt cotton in the US has increased from 4% to 70%. Some of the key findings of this study are;

- In 11 of 13 US states yield over years for Bt cotton exceeded that of conventional cotton.
- The mean profit advantage of Bt over conventional varieties ranges from US\$16 to US\$173 / acre, including the cost of the technology fee.
- On average a reduction of 1.3 to 3.4 pesticide sprays per acre per season has been shown where Bt cotton has been grown.
- The average net benefit of growing RR cotton ranges from US\$17 / acre in Arkansas to US\$108 / acre in North Carolina.
- Little difference was found in pesticide use on Bt corn, but yield increases ranging between 5.3 to 14.9 bushels / acre were found.
- A study of the impact of Bt cotton production in China was cited that indicated *‘...significant aggregate net benefits to farmers and much smaller benefits to the seed companies and research institutes/companies’*. and *‘...only 4% of farmers planting the Bt varieties suffered any effects of pesticide poisoning, compared with 33% of those who did not plant Bt cotton’*.
- *“Growing transgenic cotton (Bt, RR, or the stacked-gene type) is likely to result in reduced pesticide use in most years in most states, and it is more likely than not to be a relatively profitable enterprise in most of the US Cotton Belt”*.
- *“Bt corn will provide a small but significant yield increase in most years across the Corn Belt, and in some years and some places the increase will be substantial, resulting in significant increases in profit”*.
- *“Although there is some evidence of a small yield discrepancy early on in the RR soybean varieties, in most years and locations savings in pesticide costs will more than offset the lost revenue”*.
- *“One important aspect is the “convenience factor” for the RR crops. Farmers report that even if there is a slight yield discrepancy with RR soybeans, the reduced herbicide costs and the extra time available to attend to their higher-value crops are more than sufficient compensation. The impressive rates of adoption for many of these transgenic crops are strong evidence of their perceived value to farmers.”*

Other papers in Volume 5 Number 2 of the AgBioForum <http://www.agbioforum.org/index.htm>

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