

Has GMO Bt cotton been a “disaster” for India, as Vandana Shiva claims?

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.**

Private seed firms in India have made significant investments in cotton breeding and biotechnology since the 1980s. These investments have paid off with a series of proprietary hybrids that were developed using the inbred lines based on public-sector research and breeding methods. The adoption of proprietary hybrids has rapidly increased since 1998, and by 2009-10, 95 percent of cotton acreage was under proprietary Bt hybrids. As a consequence of their adoption, average cotton yields have increased from 100 kg/ha in the 1950s to nearly 552 kg/ha for the 2013-14 planting season.

While many micro-level studies have shown yield increases and pesticide reduction due to Bt hybrids, only a few have sought to estimate the differential impacts of proprietary hybrids from that of the Bt trait. This article seeks to estimate these differential impacts. For empirical estimation we used a unique data set from Francis Kanoi Marketing Research, who surveyed 20,000 small- and medium-sized cotton farmers over six time periods from 1998 to 2010.

Our results show that adoption of proprietary cultivars, hybrids and Bt hybrids, were 20 percent to 38 percent higher than public hybrids and open-pollinated varieties. Additionally, pesticide use was reduced by the adoption of Bt hybrids. The financial returns to proprietary research were found profitable for firms, as were the economic benefits for society from private research, which are estimated to be between 36 percent and 44 percent. Our results suggest that government programs encouraging private-sector R&D could have substantial payoffs for private firms, as well as society in general.

**Read full, original post:** Empirical Analysis on the Impact of Private-sector R&D on Cotton Productivity in India