The Journal of Rural and Agricultural Research Vol. 17 No. 1, 65-67 (2017)
Received February 2017; Acceptance May 2017

Comparative study of farmers growing *Bt.* and non *Bt.* Cotton in Haryana: A sociological study

JATESH KATHPALIA AND SUBHASH CHANDER
Deptt. of Sociology, CCS. Haryana Agricultural University, Hisar - 125004

Abstract

India has the largest area under cotton production followed by china, United States and Pakistan. Cotton has been grown in nine major states in three different zones, Punjab, Haryana and Rajasthan in north zone; Andhra Pradesh, Karnataka and Tamil Nadu in south zone and Maharashtra, Gujarat and Madhya Pradesh in central zone. Cotton popularly known as "White Gold" is a major commercial crop and has been grown for its lint and seed. This study is introducing a number of observations on the applications of bollgard of the Bt cotton. The study was conducted among 100 farmers in Sirsa and Hisar district of Haryana State through survey method. The findings of the study elucidate that main constraints reported by the farmers while growing Bt. cotton were – more number of diseases/insects (82.00%), high price of seed (80.00%), growing condition not favourable (65.00%), non-availability of labour (60.00%) and more irrigation required (45.00) etc. It was found that due to attack of whitefly and less production of Bt. cotton, farmers shifted from Bt. cotton to non Bt/desi cotton in 2014 in Hisar district of Haryana. Moreover production of Bt. cotton in Sirsa district was more than Hisar district.

Key words*: Bt.* and non *Bt.* Cotton, technology, productivity, white fly

Introduction

No country on earth cultivates more cotton than India. According to the Ministries of Agriculture and Textile, 10.3 million hectares (ha) of cotton were sowed in India during the 2009 – 2010 growing season. During the 2002 – 2003 and 2003 – 2004 growing seasons there was even a dip, with 7.7 and 7.6 million ha respectively. This was followed by a systematic increase to more than 10 million ha in 2009 2010. Haryana has occupied the 6th position in the list of top 10 largest cotton producing states in India, with a production of 25 Lakh Bales. With a yield of 665 Kilograms per hectare, Haryana account for more than 6% in the total cotton production in the country. Bt. cotton has spread very rapidly in China. There is good demand for it from the farmers since it reduces the cost of pesticide applications as well as the exposure to pesticides. (Anonymous, 2011).

The 2014-15 seasons were affected by late rains and pest pressure which led to lower yields. The price of Bt. cotton was reported to be 10 per cent less in the local market (Business Line, 2002). Some reports indicated that initially Bt Cotton showed resistance to boll worms but as soon as the formation of bolls started, the worms started attacking them (RFSTE, 2002). The impacts of *Bt*. cotton on small farmers is mixed, other worries remain about the long term impacts of *Bt*. cotton. (James C., 2008). Keeping in view fluctuation in the production of *Bt*. cotton, the study was planned with the following objectives-

- To know the reasons for growing *Bt.* and non *Bt.* cotton.
- To examine the constraints faced by *Bt.* and non *Bt.* cotton growers.

Methodology

· The study was conducted in Sirsa and Hisar districts of Haryana state. One block was selected from each district. From the selected blocks, two villages were drawn from each district. 70 farmers were selected from chainat and majod villages from Hansi block of Hisar district. From Bajekan and Kanwarpura villages of Sirsa-1 block of Sirsa district 30 farmers were also selected. Interview Schedule was prepared to collect the desired information. Finally one hundred selected farmers were surveyed with the help of Interview Schedule. Data was analyzed and tabulated to draw the inferences.

Results and Discussion

Reasons for growing Bt. cotton

Reasons for growing Bt. cotton were more productivity (90.00%), higher income (86.00%), Big boll and easy in picking (68.00%), and resistance to bollworm (51.00%) etc. On an average, estimates by farmers indicate that yield increased by 30.00 per cent and insecticide application decreased by 30.00 per cent while profitability increased by 80.00 per cent. The study is accordance with the study of Iyengar and Lalitha (2002).

Table 1: Reasons for growing Bt. cotton (N=100)

Sr. No.	Reasons	Frequency	Percentage
1.	More productivity	90	90.00
2.	Higher income	86	86.00
3.	Big boll and easy in picking	68	68.00
4.	Resistance to bollworm	51	51.00

(Responses were multiple)

Reasons for growing non Bt. cotton/desi

Data in table 1 reveals that main reasons for starting again growing American non-Bt.cotton and desi cotten were continued reduction in productivity of Bt.cotton and more attack of whitefly on Bt. cotton (100.00%), seed is less expensive (80.00%), higher production cost of Bt. cotton (70.00%) and feed (binola/cotton seed) good for animals (60.00%).The study is accordance with the study of James (2008) and Kumar *et al.* (2013).

Constraints for Bt. cotton

The data in table 3.shows that main constraints reported by the farmers while growing Bt. cotton were – more number of diseases/insects (82.00%), high price of seed (80.00%), growing condition not favourable (65.00%), non-availability of labour (60.00%) and more irrigation required (45.00) etc. The findings are accordance with the study of Acharya, K. (2006) and Dev.(2008).

Table 3:Constraints for growing Bt. cotton (N=100)

Sr. No.	Reasons	Frequency	Percentage
1.	More No. of diseases/insects	82	82.00
2.	High price of seed	80	80.00
3.	Growing conditions not favourable	65	65.00
4.	Non-availability of labour	60	60.00
5.	More Irrigation required	45	45.00

(Responses were multiple)

Constraints for non Bt. cotton

According to table 4. main constraints reported by the farmers who were growing non Bt. cotton/desi were – non-availability of desi cotton seeds (90.00%), bollworm (sundi) attack (90.00%), non-availability of labour during season (85.00%), expensive cost of labour and more number of pesticides required (70.00% each) and less production (50.00%). These findings are accordance with the study of Bennett et *al.* (2006) and report of RFSTE (2002).

Table 4: Constraints for growing non Bt. cotton /desi (N=20)

Sr. No.	Reasons	Frequency	Percentage
1.	Non-availability of seeds	18	90.00
2.	Bollworm (sundi) attack	18	90.00
3.	Non-availability of labour during season	17	85.00
4.	Expensive cost of labour	14	70.00
5.	More No. of pesticides required	14	70.00
6.	Less production	10	50.00

(Responses were multiple)

Table 2: Reasons for growing non Bt. cotton/desi (N=20)

Sr. No.	Reasons	Frequency	Percentage
1.	Continued reduction in productivity of Bt. cotton	20	100.00
2.	More attack of whitefly on Bt. cotton	20	100.00
3.	Seed less expensive	16	80.00
4.	Higher production cost of Bt. Cotton	14	70.00
5.	Feed (binola/cotton seed) good for animals	12	60.00

(Responses were multiple)

It was observed that the average yield of Bt. cotton was more than American non-Bt./ desi cotton for the last 6-7 years. But due to attack of whitefly and less production of Bt. cotton, farmers shifted from Bt. cotton to non Bt/desi cotton in 2014 in Hisar district of Haryana. Moreover production of Bt. cotton in Sirsa district was more than Hisar district.

Conclusion

It was concluded from tables that reasons for growing Bt. cotton were more productivity (90.00%), higher income (86.00%), Big boll and easy in picking (68.00%), and resistance to bollworm (51.00%) etc. On an average, estimates by farmers indicate that yield increased by 30.00 per cent and insecticide application decreased by 30.00 per cent while profitability increased by 80.00 per cent. Main constraints reported by the farmers while growing Bt. cotton were – more number of diseases/insects (82.00%), high price of seed (80.00%), growing condition not favourable (65.00%), non-availability of labour (60.00%) and more irrigation required (45.00) etc.

References

Acharya, K. (2006). Bt cotton farmers are alert this year. Lenson Bt: The growing season sets in India Together, June 20, 2006. <http://www.indiatogether.org/2006/jun/agrbtkarnatk.htm>. Accessed April, 2007.

Anonymous, (2011). Annual report AICCIP. All India Coordinated Cotton Improvement Project, Coimbatore. Business Line (Newspaper) (2002). India, December 9, 2002.

Bennett, R., Kambhampati, U., Morse, S. and Ismael, Y. (2006). Farm-level economic performance of genetically modified cotton in Maharashtra, India. Review of AgriculturalEconomics, 28(1): 59-71.

Dev, S.M. and Rao, N.C. (2008). Socio-economic Impact of BT Cotton. Centre for Economic and Social Studies (CESS) Monograph No. 3. Hyderabad

James, C. (2008). Global Status of Communicialize Biotech/GM Crops: 2008. ISAAA Brief no. 39. ISAAA: Ithaca, New York.

Kumar,A., Kishore, A., Reddy, Y.R., Chaitanya, P. J., Lakshmi, B.N., Pochampalli, J., (2013). Isolation of Gossypol and Analysis of Phytochemicals in Seed Extract of Bt and Non-Bt Varieties of Cotton. Journal of Pharmacognosy and Phytochemistry. May/June 2013.

Lalitha.N and Iyengar s (2002). Bt Cotton in India: Controversy Visited, Indian Journal of Agricultural Economics, 57: 3, July-September.

RFSTE (2002). Failure of Bt Cotton in India, Press Release Research Foundation for Science, Technology and Ecology, September 26, 2002.