

## Profitability of Bt cotton production

D. B. PAWAR AND B.R. PAWAR\*

Department of Agricultural Economics, Marathwada Agricultural University, PARBHANI (M.S.) INDIA

### ABSTRACT

Hirsutum hybrid cotton (*Gossypium hirsutum* L.) with modified gene of bacteria *Bacillus thuriangiensis* is popularly known as Bt cotton. Investigation was carried out during the year 2006-07 on rainfed and irrigated Bt cotton farms in Parbhani district of Maharashtra. Data were collected from forty eight rainfed and forty eight irrigated cotton growers by personal interview method with the help of pretested schedule with respect to inputs, productions, costs and returns. Cost concepts namely cost-'A', cost-'B' and cost-'C' were used for cost evaluation. The results revealed that yield of Bt cotton was 16.04 q/ha on rainfed Bt cotton farm while it was 31.65 q/ha on irrigated Bt cotton farm. It implied that irrigated condition is more favourable to increase the productivity of Bt cotton crop. It was observed that cost-'C' was Rs. 26946.14/ha on the rainfed farm while it was Rs. 41647.01/ha on the irrigated farm. It is worth noting that net profit on the irrigated farm was Rs. 22130.99/ha which was more than four times than that on the rainfed farm (Rs. 5462.36/ha). Output input ratio was 1.20 and 1.53 on the rainfed and the irrigated farms, respectively. It inferred that investment in Bt cotton production had been worthwhile in both the conditions. Cost of production of Bt cotton was Rs. 1609.45/q on the rainfed farm while it was Rs. 1250.75/q on the irrigated farm. It was implied that higher productivity/ha and lower cost of production/q resulted into higher profitability of Bt cotton under irrigated condition.

**Key words :** Bt cotton, Costs, Returns, Income, Profit

### INTRODUCTION

Hirsutum hybrid cotton (*Gossypium hirsutum* L.) with modified gene of bacteria *Bacillus thuriangiensis* is popularly known as Bt cotton. Commercial hybrid cotton can help to increase the cotton productivity. But it is affected mainly due to bollworm pest attack. In order to overcome the pest attack, modified gene of bacteria produces bacterial diseases in insect body and ultimately the organism kills the insect which causes the bollworm attack. Maharashtra has the highest cotton area of 29.68 lakh hectares which is 34.80 per cent to India's area under cotton. However, only 3 per cent of cotton area is under irrigated and rest of the area is under rainfed condition in the state (Pathrikar, 2003). In Marathwada region of Maharashtra, cotton cultivation has been playing a key role in development of farm economy because 30 per cent of cropped area is under cotton crop. In other word, the region has 10 lakh hectares area under cotton in which area of Bt cotton has 8 lakh hectares. The region mostly comes in assured rainfall zone and black soils which are favourable factors for cultivation of the crop. Costs and returns are important economic aspects in order to determine profitability of Bt cotton crop for decision making in production of the crop. Keeping in view the above aspects, the study was undertaken.

### MATERIALS AND METHODS

In relation to selection of farms, rainfed and irrigated Bt cotton farms were selected through multistage sampling design as follows. In the first stage, Parbhani district was purposely selected, because of its predominance in area of cotton in Marathwada region of Maharashtra. In the second stage, Parbhani tehsil was also purposely selected, because of its superiority in area of cotton under rainfed as well as irrigated conditions. In the third stage, eight villages were selected on the basis of highest area under both rainfed and irrigated Bt cotton. In the fourth stage, from each. of the selected villages, the separate lists of rainted and irrigated Bt cotton farms with area under the crop were obtained. Then, six rainfed and six irrigated Bt cotton farms were selected randomly from each of the villages. Thus, 48 rainfed and 48 irrigated Bt cotton farms were selected for present investigation. Regarding collection of data, cross sectional data were collected from 48 rainfed and 48 irrigated cotton growers by personal interview method with the help of pretested schedule.

For evaluation, data were converted into per hectare basis in tabular form. Then statistical tools like arithmetic mean, percentage and ratio were used for estimating the costs and returns. Cost concepts like cost-'A', cost-'B' and cost-'C' were used. Cost-'A' refers to paid out cost

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\* Author for correspondence.