

Research  
Paper

## Response of Bt cotton hybrids to different plant spacing under rainfed condition

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### ABSTRACT

The field experiment was conducted at Department of Agronomy, Marathwada Agricultural University, Parbhani during the *Kharif* season, 2008-09 to find out the response of Bt cotton hybrids to different plant spacings. The plant spacing of 90 x 60 cm recorded highest seed cotton yield (SCY) which was significantly superior over plant spacing 150 x 30 cm and 180 x 30 cm and also at par with spacing of 120 x 45 cm. Plant spacing of 120 x 45 cm and 150 x 30 cm recorded at par SCY. The plant spacing 180 x 30 cm recorded significantly lowest SCY. Among the three Bt cotton hybrids Ajit 155 Bt, recorded significantly higher SCY than Bunny Bt and RCH 2 Bt.

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**Key words :** Plant spacing, Bt cotton hybrids, SCY

### INTRODUCTION

Cotton (*Gossypium hirsutum*) is important fiber crop of global significance and cultivated in tropical and subtropical regions of more than seventy countries of the world. Cotton plays key role in the national economy in terms of both employment generation and foreign exchange earnings. The transgenic cotton era has dawned in our country with the approval accorded by GEAC (Genetic Engineering Approval Committee) for the commercial cultivation of Bt. cotton hybrids in central and southern zones from 2002 crop season onwards. Performance of Bt cotton hybrids varies from region to region with changing agro climatic conditions, crop nutrition, pest pressure and management. Today transgenic cotton hybrids are becoming popular among the farming community because of the protection from the bollworm menace at reduced cost besides being environmentally safe. Apart from the likelihood of reduction in insecticide use by at least 50 to 75 per cent, it is also expected to ensure favourable ecological, economical and sociological returns in contrast to the harmful effects due to large scale use of insecticides (Kranti, 2002). Among the various factors influencing production of Bt cotton hybrids, spacing

play a very significant role and needs to be confirmed for various Bt type of cotton hybrids. The present study was therefore, planned to be carried out to know the yield potential of Bt hybrids at various plant spacings.

### MATERIALS AND METHODS

A field experiment was conducted during *Kharif* season of 2008-09 at Department of Agronomy, Marathwada Agricultural University, Parbhani, during the *Kharif* 2008, the total rainfall of 629.5 mm was received (23<sup>rd</sup> MW to 6<sup>th</sup> MW) in 41 rainy days. The experiment was laid out in split plot design with four spacings ( $S_1$  - 90 x 60 cm,  $S_2$  - 120 x 45 cm,  $S_3$  - 150 x 30 cm and  $S_4$  - 180 x 30 cm) as main plot treatments and three Bt cotton hybrids ( $V_1$  - Bunny Bt,  $V_2$  - Ajit 155 Bt and  $V_3$  - RCH 2 Bt) as sub plot treatments, replicated thrice. The experimental field was clayey (56.20 %) in texture with low in available nitrogen (110 kg/ha), moderately high in available phosphorus (22.56 kg/ha) and rich in available potash (425.50 kg/ha), medium in organic carbon content (0.53 per cent). The sowing was undertaken in the last week of June. Sowing was done by dibbling method. All the intercultural operations were done as per the