Research Paper

Bt cotton and its leaf area index (LAI), ginning (%), lint index (g), earliness index and yield contributing characters

■ P.L. GHULE, J.D. JADHAV, D.K. PALVE AND V.V. DAHIPHALE

See end of the paper for authors' affiliations

Correspondence to :

J.D. JADHAV
Zonal Agricultural Research Station, SOLAPUR (M.S.) INDIA

ABSTRACT : The experiment was laid out in a split plot design with three replications. There were twelve treatment combinations. The combination of three plant geometries were included in the main plots and four nutrient levels in sub plots. The gross plot size was 7.2 m x 5.4 m whereas, net plot size was 5.4 m x 4.5 m. The quality parameters like ginning per cent, lint index, earliness index were not influenced significantly by plant geometry. The number of leaves and leaf area were improved significantly due to application of graded level of NPK. Application of fertilizer dose 120:60:60 kg NPK/ha was effective in increasing number of functional leaves and significantly superior over 80:40:40 kg NPK/ha, 100:50:50 and 75 per cent RDF + 5 t FYM/ha and it was at par with 100:50:50kg NPK/ha at 60, 90 DAS and at harvest. This could be due to height of plant and more photosynthetic activity due to application of higher levels of nutrient to Bt. cotton hybrid. The application of 120:60:60 kg NPK/ha increased leaf area/plant significantly over application of 80:40:40 kg NPK/ha and was at par with application of 100:50:50 kg NPK/ha at 120 DAS and at harvest and also at par with 75 per cent RDF + 5 t FYM/ha at 30 DAS. The increase in leaf area might be attributed to number of functional leaves/plant.

KEY WORDS : LAI, Ginning (%), Lint index (g), Earliness index

HOW TO CITE THIS PAPER : Ghule, P.L., Jadhav, J.D., Palve, D.K. and Dahiphale, V.V. (2013). Bt cotton and its leaf area index (LAI), ginning (%), lint index (g), earliness index and yield contributing characters, *Internat. Res. J. agric. Eco. & Stat.,* **4** (1) : 85-90.

INTRODUCTION

Cotton (*Gossypium* spp.) is important fibre crop of global significance and cultivated in tropical and subtropical regions of more than seventy countries in the world of which the top five producers are China, USA, India, Pakistan and Uzbekistan. Cotton is the major cash crop of India and accounts for 65 per cent of fibre used in textile industries. Cotton plays a key role in national economy in terms of both employment generation and foreign exchange earnings. Cotton impacts the lives of estimated 60 millions people in India. The area under Bt cotton in India was 9.555 lakh hectares with production of 31.50 lakh bales and productivity was 560 kg of lint per hectare during 2007-08. Similarly, in Maharashtra the area under Bt cotton was 3.19 lakh hectares with production of 6.20 lakh bales and productivity was 330 kg of lint per hectare during 2007-08 (Anonymous, 2008).

MATERIALS AND METHODS

The details of materials used and the methods adopted during the course of investigation are given in this paper under appropriate heads.

Experimental methods:

The experiment was laid out in a split plot design with three replications. There were twelve treatment combinations. The combination of three plant geometries were included in the main plots and four nutrient levels in sub plots. The gross plot size was 7.2 m x 5.4 m whereas, net plot size was 5.4 m x 4.5 m.

Leaf area per plant (dm^2) :

The functional leaves on plant uprooted for dry matter studies were removed and classified into three groups *viz.* big, medium and small. The graded leaves were recorded for length and breadth and actual leaf area was calculated with the help of formula derived by Ashley *et al*. (1993).

$$\text{Leaf area} = (L \times W \times 0.771) \, n$$