

Research Article

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Effect of fertilizer levels on soil nutrient status at different growth stages and yield of Bt and non-Bt cotton

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Summary

The Bt cotton is one of the outcome of gene revolution undertaken for production of cotton. Growing Bt cotton is proved as profitable as compare to non-Bt cotton which resulted in increase the area under cultivation of Bt cotton in Maharashtra as well as in India. The field experiment on effect of fertilizer levels on soil nutrient status at different growth stages and yield of Bt and non-Bt cotton was conducted at Cotton Improvement Project, Mahatma Phule Krishi Vidyapeeth, Rahuri during May to September, 2008. The experiment was laid out in Factorial Randomized Block Design with three replications and two main treatments *i.e.*, hybrid Bt RCH-2 and Non-Bt RCH-2 and nine sub treatments with different fertilizer doses *i.e.*, F₁ - No recommended doses of fertilizer (RDF), F₂ - 50 % RDF, F₃ - 75 % RDF, F₄ - 100 % RDF, F₅ - 125 % RDF, F₆ - 150 % RDF, F₇ - 100 % RDF + 2 % DAP spray, F₈ - 100 % RDF + 1 % MgSO₄ and F₉ - 100 % RDF + 1 % KNO₃. The common RDF for Bt as well as non-Bt was 100 N, 50 P₂O₅ and 50 K₂O kg ha⁻¹. The results revealed that the Non-Bt hybrid at 100 % NPK recorded maximum content of available nitrogen, potassium, magnesium and iron in soil as compared to Bt hybrid but except phosphorus which was more in Bt than non-Bt Non-Bt hybrid recorded maximum soil available nitrogen and potassium content in F₉ (100 % RDF + 1 % KNO₃) treatment at boll development stage as compared to Bt hybrid. However, magnesium and iron were maximum in F₈ (100 % RDF + 1 % MgSO₄) treatment in non-Bt as compared to Bt hybrid and phosphorus content was maximum in F₇ (100 % RDF + 2 % DAP) treatment in Bt as compared to non-Bt hybrid at boll development stage. The application of 100 % RDF + 1 % MgSO₄ spray recorded highest yield of Bt and non-Bt cotton hybrids.

Key words : Bt and non-Bt cotton, Yield, Soil nutrient status, Growth stages, Fertilizer levels

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