



## Research Paper

See end of the paper for  
authors' affiliations

Correspondence to :

### H.B. PATIL

Department of Agronomy,  
K.V. Patel College of  
Agriculture, Shahada,  
NANDURBAR (M.S.)  
INDIA  
Email : hemantbhamare  
571980@gmail.com

# Effect of inorganic and organic sources of nutrients on growth and yield of American hybrid cotton (*Gossypium hirsutum*)

H.B. PATIL, B.C. CHAUDHARI, V.N. PATIL AND P.Y. PENDHARKAR

## ABSTRACT

A field experiment was conducted during *Zaid* season of 2004 at Allahabad to response of American hybrid cotton to combined use of inorganic and organic sources of nutrient. Among the nutrients management practices, application of 80, 40 and 40 kg N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O /ha in combination with farm yard manure and 2 times spray of urea @ 2 per cent at squaring and boll formation stage gave the best result. The observation registered during the trial were plant height, number of boll/plant, number of monopodial branches/plant, number of sympodial branches/plant, number of bolls/plant, total lint yield (q/ha.) and total seed yield (q/ha).

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**KEY WORDS :** Cotton, Inorganic and organic sources of nutrients, Yields components

Cotton is the most important fibre crop and is closely linked to human civilization itself. India ranks first in world in respect of area and third in total production. A low productivity of cotton is largely attributed to excessive growth and boll shedding, imbalance use of organic and inorganic sources of nutrients and poor agronomic practices of this crop. FYM improves NPK and humus content in soil that increases growth and yield of cotton. Hence, the present investigation was undertaken to see the response of American hybrid cotton to combined use of inorganic and organic sources of nutrients.

## RESEARCH PROCEDURE

A field study was conducted at Crop Research Farm, Department of Agronomy, Allahabad Agricultural Institute – Demmed University Allahabad (U.P). The soil was sandy loam, pH 8.2, organic carbon 0.675 per cent, available nitrite 55.95 kg/ha, amonical nitrogen 11.25 kg/ha, potash 292.5 kg/ha and phosphorus 3.38 kg/ha. The trial was arranged in randomized block design, with three replications and nine treatments. The treatments included were T<sub>1</sub>–100 per cent recommended dose of NPK, T<sub>2</sub>–75 per cent recommended dose of NPK + 5 tones of FYM/ha +Foliar spray, T<sub>3</sub> – 75 per cent recommended dose of NPK + 25 per cent of FYM/ha + Foliar spray,

T<sub>4</sub>–75 per cent recommended dose of NPK + 5 tones of FYM/ha + No Foliar spray, T<sub>5</sub>–75 per cent recommended dose of NPK + 50 per cent of FYM +Foliar spray, T<sub>6</sub>–50 per cent recommended dose of NPK + 5 tones of FYM +Foliar spray, T<sub>7</sub>–50 per cent recommended dose of NPK + 50 per cent of FYM +foliar spray, T<sub>8</sub>–50 per cent recommended dose of NPK + 5 tones of FYM + No foliar spray, T<sub>9</sub>–50 per cent recommended dose of NPK + 50 per cent of FYM +No foliar spray.

## RESEARCH ANALYSIS AND REASONING

The data recorded during the course of investigation were tabulated, statistically analysed and results are interpreted here under appropriate heads:

### Growth and yield attributes:

#### Plant height:

The Table 1 shows that the statistically superior plant height was registered in the treatment T<sub>2</sub> (75% recommended dose of NPK + 5 tones of FYM/ha +foliar spray) and was at par with the treatment T<sub>1</sub> (100% recommended dose of NPK), while the treatment T<sub>9</sub> (50% recommended dose of NPK + 50 % of FYM/ha + No foliar spray) recorded the minimum plant height at all stages of growth interval. However, treatment T<sub>5</sub> (75%