*Research Paper :*

# The effect of insecticides on sucking pests and bollworms in cotton

**P.B. KEDAR, D.S. SURYAWANSHI, P.K. WAGHMARE AND D.B. WAGHMODE**

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See end of the article for authors' affiliations

Correspondence to :
**P.B. KEDAR**
Department of Entomology, Marathwada Agriculture University, PARBHANI (M.S.) INDIA

## SUMMARY

**The field investigations on the effect of plant protection on sucking pests and bollworms in cotton *viz*. aphids, jassids, thrips, whitefly, spotted bollworms, *Helicoverpa* and pink bollworms were carried out under rainfed conditions at the Research Farm, Department of Agronomy, Marathwada Agriculture University, Parbhani during *Kharif* 1999-2000 and 2000-200. The plant protection with carbosultan 25 STD @ 60 g/kg as seed treatment and foliar application of dimethoate, NSKE and endosulfan 35 EC a month after sowing showed significantly lower incidence of sucking pests as well as bollworm complex successfully over untreated check. However, plant protection treatment did not influence the yield significantly.**

**Key words :** Plant protection, Sucking pests, Bollworms, Yield and cotton, Insecticides

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Pest management is one of the major factors to attain a higher sustainable production of cotton. Insects are very sensitive to nutritional changes in the host plants. These changes ensure from manures (KYW) through plants for particular interest in response to measures. A good knowledge on the effect of plant nutirents on pest incidence is necessary for loss assessment and formulation of pest management programme. The study was, therefore undertaken to determine the incidence of sucking pests as well as bollworms with different levels of manures (FYM) on cotton crop in retention of plant protection in Marathwada region of Maharahstra state at Parbhani.

## MATERIALS AND METHODS

A field experiment was conducted during *Kharif* 1999-2000 and 2000-2001 at Research farm, Department of Agronomy, Marathwada Agricultural University Parbhani. The soil of the experimental field in both the years was well drained clayey soil, low in nitrogen (0.04 and 0.05 for the year 1999 and 2000, respectively), moderate in available phosphorus (0.002 - 0.0025 for the year 1999 and 2000, respectively) and high in available potash (0.63 and 0.64 for the year 1999 and 2000, respectively).

The cotton variety, NHH-44 was used for the study. Experiments were conducted in a split plot design with 16 treatment combinations replicated thrice. Out of them, the treatments comprised of four levels of chemical fertilizers, two levels of manure treatments and two plant protection treatments *viz*., unprotected check (P0) and a plant protection treatment comparising seed treatment with carbosulfan, spraying of dimethoate, NSKE, endosulfan, quinalphos and cypermethrin as sub plot treatments.

The experimental field was thoroughly prepared by ploughing followed by two harrowings and subsequently cleaned by picking stubbles in summer. Before sowing, manure (FYM) was applied by broadcasting at the rate of 10 tonnes/ha and the field was subsequently harrowed for mixing FYM. During the initial stage of crop plant establishment, two hoeings and two weedings were carried out in treated and untreated plots. For sowing, marking was done by marker to maintain the spacing of 90 x 60 cm followed by sowing with dibbling method by placing two seeds per hill. Gap filling was done after 10 days followed by thining after 30 days of sowing. During the initial stage of crop plant establishment, two hoeings and two weedings were carried out in treated and untreated plots.

For controlling the sucking pests and bollworm complex of cotton, seed treatment was carried out with carbosulfan 25 STD @ 60 g/kg in all plots with plant protection (p1) treatment at the time of sowing as well as spraying of diamethoate 30 EC 0.03 per cent