

Research Paper :

Influence of manure (FYM) on the incidence of sucking pests and bollworms in cotton

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SUMMARY

Investigations on the influence of manure (FYM) on the incidence of cotton pest complex viz., aphids, jassids, thrips, whitefly, spotted bollworm, *Helicoverpa* and pink bollworm were carried out under rainfed conditions at the Research Farm, Department of Agronomy, Marathwada Agriculture University, Parbhani during Kharif 1999-2000 and 2000-2001. Manuring of FYM showed significantly lower incidence of aphids as well as jassids and not significant about thrips population than in unmanured plots. Numerically higher number of thrips were observed in manured plots than unmanured plots. In case of bollworms the incidence of spotted bollworms and *Helicoverpa* in squares and green bolls, the trend of infestation in locules indicated that manured plots were less susceptible to pink bollworm damage than unmanured plots. Manured crops gave significantly highest yield of cotton than unmanured crops.

Key words :

Cotton, Manure, FYM, Sucking pests, Bollworms, Yield

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 (FYM) through plants of particular interest in the response to measures. A good knowledge on the effect of plant nutrients 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 bollworm complex with different levels of manures (FYM) on cotton crop in retention of plant protection in Marathwada region of Maharashtra state at Parbhani.

MATERIALS AND METHODS

A field experiment was conducted during Kharif of 1999-2000 and 2000-2001 at Research Farm, Department of Agronomy, Marathwada Agril University Parbhani. The soil of the experimental field in both the years was well drained clayey soil. Soil was 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 two manure (FYM) treatments viz., M₀ (unmanured plot) and M₁ (Manure plot @ 10 tonnes /ha). Experiments were conducted in split plot design with treatments consisted manure (FYM) as main plots and plant protection as sub plots. The main plots of manure were without FYM and with FYM @ 10 tonnes /ha. Whereas sub plots consisted of without plant protection and with plant protection, viz., seed treatment with carbonsulfan 25 STD @ 60 g/kg of seed, spraying of dimethoate 30 EC 0.03 per cent followed by NSKE 5 per cent Endosulfan 35 KC 0.07 per cent, quinolphos 25 EC 0.05 per cent and cypermethrin 25 EC 0.007 per cent).

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

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