

Research Paper :

Efficacy of Different Newer Chemicals and Seed Treatment Against Foliage Feeding Wheat Aphids

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SUMMARY

The present investigation was undertaken to find out the effective and economical control measures for the management of foliage feeding wheat aphids, for which four insecticides as sprays viz., Imidacloprid 17.8 SL, Thimethoxam 25 WS, Quinolphos 25 EC and Oxy-demeton methyl 25 EC and two seed treatments viz., Imidocloprid 70 WS and Thiamethoxam 70 WS were evaluated. The pooled data for consecutive three years pertaining to efficacy of various insecticides treatments were significantly effective against control foliage feeding wheat aphids. Imidocloprid 17.8 SL @ 20g.a./ha proved to be significantly most effective followed by thiamethoxam 25 WS @ 12.5g.a./ha, imidocloprid 70WS @ 0.35g.a./kg of seed, thiamethoxam 70WS @ 0.35g.a./kg of seed, oxy-demeton methyl 25EC @ 12.5g.a./ha and quinolphos 25EC @ 125g.a./ha against the control of foliage feeding wheat aphids. The treatment with imidacloprid 17.8SL @ 20g.a./ha (51.86g/ha) recorded significantly highest yield, over rest of the treatments and untreated control (39.53g/ha). The highest additional income (Rs.13, 738/ha) net profit (Rs.13,140.00/ha) and benefit cost ratio (2.48) were observed in the treatment with imidacloprid 17.8SL @ 20g.a./ha.

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Wheat is one of the most important food crops in India. The post-green revolution period which exhibited phenomenal growth in wheat production also witnessed an increase in pest problems. Among the insect pest attacking wheat crop in India, cereal aphids have assumed economic importance during past three decades and have become regular pests in all major wheat growing areas (Singh, 1986 and 1998).

Due to shift of sowing time of wheat, availability of relatively photo insensitive varieties, temperature tolerant genotypes and also due to considerable changes in agro techniques involving higher fertilizer inputs and irrigation led changes in pest complex of wheat. The major insect pests problems in India are termites, aphids, shoot fly, brown wheat mites, gujha weevil etc. Among these, wheat aphids, *Rhopalosiphum padi*, *Rhopalosiphum maidis*, *Hemiptera*, *Aphididae* are most serious pests of wheat. On this basis, an attempt was made to find out the effectiveness of some chemical insecticides against foliar aphids of wheat and their bio safety to *Coccinellid* predator.

rabi 2006-07, 2007-08 and 2008-09 on the research farm of Agricultural Research Station, Niphad, Dist-Nasik (M.S.), India. A field experiment was carried out in Randomized Block Design with seven treatments viz. imidacloprid 17.8 SL, imidacloprid 70 WS and thiamethoxam 70 WS (as seed treatment), thiamethoxam 25 WG, quinolphos 25 EC, oxy-demeton methyl 25 EC and untreated control and three replications on wheat variety Trimbak (NIAW-301) in plot size 6 x 1.35m (six rows of six meter row length).

The insecticidal sprays were applied at an interval of 15 days, initiating just after average infestation of aphids 10 aphids/shoot/plant. Five shoots from each treatment were selected randomly for recording observations. Observations were recorded on the basis of average population of survival aphids. Pre-count was taken 24 hours before spray and post-count was taken on 1, 2, 7 and 15 days after spray. The average population of aphids survived per shoot was worked and the data were subjected to square root transformation. The experimental data were subjected to statistical analysis (Panse and Sukhatme, 1967).

MATERIALS AND METHODS

A field experiment was conducted during

RESULTS AND DISCUSSION

The pooled data on efficacy of tested

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