

Research Paper :

## Management of major insect pests of sunflower

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### SUMMARY

A field trial was conducted to study the management of major insect pests (*Amrasca biguttula biguttula*, *Bemisia tabaci* and *Helicoverpa armigera*) of summer sunflower. The results indicated that the combination of phorate 10 G @ 1.5 kg ai/ ha as basal application with two foliar sprayings of cypermethrin 25 EC @ 0.005% after 45 and 60 days of sowing, phorate and combination with two sprayings either of cypermethrin @ 0.005% or methyl-0-demeton @ 0.03% at an interval of 45 and 60 days after sowing and phorate + two sprayings of endosulfan @ 0.05 % after 45 and 60 days of sowing was found most effective treatment to minimizing the population of *A. biguttula biguttula*, *B. tabaci* and *H. armigera*, respectively. However, basal application of phorate with two foliar sprayings of monocrotophos @ 0.05 % registered highest crop yield and it was as high as 1380.00 kg/ ha.

### Key words :

Sunflower,  
*Helicoverpa armigera*,  
*Amrasca biguttula biguttula*,  
*Bemisia tabaci*

Sunflower (*Helianthus annuus* L.) is an important oilseed crop. Due to its wide adoptability, it is cultivated in all the major crop growing areas and seasons. In India, more than fifty insects species have been reported infesting sunflower crop of which some are like leaf defoliators, grasshopper, termites, various sucking insects like jassids, thrips, white fly and bugs etc. In U.P., sunflower is known to suffer heavy losses from ravages of termite and cutworm as soil insects, jassids, thrips, whiteflies as sucking insects and tobacco caterpillar, Bihar hairy caterpillar and capitulum borer as defoliators. Since the unilateral and indiscriminate use of hazardous chemical pesticides result in alarming resistance in insect pest, their resurgence, elimination of friendly parasitoids, pollinators and insecticidal residues in food chain system causing significant human hazard. Therefore, there is dire need to develop such management strategies, which are environmentally safe, economically viable and socially acceptable. Keeping this view, the present study was undertaken to study the investigation on management of major insect pests of sunflower.

### MATERIALS AND METHODS

The present investigation on insecticidal trial against major insect pests (jassid, white fly and capitulum borer) of sunflower (cultivar Modern) was undertaken during the two

consecutive years *i.e.* 2005-06 and 2006-07 in summer season.

Experimental field trial was laid out in an area of one acre. In order to pesticidal schedules two sets were used having phorate as basal treatment @ 1.5 kg a.i./ha with two foliar sprayings of methyl-o-demeton 25 EC (0.03 per cent), endosulfan 35 EC (0.05 per cent), monocrotophos 36 SL (0.05 per cent), cypermethrin 25 EC (0.005 per cent), neemazal 10 EC (0.5 per cent) and bio-lep (0.5 per cent) after 45 and 60 days of sowing. In second set, same insecticides and bio-pesticides were applied singly on sunflower crop after 30, 45 and 60 days of sowing for observing their individual performance to control the pests and their effectiveness in comparison to various used combinations. For assessment of the effectiveness of control schedules, data were recorded on pest incidence after 72 hours of the final treatment in case of jassid and white fly. Percentage damage done by capitulum borer, the efficacy of insecticide spray, the percentage of damaged and healthy flowers were evaluated up to maturity of sunflower crop. In last, the yield was also recorded.

### RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

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