

Research Paper :

Reaction of natural enemies on insect pests of sunflower

R.K. PAL AND R.A. KATIYAR

International Journal of Plant Protection (April, 2010), Vol. 3 No. 1 : 111-113

See end of the article for authors' affiliations

Correspondence to :

R.K. PAL

Department of Seed
Science and
Technology, C.S.A.
University of
Agriculture and
Technology, KANPUR
(U.P.) INDIA

SUMMARY

The extensive and intensive surveys were made during summer, rainy and winter sown sunflower crop at three stages viz., one, two and three months old crop to evaluate the natural enemies of sunflower pests in central plain zone of U.P. Two parasitoids viz., *Trichogramma* sp. and *Telenomus* sp. were observed to parasitise the eggs of cutworm and extent of parasitisation was observed 8-12 and 3-10 per cent, respectively. Larval parasitoids include *Microcentrus collaris*, *Microplitis similes*, *Apanteles* sp. and *Microbracon* sp. Their extent of parasitisation varied from 3 to 12 per cent. One predator, *Dorylus labiatus* was also found feeding voraciously on the larvae of cutworm. The natural enemies viz., *Brumus suturalis*, *Coccinella septempunctata*, *Menochiles sexmaculata*, *Chrysoperla carnea* and *Mantis religiosa* were recorded as predators of white fly and jassids. *Trichogramma chilonis* was noticed to parasitise the eggs of *H. armigera* in rainy season and peak parasitisation (50-55 per cent) was observed in winter sunflower.

Key words :

Sunflower,
Parasitoids and
White fly

Sunflower (*Helianthus annuus* L.) is an important oilseed crop. Due to its wide adaptability, it is cultivated in all the major crop growing areas in the season. 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, whitefly 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 gram pod borer as defoliators. It is well known fact that natural enemies (parasitoids and predators) act as important bio- agents in suppressing the pest population in nature. This sort of story will be a noble and truthfully approach in modern concept of IPM which is gaining much importance in the present concept. The present investigations will also minimize the indiscriminate use of chemical pesticides and shall check the hazardous ill effect on human beings, non target organism and other live forms including aquatic as well as terrestrial animals.

MATERIALS AND METHODS

In present study an intensive survey was undertaken to record the natural enemies of

sunflower insect pests in three stages of crop viz., one, two and three months old crop from the areas where sunflower is grown commercially in large scale in districts of U.P. The areas were thoroughly surveyed to record the natural enemies of various pests attacking sunflower at its different stages of growth since sowing to harvesting the crop in all the three cropping seasons of summer, rainy and winter.

The experimental and observational site was selected at Crop Research Farm, Kalyanpur of C.S.A. University of Agriculture and Technology, Kanpur. Observations were recorded on natural enemies in experimental as well as farmer's field of sunflower to study the various parasites and predators and their extent of parasitisation. The specimens were examined to record the diagnostic symptoms of diseased insect pests.

RESULTS AND DISCUSSION

It is evident from Table 1 that the highest (8 to 12 per cent) egg parasitisation by *Trichogramma* sp. and 3 to 10 per cent by *Telenomus* sp. were recorded on cutworm (*Agrotis ipsilon*) during summer and winter season sunflower grown in different agro-ecological zone of central U.P. The larval parasitoids, *Microcentrus collaris*, *Microplitis similes*, *Apanteles* sp. and *Microbracon* sp.

Accepted :
March, 2010