

Campoletis Chlorideae Uchida
an important
endo-larvel parasitoid
of *Helicoverpa armigera*
(Hubner)



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REVIEW OF LITRETURE

The literature pertaining to occurrence of *C. Chlorideae* and its importance was collected and is presented here under.

1. Occurrence of *C. chlorideae*

C. Chlorideae was reported from Gujarat, Uttar Pradesh and West Bengal, Madhya Pradesh (Achan et al., 1968, Rao, 1968, Patel and Patel, 1972, Gargrade, 1964).

In India during 1973–83, *C. chlorideae* was the most common parasitoid of *H. armigera*. The parasitism by *C. chlorideae* was studied at Anand, Gujarat. Parasitism by *C. chlorideae* was lower in pesticide treated crops than in untreated crops.

2. Economic importance

Patel and Yadav (1982) reported seasonal occurrence of *C. chlorideae* at Anand during three season during 1972–73, 1973–74 and 1974–75. The parasitoid began its activity towards the second week of September on Tomato. This synchronized with the activity of *H. armigera*. Optimum parasitism was recorded during December, January and February.

According to Achan et al. (1968) *Ecphoropsis distinctus* now *C. chlorideae* appeared to be the dominant parasite attacking both *H. armigera* and *H. assulta*. They mentioned that it was recorded from *H. armigera* from widely separated states in India having very diverse climates. It is therefore, possible that this parasite may be capable of adapting itself to a wide range of ecological conditions. According to them, *C. chlorideae* has the longest period of activity i.e. occurring almost throughout the year in one state or the other where *H. assulta* and *H. armigera* are present at any level of host population density. Further, it was reported that hyper parasitism by the Chalcids, *Brachymeria* sp. And *B. excarinata* was low but they by Eurytomid, *Aximopsis* sp. Reached a maximum of 60 per cent in Piparia (Madhya Pradesh). Despite this hyperparasitism, every year percentage of parasitism by *C. chlorideae* in this locality was high, reaching a maximum of 80 per cent.

Bipatate (1981) reported that *C. chlorideae* was the most important mortality

parameter in all five generation on cotton. These studies were carried out in Maharashtra, India in 1980–81.

Yadav and Patel (1982) reported that *C. chlorideae* was potential larval parasitoid of *H. armigera* in potato fields at Anand. It was able to regulate *H. armigera* population in association with eggs parasitoid *Tricogramma achaeae*. However, its efficiency in tomato was wanting and they emphasized supplementation of *C. chlorideae* during critical period when its number is low.

Pawar et al. (1989) reported that 10 species of hyper parasitoids were recorded from cocoon of *C. chlorideae* with hyper parasitism being about 40 per cent in cereals and 10 per cent in legumes. The *C. chlorideae* was the most common parasite in Andhra Pradesh, Karnataka and Maharashtra.

Prasad et al. (1989) reported that the rate of parasitism by *C. chlorideae* was high (50–53 per cent) on chick pea in Bihar, India.

Srinivas (1989) reported that *C. chlorideae*, very active in chickpea fields Tamil Nadu, India. It was caused as much as 43.9 per cent parasitism in the larvae of *H. armigera*.

Nikam et al. (1991) Reported *Campoplex chlorideae* was determined using 0–1 to 9–10 days old larvae of *Helicoverpa armigera*. Maximum parasitoid emergence (137) occurred from 4–5 days old larvae (45.66% parasitism). There was a significant correlation between the age of host larvae and percentage parasitism.

Dubey et al. (1993) reported that in Madhya Pradesh, the larval parasitoid *C. chlorideae* reduced the larval population of *H. armigera* in chickpea and tomato fields.

Sachan and Bhaumic (1998) reported the extent of natural parasitization by *C. chlorideae* in *H. armigera* on chickpea in Uttar Pradesh, India varied between 12.96 and 56.28 per cent, during 1995–96, and 3.37–80.64 per cent, during 1996–97, Parasitization recorded during 1995–96 was 37.17, 46.10, 42.67, 16.16 and 26.1 per cent during the November, December, January, February and March, respectively.

Dhembare (1999) conducted a laboratory experiment to determine the suitability of host age of *Helicoverpa armigera* by its larval parasite *Campoplex chlorideae*. In this study, the second instar larvae of *H. armigera* was found most effective which gave highest (45%) parasitization.

Devy et al. (2002) reported that *C. chlorideae* was recorded as the most important natural enemy of the pest *H. armigera* on chick pea in Manipur.

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