

### Some predatory insects and their parasites

On and around ICRISAT Center, Andhra Pradesh, India, investigations have been carried out on the natural enemies of parasitic and predatory fauna of the major insect pests of sorghum, pearl millet, pigeonpea, chickpea and groundnut. Observations pertaining to a few common predators are presented in this communication.

#### *Menochilus sexmaculatus* Fab. (Coccinellidae : Coleoptera) :

Both larvae and adults of this predator feed on aphids, mites and eggs and small larvae of many insects including *Heliothis* spp. They are recorded in large numbers on sorghum from flowering onwards (generally from end of August in the rainy season crop), when aphids start increasing. In a collection of different stages of this predator, no parasite emerged from eggs (n=416), but nematode parasite *Hexameris* spp. emerged from larvae (n=57), pupae (n=152) and adults (n=150) in the range of 3-9%, 1-4% and 0-13% respectively. Hymenopteran parasites *Tetrastichus coccinellae* Kurdjumov (fam : Eulophidae) and *Perilitus coccinellae* Schrank (fam : Braconidae) were recorded in pupae (2-4%) and in adults (4-8%). The latter insect parasite was found in meagre proportion.

#### *Delta* spp. (Eumenidae : Hymenoptera) :

The wasps *Delta pyriforme* (Fab.), *D. conoidum* (Gmelin) and *D. companiforme esuriens* (Fab.) most actively predate on the larvae of some insect pests including *Heliothis* spp. The wasp stings and paralyzes the larva on the plant and takes it to the mud nest where it is enclosed in a mud cell, in which the wasp lays the egg. The wasp larva emerging from the egg develops on these enclosed larvae<sup>1</sup>.

These wasps on their way to nests are followed by hymenopterans, identified as *Chrysis fuscipennis* Brulle, *C. quaerita* Nurse and *Stilbum cyanurum* (Forster) (fam : Chrysiidae). In a collection of the mud nests of

these wasps we observed these species as parasites developing in mud-cells feeding either on lepidopteran larvae or the wasp larvae.

#### *Xanthogramma scutellaris* (Fab.) (Syrphidae : Diptera) :

The maggots and pupae of this fly are normally seen on sorghum, maize and pearl millet infested with aphids. We have recorded them in large numbers on sorghum, maize and pearl millet. In a collection of 127 larvae and 108 pupae from sorghum in August, only one parasite *Syrpophagus* sp (Encyrtidae : Hymenoptera) was recorded from this predator. The parasitism rate varied from 0-16% in larvae and 0-10% in pupae.

#### *Chrysopa* spp (Chrysopidae : Neuroptera) :

Lacewings are seen across many crops preying on aphids and other tiny insects including eggs and small larvae. Its eggs which are pedicled are commonly seen on the plants. The eggs of this predator was found to be parasitised only by *Trichogramma chilonis* Ishii (Trichogrammatidae : Hymenoptera). We recorded 93% parasitism (n=44) on maize, 70% (n=61) on sorghum, 20% (n=50) on safflower, 0.5% (n=19) on groundnut and 0% (n=16) on mungbean.

#### *Mantis* spp (Mantidae : Dictyoptera) :

Preying mantids are general predators seen across many crops and wild plant species. They attack many insects and feed upon them. A few an inch-and-a half long ootheca 'the egg-cases' in Dictyopterans were collected from pigeonpea in October and found them greatly parasitised by the parasite *Podagrion* sp (Torymidae : Hymenoptera).

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