J. Biol. Control, 21(Special Issue): 177-178, 2007

Feeding potential of *Ischiodon scutellaris* (Fabricius) (Diptera: Syrphidae) on green peach aphid, *Myzus persicae* (Sulzer) (Homoptera: Aphididae)

SHARANABASAPPA, K. A. KULKARNI, C. P. MALLAPUR, K. P. GUNDANNAVAR and D. N. KAMBREKAR

Department of Entomology, College of Agriculture, Dharwad – 580005, Karnataka, India

Email: sharanu_desh@rediffmail.com

ABSTRACT: Studies carried out on the feeding potential of *Ischiodon scutellaris* on green peach aphid, *Myzus persicae*, revealed that the third instar larvae consumed more aphids as compared to first and second instar. The total number of aphids consumed during November was 581 as compared to 497 aphids during January.

KEY WORDS: Feeding potential, *Ischiodon scutellaris*, *Myzus persicae*

INTRODUCTION

The larvae of syrphid flies belonging to the subfamily Syrphinae exhibit varied feeding habits, some being carnivorous, others phytophagous and some are scavengers. However, majority of carnivorous syrphids feed on aphids (Agarwal *et al.*, 1984; Ghorpade, 1981). The immature stages of syrphids are usually associated with aphid colonies in different crop ecosystems. Among the syrphids, *Ischiodon scutellaris* (Fabricius), a widely distributed species has been reported as an important predator of several species of aphids. Keeping this in view, the present study was undertaken to know the feeding potential of *Ischiodon scutellaris* on *Myzus persicae*.

MATERIALS AND METHODS

The feeding potential of *I. scutellaris* on *M. persicae* was studied under laboratory condition during November 2005 January 2006 in the Department of Agricultural Entomology, College Agriculture, Dharwad. One-day-old eggs laid in aphid colonies were removed by using a fine camel hairbrush and kept individually in a glass Petriplate (5 cm dia.) containing cabbage leaf bit with all stages of aphids. After hatching, ten first instar larvae were kept in small Petriplates (5 cm diam) along with aphids individually. After every 24 hours, the larvae were transferred to fresh lot of aphids present on fresh cabbage leaf. Each individual was provided with 25 aphids daily and the number of aphids was enhanced to 50 (during second instar) and 100 (during third instar) as the growth of the larvae advanced. The date of each moulting for all individuals was recorded to know the duration of each instar. Finally, the number of aphids consumed by each instar was calculated and per day consumption by each instar was worked out.

RESULTS AND DISCUSSION

The studies on the feeding potential indicated that there was a gradual increase in the aphid consumption and the final instar larva was the most voracious consumer. There was a significant difference in the feeding potential and duration of larval instars. Three larval instars *viz.*, I, II and III consumed 16.36, 98.25 and 467 aphids, respectively, during November, whereas it was 13.26, 83.4 and 398.2 aphids during January. The duration of each larval instar in November occupied 2.9, 3.2 and 5.6 days, respectively whereas during January,

Table 1 Feeding potential of *Ischiodon scutellaris* on green peach aphid *Myzus perscicae*

Larval instar	Mean number of aphids consumed / larva		Duration of larval instars (Days)	
	November 2005	January 2006	November 2005	January 2006
I	16.36[c]	13.26[c]	2.9[c]	2.5[c]
II	98.25[b]	83.40[b]	3.2[b]	2.9[b]
III	467.00[a]	398.20[a]	5.6[a]	4.7[a]
Total	581.61	497.96	11.7	10.10

Figures followed by same letter are not significantly different from each other by DMRT (P = 0.05)

2.5, 2.9 and 4.7 days. The mean number of aphids consumed by each larva was maximum in November (582 aphids) as compared to January (497 aphids) (Table 1).

The total duration of the larval instars for *I. scutellaris* was 11.7 days in the month of November and 10.10 days during January. The variation in the duration of the larval instars and mean number of aphids consumed may be more during November because the aphid was in early instar, small in size and less in weight. However, the present findings are in conformity with Ashwani *et al.* (1996) who reported that *I. scutellaris* larvae consumed 662.4 aphids during its total larval period. Whereas, Sunil Joshi *et al.* (1999) recorded 370 individuals of *Aphis craccivora*.

REFERENCES

Agarwala, B. K., Laska, P. and Raychaudhuri, D. V. 1984. Prey records of aphidophagous syrphid flies from India (Diptera: Syrphidae). *Acta Entomologica Bohemoslovaca*, **81**: 15-21.

Ashwani Kumar, Kapoor, V. C. and Mahal, M. S. 1996. Feeding behaviour and efficacy of three aphidophagous syrphids. *Journal of Insect Science*, **9**: 15-18.

Ghorpade, K. D.1981. Insect prey of Syrphidae (Diptera) from India and neighboring countries: A review and bibliography. *Tropical Pest Management*, **27**: 62-82.

Joshi, S., Venkatesan, T., Ballal, C. R. and Rao, N.S. 1999. Comparative biology and predatory efficiency of six syrphids on *Aphis craccivora* Koch. *Pest Management in Horticultural Ecosystems*, **5**: 1-6.

Roy, P. and Basu, S. K.1977. Bionomics of aphidophagous syrphid flies. *Indian Journal of Entomology*, **38**: 165-174.