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Research Note

Effect of host, *Corcyra cephalonica* (Stainton) on the development of *Chrysoperla carnea* (Stephens)

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ABSTRACT: An experiment conducted in the laboratory on the effect of host, *Corcyra cephalonica* on the development of *Chrysoperla carnea* (Stephens) revealed that the maximum eggs (53.29 per day) were consumed in the treatment of 125 eggs/day which also recorded minimum larval and pupal periods of 8.04 and 9.17 days, respectively. Whereas, the treatment 100 eggs/day noted maximum pupal weight (8.42 mg) and the highest fecundity (350.75 eggs/female) as well as the maximum adult longevity (46.50 days). The food offered as 25 eggs/day has shown the adverse effect on the development of predator.

KEY WORDS: *Corcyra cephalonica, Chrysoperla carnea,* host, predator

Green lacewings constitute a prominent group of predators due to their amenability to mass production and potential for use in varied ecosystems. In India, 67 species of the predator belonging to 21 genera have been recorded on various crops (Singh and Jalali, 1994). The most common species, *Chrysoperla carnea* (Stephens) is widely used and studied for its host preference (Gerling *et al.*, 1997) and reproductive and predatory potential on different pest species (Balasubramanian and Swamiappan, 1994). However, the information on survival and predatory potential *vis-à-vis* the requirement of host eggs of *Corcyra cephalonica* for this species is lacking and hence the studies were undertaken.

An experiment was conducted with five treatments having four replications in a completely randomized design in the Department of Entomology, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, during 1997-98. Twenty newly hatched larvae of *C. carnea* were taken individually in each plastic vial for every treatment. *Corcyra* eggs were counted and transferred to vials in which *Chrysoperla* larvae were

kept. On every next day, the number of *Corcyra* eggs consumed was counted. The observations were continued up to the pupal stage. The observations on larval and pupal period, pupal weight, adult female fecundity and longevity were also recorded.

The data (Table 1) revealed significant differences among the treatments. In the treatment having daily 125 eggs, the maximum consumption of eggs was observed (53.29 eggs/day) by *C. carnea* as compared to other treatments. The number of 22.75 eggs/day was consumed by the larvae in the treatment of 25 eggs/day. The next treatments followed as 50 eggs/day, 75 eggs/day and 100 eggs/day in which the egg consumption was noticed as 38.48, 46.29 and 45.35 eggs/day/larva, respectively.

The maximum larval period of 10.99 days was observed in the treatment of 25 eggs/day in which minimum egg consumption was noticed. It is revealed that as the consumption increased, a gradual decrease in the larval period occurred. The shortest larval period of 8.04 days was recorded in the treatment 125 eggs/day. The maximum pupal weight was observed in 100 eggs/day in which 45.35 eggs were consumed. Minimum pupal weight (5.24 mg) was observed in the treatment 25 eggs/day in which minimum consumption was noticed. The treatments 50 and 75 eggs/day showed 7.13 mg and 7.53 mg pupal weight, respectively. There has been no significant difference on the pupal period due to different treatments. However, as in the case of larval period, the pupal period was also found decreasing with the increase in egg consumption. The maximum pupal period was observed in the treatment 50 eggs/day (11.42 days) and minimum pupal period of 9.17 days in the treatment 125 eggs/day.

Table 1. Daily consumption of *Corcyra* eggs by *C. carnea* and its larval and pupal period, pupal weight, fecundity and longivity

Eggs/day	No. of eggs consumed	Larval period (days)	Pupal period (days)	Pupal weight (mg)	Adult longevity (days)	Fecundity (eggs/ female)
25	22.75	10.99	10.14	5.24	43.00	253.75
50	38.48	10.41	11.42	7.13	46.50	282.00
75	46.29	9.14	10.34	7.53	42.00	332.00
100	45.35	10.20	9.50	8.42	46.50	350.75
125	53.29	8.04	9.17	7.22	39.00	254.00
SE M±	2.08	0.55	1.65	0.218	1.62	4.44
CD (P=0.05)	5.93	1.56	-	0.628	-	12.68

The treatment 100 eggs/day was found to be significantly superior in respect of fecundity than other treatments by recording 350.75 eggs/female. The minimum of 253.75 eggs/female was observed in the treatment 25 eggs/day. The next better treatments were 125, 50 and 75 eggs/day, which recorded the fecundity 254.25, 282.0 and 232.0 eggs/female, respectively.

There has been no significant difference in the longevity of the adults due to the treatments. However, maximum longevity (46.5 days) was observed in the treatment 50 and 100 eggs/day and minimum longevity (39 days) due to the treatment 125 eggs/day in which high egg consumption was observed. Ganev (1977), Rana and Shrivastava (1998) and Singh and Hamid (1998) recorded similar observations in respect of larval period, pupal weight, adult longevity and fecundity.

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