# Effect of phid species and its host plant on the feeding capacity of some aphidivorous insects

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This work was carried out under laboratory conditions of Plant Protection Department, Faculty of Agriculture, Moshtohor, Benha Branch, Zagazig University, during seasons 2000/2001 and 2001/2002, to evaluate some biological aspects of Coccinella undecimpunctata L., Cydonia vicina var. isis and Chrysoperla carnea as natural enemies, when reared on some aphid species infesting some field crops, vegetables and fruits in Egypt.The feeding capacity of the different predators and the duration of their immature stages were estimated on the Aphis craccivora, S. graminum, H. pruni and T aurantii under laboratory condition.Also, the effect of temperature and kinds of food on the bionomics and feeding capacity of the two coleopteran predators, Coccinella undecimpunctata and Cydonia vicina isis (Fam.: Coccinelledae) and one Neuropteran predator, Chrysoperla carnea (Fam.: Chrysopidae) was studied under controlling conditions of 23.3±1.8°C and 26.8±0.4°C and 65.1±2.6%RH, 68.3±1.6%RH.1-Bionomics and feeding capacity of some predaceous insect species:1-a. Effect of feeding on different aphid species on duration, longevity and feeding capacity of Coccinella undecimpunctata Linn.-Durations of immature stages:In the laboratory, at 23.3±1.8°C and 65.1±2.6%RH, and 26.8±0.4°C & 68.3±1.6%RH the durations of different in immature stages and adult's longevity were estimated.The incubation period of C. undecimpunctata eggs averaged 4.4 & 6.4 days when adult females of the predator were reared on Aphis craccivora and S. graminum nymphs at 23.3°C. While, at 26.8°Cthese periods were 5.3 & 5.7 days when fed on T aurantii and H. pruni nymphs, respectively.By feeding the larvae of C. undecimpunctata on these preys, the duration periods of its four larval instars were 1.2, 2.0, 1.2 and 2.6 days when C. undecimpunctata fed on A. craccivora; 1, 2, 2 and 3.6 days when the predator fed on S. graminum at 23.3°C. While at 26.8°C and when the larvae fed on Hyalopterus pruni and Toxoptera 2nd 3rd aurantii nymphs, the durations of 1St, 2& 4th instars were 2.1, 2.8, 1.8 & 4.3 and 1.3, 1.0, 2.1 & 3.1 days on H. pruni and T. aurantii nymphs, respectively.Concerning the total larval period, data demonstrated that this period was 7.0 & 8.6 days at 23.3°C on A. craccivora and S. graminum. While, at 26.8°C was 11.4 & 7.5 days on H. pruni and T aurantii, respectively.On the other hand, the pre-pupal period lasted 1.1 day approximately when the predator fed on four aphids species. While, the pupal period lasted 3.8, 4.8, 6.5 and 4.0 days when the predator fed on A. craccivora, S. graminum, H. pruni and T aurantii, respectively.-Feeding capacity of C. undecimpunctata larvae:First instar larvae, when the larvae of C. undecimpunctata fed on A. craccivora & S. graminum nymphs, a larva consumed 6.3 & 1.7 nymphs & 8.6 nymphs, respectively. While, when fed on T aurantii and H. pruni at 26.8°C the averages of consumed nymphs were 3.7, 1.7 nymphs/larva/day of T aurantii and 5.3, 9.2, 1.2 nymphs/larva/day of H. pruni.-The second larval instar:Daily consumption of the second larval instar of C. undecimpunctata on A. craccivora & S. graminum at 23.3°C and T aurantii & H. pruni nymphs at 26.8°C was 16.9 & 25.7 and 21.6 & 26.4 nymphs at 23.3°C, and 9.4 nymphs and 14.1, 17.4 and 18.9 nymphs at 26.8°C, respectively.-The third larval instar:The total consumption of nymphs throughout this instar was 29.4+0.6 and 78.4+1.5 nymphs for A. craccivora and S. graminum. While, was 62.6+4.4 and 48.2+4.1 nymphs for T. aurantii and H. pruni, respectively.-The fourth larval instar:The total numbers of consumed nymphs during the whole period of the 4th instar larva averaged 76.4+2.3, 195.1+7.3, 181.0+10.4 and 157.9+7.3 nymphs for A. craccivora, S. graminum, T. aurantii and H pruni, respectively.Total consumption of nymphs throughout the larval

stage:Throughout the total developmental period of the larval stage, the larva of C. undecimpunctata consumed 156.4 nymphs of A. craccivora and 330.1 nymphs of S graminum at 23.3°C. While, when fed on T. aurantii & H pruni nymphs, the total consumptions were 258.4 and 272.2 nymphs, respectively at 26.8°C.from the obtained data it could be concluded that the kind of aphid which used as a food source of predator had effect on its immature stage durations. Also, the larvae of C. undecimpunctata consumed more nymphs of H. pruni and S. graminum than other aphid species.Feeding capacity and longevity of unmated adults of C. undecimpunctata:Under laboratory condition of 23.3°C and when adults of C. undecimpunctata were fed on A. craccivora & S. graminum nymphs, the male lived for 32.4+2.2 and 41.7+2.0 days, while, female lasted 32.0+1.8 and 37.9+1.9 days, respectively. During the adult's life-span, one male of C. undecimpunctata consumed a total mean number of 1172.8 and 2001.6 nymphs, but unmated female fed on 2096.0 and 2580.9 nymphs, respectively.