

RESUMO - FITOSSANIDADE

EFFECT OF STARVATION ON THE ATION FITNESS OF COCCINELLA SEPTEMPUNCTATA AND HARMONIA AXYRIDIS ON APHIDS AND 50 % HONEY WATER DIET.

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For plant biological control, using two ladybird species, *Coccinella septempunctata* and *Harmonia axyridis* (Coleoptera: Coccinellidae), is important in sustainable agriculture. This study shows the impact of diet and starvation on

both species. Both species of ladybird beetle were treated to three dietary conditions: high aphids, low aphids, and low aphids + 50% honey solution. The response parameters of two species were measured over 30 days under controlled conditions at $25 \pm 2^{\circ}\text{C}$ and 75% RH. Data were analysed using a two-way ANOVA and Tukey's test in GraphPad Prism Version 10. Both species were observed only in the high-aphid diet. The ladybeetle *H. axyridis* laid had a high number of eggs (450 ± 15.2) and a high life cycle duration (40.78 ± 0.8 days). On the other hand, *C. septempunctata* has consumed a significantly higher number of aphids (561.7 ± 20.1) but has laid a lower number of eggs (350 ± 12.8) and a shorter life cycle (24.11 ± 0.6 days). Both species suffered severe fitness costs, with *H. axyridis* laying a low number of eggs (200 ± 10.5 eggs) and consuming 363.3 ± 16.8 aphids, and *C. septempunctata* consuming aphids (320.0 ± 14.7 aphids) and laying a total number of eggs (150 ± 9.8 eggs). The effect of a 50% honey-water diet on the number of eggs was observed. *H. axyridis* laid a higher number of eggs (300 ± 12.1 eggs) and consumed several aphids (*H. axyridis*: 248.3 ± 14.2), whereas *C. septempunctata* consumed a lower number of aphids (331.3 ± 15.4) and, as a result, laid a lower number of eggs (250 ± 11.3). The Ladybeetle *H. axyridis* and *C. septempunctata* had a low and higher aphid consumption rate respectively. Conclusively, our results show that *C. septempunctata* has basic fitness compared to *H. axyridis*, but *C. septempunctata*, it is the most effective species for outbreaks and control of pest populations. In both predators the high aphid diets are better than the artificial diet, and could determine the efficiency of biological control on the crops.

Palavras-chave: ladybird beetle; aphids; integrated pest management; predator.