



Honeydew of *Planococcus citri* (Pseudococcidae) increases longevity and locomotory activity of its parasitoid, *Coccidoxenoides perminutus* (Encyrtidae)

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We performed a sequence of assays in order to determine the effect of the honeydew released by *Planococcus citri* on the biology of its parasitoid, *Coccidoxenoides perminutus*. Firstly we found that honeydew increased the longevity of female parasitoids when compared to distilled water. However, it was not as good as honey as a food source. We then asked if such honeydew is affecting the parasitoid's behavior. Results showed that females spent less time feeding on honeydew than on honey, and an exceptionally higher proportion of females restarted walking after contacting honeydew when compared to those that contacted honey. In a third assay, we showed that females that were given a combination of honey and honeydew spent as much time feeding as females that received honey only. Nevertheless, honey-only-fed females displayed almost three times less locomotory activity than their counterparts that received the honey-honeydew combination. Furthermore, we explored the effect of a previous contact with honeydew on feeding and locomotory activities of females, in a honeydew-free area. Such contact made females walk more than individuals that did not have a recent contact with honeydew. Finally, we were interested in knowing if honeydew's effect would still be observed on honey-fed females in a honey-free area. It resulted that when in the presence of honeydew, both previously honey-fed and starved females walked more than their respective counterparts that were in the presence of distilled water. These results altogether show that females of *C. perminutus* can rely on the honeydew of *P. citri* as a source of sugar in field, whilst also indicating that honey can be used as a supplementary source of sugar in order to extend female's longevity in laboratory; and, importantly, also prove that honeydew is affecting the locomotory activity of females independently of both the feeding status (starved or honey-fed) and presence of food, with potential consequences to host searching.

Key words: parasitoid behavior, host searching, locomotory stimulant.

Financial support: FACEPE/CNPq