

THE DISRUPTION OF PRIMARY ENDOSYMBIONTS OF *MYZUS PERSICAE* INFLUENCES THE APHID FEEDING BEHAVIOR

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Myzus persicae (Sulzer), like all aphids, associates with the endosymbiotic bacteria *Buchnera aphidicola* which is localized in the aphid hemocoel. Although the accepted function of *B. aphidicola* is to provide nutrients to complete the aphids diet (essential amino acid, vitamins, etc.) there are evidences of other roles. Our hypothesis is that this endosymbiont has an active role in the plant-aphid interaction in relation to host acceptance. In this work we analyzed how the feeding behavior of *M. persicae* is affected by antibiotic treatment against *B. aphidicola*. Young adults of *M. persicae* were treated for 7 days with the antibiotic chlorotetracycline through artificial diets to disrupt *B. aphidicola* (aposymbiotic aphids) and their feeding behavior on radish plants (*Raphanus sativa*) was monitored with electrical penetration graph (EPG) technique. Two sets of controls were used, 1) aphids reared on radish until adulthood and then fed for 7 days on artificial diets without the antibiotic, and 2) aphids reared on radish until the EPG monitoring day. We found that aposymbiotic aphids have stylet pathway constrains, perform less cell punctures and need more time to start the phloem activities than the aphids fed on normal diet or in radish. Also salivation and ingestion of phloem sap were impeded, resulting in a significantly reduced number of aphids capable of host acceptance. Although the artificial diet has contributed to some odd probing behavior, e.g. increased xylem contact and longer time to start phloem activities, in all cases the effect was significantly increased by the antibiotic treatment.

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