Behavioral Responses of the *Polybia fastidiosuscula* Against Organic Volatiles Compound of Maize

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INTRODUCTION. The herbivore-induced plant volatiles (HIPVs) consist of odors that are released by plants attacked and that serve as important cues to locate their hosts/prey. **OBJECTIVE.** The objective of this study was to investigate the behavioral responses of the social wasp *Polybia fastidiosuscula* Saussure (Hymenoptera: Vespidae) to volatiles of the maize plants, both constitutive volatiles and those induced by *Spodoptera frugiperda* (Lepidoptera: Noctuidae). **MATERIAL AND METHODS**. Using Y-olfactometer were conducted behavioral bioassays during 1-2 hours, 5-6 hours and 24-25 hours after they started feeding on the plant. For each treatment, at least 40 *P. fastidiosuscula* workers were tested. **RESULTS AND DISCUSSION.** Our results showed that social wasps didn't have significant preferably when exposed to air (χ^2 = 0, 906; g.l = 1; p = 0, 3942), caterpillars (χ^2 = 2,25; g.l = 1; p = 0, 1615), undamaged plants (χ^2 = 0, 049; g.l = 1; p = 0, 9029) or plants with mechanical damage + water. However, wasps preferred plants induced by *S. frugiperda* larvae and mechanically damaged plants + regurgitant when tested 5-6 hours (χ^2 = 13, 904; g.l = 1; P = 0, 0003), (χ^2 = 32,65; g.l = 1; P = 0, 0001) and 24-25 hours (χ^2 = 6, 927; g.l = 1; p = 0, 0113), (χ^2 = 4, 937; g.l = 1; P = 0, 0338) respectively. The same was not observed when the plants were induced by caterpillars (χ^2 = 0, 476; g.l = 1; p = 0, 5552) or mechanically damaged plants + regurgitant (χ^2 = 0, 593; g.l = 1; p = 0, 5029) when tested 1-2 hours after they started feeding on the plant. **CONCLUSION.** This is the first study to show the capacity of the social wasp *P. fastidiosuscula* to use chemical cues in locating their prey.

Key words: Induced Plant Volatiles; Semiochemical Effect, Biological Control, Social Wasp.

Acknowledgments: CNPq, FAPEMIG, CAPES, INCT-IPP, EMBRAPA