Association of Mites with Microorganisms

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INTRODUCTION. Symbiotic associations between arthropods and microorganisms are well known in nature. To arthropods, these associations provide advantages such as production of enzymes and vitamins, protection from natural enemies and detoxification defense compounds produced by plants. For microorganisms, the main advantage is the location for development and dispersion. *Tetranychus evansi* and *T. urticae* are important pests of many crops, especially tomatoes. Considering the lack of research on microorganisms associated with mites of agricultural importance, this research becomes grating importance. **OBJECTIVE.** The objective of this study was to determine the diversity of microorganisms associated with *T. evansi* and *T. urticae* and evaluating the presence of Wolbachia, Rickettsia, Spiroplasma and Cardinium. **MATERIAL AND METHODS.** The diversity of microorganisms associated with *T. evansi* and *T. urticae*. It was determined by denaturing gradient gel electrophoresis (DGGE) technique. In addition, specific pairs of primers were evaluated for identification of the following bactéria: Wolbachia, 76F (5'-TTGTAGCCTGC TATGGTATAACT-3') /1012R (5'-GAATAGGTATGATTTTCATGT-3'); Rickettsia, RICS741F (5'-CATCCGGAG CTAATGGTTTTGC-3') /RCIT1197R (5'-CATTTCTTTCCATTGTGCCATC-3'); Spiroplasma, Spits-J04 (5'-GCCAGAAGTCAGTGTCCTAACCG-15 3') /Spits-N55 (5'-ATTCCAAGGCATCCACCATACG-3') and Cardinium, gyrBF (5'-GTTACCGTATACCGAAATGG-3') /gyrBR (5'-TGCTTTCCGRGCMGCTTG-3'). **RESULTS AND DISCUSSION.** Results reveal that none mite species own fungus as endosymbiont organisms. *T. evansi* hosts a larger bacteria diversity compared to *T. urticae*, being these bacteria species predominantly different between the two mites. Most of bacteria species inside the mites belongs to Proteobacteria phylum and both mite species host none identified bacteria. None of specific primers used were adequate for species bacteria identification. **CONCLUSION.** Related researches to endosymbionts normally evaluate the influence of a specific microorganism on host biology. Here, by the first time, we show the microorganism diversity inside this two important mite species. This information could help to understand the success of this two mite species as agriculture pests.

Key words: *Tetranychus spp,* biochemistry responses of tomato, herbivory on agricultural pests, endosymbionts bacteria.

Patronage: CNPq, FAPEMIG, CAPES, INCT-IPP