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DNA-Based Analysis of Gut Content of Zygoribatula sp (Acari: Oribatida) and Scheloribates sp (Acari: Oribatida), under the Canopy of Prosopis Laevigata, in a Semiarid Land

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Abstract : In arid and semi-arid regions, plants are essential in the functional activity and productivity, modifying the microclimatic conditions of their environment, which allows many organisms to grow under them. Within these organisms, oribatid mites play a key role in reintegrating nutrients into the soil through the consumption of soil fungi. However, oribatid mites feed on a vast array of fungal species, which is likely to have strong impacts on their population dynamics and their environment. So, in this study, the aim was to determine the gut content of the abundant oribatid mites Zygoribatula sp and Scheloribates sp, under the canopy of the bush P. laevigata in a semi-arid zone through DNA-based analysis. The results showed the presence in the gut of both mites of different fungal taxa. Fungi, such as Aspergillus sp and Mortierella sp, probably served as a food despite the production of deterrent compounds or structures from both fungal species. Saccharomyces sp might serve as well as a food source; however, it might be part of their microbial endosymbionts. On the other hand, the presence of Beauveria sp indicates a probable pathogenicity interaction, instead of fungal consumption, since this fungus is known to be entomopathogenic. Finally, the results might indicate a feeding preference to certain soil fungi according to diverse features from both taxa.

Keywords : microenvironment, endosymbionts, Oribatida, fungi
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