

cupuçu

**Plant associated microbes in the rhizosphere of *Theobroma grandiflorum*  
(WILLD. EX SPRENG.) SCHUM and *Bactris gasipaes* H.B.K.**

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The rhizosphere is the soil compartment which is strongly influenced both physically and chemically by the root. This may affect microbial populations in the rhizosphere. In this study we investigated the rhizosphere community structure of *Theobroma grandiflorum* and *Bactris gasipaes*, two important crop plants in sustainable agriculture in Brazil.

We measured the patterns of potential C source utilization by microbial communities with the Biolog® redox method based on tetrazolium dye reduction as an indicator of sole-carbon-source utilization to classify heterotrophic microbial communities.

In a first assessment, 130 bacterial strains were isolated from the rhizosphere of *Theobroma grandiflorum* and *Bactris gasipaes* and analyzed for the utilization of the 95 different C sources by inoculation into Biolog® plates.

The Biolog® patterns were analysed using principal-component analysis. Distinctive patterns of C source utilization were apparent for bacterial isolates from *Theobroma grandiflorum* and *Bactris gasipaes*. While the isolates of *Theobroma grandiflorum* rhizosphere are characterized by predominant utilization of organic acids and amino acids, the bacterial rhizosphere isolates of *Bactris gasipaes* utilize mainly carbohydrates. The results indicate that this rapid method is effective for detecting plant dependent differences in rhizosphere communities.

It is well known that only 1 to 3% of rhizosphere microbes can be isolated and cultured. In order to avoid the restriction caused by isolation, in a second approach dilution series of soil suspensions will be used directly as inoculum for Biolog® plates.

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