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Operational taxonomic units that distinguish soils of crops and fruits in the whole Japan

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The microbial community evaluation constitutes an essential topic to access the soil health conditions, with special regard to the operational taxonomic units (OTU). This data can easily represent the soil bacterial condition and also might distinguish many kinds of environment, such as urban areas, and agricultural soils. As a criterion to set up a "finger-print" for agricultural soils in terms of microbial community, metagenomic profiles from crops and fruit soils had their OTU analyzed after the normalizing their abundance where the sum of each sample was equivalent to 1. The bacterial and fungal genes were the target region evaluated by principal component analysis (PCA). Although some dominant taxonomic groups were constantly present in most of the soils, the OTU within the bacterial and fungal communities were specific according to the land use type (crops or fruits) i.e. each one had a remarkable difference in terms of OTU. Hokkaido prefecture contained most of specific groups, whereas other prefectures were more diverse. Similar profile was found in fungal genes. Within the bacterial genes a few number of OTUs made possible to separate crops and fruit soils, however for the fungal ones a large number was necessary for the same goal. The bacterial representative genera were *Nitrospira* (involved with Nitrogen cycling) and *Arthrobacter*. Whereas the *Fusarium* was the most important fungus in terms of OTU bioindicator.

Biography

Andre Freire Cruz had focused on evaluation of soil microbial status as indicator of sustainability. He has worked with many agricultural soils, recently has concentrated on fruit orchards in Japan and other countries especially concerning on analysis of microbial growth and activity. He has used many methods to evaluate the soil biology, but actually most of his researches are using metagenome analysis of bacterial and fungal genes and their relation with other soils properties.

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