ABSTRACTS

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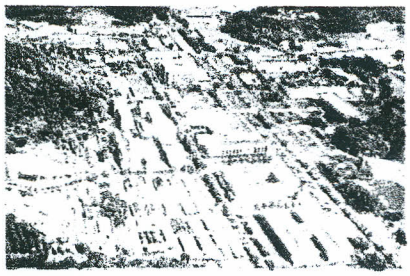
6TH INTERNATIONAL CONFERENCE ON MYCORRHIZA

"BEYOND THE ROOTS"



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Rhizosphere and root mycorrhizal diversity of maize genotypes contrasting for phosphorus efficiency

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Thematic Area: Mycorrhizas and plant nutrition

Acid soils and low phosphorus (P) availability limit plant growth in many soils of the tropics. One of the strategies developed by plants in order to improve P acquisition efficiency is the symbiotic association with arbuscular mycorrhizal fungi (AMF). In this work, the soil AMF natural community associated with two maize genotypes contrasting for phosphorus efficiency was evaluated, in soils with low P levels. Mycorrhizal population DNA library was generated from the roots and rhizosphere of the maize lines: L3 (P efficient) and L22 (P inefficient) by cloning rDNA fragments amplified by AMF specific primers. Direct sequencing of these fragments indicated that differences in the genetic diversity of the microbial community of the root was reduced when compared to the rhizosphere, and there were some differences in the AM fungi species between the two genotypes. Sequencing analysis revealed that *Scutellospora* was the dominant genus found in the efficient genotype. Visualization of mycorrhizal colonization using stereomicroscope analysis demonstrated greater colonization in roots of the L3, compared to L22. The number of AMF spores found in the rhizosphere was similar in both genotypes but the mycorrhizal infection was significantly reduced in the roots of the P inefficient genotype. These results provide strong evidence that that some mycorrhizal groups were stimulated by P efficient maize genotypes.

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