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for Increasing ical Nitrogen in TAXONOMY OF RHIZOBIA ISOLATED FROM THE ROOT NODULES OF LEGUMINOUS TREES IN THE SUDAN

> NICK, G.1, JARVIS, B.D.W.2, TIGHE, S.W.3, NIEMI, M.4, DE LAJUDIE, P.5 AND LINDSTROM, K.

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Molecular methods and fatty acid analysis were used to further characterize rhizobia isolated from the root nodules of Acacia senegal and Prosopis chilensis. In this work the relationships between the tree rhizobia, rhizobia isolated from different plants and reference strains representing recognized rhizobial species were analyzed by total cellular fatty acid analysis, DNA-DNA dot-blot hybridizations, restriction fragment length polymorphism analysis of amplified 16 S rDNA obtained by PCR, and by REP and ERIC PCR fingerprints. Also the methods used in this study showed that the Sudanese tree rhizobia are diverse, even though the majority of the strains seemed to belong to two main clusters. The strains of these main clusters belong to the same phylogenetic branch as Sinorhizobium meliloti and S. fredii and might represent two new species. Some of the strains seem to belong to the recently described two new species S. teranga and S. saheli. One strain may be a S. meliloti B type and two strains belong to the Senegalese group U. Part of the strains resemble agrobacteria (fig.1). The taxonomic position of some of the strains still remains unclear.

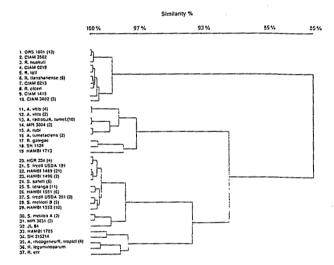


Fig.1. UPGMA dendrogram based on genetic distances derived from PCR-RFLP analysis of the amplified 16 S rDNA. The number of strains which gave the same profiles is indicated in parentheses.

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# Nitrogen Fixation: Fundamentals and Applications

Proceedings of the 10th International Congress on Nitrogen Fixation, St. Petersburg, Russia, May 28–June 3, 1995

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