

## High diversity of chickpea Mesorhizobium species isolated in a Portuguese agricultural region



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**Abstract:** Chickpea rhizobia isolated from Portuguese soils were assigned to the genus Mesorhizobium by 16S-rDNA sequencing. High species diversity was found within populations of an agricultural region in the south of Portugal.; Besides the expected Mesorhizobium ciceri and M. mediterraneum, some isolates were close to M. loti or M. tianshanense and some formed a clade that may represent a new species. A new PCR-based approach, named direct amplified polymorphic DNA (DAPD) analysis, supported the 16S-based phylogeny. This suggests that this method could be used as a molecular tool to assess genetic relationships. Evaluation of genetic diversity by 16S-rDNA sequence, DAPD and protein profiles showed different levels of heterogeneity in natural populations. 2004 Federation of European Microbiological Societies. Published by Elsevier B.V. All rights reserved.

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