

Rhizobia of chickpea from southern Portugal: symbiotic efficiency and genetic diversity



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Abstract: Aims: In order to evaluate differences between chickpea rhizobial populations from three geographical areas in southern Portugal (Beja, Elvas and Evora), isolates from the three regions were obtained and analysed.

Methods and Results: The genetic characterization of the isolates was done by plasmid profiles and restriction analysis of the nif H gene. Symbiotic efficiency of the isolates was also determined. Relationships between geographical origin, symbiotic efficiency and molecular characteristics were established. Beja soil revealed a larger rhizobia population as well as the presence of some of the isolates with higher symbiotic efficiency values. Isolates with a single plasmid showed a significantly higher symbiotic efficiency.

Conclusions: Genetic and phenotypic differences were detected between the natural rhizobial populations from the three locations.

Significance and Impact of the Study: The different yield potential with cultivars of chickpea usually obtained in the three regions of southern Portugal could be due to their different natural rhizobial populations.

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