

Isolation and Characterization of Salt-Tolerance of Rhizobia under the Effects of Salinity

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Abstract : The bacteria of the soil, usually called rhizobium, have a considerable importance in agriculture because of their capacity to fix the atmospheric nitrogen in symbiosis with the plants of the family of legumes. The present work was to study the effect of the salinity on growth and nodulation of alfalfa-rhizobia symbiosis at different agricultural experimental sites in Ouargla. The experiment was conducted in 3 steps. The first one was the isolation and characterization of the Rhizobia; next, the evolution of the isolates tolerance to salinity at three levels of NaCl (6, 8,12 and 16 g/L); and the last step was the evolution of the tolerance on symbiotic characteristics. The results showed that the phenotypic characterizations behave practically as Rhizobia spp, and the effects of salinity affect the symbiotic process. The tolerance to high levels of salinity and the survival and persistence in severe and harsh desert conditions make these rhizobia highly valuable inoculums to improve productivity of the leguminous plants cultivated under extreme environments.

Keywords : rhizobia, symbiosis, salinity, tolerance, nodulation, soil, Medicago sativa L.

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