World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:8, No:09, 2014

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

Authors : Sarra Sobti, Baelhadj Hamdi-Aïssa

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.
Conference Title : ICABB 2014 : International Conference on Applied Biology and Biotechnology
Conference Location : Paris, France
Conference Dates : September 22-23, 2014

Open Science Index, Bioengineering and Life Sciences Vol:8, No:09, 2014 publications.waset.org/abstracts/8701.pdf