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**GENETIC AND PHYSIOLOGICAL DIVERSITY OF RHIZOBIA ISOLATED
FROM *MELILOTUS INDICUS* L. IN EGYPTIAN SOILS**

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ABSTRACT

The objectives of this work were to describe the biodiversity and the phylogeny of rhizobial strains nodulating wild legume *Melilotus indicus* L. (*M.i.*) in 14 different Egyptian soils. Thirty seven rhizobial isolates were obtained from the root nodules of *M.i.* They were characterized morphologically and physiologically on the basis of their resistance to NaCl and pH. Furthermore, the total genomic DNA isolated from the 37 rhizobial isolates will be analyzed by rep-PCR amplification fingerprinting (using REP, ERIC and BOXA1R primers). Based on the physiological experiments, all the 37 isolates were fast-grower. Only five isolates were tolerant up to 7% NaCl. The rhizobial isolates showed a wide diversity in their pH tolerance. Moreover, PCR with REP and ERIC primer pairs of DNA from the strains yielded multiple distinct DNA products of size ranged from approximately 177 to 3773 bp with the REP primer and from 200 to 2921 bp with the ERIC primer. BOX A1R primer did not reveal any polymorphism in all isolates. We can conclude that *Melilotus* rhizobia isolated from Egyptian soils are both phenotypically and genetically diverse.

Keywords: Genetic diversity, legume nodules, *Melilotus*, rhizobia.