INTERACTION BETWEEN VESICULAR ARBUSCULAR MYCORRHIZAS AND *RHIZOBIUM LEGUMINOSARUM*

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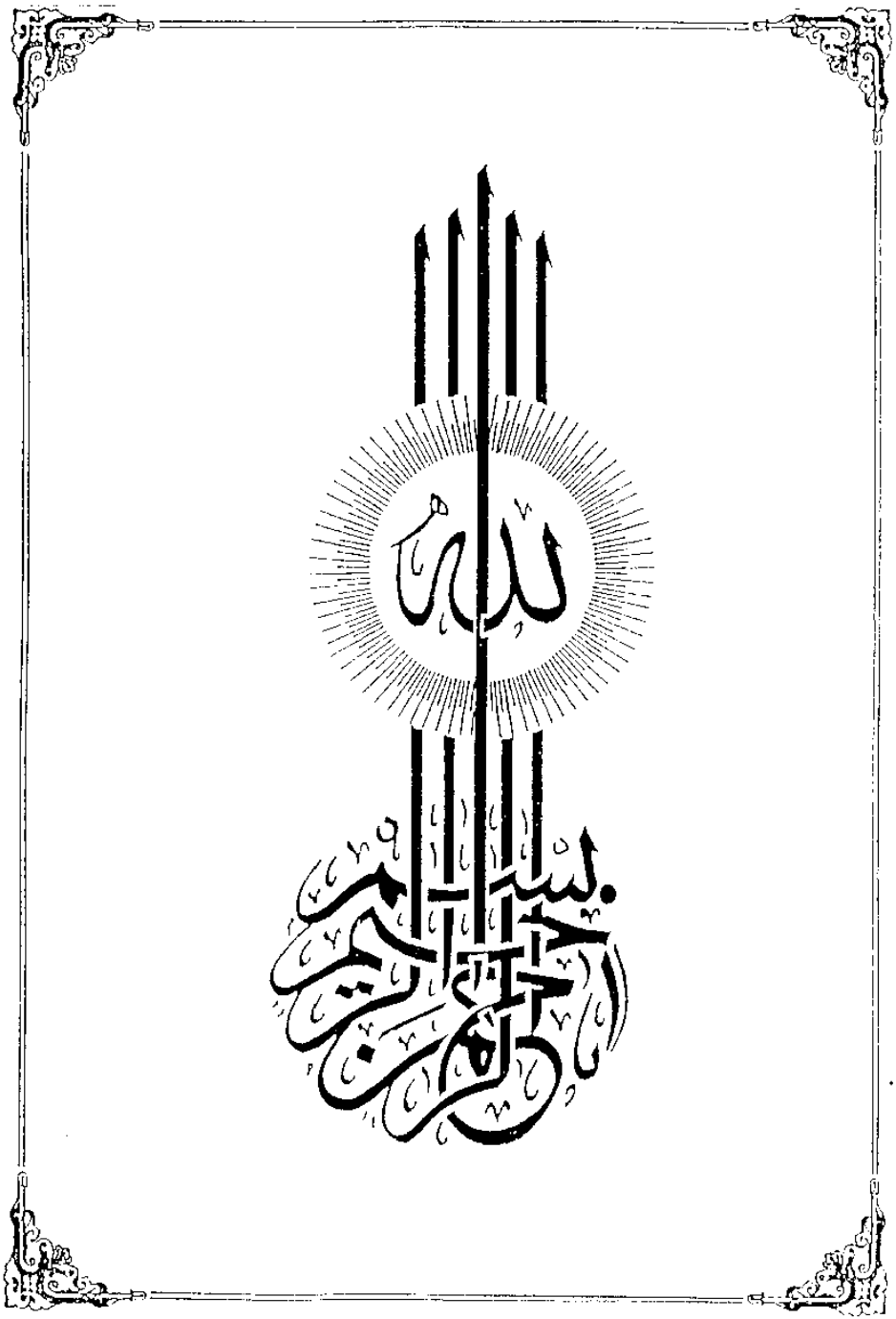

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ABSTRACT

This study was carried out to evaluate the effect of inoculation with different imported and local strains of *R. leguminosarum* biovar *viceae* and/or VA mycorrhizas on growth,

nodulation and chemical contents of two genotypes of faba bean and lentil grown on two types of soil and amended with two forms of phosphate.

The obtained results revealed that the imported strain *R. leguminosarum* USDA-102 F 84- faba bean genotype 402 and the local strain *R. leguminosarum* ARC-202L-lentil genotype 370 proved to be the most effective symbiotic systems when used in combination with VAM. These combination produced significant improvements in plant growth, nodulation, nitrogen and phosphorus contents and mycorrhizal root infection of both plants.

It was also observed that the clay-loam soil supported better growth, nodulation, chemical contents and mycorrhizal development compared with calcareous soil.

However, no significant differences were observed between the effects of super-or rockphosphate application with single or dual inoculation treatments in the two types of soil.

To evaluate the nodulation and mycorrhizal status of faba bean and lentil plants grown under conditions of bad drainge, a preliminarly survery was carried out in two governrate at upper Egypt, i.e. El-Minia and Assuit. Representative samples were taken from a well drained soil to be

used as a control. Data showed that bad drainge adversly affected the number of nodules and number of mycorrhizal spores to greater extent than mycorrhizal infection. No correlation was generally observed between the number of mycorrhizal spores and mycorrhizal root infection.

The effect of soil moisture content, inoculation with the most effective *R. leguminosarum* strains and/or VAM and soil types on the growth, nodulation, N & P contents, mycorrhizal root infection and number of mycorrhizal spores was studied in a pot experiment. The recorded results showed that moisture content representing 60% of soil WHC gave the highest growth, nodulation, N & P contents and mycorrhizal root infection of faba bean and lentil plants. Increasing or decreasing soil moisture content above or under this level resulted in decreasing growth parameters and mycorrhizal infection of both hosts. The level of reduction in the measured parameters with increasing moisture content to 90% of WHC was more pronounced than that observed with 30% moisture content.

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