Paper (4)

Evaluation of Elemental Sulphur Application with Rhizobia Inoculation on Peanut Yield and its Quality Grown in Sandy Soil at Egypt

Radwan TEE,RaflaHanaa H, Zaki RN.

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Two field experiments were conducted during the summer of two successive seasons of 2011 and 2012, to identify the response ofpeanut (*Arachishypogaea* L., cv. Giza 5)to soil application of elementalsulphur (at rate of 15, 30 and 45 Kg/fed before sowing) and Rhizobia(*Bradyrhizobiumjaponicum*) inoculation, individually or in combination, for determination of the yield criteria, pods yield, 100 seeds yield, seeds & straw yield and shilling percentage at harvest, as well as seed oil, oil yield, protein content and protein yield. The associated amelioration in plant macro and micronutrient contents and uptake, and soil biological activities (nodulation status, nitrogenase, dehydrogenase, CO_2 evolution and total bacterial counts) were assessed in this study. The obtained results indicated that, *Rhizobium* inoculation or S addition alleviated the adverse effect of soil nutrient deficiency and caused significant increases in all the studied parameters of peanut and soil. *Rhizobium* inoculation individually, caused insignificant increases in all the studied parameters over S addition solely at 45 Kg s/fed. Combined addition of sulphur at all rates with *Rhizobium* inoculation, gave high significant increases in all prior studied parameters and soil biological parameters at 50 and 80 days after peanut sowing followed by the individual treatments.