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POSSIBILITY OF ENHANCING GROWTH, YIELD AND OIL OF WHITE MUSTARD (*SINAPIS ALBA*, L.) PLANTS BY USING SOME FERTILIZATION TREATMENTS.

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ABSTRACT

Pot experiment was carried out in Faculty of Agriculture Farm, Al-Azhar Univ, Assiut, during two successive seasons 2014-2015 and 2015-2016 aiming to study the effect of four rates of compost (zero, 36, 72, 108 g / pot), rock phosphate and sulfur at (zero, 0.6, 0.9, 1.2 (g) phosphorus / pot) and (zero, 0.4, 0.6, 0.8 (g) sulfur / pot), respectively and inoculation with two strains of bacteria, namely *Bacillus megatherium* var. *phosphaticum* and *Thiobacillus thioparius* ,as well as, their interaction on growth, yield and chemical constituents of white mustard (*Sinapis alba*, L.) plants grown in sandy soil. The obtained results showed that all compost levels increased herb dry weight/plant, number of siliques/plant, weight of siliques/plant, seed weight/plant, weight of 1000 seeds weight/plant, volatile and fixed oil percentages, evolution of carbon dioxide (mg/ 10 g soil) and dehydrogenase activity (DHA) (TPF/g/day). However, the medium rate of compost (72 g), was the most effective treatment. All measurements were markedly responded to mineral and bio-fertilization. The maximum values of these parameters were obtained by the application of a mixture of 75% PS + BP followed by 75% PS + BP + BS.

Key words: *Bacillus megaterium* var.*phosphaticum*, Compost, Rock Phosphate, *Sinapis alba*, L., Sulfur, *Thiobacillus thioparius* and fixed and volatile oils.