

IMPROVING THE AVAILABILITY OF POTASSIUM FROM FELDSPAR IN SANDY AND CALCAREOUS SOILS, EGYPT

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Sandy and calcareous soils are very poor in plant nutrients, specially potassium, and such great problem may be solved by applying organic matter and clay minerals. Therefore, when using natural sources such as clay mineral (feldspar) a designed specific management programme for applying these sources may become a suitable solution for reducing use of chemical fertilizers. Three treatments (control, feldspar, and feldspar mixed with compost) were applied in two types of soil (calcareous and sandy). Results show that the addition of both compost and feldspar individually or together increased available potassium content as compared to control. The application of feldspar alone increased the available potassium content in calcareous soil more than in sandy soil (6.62 and 5.24 %), respectively. Results also indicated that applying a mixture of organic manure and feldspar in calcareous and sandy soils led potassium to increase by 35.22 and 23.50 %, respectively. Therefore, the experiment cleared that the optimum way for using the feldspar in calcareous and sandy soils must be by combining it with organic matter. Finally, the application of K-feldspar in calcareous was better than in sandy soils in increasing the potassium level.