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Use of Silicate or Chicken Compost in Calacarious Soil on Productivity and Mineral Status of Wheat Plants under Different Levels of Phosphorus

Authors : Hanan, S. Siam, Safaa A. Mahmoud, A. S. Taalab

Abstract : A pot experiment was conducted in greenhouse of NRC, Dokki, Cairo, Egypt to study the response of wheat plants to different levels of superphosphate at (60kg P2O5 or 30 kg P2O5) with or without potassium silicate or chicken compost (2.5 ton/fed.) on growth yield and nutrients status especially, and phosphorus and silica availability. Data reveal that the addition either chicken or compost increased significantly affected on all the growth and yield parameters as well as nutrients status and protein of the different parts of wheat plants if compared with control (60kg P2O5 or 30 kg P2O5). Data also reveal that the highest mean values were obtained when potassium silicate with was added to 60 kg P2O5, while the lowest values of the previous parameters were obtained when 30 kg P2O5 alone was added to plants. Furthermore, data indicated that the highest mean values of all mentioned parameters were obtained when chicken compost was applied with any rate of P as compared with silica addition at the same rates of P. According to the results, the highest values of all mentioned parameters were obtained when addition of chicken compost and potassium silicate including the high rate of P at (60 kg P2O5) while the lowest values of the previous parameters were obtained when plants received of phosphorus (30 kg P2O5) alone.

Keywords : wheat, yield, chicken compost, potassium, phosphorus, silicate, nutrients status
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