



Response of some Wheat (*Triticum aestivum* L.) Growth Parameters to Nano Phosphate Fertilizer Compared to Superphosphate Fertilizer

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Abstract: An outdoor pots experiment was conducted at agricultural research station, University of Basrah, southern Iraq (30°34'4.80" N 47°44'56.40" E) during winter season of 2021-2022. The study was carried to reveal the effect of Nano phosphate fertilizer compared to superphosphate fertilizer on growth parameters of two wheat cultivars (*Triticum aestivum* L.). Superphosphate fertilizer was added at rates of 0, 30, 60 and 90 kg P ha⁻¹, while, Nano phosphate source was applied at 0, 3, and 6 kg P. ha⁻¹. Two wheat cultivars (Jad and Adina) were used. Both P sources were mixed with pot soils at planting time. Wheat plants were grown for 70 days period. Plant parameters: tillers numbers, plant high, leaves number, flag leaf area, dry weight, P concentration were obtained at harvest time. Phosphorus uptake was calculated at same time. Results of the study showed that there was no significant differences in all studied growth parameters between superphosphate and Nano phosphate sources, even though the rate of applied Nano phosphate source were much lower than that of superphosphate source. The results also indicated that, irrespective of the origin of phosphorus, higher rates of applied phosphorus led to an increase in all the growth parameters examined. When comparing the two phosphorus sources and their application rates, most growth parameters for the Adina cultivar exceeded those of the Jad cultivar at both phosphorus sources applied rates. Additionally, the results highlighted a significant interaction among treatments for all the investigated growth parameters.

Keywords: Growth parameters, Nano-phosphate, Superphosphate, Wheat cultivars.

Introduction

Wheat (*Triticum aestivum* L.) is one of the world's most important crop plants, following rice and maize in global world total food grain. Wheat is a source for fiber, protein, minerals, carbohydrates and vitamins (Elsahookie *et al.*, 2021). The average wheat production in Iraq

FAD), phospholipid and phosphoprotein (Roberts & Johnston, 2015). Phosphorus applied to soil as chemical fertilizer react with calcium and magnesium carbonate in calcareous soils and with aluminum and iron hydroxides in acidic soil and subjected to



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To,

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Dear authors,

I have immense pleasure to inform that your research manuscript BJAS/ 838-23, Entitled "Response of some Wheat (*Triticum aestivum* L.) Growth Parameters to Nano Phosphate Fertilizer Compared to Superphosphate Fertilizer" has been accepted and the editorial board agreed to publish this paper in the forthcoming issue of the Basrah Journal of Agricultural Sciences.

We thank you choosing this journal for publishing your research and hope that you will consider doing so again in the future.

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Prof. Dr. Asaad R. Al-Hilphy

Editor in Chief



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