

## Response of bread wheat (*Triticum aestivum* L.) and triticale (X.Triticosecale Wittmack) varieties at different levels of phosphate fertilization under Basra Governorate conditions

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### abstract

A field experiment was carried out during the winter agricultural season 2023-2024 at the Agricultural Research Station of the College of Agriculture - University of Basrah - Karma Ali site, which is located at a longitude of 47.80° W and a latitude of 30.57° N in the soil of a Silty loam to study the response of three varieties of (bread) wheat (IPA- 99, Bhooth- 22 and Al-Rasheed) and one variety of Tritical (Amal-7) Under the influence of four levels of phosphate fertilizer (0, 50, 100 and 150 kg P<sub>2</sub>O<sub>5</sub> h-1 under the conditions of Basrah Governorate. The seeds of the varieties were sown on 15/11/2023, and phosphate fertilizer was added at once before planting according to the study levels, and the experiment was applied according to the method of factor experiments using the design of complete random block (R.C.B.D) with three repeaters . The results indicated the superiority of the Rasheed variety in the qualities of the plant height, the area of the flag leaf, number of spikes, number of grains spike, grain yield and biological yield, amounting to respectively, While the IPA-99 variety outweighed 1000 grains amounted to (48.88) g, and the Amal-7 variety outperformed the percentage of protein in grains amounted to (13.25%). While the fertilizer level exceeded 150 kg P<sub>2</sub>O<sub>5</sub> ha-1 significantly in most of the studied characteristics (plant height, flag leaf area, number of shoots, number of spikes, number of grains per spike, weight of 1000 grains, grain yield, biological yield and protein percentage in grains amounted to respectively. The intervention between the two factors of the study superiority of the Rasheed variety at the level of fertilizer 150 kg P<sub>2</sub>O<sub>5</sub>ha-1 in the characteristics studied (plant height, area of the flag leaf, number of ears, number of grains in spike, grain yield and Biology yield and amounted to respectively. While the interaction between the variety IPA- 99 at the fertilizer level 150 kg P<sub>2</sub>O<sub>5</sub> ha-1 by giving the highest weight of 1000 grains amounted to (56.23 grain) and the interaction between the variety Amal-7 at the fertilizer level of 150 kg P<sub>2</sub>O<sub>5</sub> ha-1 by giving the highest protein content in the grain amounted to (13.76. %)

**Keywords : varieties , bread wheat , triticale , phosphate fertilization**