

**WHEAT PRODUCTIVITY AS AFFECTED BY VARIETIES, NITROGEN, ORGANIC AND BIO-FERTILIZERS UNDER NEW RECLAIMED SOIL CONDITION.**

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**ABSTRACT**

Two field experiments were carried out in the Experimental Farm , of the Faculty of Agriculture , Fayoum University on Sandy Loam soil during 2011 / 2012 and 2012 / 2013 seasons to study the effects of two organic manure levels i.e. (15 and 30 m<sup>3</sup> / fed.), bio-fertilizer (Azotobacter who was inoculation the seeds) and three levels of nitrogen fertilizer .[100% (75 kg N / fed. ) & 50 % (37.5 kg N / fed.) and 25 % (18.75 kg N / fed.) ]of Urea ( 46 % N) and their combinations on productivity of two wheat cultivars i.e. (Sakha 93 (V<sub>1</sub>) & Sakha 94 (v<sub>2</sub>)). The treatments were set in Randomized Complete Block Design (RCBD) in factorial arrangement with three replications .

Significant effect for wheat varieties were obtained on plant height (cm) , in the 1<sup>st</sup> season and on total protein percentage in both seasons but was insignificantly on other traits .The superiority was for Sakha 94 in most characters .

Fertilizer treatments was significantly effect on all traits in both season except plant height , number of spike / plant ,1000-grain weight in second season and harvest index% in first season .F<sub>3</sub> ( 30 m<sup>3</sup> / fed. organic manure + bio – fertilizer + 50 % ( 37.5 kg N / fed.) treatment gave the highest values followed by F<sub>4</sub> (30 m<sup>3</sup> / fed. organic manure + bio – fertilizer + 25 % (18.75 kg N / fed.)) or F<sub>5</sub> (30 m<sup>3</sup> / fed. organic manure + 50 % (37.5 kg N / fed.)) treatments .

Interaction between varieties and fertilizer treatments was significantly effect on number of spike / plant and weight of grains / spike in both seasons and on grain yield (ton / fed.) and total protein (%) in 1<sup>st</sup> and number of grains / spike in second season only but was insignificantly on plant height (cm) ,1000-grain weight, and harvest index (%) in both seasons .

Results of stepwise regression revealed that both the harvest index, 1000 grains weight, number of grains/ spike and plant height were causes high grains yield genotypes in wheat programs.

By using organic fertilizer and / or bio-fertilizer with half dose of mineral fertilizer it could be increased in plant growth and yield . Besides, using bio-fertilizers that contain different microbial strains had led to decrease in the use of chemical fertilizers and had provided height products free of harmful agrochemicals for human safety.

**Key word:** *Wheat, Organic manure, Bio-fertilizer, Nitrogen fertilizer, Varieties, Stepwise .*