

EVALUATION THE USE OF ORGANIC AND BIO-FERTILIZERS AS A TOTAL OR PARTIAL REPLACEMENT OF NITROGEN FERTILIZER UNDER NEW RECLAIMED SOIL CONDITION IN TWO WHEAT CULTIVARS.

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ABSTRACT

Tow field trials were carried out in 2011/2012 and 2012/2013 winter seasons to study the evaluation used the organic manure and bio-fertilizer as a total or partial replacement of nitrogen fertilizer on yield and protein quality of two wheat varieties (*Triticumaestivum*, L.) under newly reclaimed soils. The field experiments were layout at the Experimental Farm, of the Faculty of Agriculture, Fayoum University, Egypt. The treatments were set in Randomized Complete Block Design in factorial arrangement with three replications. The results showed that significant effect for wheat varieties were obtained on plant height and spike length in the 1st season and total protein percentage in both seasons but were insignificantly on other traits. The superiority was for Sakha94 in most characters. Fertilizer treatments were significantly effect for all studied traits except plant height and number of tillers/plant in 2nd season and spike length in 1st season. F₃ (30 m³/fed organic manure + bio-fertilizer + 37.5kg N/fed (50 %) gave the superiority in most traits in both seasons followed by F₄ (30 m³/fed organic manure + bio-fertilizer + 18.75kg N/fed.(25%) or F₅ (30 m³/fed. organic manure + 37.5kg N/fed.(50 %) treatments. Interaction between varieties and fertilizer treatments was significantly effect in most of studied traits except plant height and spike length. On the other hand, applying of F₃ (30 m³/fed organic manure + bio-fertilizer + 37.5kg N/fed.(50 %) with Sakha 94 or Sakha 93 gave higher values of grains yield in both seasons. Finally, by using organic fertilizer and/or bio-fertilizer with half dose of mineral fertilizer it could be 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. In path coefficient analysis straw yield and spike length revealed that positive direct effect and plant height through spike length were positive indirect effect on yield. These traits can be considered for selection.

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