

## **IMPROVEMENT OF SOIL FERTILITY AND PEANUT (*Arachis hypogaea*) PRODUCTION AS USING OF COMPOST AND YEAST APPLICATION UNDER SANDY CALCAREOUS SOIL CONDITION**

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### **Abstract**

Two field experiments were carried out at Assiut Agricultural Experimental Station, Arab El-Awammer, Egypt, during two successive seasons (2007 and 2008) to investigate the application of certain bio-organic treatments consisted of compost and yeast on peanut plants yield and its components as well as soil nutrients.

Results showed that the application of 30 kg N fed<sup>-1</sup> as compost plus spraying the active dry yeast at 2% after 3 and 6 weeks from planting were more effective to improve the studied parameter (number of branches per plant, number of pods per plant, 100-pods weight, seed of 100-pods weight, 100-seed weight, shelling %, yield per plant and yield fed<sup>-1</sup>) as compared with control treatment. Also, total N, available P and exchangeable K in the soil were significantly increased the active dry yeast at 2% after 3 and 6 week from planting.

### **INTRODUCTION**

The soils of arid and semiarid regions are poor in organic matter and need organic materials amendments to improve their physicochemical and biological properties, productivity and fertility (Pascual *et al.*, 1997). The organic substances amendments most widely used are farmyard manure and compost. Compost has high organic matter, N and P contents, hence it is suitable for agricultural purposes.

Great attention has been given when using yeast as biofertilizer using different application methods and rates for the promotion of plant growth, crop yield and quality. Improvements of growth, yield and quality of many crops were reported by El-Ghamirny *et al.* (1999) on some vegetable and fruit trees, (Tartouia, 2002), (Fathy & Farid, 1996) on pea plants, (Amer, 2004) and on common bean.

Peanut is a promising summer crop cultivated in the newly reclaimed area in Egypt for local consumption and exportation. At the time being, application of bio-organic farming became of great importance for sustainable agriculture to elutriate deterioration of the agricultural lands and environment, as well as to produce healthy safe foods for human and animals. In addition bio-organic farming plays an important role in biological balance and biocontrolling of soil borne diseases (Gomaa *et al.*, 2005).