

## Evaluation of Nitrogen Levels and Application Methods with or without compost on Yield and Quality of Peanut under the Newly Reclaimed Soils.

Hanan S. Siam<sup>1</sup>; Safaa A. Mahmoud<sup>1</sup>, A. S. Taalab<sup>1</sup>; Khaled A. Shaban<sup>2</sup>

<sup>1</sup>Plant Nutrition Dept., National Research Centre, Dokki, Egypt

<sup>2</sup>Soil, Water and Environment Res. Institute, Agric. Res. Center, Giza, Egypt

**Abstract:** Two field experiments were conducted to study the effect of levels of nitrogen and efficient application method in the production of peanut (*Arachis hypogaea* L.). Using four levels of urea soil application (0, 10, 20 and 40 kg/acre) and four levels of urea foliar application (0, 1.25, 2.5 and 5%), the experiment was laid out in a split-plot design, where the main plots were used to determine the effective method of application and the sub plot used to detect the influence of N levels on the yield. Two different application methods (soil application and foliar spray) treated with or without organic compost. The average data obtained after two years of study indicated an increase in seeds yield, pods yield and weight of 100 seeds irrespective of the method used of urea application. The seeds yield increased from 350 to 790 kg/acre in the plots that were treated with 40 kg N/acre compared with the control plots.

The soil application method, producing an average seeds yield of 927 kg/acre was found to be superior to the foliar spray method with an average seeds yield of 859 kg/acre. Also, these results indicated that addition of compost increased weight of seeds yield, pods yield and weight of 100seeds as compared to plants which untreated with compost. Also, there was a markedly increase yield parameters, as well as chlorophyll (a+b) except proline decrease when addition of compost. Also, increasing levels of nitrogen either soil application or foliar application gradually increased all mentioned parameters. Furthermore increasing of N rate as foliar spraying with compost fertilizer was more effective and increased N,p,k content and quality parameters ,i.e. oil and protein in seeds peanut plants if compared to the other treatments . In addition the soil pH and Ec in soil after peanut harvest decrease value were increase rate of N fertilizer in the presence of compost fertilizer.

In regard to the nutrient content, it can be interfered that soil application and foliar spray urea application increased the content of some nutrients, oil and protein as compared with control.

**Key words:** foliar spray, seeds yield, N level, protein content, oil, compost, soil application.