

EFFECT OF NITROGENOUS FERTILIZERS IN CONTENT OF EACH OF THE BARLEY PLANT OF CERTAIN NUTRIENTS IN CALCAREOUS IRAQI SOIL

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ABSTRACT

To study the effect of the source of nitrogenous fertilizer ($\text{Ca}(\text{NO}_3)_2$, $\text{Mg}(\text{NO}_3)_2$, KNO_3 , urea) in the content of each barley plant and soil of certain nutrients minerals, used small pots (8 × 10) cm by Neubauer Technique to ensure the full uptake of ready-made nutrients that are found in calcareous soil from agricultural Delmach project with deep (0-25 cm). The results showed that plant height during the first ten days was as follow:

$\text{KNO}_3 > \text{Ca}(\text{NO}_3)_2 \approx \text{Mg}(\text{NO}_3)_2 > \text{Control} > \text{Urea}$, while the above arrangement is different when twenty days of plants age as follow:

$\text{KNO}_3 > \text{Mg}(\text{NO}_3)_2 > \text{Ca}(\text{NO}_3)_2 > \text{Urea} > \text{Control}$. The dry weight of the plant after (20) days was taken the following arrangement: $\text{Ca}(\text{NO}_3)_2 > \text{Mg}(\text{NO}_3)_2 > \text{KNO}_3 > \text{Urea} > \text{Control}$. As well as the amount of uptake calcium in the plant took the same arrangement above, and the soluble and exchangeable calcium in soil correlated with uptake calcium in plant with $r = 0.766$ and 0.698 respectively, while uptake magnesium in plant was arranged as follow: $\text{Mg}(\text{NO}_3)_2 > \text{Ca}(\text{NO}_3)_2 > \text{KNO}_3 > \text{Urea} > \text{Control}$, and the Mg-soluble and Mg-exchangeable correlated with Mg-uptake with $r = 0.892$ and 0.866 respectively. The K-uptake in the treatments as follow: $\text{KNO}_3 > \text{Urea} > \text{Ca}(\text{NO}_3)_2 > \text{Mg}(\text{NO}_3)_2 > \text{Control}$, and K-soluble and K-exchangeable with K-uptake correlated with $r = 0.798$ and 1.000 respectively, while the Na-uptake took as follow: $\text{Urea} > \text{Control} > \text{Ca}(\text{NO}_3)_2 > \text{Mg}(\text{NO}_3)_2 > \text{KNO}_3$ treatment.

The sources of N-fertilizers used in the experiment led to increase both soil salinity, PH and soluble, exchangeable calcium concentration and soluble,

Exchangeable potassium concentration compared with control treatment in the end of experiment.

KEYWORDS: Neubauer Technique, Ammonium Carbamates and Di-Oxide Carbon (CO_2)