

Effect of fertilizers treatments and soil moisture regimes on Rice Plants (*Oryza sativa* L.) Macro Nutrients by different rice parts of two varieties at harvest.

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Abstract: A pot experiment was conducted using El kanater clay loam soil to study the influence of soil moisture regimes and different fertilizer treatments on yield of two rice varieties and macro nutrients content.

The obtained results can be summarized in the following:

Yield of rice plants were highly significantly increased by using soil moisture regime of (M1) followed by M2 and M3 in decreasing order.

Soil moisture regimes significantly affected the uptake of N, P and K by the different rice parts (roots, straw and grains) of the two rice varieties (Giza 176 and Sakha 102). Nitrogen, P and K uptake by rice plants grown on soil kept at submergence (M1) were significantly higher than those in plants grown under soil moisture regimes of M2 and M3.

Also, results indicated that all the used fertilizer treatments i.e. inorganic fertilizer (F1 and F2) organic fertilizer (F4) and their combination (F3) significantly increased grain yield, the total uptake of N, P and K by different rice part (roots, straw and grains) as compared with those obtained under non fertilized treatment (F0).

Inorganic fertilizers (F1 and F2) treatments significantly increased the grain, straw and root yield, concentration and the total uptake of N, P and K as compared with those obtained by using the organic fertilizer treatment (F4).

The highest values of the yield of the two rice varieties, concentration and the total uptake of N, P and K were obtained by using the fertilizer treatment of F3 (organic and inorganic in combination) followed by the two rates of inorganic fertilizer treatments (F2 and F1) and F4 (organic fertilizer alone) in descending order.

The interaction between soil moisture regimes and fertilizer treatments significantly affected the yield of rice plants, concentrations and the total uptake of N, P and K by the two rice varieties. The highest concentration and uptake values were obtained under soil moisture regime of M1 and using fertilizer treatment of F3 (M1F3), while the lowest values were obtained under soil moisture regimes of M3 and without fertilizers (M3 F0).

Key words : Organic and Inorganic fertilizers, Soil moisture, Macro, Rice varieties, Yield, Nitrogen.