

**RESPONSE OF KEITT MANGO TREES TO DIFFERENT
NITROGEN AND POTASSIUM FERTILIZATION
LEVELS UNDER SHADING AND NON
SHADING CONDITIONS**

By

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B.Sc.Agric. Sc. (Horticulture), Ain Shams University, 2001

M.Sc. Agric. Sc. (Vegetable Crops), Cairo University, 2008

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ABSTRACT

Ola Abd El-Satar Abd El Haliem: Response of Keitt Mango Trees to different Nitrogen and Potassium Fertilization Levels Under Shading and non-Shading Conditions Unpublished Ph.D. Thesis, Department of Horticulture, Faculty of Agriculture, Ain Shams University, 2018.

This study was carried out during three successive seasons of 2010/2011, 2011/2012 and 2012/2013 to investigate the effect of nitrogen and potassium fertilization treatments and shading on yield, and fruit quality of three-years-old mango (*Mangifera indica* L.) cv. Keitt grafted on sucary seedling rootstock planted at 2.5×2.5 meters apart grown in sandy soil under drip irrigation system with wells water. This experiment included nine levels of fertilization: T1= N 80+ K₂O 80 Kg/Fed., T2= N 80+ K₂O 100 Kg/Fed., T3= N 100+ K₂O 80 Kg/Fed., T4= N 100+ K₂O 100 Kg/Fed., T5= N 120+ K₂O 80 Kg/Fed., T6= N 120+ K₂O 100 Kg/Fed., T7= N 150+ K₂O 80 Kg/Fed., T8= N 150+ K₂O 100 Kg/Fed. and control (T9) = N 133+ K₂O 90 Kg/Fed.. The results cleared that Keitt mango trees supplied with 150 kg/feddan of nitrogen + 100 kg/feddan of potassium under shading condition significantly exhibited the highest yield (kg)/tree, number of fruit/tree, fruit weight, total sugars content and reducing sugars. Moreover, the best fruit pulp color was achieved with 80 kg/feddan of nitrogen + 80 kg/feddan of potassium under open field condition in the three studied seasons. The highest significant value of acidity and TSS were achieved by 120 kg/feddan of nitrogen + 100 kg/feddan of potassium under shading condition in the first and the third seasons. Whereas, the control treatment attained a maximum ascorbic acid content in the three growing seasons. The nitrogen, potassium, iron, zinc, calcium, magnesium, manganese, copper and cobalt in leaves were evidenced with by the treatment 150 kg/feddan of nitrogen+100 kg/feddan of potassium under shading condition manifested the highest values through three tested seasons. Nevertheless, the highest phosphorus percentage in leaves of keitt mango trees was found by 150 kg/feddan of

nitrogen + 100 kg/feddan of potassium treatment under open field condition in first and third seasons. whilst, In second season, 150 kg/feddan of nitrogen + 80 kg/feddan of potassium treatment under shading condition.

The application of 150 kg/feddan of nitrogen + 100 kg/feddan of potassium treatments under shading condition gave highest N, P, Fe, Zn, S and Mg in mango fruits pulp, except, Ca and Mn in second and third seasons, respectively, whereas, 150 kg/feddan of nitrogen + 100 kg/feddan of potassium with open field condition gave highest percent in second season.

Keywords: Fertilization, Mango cv. Keitt, Nitrogen, Potassium, Shading-yield

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