

EFFECT OF NITROGEN AND POTASSIUM FERTILIZATION ON BANANA (*Mousa spp.*) "WILLIAMS cv." GROWTH AND PRODUCTIVITY IN NEWLY RECLAIMED SOIL OF FAYOUM GOVERNORATE

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ABSTRACT

A field study was conducted on banana (*Mousa spp.*) "Williams cv." (the plantlets developed from local meristems, superior selected from Williams cv. grown in Egypt) grown in a newly reclaimed soil, Fayoum Governorate during three successive seasons to determine the N and K requirements. The plants were received different rates of N and K fertigation. The annual rates per plant were; 250, 500 or 750g. actual N in the form of NH_4NO_3 and 400, 800 or 1200g. actual K_2O as K_2SO_4 . All considered N and K rates were divided into 300 unequal doses around the year and were added as a solution by fertigation. Results show that the increasing rates of each fertilizer (N and K) increased plant height, Pseudostem girth and leaves number and reduced the number of days taken for shooting (flowering). N-fertigation had the greatest effect on plant height, girth and time to shooting. The uppermost N level (750g. N/plant/year) resulted in progressive increase in growth characteristics and yield. Application of 1200g. K_2O /plant results in a significant increase in growth bunch and finger characteristics. Increasing N rates raised leaf N and Fe contents and decreased leaf P, K, Ca, Mg and Zn contents but had no significant effect on leaf Mn content. Increasing rate of K- fertigation decreased leaf N, P, Ca, Mg and Fe contents and increased leaf K, Mn and Zn contents.

The following excretion N and K fertigation program could be suggested for banana Williams cv. in newly reclaimed soils:

(Feb. 30g. N + 24g. K_2O), (Mar. 40g. N + 72g. K_2O), (April 80g. N + 90g. K_2O), (May 72g. N + 145g. K_2O), (June 90g. N + 168g. K_2O), (July 114g. N + 190g. K_2O), (Aug. 126g. N + 220g. K_2O), (Sept. 75g. N + 120g. K_2O), (Oct. 66g. N + 72g. K_2O), (Nov. 42g. N + 48g. K_2O), (Dec. 30g. N + 36g. K_2O) and (Jan. 15g. N + 159g. K_2O). Application of 750g. actual N and 1200 g. actual K_2O / plant is recommended for banana "Williams cv." in newly reclaimed soil.