

EFFECT OF VARYING INORGANIC NITROGEN FERTILIZER REGIMES ON GROWTH, YIELD AND QUALITY OF SNAP BEANS

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Abstract (C2019)

Smallholder irrigated farms in central Kenya are characterized by low nutrient levels, particularly Nitrogen. An on-farm trial was established under furrow irrigation between early March 2010 and November 2010 at Kimbimbi in Kirinyaga South district to evaluate the effect of inorganic fertilizer application regimes on growth, yield and quality of snap beans. Fertilizer treatments comprised: (i) application of DAP at planting and topdressing with CAN at 21 days after emergence (DAE); (ii) application of DAP at planting and topdressing with NPK-17:17:17 at 21 DAE; (iii) application of DAP at planting, topdressing with CAN at 21 DAE and topdressing with NPK-17:17:17 at 35 DAE; (iv) application of CAN at planting, topdressing with CAN at 21 DAE and then topdressing with CAN at 35 DAE; (v) control (no fertilizer added). The varieties tested were Amy and Serengeti. The trial was laid out in RCBD with a factorial arrangement and replicated three times. Fresh pod yield was sorted into fine and extra fine grades. Nitrogen fertilizer regimes delayed seed emergence in the first planting. Serengeti took a longer time to emerge and flower than Amy. Fertilizer application depressed nodulation. Generally, application of DAP-CAN and DAP-NPK significantly increased shoot dry weight while CAN alone had no effect. Serengeti had higher shoot dry matter than Amy. In Amy variety, only DAP-CAN and DAP-NPK had higher extra fine pods than the control, while all the fertilizer treatments increased extra fine pods in Serengeti. Serengeti had significantly higher total extra fine pods than Amy in all treated plots, but not in control plots. All treatments except DAP-NPK had significantly higher fine pods than the control in Amy while all fertilizer treatments improved fine pods in Serengeti. DAP-CAN and DAP-NPK fertilizer application had the most positive effect in Serengeti while DAP-CAN-NPK had the most positive effect in Amy.

Key words: fine pods, extra fine pods, Serengeti, Amy, inorganic fertilizer