

**EVALUATION OF THE EFFECT OF PHOSPHORUS FERTILIZER AND PLANT DENSITY ON THE GROWTH AND YIELD OF FINGER MILLET IN MABERA, KURIA WEST DISTRICT.**



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## **ABSTRACT**

Finger millet (*Eleusine coracana*) is an important nutritional and economic crop that contributes greatly to income and food security of the smallholder farmers in rural areas in sub-Saharan Africa. The production of this crop has been declining due to reduced area under cultivation and loss in soil fertility. The objective of this study was to find out the effect of different levels of phosphorus fertilizer and plant density on the performance of finger millet. The experiment was setup with Randomized Complete Block Design with treatments being phosphorus levels of Triple Super Phosphate (TSP) (0, 25, 50 and 75 Kg/ha) and spacing in centimeters, S1 (30X10), S2 (30X15) and S3 (30X20). The experimental field was divided into 3 by 3 meters and replicated twelve times and three blocks. The experiment was conducted in two seasons, the first season seeding was done during the short season, 21<sup>st</sup> November 2014 and the long rain season on 23<sup>rd</sup> June 2015. Data was collected on growth and performance indicators like plant height, seed weight, length of the heads and number of fertile tillers was determined. Results indicated that plant density and phosphorus levels had significant effects on finger millet seed weight, number of fertile tillers, plant height and percentage lodging. It was found out that spacing and phosphorus levels affect the performance of finger millet in terms of tillering ability, growth and yield. The interaction between spacing and fertilizer levels in season one had a significant effect on finger millet height. The contribution of phosphorus to the size of the head length of finger millet appeared to be higher than that of plant density in both seasons. It was recommended that 75 kg/ha can be used to increase yield of finger millet in the study area.