

Effect of Defoliation and Spacing on the Leaf and Grain Yields of Grain Amaranth

by

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ABSTRACT

Grain amaranth is an emerging crop which is highly nutritious, drought tolerant vegetable which can be promoted in ASAL areas as it can do well with as little rainfall as 200mm. The crop is being promoted in Turkana County but the effects of different row spacing and defoliation intervals on yields in the region are not known. Because the leaf and seed are both consumed, the study therefore sought to establish the effect of spacing and defoliation on the rate of growth, leaf yield, and grain yields of the crop. Due to its high nutritional value the crop is able to address the malnutritional problems which are rampant in the county. The county relies on animals for protein source which is very expensive hence the need to promote the crop to subsidize the protein source. Different intervals of defoliation of 0, 7, 10 and 14 days, at a fixed 50% defoliation level and row spacing of 60cm, 75cm, and 90cm by drill were used. The treatments were arranged in completely randomized block design (CRBD) to establish their effects on the growth rate, leaf and grain yields. The within line spacing was thinned to 20cm, 14days after sowing. Data collected was subjected to SPSS, ANOVA (to determine if there were any mean differences) and post hoc tests (to determine if the differences were significant). Results indicated that, the closer the spacing (60cm), other factors held constant gave highest leaf and grain yield. The longest defoliation interval of 14 days gave the highest total leaf yield while the no defoliation treatment gave the highest amount of grain. The best combinations from the experiment were 60cm spacing with 14 day defoliation interval for highest leaf yield while 60cm spacing with no defoliation treatment yielded the highest amount of grain.