

EFFECTS OF INTERCROPPING ON FRESH LEAF YIELD OF AMARANTH (*A. DUBIUS*) IN WESTERN KENYA

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Abstract:

Amaranth (*Amaranthus* spp.) is an important indigenous vegetable in Kenya, yet factors affecting leaf yield have not been fully investigated. Besides being rich in micronutrients, it has several medicinal properties compared with most traditional vegetables. For the potential of this crop to be exploited, there is a need to look at factors that would contribute to optimal leaf yields. Field experiments were carried out in Teso district of Western Kenya to investigate the effects of intercropping amaranth (*A. dubius*) with soybean (*G. max*) on leaf yield of *A. dubius* at six harvest dates. A split-plot design was used where single rows, double rows, and sole stands formed the main treatments which were replicated three times in two sites (A and B) for two cropping seasons. Data were collected on *A. dubius* leaf yield at six harvest dates and analysed using split-plot ANOVA. Results indicated that intercropping significantly affected leaf yield in both seasons and sites ($P < 0.05$). Leaf yield of *A. dubius* was higher in site A than site B and in season two compared with season one. Similarly, higher *A. dubius* leaf yield was obtained from double row intercrops compared with single row intercrops or sole stands for the two seasons in both sites. There was a significant increase ($P < 0.05$) in leaf yield of *A. dubius* in weeks 1, 2, and 3, reaching a peak in week 4 before declining in weeks 5 and 6. Average land equivalent ratios (LERs) were 2.1 for single rows in both sites, and 2.6 and 3.0 for double rows in site A and B respectively. Intercropping *A. dubius* with *G. max* using double rows provided full potential for sustainable use of biological diversity towards meeting food, health, and economic needs of the Kenyan population.
