

Morphological Characterization and Yield Performance of Amaranth Genotypes in Embu

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Abstract

Amaranth is one of the commonly cultivated indigenous vegetable in Kenya especially among the rural dwellers. It is said to contain about 6% of the total land under vegetable cultivation annually. This genus consists of about 60 species, most of them are cultivated as leave vegetables, grains or ornamentals. Most of the cultivated cultivars of amaranth have got low yields on leaves because there are no improved varieties. This study was conducted to: a) To come up with the morphological characteristics of the amaranth genotypes. b) To study the yield performance of the said genotypes and c) To conduct a proper research that is demand-driven to meet the farmer's needs. The experiment was carried out at the University of Embu demonstration farm for one season from January to March with 11 lines and 3 replicates. Randomized complete bock design was used. Data was collected on leaf yield and morphological characteristics and the results showed that the plant height, leaf length, leaf width and the yield were significantly different ($P \leq 0.05$) among the 11 genotypes. Genotype 8 had the highest leaf yield of 2.18kg while genotype 9 had the lowest yield of 0.22kg. Seven agro-morphological characteristics were observed and they showed similarities over the season this were the leaf colour, stem colour, leaf hairy, inflorescence colour, leaf margin and inflorescence compactness. The cluster dendrogram analysis grouped the 11 genotypes into 3 clusters considering their similarities. This study found that genotype 8 was the best performing in terms of leaf yield. It also found out that genotype 9 was the least performing in terms yield while genotype 8 the broadest leaf size in terms of the width and the length. Recommendations were made that further research to be done on how timely harvesting of the leaf amaranth affects its production. Also conducting the same experiment but on different agro-ecological zones in order to have a wider range of conclusion.