

Agro-morphological characterization of traditional African vegetables cultivated in the highlands of Madagascar

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Abstract

Malagasy agriculture is mainly characterised as a subsistence farming. The smallholder farmers diversify their cropping system as a strategy to cope with yield uncertainty and to ensure their food availability. Traditional African vegetables (TAVs) take an important place in this cropping system. TAVs are easy to grow, have high levels of micronutrients and could be an important income source for the farmer households. The Darwin initiative project introduced several TAVs accessions to the Malagasy farmers to increase income and improve food and nutrition security. The aim of this study was to characterize the TAVs accessions in order to evaluate their adaptation in Madagascar and to multiply these vegetable seed for the household farmers. A total of 12 accessions of African nightshade, Amaranth, African eggplant, and Ethiopian mustard were characterized on-station at Antsirabe for their agro-morphological traits using a randomised complete block design with three replications in 2019/2020. Data was analyzed using R software. The results indicated distinct and wide variations between accessions. Accessions had a significant effect ($\alpha=0.01$) on total biomass. Days to flowering, total biomass, stem color, petiole color, leaf blade width and length, stem pigmentation and pubescence, leaf pigmentation and inflorescence color were the parameters to discriminate the accessions. Traditional African Vegetables had potential to be adapted, multiplied and distributed into household farmers in Madagascar.

Keywords: Indigenous vegetables, underutilized crops, African nightshade, amaranth, African eggplant, Ethiopian mustard.