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"Management of land use systems for enhanced food security: conflicts, controversies and resolutions"

Morphological Diversity of Spider Plant (*Cleome gynandra* (L.) Briq.) Accessions from Different Countries in African

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Abstract

Spider plant (*Cleome gynandra* (L.) Briq.) has the African recipe taste for potential nourishment of local community based on its diverse use-values. The diverse uses range from nutritional (high value of vitamin C & A; minerals-Mg, Zn, Ca; protein, fat and fibre) and medicinal. As well it reduces risks of degenerative diseases like cardiovascular diseases, some cancer types, inflammation and age-related disorders. However, there is scarce and sparse scientific information on the plant diversity for use in crop improvement and is a potential area for research. Morphological characterisation and evaluation of 255 spider plant lines developed by single plant selection from 32 accessions obtained from AVRDC-The World Vegetable Center, East and Southern Africa (AVRDC-ESA) was conducted in 2014 in Arusha, Tanzania. The materials were assessed in on-station field experiment at AVRDC-ESA, 1290 m a.s.l, 4.8° N latitude and 37°E longitude. Five advanced lines were included as checks. The experiment was laidout in an augmented design of five blocks. The check lines were arranged in a randomised complete block design, and each was assigned to a plot in each block at random. The 255 test lines were available only once in the experiment assigned at random. A number of quantitative and qualitative data were collected. The materials were evaluated by seven female and six male farmers from around the research centre for their yield, quality and desirable horticultural traits. We present within and among accessions morphological diversities based on quantitative and qualitative traits data collected. We also present traits associations with leaf yield and among each other. The paper identifies promising lines for yield, quality and desirable horticultural traits for further evaluation and use in germplasm development programs and especial studies.

Keywords: Characterisation, germplasm development, indigenous vegetables, morphological traits

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