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Morphological Characterisation and Polyploid Assessment of Citrus Varieties

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ABSTRACT

This study was carried out to evaluate the morphological traits and assess the polyploid in Citrus varieties. Field experiment was carried out at the research farm of the Department of Botany, University of Ibadan, while polyploid assessment was done at the International Institute for Tropical Agriculture, Ibadan, Nigeria. The experiment was laid out in a complete randomised design with three replicates. The growth and yield character significantly ($p < 0.01$) varied in Citrus varieties. *Citrus* (L.) *Burm F* significantly ($p < 0.05$) exhibited higher plant height (73.27 cm), while *Citrus aurantifolia* had higher number of leaves (103.23) and number of branches (9.80). The leaf length (18.92 cm), leaf width (11.22 cm), fruit length (107.00 mm), fruit diameter (138.04 mm) and fruit weight (660.69 g) were significantly higher in *Citrus maxima*. The diploid status of $2n = 2x = 18$ was confirmed in Citrus varieties. The highest mean peak band of 7217.48 was shown in *Citrus limon*, while the highest coefficient of variation (10.40) was revealed in *Citrus sinensis* Valencia. *Citrus aurantifolia* and *Citrus limon* had the same vertical wavelength peak of 230 nm. These are indications of polyploid expressions. The leaf length is positive and strongly correlated with leaf width, petiole length, fruit length, fruit diameter and fruit weight at $r = 0.95, 0.64, 0.64, 0.69,$ and 0.76 respectively. The leaf width is positive and strongly correlated with leaf width, petiole length, fruit length, fruit diameter and fruit weight at $r = 0.8, 0.75, 0.87$ and 0.93 respectively. Therefore, *Citrus maxima*, *Citrus aurantifolia*, *Citrus* (L.) *Burm F* and *Citrus limon* should be improved. The leaf length, leaf width, petiole length, fruit length, fruit diameter and fruit weight characters should be considered in further breeding of Citrus.

Keywords: Citrus, morphology, polyploid, breeding

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