

Diversity and Agro-Morphological Characteristics of Nigerian Sesam (*Sesamum Indicum* L.) Cultivars using Random Amplified Polymorphic DNA Markers

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Sixty sesame accessions from eight locations in Nigeria were assessed for agro-morphological traits using random amplified polymorphic DNA (RAPD) markers. DNA was isolated using modified cetyltrimethyl ammonium bromide extraction method. The cultivars were assessed for genetic diversity using eight random amplified polymorphic DNA markers. The agronomic assessment was also conducted and the results showed that germination period ranged 3-7 d. Mean 100-seed weight was 3.6 ± 0.3 mg, while mean seed pod was 56 pods per plant, with days to flowering ranging 48-62 d. Seeds size ranged 50.6-79.3 mm, while plant height was 1.4 ± 1.7 m. Dendrogram generated using unweighted pair groups mean arithmetic analysis separated the accessions into six major groups of two clusters and some independent cultivars with a bootstrap value of 45-60%. The polymorphic information content (PIC) values ranged from 0.3-0.9. The RAPD marker OPT-10 showed polymorphic characteristics, while OPB-11 was monomorphic with least PIC value. Results of PCR amplifications indicated high level of genetic diversity among the accessions and farmers can select varieties for breeding purposes based on agro-morphological traits.

Keywords: Agro-morphological, RAPD markers, sesame cultivars