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INTRA- AND INTER-POPULATION GENETIC DIVERSITY OF OIL PALM (*Elaeis guineensis* Jacq.) PISIFERA CLONES ORIGINATED FROM NIGERIA BASED ON SSR MARKERS ANALYSIS [1]

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**ABSTRACT**: The objectives of this experiment were to determine intra- and inter-population genetic diversity of tissue culture derived ramets of pisifera palm collections originated from Nigeria (pisifera Nigeria). A total of 87 ramets of pisifera Nigeria derived from six orteds were used for analysis. In this experiment, the genetic diversity was assessed using 12 loci of oil palm’s specific SSR markers. The results of the experiment indicated out of 12 SSR marker loci evaluated, one locus was monomorphic in all pisifera palms evaluated while 11 were polymorphic. The average number of alleles per locus in the analyzed populations was 3.3. Out of six different populations of pisifera Nigeria analyzed, ramets derived from orted # 22, # 24 and # 32 showed uniform allele profiles in all of SSR marker loci tested,
indicating the clonal nature of the ramets. On the other hand, at least one ramet derived from orted # 14, # 23 and # 33 exhibited different alele profiles than that of the rest, indicating possibilities of either somaclonal variants or mislabelled materials. These results demonstrated SSR marker can be used to evaluate genetic relatedness among ramets derived from different orteds, uniformity of ramets derived from tissue culture of single orted, and detecting either somaclonal variants or mislabelled ramets.

**Key words**: Tissue culture, clonal propagation, ramet uniformity, mislabeled materials, somaclonal variants