Genetic Diversity of the Medicinal Plant *Ocimum Gratissimum* L. (mint) from Kenya Based on AFLP Markers

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**Abstract:** *Ocimum gratissimum* L. native to Africa is a shrubby essential oil containing plant with medicinal, antimicrobial and antihelminthic properties. It is an important herbal medicine not only among Kenyan communities but also in the sub-Saharan Africa. No systematic assessment of genetic variability in *O. gratissimum* of Kenya has been carried out. In this study, amplified fragment length polymorphism (AFLP) analysis was used to estimate genetic diversity and genetic differentiation in 139 samples from all the different provinces of Kenya. Seven primer pairs, the *Eco*+ACT plus *Mse*+CAA, *Eco*+ACT plus *Mse*+CTG, *Eco*+ACA plus *Mse*+CAA, *Eco*+ACA plus *Mse*+CTG, *Eco*+AGC plus *Mse*+CAA, *Eco*+ACC plus *Mse*+CAA, and *Eco*+ACC plus *Mse*+CAC were the best combinations and generated polymorphic 655 bands with fragment ranging in size from 50 - 473 bp in size. Populations from central Kenya had the highest levels gene diversity. Most of the variability was partitioned into within populations 71%; *P* < 0.001 implying that collection strategies for conservation should focus on a few populations with many individuals across the ecological amplitude of the population. Genetic differentiation was GST = 0.286, an indication of genetic variation among the populations.

**Key words:** *Ocimum gratissimum* L., AFLP, genetic diversity.


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