

Genetic diversity of *Calotropis gigantea* (L.) R. Br. with RAPD markers: Taxonomic implication

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Calotropis gigantea (L.) R. Br. (Asclepiadaceae) is a beneficial plant as a source of pharmaceutically active substances, commercially important fibers, etc. It plays an important role, both biologically and ecologically. These two forms of *C. gigantea* occurs in the wild, and the only polymorphic morphological character between them is the flower colour, either white or purple. Due to anthropogenic activities, this plant is disappearing. To conserve *C. gigantea*, correct identification and diversity studies are essential. Molecular analysis data could use to study genetic diversity without using flowers. Randomly Amplified Polymorphic DNA (RAPD) analysis was used to investigate the genetic variations between these two forms. Ten purple flower forms and ten white flower forms of *C. gigantea* were selected from different areas. The genomic DNA was isolated from fresh young leaves. PCR amplifications were performed for each sample by using ten different RAPD primers where a total of 92 polymorphic fragments out of 106 total fragments were observed. The polymorphism was 87%, and genetic similarity was 13% among these individuals. The dendrogram was constructed by using MINITAB-19 software. Two clusters were generated at similarity levels 59.8716 and 62.8512 for white and purple flower forms respectively. Out of ten RAPD primers, only the primer OPE3 has given a unique banding pattern for the white flower forms which is higher than 2000 bp. The results indicate a high genetic diversity between the two flower colour forms of *C. gigantea*, which would be important in the conservation of the species.

Keywords: *Calotropis gigantea*, Diversity, Genetic, Polymorphism, RAPD

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