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RESEARCH PAPER

Exploring the potential of *Macaranga nicobarica*: A sustainable alternative to plastic plates in the Andaman and Nicobar Islands

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Abstract : The Andaman and Nicobar Islands have been actively seeking sustainable alternatives to plastic and recent research by the ICAR-Central Island Agricultural Research Institute (CIARI) and the ICAR-National Bureau of Plant Genetic Resources (NBPGR) has identified *Macaranga nicobarica*, commonly known as the "Giant leaf" plant, as a promising substitute for plastic packaging. This study investigates the potential of *M. nicobarica* as an alternative source for plastic plates, focusing on its growth, development, and leaf characteristics. Germplasm of *M. nicobarica* was collected from three locations in the Nicobar Islands and conserved for further study. Morphological observations were made on leaf production patterns and various leaf characteristics, and statistical analyses were conducted to compare these traits among different accessions of *M. nicobarica* and other relevant species (*M. tanarius* and *M. indica*). Significant variations were observed in leaf characteristics among *M. nicobarica* accessions, with some displaying larger dimensions and higher leaf area compared to others. Furthermore, *M. nicobarica* exhibited distinct differences in leaf characteristics compared to other species of the *Macaranga* genus. A dendrogram analysis confirmed the clustering of all *M. nicobarica* accessions, distinct from other studied species. The findings suggest that *M. nicobarica*, particularly accession IC: 626370, holds significant potential as an alternative source for plastic plates, owing to the size and texture of its large leaves. This research contributes to the ongoing efforts to reduce plastic dependency in the Andaman and Nicobar Islands, highlighting the importance of indigenous resources like *M. nicobarica* in fostering sustainable solutions for environmental challenges.

Key Words : *Macaranga nicobarica*, Plastic alternatives, Leaf characteristics, Andaman and Nicobar Islands, Sustainable development

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