Systematic study on Guttiferae Juss. of Peninsular Malaysia based on plastid sequences

ABSTRACT

Twenty-one taxa in 4 genera (Calophyllum, Mammea, Mesua s.l. and Garcinia) of Guttiferae from several areas in Peninsular Malaysia were used to investigate the status and relationships of taxa within the family Guttiferae using the chloroplast DNA trnL-trnF sequence data. Molecular phylogeny results indicated that Calophyllum, Mammea and Garcinia are monophyletic genera. However, the genus Mesua appeared to be polyphyletic as Mesua ferrea did not form a cluster with the other Mesua taxa. Therefore, the molecular phylogeny supports the morphological classification that Mesua taxa in Peninsular Malaysia other than M. ferrea, be transferred back into genus Kayea. On the other hand, the molecular phylogeny disagrees with the morphological classification of Calophyllum wallichianum var. wallichianum and C. wallichianum var. incrassatum as varieties of C. wallichianum. Therefore, the status of these two varieties should be reinstated to distinct species as C. wallichianum and C. incrassatum respectively.

Keyword: Guttiferae; Mesua; trnL-trnF; cpDNA; Phylogeny