

A review on molecular systematic of the genus *Dendrobium* Sw.

ABSTRACT

One of the most important genera in the family Orchidaceae is genus *Dendrobium* with 800-1400 species in the world. This genus spreads from Korea and Japan through South-east Asia, west to Himalayas, east in to Philippines, and south through Indonesia, the Pacific Islands, New Zealand and Australia, with more than 150 species in New Guinea . *Dendrobium* plants are one of the most popular orchids for its medicinal and commercial value in potted and cut flower industries. Most of the orchids prefer the tropical regions with high annual rain fall and without drought season to grow. Malaysia has this climatic situation, so it is suitable area for orchids to thrive well. Previous morphological studies have not supported the systematic of this genus so it needs a deeper analysis and using more species. Problems associated with variability and plant habit could easily caused confusion in species identification. As a result, advance studies need to be performed for this genus using more robust characters than morphological characters. Molecular systematic and phylogenetic studies that have been done in last years and will be done in the feature research will provides comprehensive information to be used as a powerful tool for conservation of endemic and endangered species. This paper is a review of previous molecular studies that have been done on this important genus in the world that will help us to select the best method for molecular systematic studies of this genus in Malaysia for future researches.

Keyword: *Dendrobium*; Orchidaceae; Molecular systematic; cpDNA; nrDNA; Low copy nuclear gene.