

ABSTRACT

Siti Zahra Rahmani, 24020121120034, Taxonomic Study and Phenetic Analysis of *Beilschmiedia* spp. (Lauraceae) on Java Island. Under the supervision of Lilih Khotimperwati & Deby Arifiani

Indonesia is one of the megadiverse countries rich in flora, including the genus *Beilschmiedia*, which is widely distributed in tropical forests. However, information regarding the diversity of *Beilschmiedia* species in Java has not been updated for more than six decades. This study aims to update the information on species of *Beilschmiedia* in Java and to analyze the phenetic relationships among species of the genus based on morphological characters. The study examined a total of 144 herbarium specimens from the Herbarium Bogoriense (BO) collection and 127 digital specimens obtained from online databases. There are 97 morphological characters were observed from leaves, stems, flowers, and fruits. The locality information on the specimen labels was used to obtain geographical coordinates for constructing a distribution map using QGIS version 3.42. Data analysis was conducted through cluster analysis and principal component analysis (PCA) using MVSP version 3.1. Cluster analysis employed the Unweighted Pair Group Method with Arithmetic Mean (UPGMA) and the Simple Matching Coefficient (SMC) as the similarity index. The results revealed the presence of four *Beilschmiedia* species on Java, namely *B. gemmiflora*, *B. lucidula*, *B. madang*, and *B. roxburghiana*. Dendrogram and scatter plot indicated the formation of two distinct clusters of *Beilschmiedia* spp. in Java. The first cluster comprised *B. lucidula*, *B. madang*, and *B. roxburghiana*, while the second cluster consisted of *B. gemmiflora*. There were significant taxonomic clarifications, in which *B. javanica* showed no distinct morphological differences from *B. gemmiflora* and can therefore be revised as its synonym, while *B. undulata* is confirmed as a synonym of *B. roxburghiana*. A novelty in this study is also the recording of *Beilschmiedia roxburghiana* as a new record for Java Island.

Keywords: *Beilschmiedia*, Lauraceae, Phenetics, Herbarium, Morphology, Java