Poster 4

Morphological and Genetic Data Do Not Support the Intraspecific Taxonomic Classification of *Pimenta pseudocaryophyllus*

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Pimenta pseudocaryophyllus Landrum (Myrtaceae) is an important plant for traditional communities in southwestern Brazil, used both medicinally and for cultural. Due to the predatory exploitation, it may be at risk of vulnerability requiring. However, little is known about this species, including whether the name *P. pseudocaryophyllus* corresponds to a species or a species complex. This plant is widely distributed in South America, occupying different biomes but the distribution records are concentrated in the Atlantic Forest and the Cerrado. It presents three taxonomic varieties defined based on vegetative morphology, especially on the shape of the leaves. *P. pseudocaryophyllus* var. *hoehnei* (DC.) Landrum is in the coastal region of southern to southeastern Brazil, mainly in herbaceous, shrubby, and arboreal coastal sandy habitats (*restingas*); *P. pseudocaryophyllus* var. *pseudocaryophyllus* (Gomes) Landrum, is distributed in southeastern Brazil mainly in the highlands of ombrophilous dense forests, and *P. pseudocaryophyllus* var. *fulvescens* (Burret) Landrum that occurs in the Cerrado, with rare exceptions in the Bolivian Chaco. However, in the field and in collections records, a great variation in the shape of the leaves is observed. This study sought to analyze whether there is a congruence between genetics and morphological aspects of representatives of these taxonomic varieties. We sampled 153 *P. pseudocaryophyllus* individuals across four sites and genotyped them using a set of 11 polymorphic microsatellites. We quantified the genetic diversity of each sample and described their population genetic structure. Complementarily, we used a geometric morphometry of leaves from a subset of the total samples. We considered the leaf closest to the site's average and normalized them using General Procrustes Analysis and performed a Principal Component Analysis (PCA) to describe how taxonomic varieties are organized considering the leaves' shapes and sizes. The PCA of the morphology showed individuals comprised groups according to sampling site and variety. Conversely, the population genetic structure was not congruent with the observed morphological variation. Despite forming clearly separated clusters. We observed that varieties *pseudocaryophyllus* and *fulvescens* grouped together, whereas *hoehnei* was clearly differentiated. This preliminary study suggests that, because of the absence of correspondence between leaf morphology and genetics, leaf shape is likely not a reliable character for the intraspecies taxonomy.