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Vanilla wild relatives naturally occurring in Atlantic rainforest—central biodiversity corridor in southern Bahia – Brazil

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Abstract

The genus *Vanilla* Mill., due to being a source of vanillin, an aromatic organic compound with high commercial value, is one of the best-known of the Orchidaceae family. The extracted oil has been used in the food, pharmaceutical, and cosmetics industries. Considering the complex activity of growing vanilla for oil extraction, studying species of this genus is of huge interest for conservation and breeding programs. The current study was carried out in the extreme south of the state of Bahia, in northeastern Brazil. A region characterized by the presence of many traditional communities and small farmers, and human development index below the OECD average. The study area covered four different provenances, including the conservation unit “Descobrimento National Park” and its surrounding communities, and aimed to identify the naturally occurring *Vanilla* species. Expeditions were carried out in the forest with the purpose to find and register specimens using geo-location for further monitoring and data collection on the morphology, habitat, floral visitors, and floral phenology. The observation of the reproductive organs occurred weekly/daily for a period of 60 days, from the flower bud stage until the first flower has fallen naturally. Fifteen specimens were marked all over the studied area, three of them were blossoming and provided data for this study. Through the analysis of the morphological and phenological characteristics of the observed flowers, it was possible to identify with certainty two species, *Vanilla phaeantha* Rchb.f. and *Vanilla chamissonis* Klotzsch. These results contribute to determining and registering vanilla wild relatives’ occurrence in the extreme south of Bahia. In addition, relevant information was generated on phenological, and morphological aspects of the species found in this environment.

Keywords: Floral biology, Orchidaceae, vanilla, wild relatives