FEATURING THE PHENOLOGICAL BEHAVIOR OF Vouacapoua americana Aubl.

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Abstract

Phenological studies are essential to better understand forest community structure and dynamics, as well as climate influence on plant species. Tropical forests, such as the Amazon Forest, have significant plant-species biodiversity, mainly of woody species like Vouacapoua americana, which is an endangered species with great economic potential. The aim of the current study is to investigate the phenological behavior of species Vouacapoua americana Aubl – also known as ‘acapu’ – over a seven-year period (2016-2022). Thirty-five (35) individuals had the following reproductive phenophases assessed on a monthly basis, based on the treetop observation method: floral bud, anthesis, immature and mature fruits, and dispersion. Vegetative phenophases, such as abscission and leaf sprouting, were also assessed. Phenological analysis was carried out based on Principal Component Analysis (PCA), Circular analysis and Rayleigh test; all tests were performed in R software. Based on phenological results, reproductive phenophases have shown positive correlation to rainfall and relative humidity; the most intense reproductive phenophases were observed in the period accounting for the highest rainfall rate - from January to April. The most intense leaf phenophases were recorded in the dry season and presented positive correlation to both solar radiation and temperature. Acapu has proved to be a seasonal and annual species and this information can be used to help conservation programs, both ex situ and in situ, as well as the sustainable use of this species.

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