

Phenology of woody vegetation of an open savanna (Cerrado Ralo): effects of a burn in the rainy season

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ABSTRACT- The objective of this work was to evaluate post-fire phenology of cerrado woody species after a prescribed burn (simulating natural fire). The experiment took place in an open savanna area, 35 km Southeast of Brasília (DF), burned one year previously. In this area, two plots of 3000 m² were selected. One burned in September 2018 (B), beginning of rainy season (53.2 mm before fire) and one as control (C). Before fire, we found, in B, 106 individuals (24 species) and 106 (25 species) in C, with Jaccard' index of 0.58. Monthly, for both plots, different phenophases (leaf buds, new leaves, floral buds, flowers, and fruits), were recorded per individual. The fire did not result in death or topkill of individuals. One month after the fire, in C, 13% of the individuals presented leaf buds, 54% new leaves, 13% floral buds and 12% flowers. In B, the use of resources to replace burned vegetative parts resulted in 63% of individuals with leaf buds, 44% with new leaves and only 5% with flower buds, and flowers. However, *Kielmeyera coriacea* was observed with flower buds in B and C, while *Stryphnodendron adstringens* only in B. The investment in vegetative parts rather than in reproductive structures persisted until November/December, mid wet season. By this time, in B, 50-58% of individuals presented leaf buds, 54-56% new leaves, 3% flower buds, 2-4% flowers, and 1-3% fruits. At the same time, in C, 10-36% of individuals presented leaf buds, 37-53% new leaves, 8-11% flower buds, 8-10% flowers, and 0-6% fruits. In March, reproductive structures were present in a larger number of individuals in B (8% flower buds, 4% flowers, and 1% fruits) than in C (2% flower buds, 2% flowers, and 4% fruits). The low investment in reproductive structures in B, in the first months after the fire, is in agreement with the literature for Cerrado's woody vegetation and reflects the use of reserves in the replacement of the vegetative structures, a strategy of persistence in fire-prone environments. (FAPDF/0193.001387/2016; CNPq/442722/2018-4; Comando da Área Alfa (DF) da Marinha do Brasil).

Keywords: savanna; phenology; *Kielmeyera coriacea*; *Stryphnodendron adstringens*; prescribed fire; reproductive phenophases.

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