



## **Fleshy-fruits phenology: temporal variability on quantity and quality of animal-dispersed fruits in a cerrado-savanna**

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Time and quantity and quality of fruits and seeds produced are limiting factors for the recruitment of new individuals and maintenance plant species. Furthermore, species that produced fruits dispersed by animals have an important role as a source of food for different groups of animals and rely on them to disperse their seeds. In most of the Brazilian cerrado-savanna, as in other tropical vegetations, there is a predominance of animal-dispersed species, however there is a lack of information about fruit production and its availability over time on tropical savannas. Beyond the comprehension of fruiting patterns and their relation to biotic and abiotic factors, the fruit production over time can be associated with data on fruit quality such as the fruit color and nutritional content. Those combined informations allow us to evaluate the quantity and quality of resources available in a plant community for frugivores and seed predators. For a cerrado-savanna woody community in southeastern Brazil, subjected to a marked seasonal climate, we intended to describe: (i) fruit availability over time (in number and biomass); (ii) nutritional content; and (iii) fruit color patterns over a year. We counted fortnightly the number of ripe fruits and estimated fruit biomass over a year. For the nutritional content, we evaluated the percentage of protein, lipids and carbohydrates in the pulp or aril of fleshy-fruits. We classified fruit colors in red, black, yellow, dark-red, blue and multicolored (when the fruit display is composed by a combination of two non-green colors or more). We observed a period of the highest fruit production in the wet season, with two peaks of production, and a decline in the dry season, a possible period of scarcity. As expected, fruit nutritional content followed mainly the fruiting pattern in biomass. For lipids there was a different seasonal pattern in which lipid-rich fruits were produced mainly at the end of the wet season while fruits with less lipid were fruiting in the first part of the wet season. Fruits of different colors were not equally produced along the year, with black and red fruits more restricted to the wet season, while yellow and multicolour fruits were also observed in the dry season. The cerrado-savanna woody community showed a relevant fruit production in quantity and quality with a high production in biomass of fruits and mainly in the amount of lipids in the pulp. Despite the strong correlation with the seasonal weather, there were differences in the timing of fruit production according to fruit colors.