



Seasonality of wood species fruit production among seed dispersal modes in a cerrado-savanna: habitat responses and implications for climate change

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Fruiting is a key process in tropical woody vegetations since more than 70% of species have seeds dispersed by animals that rely on plants as food resources and seed limitation is ubiquitous. We studied the seasonality of fruit production by seed dispersal modes in a woody cerrado savanna community from Southeastern Brazil. We evaluate whether local environment (light and temperature), determined by the cardinal orientation of the cerrado savanna edges, affected: (i) the overall community fruit production in terms of fruit number and biomass and the fruiting patterns among seed dispersal modes; (ii) the relative contribution of species to fruit production and the seasonality within seed dispersal modes. We discuss whether the shifts detected in the phenology and fruit production between environments may be a proxy for the responses of woody savanna species to climate changes. We sampled all woody individuals within 36 transects equally distributed between the east (lighter and warm) and south (darker and colder) faces of a cerrado savanna. We performed phenological monitoring, fruit counting and estimated fruit biomass fortnightly during 17 months on all marked woody plants. Significant differences were previously detected between east and south faces of the cerrado savanna; east face is lighter, dryer and warmer than south face. Phenological patterns of fruiting production did not differ significantly between east and south faces by seed dispersal modes (animal, wind and other). However, we detected significant differences on the biomass of fruit production between faces; the biomass of animal and wind-dispersed was higher on the east face. The number of animal dispersed fruits did not differ between faces but the number of wind-dispersed fruits was 4-fold higher on the east face. The relative contribution of the most abundant species to fruiting patterns also differed between faces. We detected that the same species can present a significant different phenological response in terms of fruit production according to the environment. We consider the cerrado savanna species are sensitive to environmental changes determined by cardinal orientation and that climate changes may affect the seasonal patterns of seed production of several cerrado-savanna species.