

Title: SEASONALITY INFLUENCE ON THE DIVERSITY AND COMPOSITION OF ARBUSCULAR MYCORRHIZAL FUNGI IN A DECIDUOUS SEASONAL FOREST CHRONOSEQUENCE IN NORTHERN OF MG.

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Abstract:

The seasonal dry forests (SDF, or Tropical Dry Forests, TDF) are considered one of the most endangered tropical forests of the globe and with knowledge of its still incomplete about functional biodiversity aspects, though they account for about 42% of the world's rainforests. The arbuscular mycorrhizal fungi (AMF), which perform symbiotic interactions with root system of almost every family of plant species described, and play an important role in these ecosystems, transferring/facilitates nutrients absorption and water to their hosts in environments such as SDF/TDF. In this sense, the aim of this study was to determine if seasonal influences the AMF composition over the successional stages in the SDF in the North of Minas Gerais. Soil samples were collected during the dry season (September / 2013) and rainy season (March / 2014) at the Parque Estadual da Mata Seca (PEMS) in previously demarcated plots in different successional stages classified as early (15 years in the regeneration process), intermediate (25 in the regeneration process) and late (more than 50 years without anthropic intervention). The soil samples generated (3 per stage totaling 27 samples) were taken to the laboratory for extraction and identification of spores count. Data were analyzed by statistical analysis software in R, in which the effect of successional stage and seasons in AMF community composition was tested by non-metric multidimensional scaling (NMDS) using the Bray-Curtis index. Then the similarity analysis was performed (ANOSIM) to test differences in composition between the sampling periods (dry and rainy season). In our results were found 60 species of AMF, belonging to 10 families within the phylum Glomeromycota. The *Glomus* and *Acaulospora* genera were more frequent among others. Regarding the composition of species that do not differ between the stages ($p = 0.038$) only between the stations, where the dry season is characterized by a significantly different composition of the rainy season ($p = 0.001$). In general, seasonality exerted a strong influence on the diversity of AMF, and the AMF composition was also affected by changes of the seasons, despite the successional stages analyzed where there was no significant differences in the composition of arbuscular mycorrhiza fungi at each stage plot.

Keywords: AMF, biodiversity, composition, seasonality, successional stages

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