

TITLE: QUANTIFICATION OF SPORES OF ARBUSCULAR MYCORRHIZAL FUNGI IN PASTURE AND FOREST IN CERRADO

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ABSTRACT:

The state of Maranhão is contemplated by Cerrado biome, which has of a high biodiversity, including arbuscular mycorrhizal fungi (AMF) which form mutualistic symbiotic associations with roots of plants, favoring the nutrient cycling, absorption of minerals of low mobility in soil as: P, Zn and Cu. The present work had as objective to quantify the number of spores in pasture and forest areas in the Cerrado Maranhense biome. Soil samples were collected in 4 country of the southern region of the State of Maranhão: Governor Edson Lobão, Ribamar Fiquene, Porto Franco and Estreito. In each country, a pasture and a forest were selected with vegetation characteristic of Cerrado *stricto sensu*, where five composed samples were collected of soil, were collected random at 0-20 cm depth. After the collected, the soil was dried and passed in a 2 cm sieve to remove the coarse fractions. In laboratory, spores of AMF were extracted from the soil according to a wet sieving methodology and then counted using a stereoscopic microscope (40×). For the forest, the countries with the highest number of spores were: Ribamar Fiquene and Governador Edson Lobão, with 579 and 493 spores, respectively, not statistically differentiating between them. For the pasture there was no statistical difference between the studied areas. In relation to land use change, there was a statistical difference between the forest and pasture only in the Ribamar Fiquene country, where the forest had 579 spores and pasture 301. This difference between the systems may be associated with the chemical characteristics of the soil, for example the amount of H in pasture area was below 10 and in the forest above. This difference was not observed among the systems of other countries. Although there was a difference in the amount of spores between systems, only in one country can we not say that the change in land use does not affect the biodiversity of the AMF, because only after analyzes of abundance and frequency can we affirm the effects of this change in the AMF community.

Keywords: Cerrado, Land use, Preservation

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