

**TITLE:** MYCORRHIZAL COLONIZATION IN ENDANGERED SPECIES OF PLANTS IN THE AMAZON

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**ABSTRACT:**

Arbuscular mycorrhizal colonization plays an important role in tropical ecosystems, which usually have nutrient poor soils and thus the symbiosis increases plant uptake. Approximately 95% of all vascular plant species have the potential to form this mutualistic association with arbuscular mycorrhizal. We know that in Amazon rainforestry, few studies have evaluated mycorrhizal colonization in endangered species. The present study evaluated the mycorrhizal colonization in three endangered species located in Pará state, Brazilian Amazon. We evaluated the species: *Apuleia leiocarpa* (Vogel) J.F. Macbr (Amarelão), *Cedrela odorata* L. (cedro) e *Virola surinamensis* (Rol) Warb (ucuúba). The study material was collected in germplasm Island, located in Tucuruí city in the state of Pará. We studied 20 young and mature plants of each species randomly selected in May and September 2016. Each month, two simple samples of four soil compost (0-5cm) were collected for each plant, containing fine roots (diameter  $\leq 2$  mm). The roots were cleared in 10% KOH solution and stained with 0.05% Trypan blue. Repeated measures analysis of variance was used to test the differences between young and mature plants of each species on mycorrhizal colonization. The results were compared by the Turkey test at the 5% probability level. Mycorrhizal colonization in *Apuleia leiocarpa* (Vogel) J.F. Macbr (Amarelão) species was 37.75% in mature plants and 61% in young plants, we found a significant difference ( $p < 0.005$ ). In *Cedrela odorata* L. (cedro), we observed 75.5% in mature plants and 67.5% in young plants average of mycorrhizal colonization, there was no significant difference ( $p = 0.8746$ ) and *Virola surinamensis* (Rol) Warb (ucuúba) we observed colonization of 35.7% in mature plants and 38.7% in young plants, with no significant difference ( $p = 0.6869$ ). The high mycorrhizal colonization observed in *Apuleia leiocarpa* (Vogel) J.F. Macbr (Amarelão) and *Cedrela odorata* L. (cedar) species suggest that the mycorrhizal associations have a potential for use in reforestation, regeneration and preservation programs in Amazonia.

**Keywords:** Mycorrhizal fungi, Amazon, forest regeneration.

**Development Agency:** IFPA