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Floristic Composition of Soil Seed Bank in Forest Plantations in the Eastern Amazon, Pará, Brazil

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Forest plantation in degraded areas of the Eastern Brazilian Amazon is considered a opportunity for land reclamation. The plantations, besides the economic benefits, can also be catalysts of natural regeneration in the understory, contributing to biodiversity conservation. The aim of this study is to characterise the floristic composition of soil seed banks present in the understory of forest plantations, to support environmental legislation regarding the maintenance of biodiversity in legal reserves in the Eastern Brazilian Amazon. The research is carried out in four rural properties with plantations of *Schizolobium parahyba* var. *amazonicum* (Huber ex Ducke) Barneby and *Eucalyptus urograndis* at different ages. At the time of data collection, the age of the natural vegetation in the plantation's understory ranged from 6 months to 4 years. The chosen areas have a distinct land use history prior to planting. Of each property were collected composite samples of the seed bank with a wood template of 0.25 m^2. The samples were spread on polyethylene trays and incubated during 6 months in a greenhouse at EMBRAPA, Eastern Amazon, to evaluate the natural regeneration. The samples of the soil seed banks showed a total of 2,750 individuals, representing 79 species, distributed to 34 botanical families. The heterogeneity index of Shannon-Weaver was high and ranged from 2.75 to 3.02, indicating a high diversity of floristic composition of the four plantation areas. The Sorensen index ranged from 0.619 to 0.778, and indicated the existence of high floristic similarity between the pairs formed by the four areas of study. In all areas there was a higher predominance of herbaceous vegetation (above 50 %). The portion of trees, shrubs and woody vines ranged from 36 % to 49 %. The ecological succession was mainly characterised by pioneer species (66 %) and early secondary species (23 %). The main types of seed dispersion were zoochory (38 %), anemocory and barochory (both 29 %). The studied areas may be regarded as strongholds of biodiversity as they show a similar richness as secondary forests with a comparable land use history, and whose native vegetation is under development with plants age close to 3.5 to 5 years.

Keywords: Floristic composition, forest plantation, land reclamation

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