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DEVELOPMENT AND PRODUCTION OF SEVERAL TROPICAL SPECIES IN AGROFORESTRY SYSTEMS IN THE BRAZILIAN CENTRAL AMAZONIA

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The present study, carried out at the Embrapa Western Amazonia research station near Manaus-AM, Brazil. The experiment has been installed in 1993, and comprises 18 treatments, conducted as randomized complete block design with four replications in plots of 48 X 32 square meters. The treatments are different plantation systems, consisting of combinations of the factors species mixtures, fertilization level (30% or 100% of the dose recommended for each species) and inoculation of the seedlings with VA-mycorrhizal fungi. The agroforestry system were : **System 1** – polyculture envolving rubber tree, peach palm, cupuaçu and papaya; **System 2** – polyculture with peach palm, cupuaçu, Brazil nut, urucum and cassava. For compairison, three monoculture was included in the experiment : cupuaçu, rubber tree and peach palm. Within this experiment, the development and production of several species was investigated. In field conditions, only papaya showed a significantly response to VAMF inoculation. On the order hand, the majority of the species also showed higher growth rates in the nursery when inoculated with VA-mycorrhizal fungi, and higher survival rates after planting out. Only papaya, cassava and urucum showed significant differences in production between the two levels of fertilization The analysis between and within the systems for common species showed that the production of cupuaçu in the system 1 was significantly higher than in systems 2 and significantly higher in the two agroforestry systems when compared with the monoculture. For peach palm the results give evidence that the production in system 1 was slightly higher than in the system 2 and monoculture. Rubber tree shows a better development in agroforestry than in monoculture. Brazil nut showed slightly higher mean growth rates in the treatment with 100% fertilization than in that with 30% fertilization, but the difference was not significant.