

Use of VA-mycorrhizal fungi in tropical fruit production on abandoned sites in the Amazon

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In the last decades various attempts have been made to install rubber tree plantations on larger scale in the central region of the Brazilian Amazon. The majority of these plantations has been abandoned because of phytopathological and economical problems. An alternative agricultural use of these sites is difficult to realize. This might be mainly due to the low microbiological activity in the soil which is caused by cultivation techniques and the management of the rubber tree plantations. There is evidence that soil of rubber tree plantations in the Amazon shows a deficiency of VA-mycorrhizal fungi.

The objective of the studies presented is to increase the "ecological fitness" of native fruit species by the inoculation of seedlings with effective VAM-fungal isolates and thus achieve a successful cultivation of these species on the sites mentioned above.

For the experiments the plant species papaya (*Carica papaya*) and maracuja (*Passiflora edulis var. flavicarpa*) were used.

With respect to the VA-mycorrhizal fungi, field soil with indigenous fungi was used as the substrate for seedling production (control plants). The plants of this treatment were compared to plants inoculated with the fungus *Glomus etunicatum* D13 and in 1991 to those inoculated with *Glomus etunicatum* T6 and inoculated with the native population of a primary forest, too. The plantation into the field was performed as in common praxis. During the whole cultivation period vegetative and generative parameters of the crops were evaluated.

A large increase in dry matter production was observed during the first months, as well as in flower production and fruit harvest, due to inoculation with the fungus *Glomus etunicatum* D13.