THE EXPERIMENTAL MIXED CROPPING PLANTATION TWO YEARS AFTER INSTALLATION: A PROVISIONAL BALANCE FOR AGRICULTURE

O PLANTIO EXPERIMENTAL DE SISTEMAS DE POLICULTIVO DOIS ANOS APÓS SUA INSTALAÇÃO: BALANÇOS PRELIMINARES SOB O PONTO DE VISTA DA AGRICULTURA

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Shifting cultivation is the norm in Amazonia, because the soils are extremely poor. Mixed cropping is under discussion as a means of making agriculture self-sustaining and reducing clearance of primary forest. Mixed cropping systems involving different test variants (fertilizer input, inoculation with VA-mycorrhizal fungi spores, management of the spontaneous vegetation and of the cover crop *Pueraria phaseoloides*) are being tested in a former experimental rubber plantation with the objective of achieving sustainability. The paper presents the useful plants of the four mixed cropping systems (1. rubber, cupuaçu, peach palm, papaya; 2. cupuaçu, peach palm, Brazil nut, urucum, manioc; 3. rubber, cupuaçu, coconut, orange, paricá, manioc, beans, maize; 4. rubber, paricá, mahogany, andiroba) and of four conventional monocultures (rubber, cupuaçu, peach palm and orange).

The plants inoculated with VA-mycorrhizal spores had better growth rates in the nursery, and higher survival rates after planting out. However, the possible beneficial effects of mycorrhizal fungi were not detected in the field. The incidence of diseases and pests in the mixed systems is the same as in the monocultures, because the plants in those systems have not yet reached a height sufficient to form pathogen barriers. The crop yields, in particular palm hearts, have equalled the local average in newly deforested areas. It emerged that production without input of chemical fertilizer is practically impossible on deforested areas after two to three years' cultivation. The impact of *Pueraria* as a cover crop is also discussed.

If technical and financial assistance is provided, mixed cropping systems can provide farmers with better economic returns despite the high initial costs, in addition to reducing rural exodus and preventing further slashing and burning. The experimental area could be developed to create an „agro-ecological reference site". SHIFT projects ENV 42 and ENV 45 have just started on the site, which is also suitable for the installation of further projects in the field of applied ecology. In addition, the results of the mixed cropping systems are to be used in a technology dissemination project financed by the GTZ.