

Comparative study of wood characteristics of *Carapa guianensis* Aubl. from two plantations and a natural site in Central Amazonia*

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This study on wood formation and wood characteristics of native tree species of the Central Amazon is part of the development of sustainable landuse systems in this region. Especially for the recultivation of degraded land areas, a small portion of long-lived trees for high quality timber production might contribute to the stabilization of mixed culture plantation systems. For many tree species the environmental influences to high quality timber production are not known in detail.

In the present study with *Carapa guianensis* Aubl. was attempted to find out parameters already in young trees suitable for predicting the wood characteristics and quality, when they will be adult and available for utilization.

The study relates to two monocultures with an age of 4 (8 trees) and 17 (2 trees) years respectively and to a primary forest (2 trees). The growth dynamics of the eight selected 4 year-old trees revealed 11 to 15 increment zones, which could not be correlated between labelling of increment zones by vessel enrichment. Already in the 5th year parenchyma bands indicate the pattern for adult wood. The very early formation of adult wood is underlined by the pattern of percentual composition of vessels, fibres and parenchyma (ray and strand parenchyma). Also the fiber length exhibits already after about 4 years growth the plateau with 1.45-1.59mm. Fiber lengths of plantation grown trees and those of primary forest correspond. Average density also correspond with about 0.63g/cm³. From the growth increment can be expected that under plantation condition 30-40 year-old trees can be harvested. *Carapa guianensis* can be recommended for plantations in order to produce high quality of timber.

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