

✗ **Comparative Study of Wood Characteristics of
Carapa guianensis AUBL. from Two Plantations and
a Natural Site in Central Amazonia**

Josef Bauch¹, Oliver Dünisch¹, Florian Schuster¹ and Edinelson Neves²

¹Institute for Wood Biology, Hamburg University

²CPTA-EMBRAPA, Manaus

Within a Brazilian-German project of technical cooperation the recultivation of degraded lands in Amazonia near Manaus is attempted by means of mixed plantations in order to achieve sustainable production. In this context the production of high quality timber from selected native species, e. g. *Meliaceae*, is also considered. Particularly andiroba (*Carapa guianensis* AUBL.) provides a highly esteemed timber for general construction, solid furniture parts and veneers. No information is yet available about growth dynamics, sustainable growth, and wood properties of andiroba raised under plantation conditions as compared to trees from the primary forest. A total of twelve trees from four year and seventeen year old plantations as well as from a primary forest were included in the study. Irrespective of age or growth conditions the timber produced from all trees revealed similar wood structural features and properties. The transition from juvenile to adult wood took place after only four to eight years under all site and growth conditions. The heartwood formed in a seventeen year old plantation tree already amounts to 15 % of total wood volume, measured at a DBH of 24 cm. Fibre characteristics such as length, wall thickness, and cell lumen of plantation-grown timber are of the same quality as those from primary forest trees. Wood density, which is of major significance for all technological applications, is more or less equal in all studied trees. In conclusion, andiroba trees from carefully selected seed material, which raised under plantation conditions with proper silvicultural treatment, promise to produce harvestable high quality timber at about 30 to 40 years of age.

This research is supported by CPTA/EMBRAPA, Manaus, Brazil, and BMBF (SHIFT project), Bonn, Germany.