Growth pattern of *Couratari stellata* in a Tropical Rain Forest in the Southwestern Amazon

Caroline Gaspar[1] ●; *Evaldo Muñoz Braz[2]* ●; *Patricia Povoa de Mattos[2]* ●; *Luciano Watzlawick[1], Andreia Taborda dos Santos[3]* ●
[1]Universidade Estadual do Centro-Oeste, Irati, Brasil; [2]Embrapa Florestas, Colombo, Brasil; [3]Universidade Federal do Paraná, Curitiba, Brasil (gaspar.caroline@yahoo.com; evaldo.braz@embrapa.br; patricia.mattos@embrapa.br; farinha@unicentro.br; andreiatabordayahoo.com.br)

The natural forest management, especially from the Amazon rainforest, is an important source of income and employment generation. However, there gaps information about species that are managed, such as the growth pattern of commercial species, an important factor to ensure sustainable management. The aim was to describe the individual growth of Couratari stellata in the Jamari National Forest, Rondônia State, Brazil. Dendrochronology was used for growth analysis, for this, 12 stem discs were collected. The growth rings were marked and measured with the LINTAB, with 0.01 mm accuracy. Confirmation of the annual growth layer was performed by cross-dating. Six mixed models were tested to determine the growth pattern of *C. stellata*, and the best choice was based on statistical results and graphical analysis of residues and the adherence to real data. The Lundqvist model showed satisfactory statistical parameters for the growth (Syx = 18.30%, *AICC* = 1.07E+06 and *BIC* = 1.07E+06). The trees had 143 years old (mean) and presented DBH (mean) = 65 cm, ranging from 46.5 to 83.4 cm The diameter class that presented the largest average increment in diameter was 65 cm center class, with approximately 0.52 cm.year^{-1}, with the average annual increment = 0.45 cm. There are indications that the cutting diameter for *C. stellata* is from 75 cm in diameter, ensuring the wood quantity for the next cycle, if it is considered a cut rate compatible with the diameter structure of the stand.

Growth performance of *Macaranga tanarius* from 4 provenances in Peninsular Malaysia

Rosdi bin Koter[1], Moha Zaki bin Hamzah[2], Noraini Abd Shukor[2], Hazandy Hamid[2], A. K. Wan Rasidah[1], Patahayah Binti Mansor[1]
[1]Forest Research Institute Malaysia (FRIM), Kepong, Malaysia; [2]Faculty of Forestry, University Putra Malaysia, Selangor, Malaysia (rosdi@frim.gov.my; rosdi@frim.gov.my; rosdi@frim.gov.my; rosdi@frim.gov.my; rosdi@frim.gov.my; patahayah@frim.gov.my)

This study was initiated after recognizing the importance of growth and yield studies of plantation-grown pioneer fast growing species for future forest management decisions, coupled with a general paucity of knowledge on the growth and potential yield of the species planted under plantation condition. The species of *Macaranga tanarius* is regarded among the most promising *Macaranga* genus because of the seed availability throughout the year and potentially seed germinated after probing trial established compared with other species The studies will provide an opportunity to generate baseline information for future planting of *M. tanarius* under plantation condition. Information on growth and potential yield of the species can be used in the planning for future establishment and management planning for future *M. tanarius* plantations. Growth performance from each provenance were collected and planted in four established plantation plots in SPF Jeli, SPF Maya Ayer, SPF Selandar, Melaka and Field 52 Bukit Hari, FRIM HQ. The trial was laid out in a randomized complete block design with three replications. Generally all provenances were well adapted and performed well in their growth and significantly differ between genotip and environment. Varation exist in height, root collar, survival and biomass. North provenance planted at SPF Jeli showed the highest survival and height incement value followed by Mata Ayer ; Selandar and FRIM HQ. Based on the results of this study, *M. tanarius* is a promising species but futher study need to be futher explored on the genetic studies.

C4q: FOREST ASSESSMENT

Changes in aflatoxin standards: implications for EU border controls of nut imports

Ibtissem Taghouti[1], José Maria Garcia-Alvarez-Coque[2], Victor Martinez-Gomez[2]
[1]National Research Institute for Rural Engineering Water and Forestry, Ariana, Tunisia; [2]Universitat Politècnica de València, Valencia, Spain (ibtissem.taghouti@gmail.com; jmgarcia@upv.es; vicmargo@esp.upv.es)

Food safety concerns about the risk of aflatoxin (AF) contamination have been growing in many regions, particularly in the EU. To protect consumers from health risks, the EU has established strict standards for maximum acceptable AF levels in food products. The EU's AF standards have changed several times. This article examines the Rapid Alert System for Food and Feed (RASFF) database, which contains notifications on border controls on AF levels in tree nuts and peanuts. A count data model was used to analyze the impact of political economy considerations, past alerts and path-dependence effects on RASFF border controls. Policy changes, including the harmonization and relaxing of EU's AF standards, significantly affected the frequency of border controls, with diverse effects among exporting countries. It is believed that the present study provides some insights to the modeling of food standards for explanation or forecasting purposes.

Quassia amara L. growth under different shading conditions: implications for the management of Costa Rica natural and planted forests

Joana Paulo[1] ●; *Villalobos Roger[2]*
[1]Instituto Superior de Agronomia, Lisbon, Portugal; [2]Centro Agronómico Tropical de Investigación y Enseñanza, Turrialba, Costa Rica (joanaap@isa.ulisboa.pt; rvillalo@catie.ac.cr)

The overall objective of the present work is to research the impact of light conditions on the *Quassia amara* L. growth, both in young plantations and natural forests, discussing implications for the sustainable management and production of the species in Costa Rica. Illumination conditions are characterized, at the tree level, by the crown illumination index (cii). The working hypothesis is that the tree crown illumination index can help to determine the best illumination conditions to promote tree diameter growth. Results show that for young trees, growing in young forest plantations (pure, mixed or agroforestry stands), best illumination conditions for diameter growth are characterized by a cii value of 2.5, corresponding to high lateral light interception and under 10% of the vertical projection of the crown exposed to vertical light. These conditions characterize mixed plantation or agroforestry stands, with adult trees presenting developed crowns that reduce vertical light exposure to the *Quassia amara* L. growing bellow. For trees growing in natural forests, presumably older due to the traditional management strategies of these areas, best illumination conditions are characterized by a cii value of 4.5, corresponding almost to between full overhead light (more than 90% of the crown area exposed to vertical light and partial lateral light blocked) to a completely exposed to overhead and lateral light. Management of natural forests where *Quassia amara* L. is present should stand upon for later light conditions, in order to guarantee suitable illumination conditions for the natural regeneration and growth of the young trees.