71% de las empresas maneja rebrote y los principales productos leña y chips. El principal factor crítico es el riesgo a incendios. El material VM01 en la empresa 2 se destaca con 36,36m³/ha/año; y la viabilidad económica la empresa 2 resulto con los indicadores mayormente viables con un VPE de 340,76US$/ha/año. Variaciónen el precio de venta afecta en mayor medida la viabilidad económica del proyecto.

Diameter growth of *Croton sonderianus* in natural vegetation areas of the Caatinga biome, Brazil

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The Caatinga is the only Brazilian natural region that is entirely restricted in the national territory. The species richness of this biome contrasts with the lack of information about tree species with economic potential, restricting its use. The aim of this study was to determine the pattern and the growth rate of *Croton sonderianus* in natural vegetation of Caatinga, to be used as basic information for forest plantation and restoration of degraded areas. Discs samples were collected at 1.30 m above ground level (DBH) for dendrochronological analysis and growth modeling. The trees presented DBH (mean) = 4.7 cm, ranging from 4.1 cm to 5.7 cm and mean annual increment of 0.40 cm. The trees had 18 years (mean), with a minimum of 15 and maximum of 23 years. Johnson-Schumacher growth model showed satisfactory statistical parameters (R^2adjust = 0.99; CV% = 19 e F = 13,773.8), residue distribution and adherence to real data. The application of this model will allow the prediction of the diameter growth dynamics of *C. sonderianus* in natural conditions in Caatinga biome, Brazil.

Liquefied wood polyols based wood modification for uv resistance and dimensional stability of wood

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The major problems encountered in both indoor and outdoor utilization of wood are photo instability and dimensional instability.The modification of *Melia dubia* wood for ultraviolet resistance and dimensional stability with liquefied wood has been carried out through impregnation method under solvent free conditions. The level of impregnation was estimated by determining the weight percent gain and modified wood was characterized by FTIR-ATR and CP/MAS 13C NMR spectroscopy. The effect of liquefied wood polyols on wood percent gain was studied. UV resistance, moisture adsorption and dimensional stability of modified wood were also evaluated. UV resistance of modified wood was evaluated by exposing unmodified and modified wood to UV irradiation in a QUV accelerated weathering tester. Unmodified wood showed rapid colour changes and degradation of lignin upon exposure to UV light. The modification of wood with liquefied wood polyols was effective in reducing light induced colour changes (photo-yellowing) at wood surfaces. In contrast to Unmodified wood, modified wood exhibited bleaching. FTIR analysis of modified wood exposed to UV light indicated stabilization of wood polymers against UV degradation. Modified wood showed good dimensional stability and hydrophobicity. Thermogravimetric analysis showed that modification with liquefied wood polyols improved thermal stability of wood. The results indicates that liquefied wood polyols is a promising reagent for improving dimensional stability and UV resistance of modified wood.

Rehabilitation of burnt coastal forest by three selected indigenous species at Pekan, Pahang

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Rehabilitation programme that have been conducted to recover the degraded ecosystem can fully achieve its objective if planning is being done properly. A study was conducted at coastal forest of Pantai Nenasi, Pekan, Pahang with the aims to investigate the suitable species combinations for rehabilitation of disturbed coastal forest and the effectiveness of shelter applied. The study consisted of six plots which 3 tree species planted randomly. In three plots, seedlings were sheltered by a shade net of 1 m x 1m x 1m. while seedlings for the 3 species for other three plots were not sheltered. Total seedlings planted were 180 but 145 seedlings survived. Diameter and height growth data were recorded for 1-year study period. Based on One-way ANOVA result, there were highly significant difference of tree species on height but diameter increment of tree species were not significant at ($p<0.05$). Post-hoc tests show only *C. equisetifolia* had highly significant difference on height and diameter ($p<0.05$) compared to the other two species while there was no significant difference between *C. inophyllum* and *S. grande* on height and diameter ($p>0.05$). There was highly significant difference between shelter treatment on height ($p<0.05$) while there was no significant difference between shelter treatment on diameter ($p>0.05$). This study indicate that this three species suitable to be used in other rehabilitation effort on coastal dune area due to the trees are well-adapted to the environment. The shelter treatment create more desirable condition compared to non-shelter treatment.

First record of *Quadrastichus mendeli* (Hymenoptera: Eulophidae) in Brazil: the Australian parasitoid of Blue Gum Chalcid wasp not recognize geographical barriers

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The Blue Gum Chalcid wasp *Leptocybe invasa* (Hymenoptera: Eulophidae) is considered one of the major exotic pests in *Eucalyptus* plantations worldwide. The biological control with parasitoids and genetic resistance are considered the most adequate methods for management of this pest. More than ten parasitoid species was found associated with *L. invasagalls* in Australia. The most species used in biological control programs of *L. invasa* are *Quadrastichus mendeli* Kim & La Salle and *Selitrichodes neseri* Kelly & La Salle (Hymenoptera: Eulophidae). The latest was imported to Brazil from South Africa in 2015 and are currently released to controlthis pest.*Q. mendeli* was recently found in unintentional introductions in Italy (2013), South Africa (2016) and Argentina (2016) and in December of 2018 where found in São Paulo state, Brazil. The aims of this work was report for the first time the presence of *Q. mendeli* in Brazil and to evaluate heir impact in the biological control of *L. invasa*. Branches of Eucalyptus grandis hybrid with mature *L. invasa* galls were collected in a plantation in the municipality of Luís Antônio in São Paulo State, Brazil on 07/12/2018 and maintained in an acrylic cage. Together with *L. invasa* females emerged 30 females of a one different species from the galls. The specimens were confirmed as a *Q. mendeli* by morphological characteristics and by molecular analysis. Future prospects will be study the bioecology, dispersion and a possible interaction with *S. neseri* of this parasitoid that not recognize geographical barriers.