

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

The 47th Annual Meeting of IRG

Poster abstracts

Paper prepared for the 47th IRG Annual Meeting
Lisbon, Portugal
15-19 May 2016

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in order to make a prospective study of this industrial sector. It is a market dominated by the use of CCA, with few exceptions. However, 50% of companies consider necessary the introduction to market of products or processes alternative to CCA with verified effectiveness, provided the change will not exceed the currently managed costs.

Atlas of tropical timber species - Edition of a new data-bank on 273 tropical timbers

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This poster presents a new data base, the Atlas of tropical timber species. This Atlas aims to disseminate technological characteristics and uses of 273 tropical timbers from Africa, South America and South-East Asia, as well as the properties of 17 temperate timbers.

The data published in this atlas are up-dates of the 3 formers atlases published by ATIBT & CTFT (former forestry department of CIRAD), combined with the new version of TROPIX (version 8) (CIRAD software). To the usual characteristics, such as natural durability, physical and mechanical properties, new properties (thermal conductivity, higher heating value,...) are described

This Atlas is a common project between CIRAD, ATIBT and OIBT

Keywords: technological characteristics, uses, 273 tropical timbers, 17 temperate timbers

Programme

The 47th Annual meeting of the International Research Group on Wood Protection (IRG47) 15-19 May 2016, Lisbon, Portugal

	Efficacy of lignocellulosic materials for Removal of Cation and Anions from Industrial and Urban Wastewater M Akhtari, M Ghorbani Kohkandeh, H Borazjani	16-50321
	Quality determination of <i>Aureobasidium</i> cells in fermentation liquid of wood protective biofinish S Rensink, M Sailer	
	Heartwood variation with tree height in <i>Quercus cerris</i> S Knapic, R Pimenta, T Pinto, A Bajraktari, L Nunes, H Pereira	
	Microwave-Assisted Direct Synthesis of Boronated Alkanol Amine Succinic Anhydride Esters As Potential Surfactants for Various Applications Particularly For Treating Wood A K Chattopadhyay	
	Utilization and modification of the Istrska belica olive as a wood preservation treatment M Schwarzkopf, Viacheslav Tverezovskiy, Courtney Williamson, M Burnard, A Kutnar	
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Atlas of tropical timber species



Edition of a new data-bank on 283 Tropical timbers



Marie-France Thévenon, D. Guibal, P. Langbour, S. Paradis, K. Candelier, R. Marchal, I. Chalon, Jean Gérard



Tropical timbers represent a wide range of **durability**, physical and mechanical **performances**, as well as various aesthetic appeals

When transformed, tropical timbers lead to **large and various groups of products**



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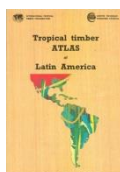
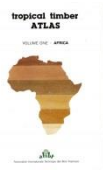
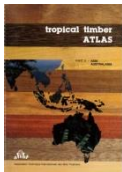
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A reliable, accurate and up-to-date knowledge of tropical timbers will allow a better use and is a contribution to the sustainability of tropical timber chains.

Up dates of 3 atlases



Up dates & Additional timber species

Atlas of Tropical Timber Species - 1st Edition

Technological Characteristics and Uses of 283 Tropical Timber Species (and 17 Temperate Species)

Ipé

Family: Bignoniaceae
 Botanic name: *Hymenoclea salsola* (L.) A. DC. var. *Hymenoclea salsola* (L.) A. DC.
 French name: *Hymenoclea salsola* (L.) A. DC. var. *Hymenoclea salsola* (L.) A. DC.
 Notes: Wood called ipé being actually in *Hymenoclea salsola*.

Notes: Species have a medium insect resistance. Heartwood is reddish brown to dark olive brown, sometimes with grey veins. Canals contain a gummy yellow deposit (gum).
 Physical and mechanical properties

Property	Mean value
Specific gravity ^a	0.84
Moisture modulus ^b	0.4
Compressive strength (parallel to grain)	64.5 N/mm ²
Tensile strength (parallel to grain)	111 N/mm ²
Modulus of elasticity (parallel to grain)	13.7 GPa
Modulus of elasticity (perpendicular to grain)	10.3 GPa
Compression perpendicular to grain	32.3 N/mm ²
Flexure modulus	100 N/mm ²
Flexure strength	50 N/mm ²
Impact strength	100 J/m ²
Stability	2078 mm

^a at 12% moisture content with 10% F factor
^b Natural durability and wood treatability
 Fungus according to I.N. standards: Class 1 - very durable

Dry wood borers. Class D - durable sapwood (damaged, rot limited in sapwood)
 Termites according to I.N. standards: Class D - durable
 Treatability according to I.N. standards: Class 4 - not permeable
 Use class ensured by natural durability: Class 4 - in ground or fresh water contact
 Notes: This species naturally covers the use class 2 end-uses in marine environment or in freshwater water due to its high specific gravity and hardness.
 According to the European standard for EN 333, performance might be modified by the intensity of end-use exposition.

Requirements of a preservative treatment
 Against dry wood borer attacks. Does not require any preservative treatment
 In case of risk of temporary humidification. Does not require any preservative treatment
 In case of risk of permanent humidification. Does not require any preservative treatment

Drying
 Drying rate: Slow
 Risk of distortion: slight risk
 Risk of warping: No
 Risk of checking: slight risk
 Risk of collapse: No
 Notes: A slow kiln drying is recommended in order to reduce defects, especially with thick boards.
 Suggested drying schedule: schedule 4 see explanatory notes

Sawing and machining
 Blunting effect: Early high
 Sawteeth recommended: Double-tooth
 Cutting tools: tungsten carbide
 Peeling: Not recommended or without interest
 Splicing: Good
 Notes: Sawdust may cause dermatitis. Some difficulties due to interlocked grain.
 Accessibility
 Nailing/narrowing: Good but pre-heating necessary
 Notes: Clamping must be done with care (very dense wood).

Commercial grading
 Appearance grading for sawn timbers
 According to EN-A grading rules (January 2011)
 Possible grading: FAS, Select, Common 1, Common 2, Common 4
 In French Guiana, the local name of this species is "Ibete verde". Grading is done according to local rules "Bols guyanaise classe".
 Possible grading: Grade 1, grade 2, grade 3, grade 4
 Visual grading for structural applications
 Traded timber with C2 marking. Possible strength class: C20 related to the European standard EN 14081 (May 2006).

Fire safety
 Conventional French grading
 Thickness: 0 to 18 mm: M3 (moderately inflammable)
 Thickness: < 18 mm: M4 (very inflammable)
 Euroclass grading: D2 or D3
 Grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2006): in concrete structural graded timber in vertical use with mean density upper 0.35 and thickness upper 22 mm.

Main end-uses
 Bridges: joints in contact with water or ground
 Bridges: joints not in contact with water or ground
 Columns: high class laminates
 Columns: laminated or laminated components
 Heavy carpentry
 Hydraulic: water tank (water)
 Industrial or heavy flooring
 Milling

Manufacture treatment
 Grading: **Local name**
 Class 1: Ipe, Ipe, Ipe, Ipe
 Class 2: Ipe, Ipe, Ipe, Ipe
 Class 3: Ipe, Ipe, Ipe, Ipe
 Class 4: Ipe, Ipe, Ipe, Ipe
 Class 5: Ipe, Ipe, Ipe, Ipe
 Class 6: Ipe, Ipe, Ipe, Ipe
 Class 7: Ipe, Ipe, Ipe, Ipe
 Class 8: Ipe, Ipe, Ipe, Ipe
 Class 9: Ipe, Ipe, Ipe, Ipe
 Class 10: Ipe, Ipe, Ipe, Ipe
 Class 11: Ipe, Ipe, Ipe, Ipe
 Class 12: Ipe, Ipe, Ipe, Ipe
 Class 13: Ipe, Ipe, Ipe, Ipe
 Class 14: Ipe, Ipe, Ipe, Ipe
 Class 15: Ipe, Ipe, Ipe, Ipe
 Class 16: Ipe, Ipe, Ipe, Ipe
 Class 17: Ipe, Ipe, Ipe, Ipe

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Release Autumn 2016
In English & in French

Funding agencies: OIBT - CIRAD
Executing agency: CIRAD
Project duration: 3 years (2013-2016)



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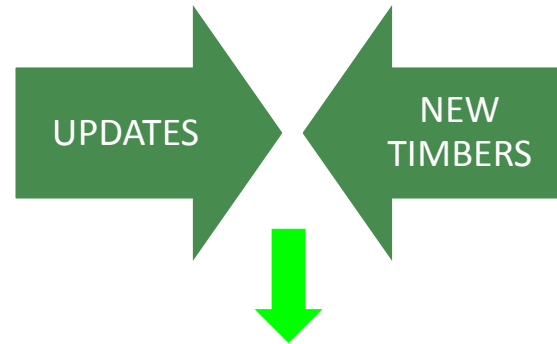
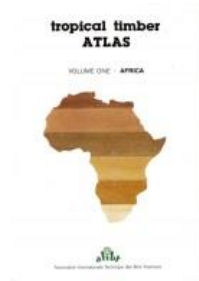
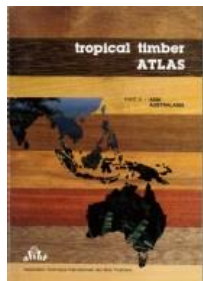


Research Unit BioWooEB, CIRAD, Montpellier, France

CIRAD has a very large data base on tropical timbers



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