

# Colorimetric characterization of eight Amazonian wood species

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## INTRODUCTION

Due to the importance of characterization and standardization of wood as raw material for different end uses, this work aimed to demonstrate the color variability of eight Amazonian wood species (Cumaru - *Dipteryx odorata* (Aubl.) Willd., Itaúba - *Mezilaurus lindaviana* Schwacke & Mez., Muirapixuna - *Cassia* L., Maparajuba - *Manilkara amazonica* (Huber) Standl., Sapucaia - *Lecythis pisonis* Cambess, Tauari - *Couratari guianensis* Aubl., Tanibuca - *Buchenavia capitata* (Vahl) Eichler and Timborana - *Piptadenia communis* Benth.) using quantitative colorimetry.

## MATERIAL AND METHODS

The determination of color of these wood species was conducted using the CIE  $L^*a^*b^*$  system and the chromatic coordinates  $L^*$ ,  $a^*$ ,  $b^*$ ,  $C^*$  and  $h$ . The wood species, obtained at the Forest Products Laboratory (LPF) of the Brazilian Forest Service (SFB), were conditioned in a controlled room with temperature and humidity to reach 12% equilibrium moisture content. Ten samples were scanned per species at 10 random colorimetric reading points on the tangential face of each sample.

## RESULTS AND DISCUSSION

According to results, the wood species were classified as: Cumaru and Sapucaia - brownish yellow., Itaúba - olive brown., Maparajuba - redish brown., Muirapixuna and Tanibuca - olive., Tauari and Timborana - yellowish olive. Additionally, it was concluded by the clarity ( $L^*$ ) that species Sapucaia, Tauari and Timborana were considered light-colored and the others dark-colored and the ink angle  $h$ , in the CIE  $L^*a^*b^*$  system of all colors of wood studied, remained in the first quadrant (between  $0^\circ$  and  $90^\circ$ ).

Table 1. Colorimetric pattern of the species studied.

Species	Colorimetric parameters				
	$L^*$	$a^*$	$b^*$	$C^*$	$h$
Cumaru	54,97	13,09	26,78	29,82	63,97
Itaúba	47,63	10,02	26,25	28,12	69,02
Maparajuba	46,56	16,48	18,53	24,82	48,49
Muirapixuna	49,42	8,85	18,77	20,76	64,80
Sapucaia	56,47	14,70	26,33	30,17	60,80
Tanibuca	52,16	6,69	18,49	19,71	69,52
Tauari	65,05	7,75	26,80	27,90	73,86
Timborana	60,98	7,68	20,72	22,13	69,99

## CONCLUSION

These results may assist in the identification of timber species in commercialization or transport control by authorities.



Figure 1. Example of colors of the wood species

**Referências:** CAMARGOS, J. A. A.; GONÇALEZ, J. C. A colorimetria aplicada como instrumento na elaboração de uma tabela de cores de madeira. Scielo, Rio de Janeiro, 1998.

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