

EVALUATION OF THE EFFECT OF SPECIES AND VARNISH ON THE QUALITY OF SURFACE FINISH OF SOME AMAZONIAN WOODS



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INTRODUCTION

The Amazon Rainforest is one of the main producers of tropical timber, covering an area of 550 million hectares. From this amount, 320 million (60%) are within the Brazilian territory. Besides, it houses about 50% of the world's biodiversity and 50% of the world's tropical timber reserve, with variability of up to 300 wood-producing species per hectare. Due to this variability, many species are still technologically unknown and consequently they are not commercially used, especially for high value-added products. Good surface finish will improve the look and durability of these products.

OBJECTIVE

The aim of this study was to evaluate the quality of surface finishes on Amazonian wood species.

MATERIALS AND METHODS

- Amazonian wood species: *Byrsonima crista*, *Eschweilera odora*, *Eschweilera coriacea*, *Manilkara amazonica* and *Inga alba*
- Experimental Station of Tropical Silviculture, INPA.



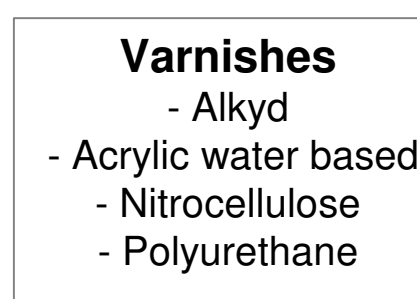
Sanding (60-320)



Amazonian wood species



Application



Varnishes

- Alkyd
- Acrylic water based
- Nitrocellulose
- Polyurethane



Wet layer thickness



Gloss



Adherence



Abrasion

RESULTS AND DISCUSSION

Factor / Mean Effect	Gloss (u.b.)	Adherence (%)	Wear rate/Abrasion (mg/100 cycles)
Effect of the species			
<i>Byrsonima crista</i>	69	3,25 a	404,50 a
<i>Eschweilera odora</i>	81	2,38 a	443,21 a
<i>Eschweilera coriacea</i>	68	2,70 a	461,14 a
<i>Manilkara amazonica</i>	76	1,83 a	428,91 a
<i>Inga alba</i>	63	2,38 a	508,55 a
Effect of the coatings/varnish			
Alkyd	77	1,1 b	540,81 c
Water Based	58	1,37 b	332,70 b
Nitrocellulose	65	3,03 a	612,35 d
Polyurethane	85	4,53 a	245,37 a

Means followed by the same letter in columns do not differ statistically - Tuckey test 95%.

CONCLUSION

- The adhesion was classified as G1, with up to 5% of the detached film area.
- The abrasion wear rate, adhesion and gloss were affected only by the varnish factor.
- The nitrocellulose and polyurethane presented the lowest and highest performances in the abrasion test, respectively.
- It was concluded that the species factor had no effect on the properties of finishes.