



# **Review upon the colour stability of black alder veneers under sunlight influence**

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## Objective

- The objective of the present research work resided in establishing the natural light influence upon the colour changes of black alder (*Alnus glutinosa*) veneers after indoor sunlight and darkness exposure, for 1 and 3 months.
  - when using two wood species:
    - **black alder and cherry;**
  - when using freshly cut black alder.

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## Why alder and cherry?



**Figure 1. Appearance of alder (a) and cherry wood (b). They can successfully be replaced one by another.**

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## Material and method



**a**



**b**

**Figure 3. Half-round slicing for alder veneers (a) and flat slicing for cherry veneers (b) when using thermally treated logs (60-70°C for 10-12 hours).**

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## Material and method



**a**



**b**



**c**

**Figure 2. Freshly cut alder veneers: debarking of alder log (a), prism cutting (b), vertical slicing machine (c).**

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## Material and method

- The veneer sheets were dried at temperatures of 90-100 °C
- 10 veneer samples were used for each case
  - 5 for indoor sunlight exposure
  - 5 for darkness exposure



Trial stand for indoor sunlight exposure

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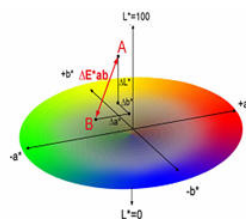
## Material and method

250x150x0,5mm

ISO 7724-2 standard



**a**



**b**



**c**

**Figure 4. Veneer sheet (a), CIE Lab Colour space (b) and Chroma Meter Konica Minolta CR 410 device (c).**

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# Results

Wood species and thermal treatment	Appearance					
	After indoor sunlight exposure			After indoor darkness exposure		
	initial	After 1 month	After 3 months	initial	After 1 month	After 3 months
Alder veneers freshly cut						
	L*=78,80 a*=4,57 b*=22,89	L*=69,79 a*=9,44 b*=26,38	L*=67,50 a*=10,48 b*=29,79	L*=79,53 a*=4,65 b*=23,15	L*=78,24 a*=4,97 b*=23,46	L*=77,54 a*=5,74 b*=23,53
Alder veneers cut with thermal treatment						
	L*=71,82 a*=7,44 b*=21,24	L*=68,15 a*=8,80 b*=26,24	L*=68,77 a*=8,29 b*=29,31	L*=71,93 a*=7,45 b*=21,12	L*=70,53 a*=9,42 b*=21,75	L*=70,07 a*=8,42 b*=21,98
Cherry veneers cut with thermal treatment						
	L*=74,41 a*=8,04 b*=24,56	L*=83,83 a*=9,41 b*=24,25	L*=84,70 a*=8,92 b*=25,79	L*=74,49 a*=8,12 b*=24,33	L*=73,63 a*=8,33 b*=24,18	L*=72,75 a*=8,13 b*=24,03

Figure 5. Colour appearance and CIELab values.

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# Results

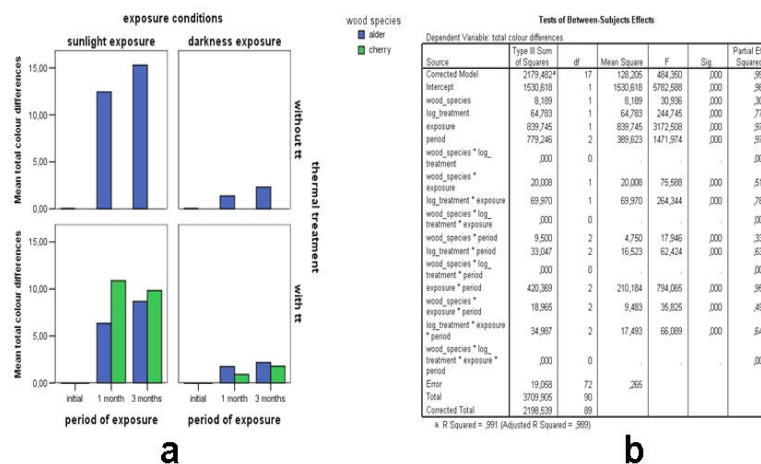


Figure 6. Colour differences (a) and SPSS table (b).

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## Conclusion

- The study results complete the colorimetric database regarding veneers used in furniture industry
- but contribute to the rehabilitation of black alder as wood species with a real potential of use in furniture industry in Romania.

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## Acknowledgement

- We acknowledge the Losan Company from Brasov for the involvement and support offered during the experiments



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Thank you for your attention!



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