COLOR VARIATION OF PINE HEARTWOOD AND SAPWOOD IN THE COLOR SPACE CIE L*A*B*

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ABSTRACT

The color of pine wood represents an important aesthetic and technological parameter that influences its use in furniture making and interior applications. The aim of this study was to determine the color of pine sapwood and heartwood in the color space CIE L*a*b* at 10% moisture content and to analyze the natural color variability. Measurements on samples from the Štiavnické vrchy locality showed that the lightness (L*) of sapwood averaged 78.5 ± 2.5, while heartwood had a value of 63.8 ± 3.6. On the red color coordinate (a*), values were 9.2 ± 1.6 for sapwood and 11.5 ± 1.8 for heartwood, while the yellow color (b*) was at levels of 19.5 ± 1.8 and 19.9 ± 1.6, respectively. The total color difference ΔE* was approximately 14.9, confirming a significant color heterogeneity between sapwood and heartwood. These results are crucial for optimizing the processing and application of pine wood in design and manufacturing.

Keywords: pine wood, sapwood, heartwood, wood color, color space CIE L*a*b*.