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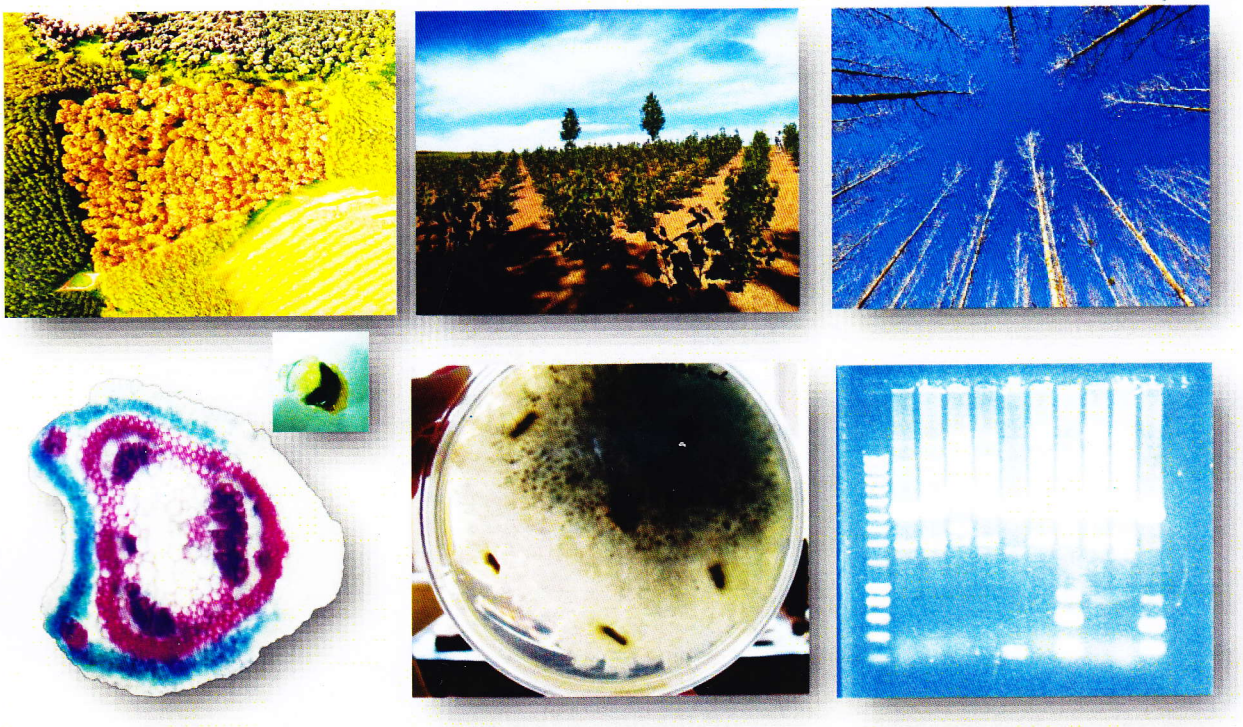
The 15th INTERNATIONAL PHYTOTECHNOLOGY CONFERENCE



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Fiber length in clone 'L-12' juvenile wood

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Abstract:
Nowadays, white poplar is becoming more interesting for breeding as a drought tolerant species. There is a considerable knowledge on certain fast-growing poplar species that are widely used, while insufficient is known about many potential clones, such as white poplar clone 'L-12'. Among anatomical characteristics, fiber length is considered to be most significant for utilization of poplar wood. Understanding size and range of wood variability is important for its proper use. In this study, variation in fiber length from pith to bark, within and between two sites, one in the Republic of Croatia (near Osijek) and one in the Republic of Serbia (near Kać) was investigated. Five trees of clone 'L-12' were collected from each site. From each tree on both sites, growth rings 2, 4, 6, 8 and 10 from pith were selected for further wood anatomical analysis. For fiber length measurements, maceration was performed. From each growth ring, 40 unbroken fibers were measured. The mean fiber length of clone 'L-12' juvenile wood from Osijek site was 0.910 mm and from Kać site was 0.896 mm. Repeated measures analysis of variance (ANOVA) was used to test significance of mentioned differences. Results indicate that fiber length varied significantly from pith to bark. The variation in radial pattern was characterized by increase in fiber length with cambial age. Variation in fiber length within both sites was more significant than between sites. Due to highly significant variability, nonhomogeneous fiber length within juvenile wood from both sites was detected. Results indicate the need for further research on anatomical characteristics of wood for better interpretation of wood quality.

Key words: clone 'L-12', fiber length, juvenile wood, wood anatomical properties variation

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