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Influence of Heartwood Extractives on Carbon Content Variations Among Clones in the Heartwood of Sugi (*Cryptomeria japonica*)

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Abstract: Heartwood extractives of Sugi (*Cryptomeria japonica* D. Don) had large variations among clones and high broad-sense heritability. Genetic improvement by selection of clones having large quantities of heartwood extractives was suggested to be possible. The heartwood had higher carbon content, larger variations among clones as compared to the sapwood. However, it was confirmed that the carbon content did not vary greatly with clone or the part of wood. Broad-sense heritability in both heartwood and sapwood was high, which implied that carbon content had a strong inheritance. It is possible that differences in carbon content among clones might be chiefly caused by the difference in the percentages of the major components. In addition, the heartwood extractives contributed to the carbon content in the heartwood. Clones with large sapwood extractives tended to have high heartwood extractives.

Keywords: sugi, broad-sense heritability, extractives, carbon content, variation

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