

**Mokuzai Gakkaishi** Vol. 55 (2009), No. 3 p.129-135

[PDF (954K)] [References]

## The Relationship between the Maturation Age in the Size of Tracheary Elements and the Boundary Age between the Stages of Diameter Growth in Planted Poplars

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(Received May 9, 2008) (Accepted July 23, 2008)

**Abstract:** In hardwoods, demarcation between juvenile wood and mature wood has often been made based on the radial variation of 3 parameters: wood fiber length (WFL), vessel element length (VEL) and vessel lumen diameter (VLD). Using 14 disks in 2 species of planted poplars, we estimated the maturation age of VLD based on its radial variation and compared it with the maturation ages of WFL and VEL reported previously. Then the relationship between the maturation ages of the 3 parameters and the boundary age between the stages of diameter growth was investigated. As a result, the maturation ages of VLD were always about 4-5 years earlier than those of WFL or VEL. On the one hand, the maturation ages of the 3 parameters were similar to the boundary age between middle and old stages of diameter growth (age  $t_2$ ) which were estimated by applying the Gompertz growth function to the radial variation of cumulative ring width. This result indicates that the age  $t_2$  is a good indicator of wood quality compared with VLD and age demarcation between juvenile and mature wood can be made based on the radial variation of cumulative annual ring width in

Keywords: juvenile wood, ring width, radial variation, fibers, vessels

these two poplar species.

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To cite this article:

Ryouta Tsuchiya and Ikuo Furukawa: Mokuzai Gakkaishi Vol. 55, No. 3, 129-135 (2009) .

doi:10.2488/jwrs.55.129 JOI JST.JSTAGE/jwrs/55.129

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