FIBER DIMENSION, CELL PROPORTION AND SPECIFIC GRAVITY ON THE RADIAL DIRECTION IN SOME GRADES OF *Acacia crassicarpa* WOOD FROM QUEENSLAND SEED SOURCES IN THE SEED ORCHADS OF PROVENANCE TEST IN SOUTH SUMATERA

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ABSTRACT

The demand of log grows parallel to the rate of population and industrial growth in Indonesia. This trend has negative correlation to the material resources. That's why the wood sources must be arranged to get higher wood production by choosing tree growing fast species, making industrial forest plantation, applied a good silviculture system, and tree improvement activities. *Acacia crassicarpa* from Queensland seed sources is a species that is recommended as industrial forest plantation.

Trees from seed orchards of provenance test were selected by family selection method and the result were three different grades i.e. first grade with the best trees quality characters, second grade with medium trees quality characters and third grade with low trees quality characteristic. Five trees were taken from each grade as replication and every single tree was treated in laboratory to measure the specific gravity by ASTM Standard (1985), cell proportion and fiber dimension by LPHH (1972) in the radial direction. Data were processed by CRD (Completely Randomized Design) and if the result was significant, then separated by HSD (Honestly Significant Different)

The result showed that grade factor excerted significant effect on rays volume and radial factor excerted significant on specific gravity and fiber length.The average specific gravity was 0.64, fiber length was 1.08 mm, fiber diameter was 14.97 micron, lumen diameter was 10.42 micron, cell wall thickness was 2.26 micron, rays volume was 8.7%, vessel volume was 10.33%, parenchyma volume was 12.85% and fiber volume was 67.93%. Those results showed that *Acacia crassicarpa* wood had a good quality character as a wood working with low to medium strength (moulding, handicraft products, glued wood products and furniture) and industrial raw material of pulp and paper.

Key words : cell proportion, fiber dimension, specific gravity, radial side, grade, kebun benih uji keturunan

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