

**WOOD PHYSIC AND FIBER DIMENSION OF 7 YEARS OLD
Paraserianthes falcataria (L.) NIELSEN PROVENANCE SOLOMON FROM
KEDIRI IN RELATION TO VARIOUS STEM DIAMETERS**

By

Eka Mashudi¹ and Sri Nugroho Marsoem²

SUMMARY

Increase on *Paraserianthes falcataria* (L.) Nielsen (sengon laut) demand for industry raw material has motivated quality improvement on sengon laut yield such as introducing sengon laut seed provenance Solomon Islands (sengon solomon). Experiment plantation has been done by Perhutani on KPH Kediri. In the case of 7 years old sengon solomon showed various stem diameters, so the study on wood physic and fiber dimension properties in relation to various stem diameters is needed to understand the quality of sengon solomon.

Samples were taken from 2 m height of 9 trees and divided into 3 diameter classes (big, medium, and small). ASTM Standard D2016 – 74 and D 2395 – 69 were used for moisture content (MC) and specific gravity (SG) determinations. British Standard 1957 no. 373 was used for dimensional changes determination. On the other hand, LPHH Standard was used for fiber dimension determination then CRD (Completely Randomized Design) was used for statistical test.

The averages data were obtained in this study: air dry MC 13.46%, SG based on oven dry, air dry, and green (OD, AD, and G) 0.27, 0.26, and 0.25, percentages of shrinkage (G – AD) L, T, and R 0.30%, 3.08%, and 1.51%, percentages of shrinkage (AD – OD) L, T, and R 0.16%, 1.60%, and 0.98%, percentages of total shrinkage L, T, and R 0.46%, 4.64%, and 2.40%, percentages of swelling (OD – AD) L, T, and R 0.16%, 1.64%, and 0.99%, percentages of swelling (AD – G) L, T, and R 0.30%, 3.19%, and 1.44%, percentages of total swelling L, T, and R 0.46%, 4.88%, and 2.44%, fiber length 0.98 mm, fiber diameter 21.20 μ m, lumen diameter 17.93 μ m, fiber wall thickness 1.64 μ m, Mulsteph ratio 29.05%, Runkel ratio 0.19, fiber coarseness 47.38, coefficient of rigidity 0.08, coefficient of flexibility 0.84.

Keywords: sengon solomon, moisture content, specific gravity, dimensional change, fiber dimension.

¹ Student of Faculty of Forestry, Gadjah Mada University.

² Staff of Faculty of Forestry, Gadjah Mada University.