

**VARIATION IN COPPICE PRODUCTIVITY OF CAJUPUT OF FIVE
PROVENANCES AT PROGENY TEST SEEDLING SEED ORCHARD
PALIYAN, GUNUNGKIDUL**

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ABSTRACT

Progeny test seedling seed orchard of *M. cajuputi* subsp. *cajuputi* was established in Paliyan, Gunungkidul, Yogyakarta on March 1998 by cooperation between CSIRO Forestry and Forest Product-Australia and The Centre of Forest Biotechnology and Tree Improvement Research and Development, Department of Forestry-Indonesia. The trial was designed by using RCBD that involving five provenance groups, one land race, and one single family of *M. viridiflora*. The main element of cajuput oil industries are leave and branches. So the quantity and quality of cajuput oil will depend on the amount of leaf productivity, a number of branches and also high content of 1,8-cineole percent.

The purposes of this research were 1) to study variation in coppice productivity between provenance and family within provenance, 2) to study correlations between the traits : a number of branches, total weight of coppice, oil concentration and 1,8-cineole percent, 3) to study genetic effect on a number of branches and total weight of coppice.

The assessment of total weight of coppice and a number of branches in the trial was carried out on May 2002. The age of coppice was one year old after the last selection in the trial. A number of branches collected were weighed in fresh weight method.

Variance analysis suggested that there were significant differences between provenance and family within provenance. The coppice productivity on Buru Island provenance group was 6.150, Seram Island was 6.524, Ambon Island was 4.513, Northern Territory Australia was 4.499, Western Australia was 3.384, Gundih was 6.643, and Tanimbar was 2.604 kgs/ha/year. The phenotypic correlations values between traits were positive and negative. Estimation of individual heritability for total weight of coppice and a number of branches was 0.09 and 0.12 respectively.

Key Words : *Melaleuca cajuputi* subsp. *cajuputi*, coppice productivity, family, provenance, progeny test seedling seed orchard, variation, heritability.