

## KARAKTERISTIK PENGUAPAN AIR DAN KUALITAS MINYAK PADA DAUN KAYU PUTIH JENIS *Asteromyrtus symphyocarpa* (*Water Evaporation Characteristics and Oil Quality of Asteromyrtus* *symphyocarpa Cajuput Leaves*)

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### ABSTRACT

*This paper studies the water evaporation characteristics and oil quality of Asteromyrtus symphyocarpa cajuput leaves on various growth level. Sample were obtained from Wasur National Park, Merauke that includes nine plants represent three growth stages: tree, poles and sapling. Three branches were taken from each growth stages representing leaf density: dense, medium and less dense. Initial fresh condition of branches were weighed and water evaporation was calculated as weight reduction of branches during five days consecutive drying. Twelve kilogram of leaves were then distilled in the kettle by means of steaming method. Distillation process were repeated five times to replicate the processes studied and during distillation process which took about 4-5 hours, cajuput oils were collected every 30 minutes. The results show that fresh leaves collected from poles branches were the heaviest leaves that weight 163.56 g/branch, followed by fresh leaves collected from tree and sapling that weight 160.22 g/branch and 142.33 g/branch respectively. The highest water evaporation rate was achieved by tree branches (7.89 g/day), followed by poles (6.47 g/day) and sapling (6.28 g/day). Cajuput oil of Asteromyrtus symphyocarpa yield is 0.33%, with the specific gravity of 0.912, refractive index of 1.459, alcohol solubility of 1:1, optical rotation of -2.1 and cineole content of 80%. According to properties mentioned, cajuput oil of Asteromyrtus symphyocarpa could satisfy The Indonesian Standard for cajuput oil (SNI 06-3954-2006) and classified as the main (U) oil quality.*

*Keywords: Cajuput oil, Asteromyrtus symphyocarpa, leaves, water evaporation, growth stages*

### ABSTRAK

Penelitian ini bertujuan untuk mengkaji karakteristik penguapan air daun kayu putih pada berbagai kelas pertumbuhan pohon dan kualitas minyak yang dihasilkan dari jenis *Asteromyrtus symphyocarpa*. Sejumlah 9 pohon yang mewakili tingkat pertumbuhan (3 pohon, 3 tiang dan 3 pancang) diambil sebagai sampel dari area Taman Nasional (TN) Wasur, Merauke. Masing-masing sampel pohon diambil 3 cabang yang mewakili cabang rimbun, sedang dan kurang rimbun. Masing-masing cabang diukur berat segarnya, dan diukur pengurangan beratnya sebagai penguapan air selama 5 hari berturut-turut. Penyulingan dilakukan di ketel dengan metode uap, dengan kapasitas ketel 12 kg daun kayu putih segar yang diulang sebanyak 5 ulangan. Penyulingan berlangsung selama 4-5 jam, dan setiap 30 menit minyak kayu putih hasil penyulingan dikumpulkan secara kumulatif. Hasil penelitian menunjukkan bahwa tingkat tiang memiliki berat daun segar tertinggi yaitu 163,56 g/cabang, disusul tingkat pohon dan pancang dengan berat daun segar masing-masing 160,22 g/cabang dan 142,33 g/cabang. Tingkat pohon memiliki rata-rata laju penguapan air daun tertinggi yaitu 7,89 g/hari, sementara pada tingkat pancang dan tiang berturut-turut hanya 6,47 g/hari dan 6,28 g/hari. Minyak kayu putih memiliki rendemen 0,33%, berat jenis 0,912, indeks bias 1,459, kelarutan dalam alkohol 1:1, putaran optik -2.1

dan kadar sineol 80%. Kualitas minyak kayu putih secara keseluruhan dari daun pohon *Asteromyrtus symphiocarpa* bisa memenuhi standar (SNI 06-3954-2006) dan termasuk kelas utama(U).

Kata kunci : Minyak kayu putih, *Asteromyrtus symphiocarpa*, daun, penguapan air, tingkat pertumbuhan