

**PENGARUH ARANG DAN CUKA KAYU TERHADAP
PENINGKATAN PERTUMBUHAN DAN SIMPANAN KARBON**
*(The Effects of Charcoal and Wood Vinegar to
Growth Increase and Carbon Store)*

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ABSTRACT

The research aimed to look into the growth responses of sengon, jabon, and agarwood seedlings; and to examine the carbon (C), nitrogen (N), phosphor (P), and potash (K) contents in soil as well as in the biomass portions of those three plant species (i.e. their leaves, stems, and roots) after being added with charcoal and wood vinegar. It also intended to explore the potency of carbon store in such plant-biomass portions. The charcoal addition was conducted by mixing it with soil evenly and homogenously, while wood-vinegar incorporation proceeded by spraying it onto the soil. For taking care of the plants, the wood vinegar was sprayed periodically to their stems, twigs, and leaves. Results revealed that the growth of sengon seedlings achieved the greatest in height (156.33 cm) and in diameter (20.08 mm), attributed to the addition of wood vinegar (2%) and charcoal (10%). For jabon seedlings, the greatest growth in height (89.17 cm) and in diameter (19.22 mm) occurred due to addition of wood vinegar (4%) and charcoal (20%). For agarwood seedlings, the greatest growth height (72.20 cm) and in diameter (18.29 mm). Besides, the addition of charcoal and wood vinegar could not also bring about the increase in consecutively nutrient contents (e.g. C, N, P, and K), biomass weight, and carbon store, which varied in the leaves, stems, and roots, in accordance to the percentages/ dosages of those two agents as added.

Keywords: Charcoal, wood vinegar, seedlings, nutrients, soil

ABSTRAK

Tujuan penelitian adalah untuk mengetahui respon pertumbuhan anakan sengon, jabon dan gaharu, serta kandungan karbon, nitrogen, fosfor dan kalium dalam tanah dan dalam biomasa tanaman setelah diberi arang dan cuka kayu. Aplikasi arang dilakukan dengan cara menambahkan arang secara merata pada lobang tanaman, sedangkan cuka kayu disiramkan pada tanah. Untuk pemeliharaan tanaman, cuka kayu disemprotkan pada batang, tangkai dan daun tanaman. Dari hasil penelitian diketahui bahwa pertumbuhan anakan sengon terbaik yaitu pada perlakuan penambahan arang 10% dan cuka kayu 2%, masing-masing dengan tinggi 156,33 cm dan diameter 20,08 mm. Untuk pertumbuhan anakan jabon terbaik yaitu pada perlakuan penambahan 30% arang, masing-masing dengan tinggi 89,17 cm dan diameter 19,22 mm. Untuk pertumbuhan anakan pohon penghasil gaharu yang terbaik yaitu pada perlakuan penambahan 20% arang dan cuka kayu 4%, masing-masing dengan tinggi 72,20 cm dan diameter batang 18,29 mm. Hasil penelitian juga menunjukkan bahwa penambahan arang dan cuka kayu tidak selalu dapat meningkatkan kandungan unsur hara tanah seperti C, N, P dan K, biomas tanaman serta simpanan karbon dengan berbagai variasi sesuai perlakuan.

Kata kunci: Arang, cuka kayu, anakan, hara, tanah.