

POTENSI DAN PENGARUH LUAS PENAMPANG KAYU GERGAJIAN SENGON (*Albizia sp.*) TERHADAP LIMBAH SERBUK GERGAJIAN SEBAGAI BAHAN BAKU *WOOD PELLET*

Oleh:

Rizal Dwi Mustaqim¹

Silvi Nur Oktalina²

INTISARI

Industri penggergajian kayu menghasilkan limbah serbuk yang berpotensi menimbulkan masalah lingkungan jika tidak dikelola dengan baik. Di sisi lain, limbah serbuk gergajian kayu sengon (*Albizia sp.*) memiliki potensi untuk diolah menjadi *wood pellet* sebagai sumber energi terbarukan. Penelitian ini bertujuan untuk: (1) mengetahui potensi limbah serbuk gergajian kayu sengon, dan (2) menganalisis pengaruh luas penampang sortimen terhadap jumlah limbah serbuk yang dihasilkan. Penelitian dilaksanakan di UD Ibadah Sambil Usaha, Kulon Progo, dengan menggunakan pendekatan kuantitatif. Data primer meliputi volume log, berat limbah serbuk, ukuran dan jumlah sortimen. Pengumpulan data dilakukan melalui observasi selama 10 hari dan wawancara mendalam. Data dianalisis secara deskriptif untuk menghitung potensi limbah dan menggunakan regresi linier sederhana untuk menguji pengaruh luas penampang sortimen terhadap hasil limbah. Hasil penelitian menunjukkan bahwa limbah serbuk gergajian kayu sengon rata-rata sebesar 31,01 kg/m³ dengan rata-rata presentase limbah serbuk 9,40%. Rata-rata volume produksi bulanan 166,99 m³, sehingga diperoleh proyeksi potensi limbah tahunan sebesar 62.140,31 kg (62,14 ton). Analisis regresi linier sederhana membuktikan bahwa luas penampang sortimen berpengaruh optimal dan positif terhadap jumlah limbah serbuk yang dihasilkan, dengan persamaan $Y = 0,0035x + 35,164$ dan koefisien determinasi (R^2) sebesar 0,8938. Hal ini menunjukkan bahwa 89,38% variasi limbah serbuk dapat dijelaskan oleh variasi luas penampang sortimen.

Kata kunci : Limbah, Serbuk gergajian, Sengon, *Wood pellet*, Sortimen kayu

¹ Mahasiswa, Program Studi Pengelolaan Hutan, Departemen Teknologi Hayati dan Veteriner, Sekolah Vokasi, Universitas Gadjah Mada.

² Dosen Pembimbing Tugas Akhir, Program Studi Pengelolaan Hutan, Departemen Teknologi Hayati dan Veteriner, Sekolah Vokasi, Universitas Gadjah Mada.

***POTENTIAL AND EFFECT OF SENGON (*Albizia sp.*) SAWNWOOD
CROWN AREA ON SAWNWOOD WASTE AS RAW MATERIAL FOR WOOD
PELLETS***

By:
Rizal Dwi Mustaqim¹
Silvi Nur Oktalina²

ABSTRACT

*The wood sawing industry produces sawdust waste that has the potential to cause environmental problems if not managed properly. On the other hand, sawdust waste from sengon wood (*Albizia sp.*) has the potential to be processed into wood pellets as a renewable energy source. This research aims to: (1) determine the potential of sengon wood sawdust waste, and (2) analyze the influence of log cross-sectional area on the amount of sawdust waste generated. The research was conducted at UD Ibadah Sambil Usaha, Kulon Progo, using a quantitative approach. Primary data includes log volume, sawdust weight, as well as log dimensions and quantity. Data collection was carried out through 10 days of observation and in-depth interviews. Data were analyzed descriptively to calculate waste potential and using simple linear regression to examine the effect of log cross-sectional area on waste output. The results show that sengon wood sawdust waste averaged 31.01 kg/m³, with an average sawdust waste percentage of 9.40%. The average monthly production volume was 166.99 m³, resulting in a projected annual waste potential of 62,140.31 kg (62.14 tons). Simple linear regression analysis proves that the cross-sectional area of the logs has a significant positive influence on the amount of sawdust waste produced, with the equation $Y = 0.0035x + 35.164$ and a coefficient of determination (R^2) of 0.8938. This indicates that 89.38% of the variation in sawdust waste can be explained by the variation in log cross-sectional area.*

Keywords : Waste, Sawdust, Sengon, Wood pellet, Sawn timber

¹ Student of Forest Management Study Program, Department of Biotechnology and Veterinary Sciences, Vocational School, Gadjah Mada University.

² Lecturer of Forest Management Study Program, Department of Biotechnology and Veterinary Sciences, Vocational School, Gadjah Mada University.