

**LAJU DEKOMPOSISI SERESAH JOHAR (*Cassia siamea* Lamk.)
DAN KEDELAI (*Glicine max* (L.) Merrill)
PADA BERBAGAI BENTUK PEMANFAATAN LAHAN**

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Intisari

Degradasi hutan memerlukan rehabilitasi segera untuk mengembalikan fungsi hutan baik ekologis maupun ekonomis. Pada ekosistem hutan, suplai unsur hara ke dalam tanah mengandalkan siklus biogeokimia melalui proses dekomposisi bahan organik. Pemilihan jenis vegetasi yang tepat diperlukan untuk mempercepat pengembalian unsur hara ke dalam tanah. Jenis tanaman legum mengandung banyak unsur nitrogen dan mudah terdekomposisi. Johar (*Cassia siamea* Lamk.) dan kedelai (*Glicine max* (L.) Merrill) merupakan jenis legum yang banyak dibudidayakan, namun pengetahuan tentang laju dekomposisinya belum banyak diketahui.

Penelitian ini bertujuan mengetahui variasi laju dekomposisi seresah johar, seresah kedelai serta campuran seresah johar-kedelai di berbagai bentuk pemanfaatan lahan dengan menerapkan *Litter Bag Technique*. Sampel daun masing-masing jenis seresah ditempatkan di tegakan jati Wanagama umur 21 tahun, hutan rakyat dan tegalan di Desa Banaran, Kecamatan Playen, Kabupaten Gunung Kidul. Sampel diambil setiap minggu selama dua (2) bulan untuk mengetahui indeks dekomposisi serta tren penurunan berat kering seresah.

Hasil pengamatan menunjukkan bahwa rata-rata seresah pada semua perlakuan mengalami pengurangan berat kering sebesar 50% pada minggu ke-6 setelah penempatan *litter bag*. Perbedaan bentuk pemanfaatan lahan, jenis seresah dan lamanya waktu berpengaruh secara nyata terhadap laju dekomposisi seresah. Indeks dekomposisi tertinggi hingga terendah berturut-turut adalah seresah kedelai 0,0421; campuran seresah johar-kedelai 0,0379 dan seresah johar 0,0194. Semakin tinggi indeks dekomposisi maka semakin cepat seresah terdekomposisi. Kandungan C/N rasio rendah, protein tinggi, morfologi daun tipis dan kandungan lignin, selulosa serta lillin yang rendah menyebabkan seresah disukai fauna tanah. Laju dekomposisi seresah terjadi paling cepat di hutan Wanagama, diikuti lahan tegalan dan hutan rakyat. Variasi iklim mikro dan aktifitas manusia pada masing-masing lokasi mempengaruhi aktivitas agen dekomposer.

Kata kunci : Jenis tanaman legum, indeks dekomposisi, laju dekomposisi seresah, C/N rasio, bentuk pemanfaatan lahan.

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LITTER DECOMPOSITION RATE OF JOHAR (*Cassia siamea* Lamk.) AND SOYBEAN (*Glicine max* (L.) Merrill) IN VARIOUS LAND USE

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Abstract

Forest degradation needs immediate rehabilitation efforts to get the economic and ecological forest functions back. The supply of nutrient into soil in the forest ecosystem relies on the biogeochemical cycle through decomposition process of organic matter. The selection of vegetation type is needed to accelerate the restitution of nutrient into the soil. Litter of leguminous plants which contain great amount of nitrogen element and it is easy to decompose therefore plays important roles in biogeochemical cycle. Johar (*Cassia Siamea* Lamk.) and soybean (*Glicine max* (L.) Merrill) are two leguminous plants which are widely cultivated. Rate of litter decomposition of those plants, however, are not known yet.

The purpose of this research was to asses rate of litter decomposition of johar, soybean and mixture of them in various land uses. Litter bag technique was used in this study. The leaf samples were filled in to litter bag and placed in a teak forest in Wanagama, community forest, and in dry field at Banaran village, Playen, Gunung Kidul, Yogyakarta. The leaf samples were taken every week during two months, dried and weighed to obtain the value of litter decomposition index and the dry weight loss.

Result of the study showed that dry weight loss of the litter of about 50% was observed after five weeks since the placement of the litter bags. Form of land utilization, kind of plant litter and length of decomposition time significantly affected the rate of litter decomposition. The greatest decomposition index was obtained in soybean litter (0,0421) followed by mixture of johar-soybean litter (0,0379) and the lowest was johar litter (0,0194). The greater value of decomposition index caused the faster decomposition process. Soil organisms were prefer to attack litter with low C/N ratio, much protein, had thin leaf morphology, low content of cellulose, lignin and wax. Rate of litter decomposition were greatest in teak plantation in Wanagama forest, followed by in dry field land and slowest was in community forest. Micro climate variation and human activity in the land uses seemed to influence the decomposition agent.

Keywords : Leguminous plants, litter decomposition rate, index decomposition value, C/N ratio, land use.

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