

PENGARUH UMUR PEMOTONGAN AWAL TERHADAP MORFOLOGI, PRODUKSI BIOMASSA, DAN KANDUNGAN NUTRIEN TANAMAN OROK-OROK (*Crotalaria juncea* L.) PADA REGROWTH KEDUA

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh umur pemotongan awal terhadap morfologi, produksi biomassa, dan kandungan nutrisi tanaman orok-orok (*Crotalaria juncea* L.) pada *regrowth* kedua. Rancangan acak lengkap pola searah digunakan untuk 3 umur pemotongan awal yaitu 6, 7, dan 8 minggu, masing-masing dengan 3 replikasi petak. Tanaman ditanam pada petak ukuran 1,5x1,2 m dengan jarak tanam 15x15 cm sehingga terdapat 48 tanaman dalam tiap petak. Tanaman dipelihara saat berumur 12, 13, dan 14 minggu yang sudah mengalami dua kali pemotongan (pemotongan pertama saat umur 6, 7, dan 8 minggu lalu pemotongan kedua saat umur 12, 13, dan 14 minggu) dan data penelitian ini yang diukur pada *regrowth* kedua dipanen 30 cm batang dari permukaan tanah. Variabel yang diukur yaitu morfologi tanaman (panjang dan tinggi tanaman, panjang dan lebar daun, serta jumlah daun), produksi biomassa (produksi segar, bahan kering, dan bahan organik), dan kandungan nutrisi (bahan kering, bahan organik, dan protein kasar). Data dianalisis secara statistik menggunakan analisis variansi pola searah dan beda antar rerata diuji dengan *Duncan's Multiple Range Test* (DMRT). Hasil analisis menunjukkan bahwa umur pemotongan awal berbeda tidak memberikan pengaruh nyata ($P>0,05$) terhadap panjang dan tinggi tanaman serta lebar daun, tetapi memberikan pengaruh nyata ($P<0,05$) terhadap panjang dan jumlah daun, produksi biomassa (segar, bahan kering, bahan organik) dan kandungan nutrisi (bahan kering, bahan organik, dan protein kasar) tanaman orok-orok yang dipanen pada *regrowth* kedua. Tanaman orok-orok umur pemotongan awal 6 minggu memiliki panjang daun (13,09 cm), produksi segar (19,42 ton/ha), dan protein kasar (13,99%) lebih tinggi. Tanaman orok-orok umur pemotongan awal 7 minggu memiliki jumlah daun (262,20 helai), produksi bahan kering (5,98 ton/ha), produksi bahan organik (5,52 ton/ha), kandungan bahan kering (32,55%), dan bahan organik (92,27%) lebih tinggi. Tanaman orok-orok umur pemotongan awal 8 minggu memiliki morfologi, produksi biomassa, dan kandungan bahan kering lebih rendah. Dapat disimpulkan bahwa umur pemotongan awal 6 minggu cocok digunakan sebagai acuan umur pemanenan tanaman orok-orok sampai pemanenan ketiga sebagai pakan ternak karena menghasilkan produksi segar dan kandungan protein yang lebih tinggi.

Kata kunci : *Crotalaria juncea* L., Kandungan Nutrien, Morfologi, Produksi Biomassa, *Regrowth* Kedua, Umur Pemotongan Awal

THE INFLUENCE OF EARLY CUTTING AGE ON MORPHOLOGY, BIOMASS PRODUCTION, AND NUTRIENT CONTENT OF SUNN HEMP (*Crotalaria juncea* L.) AT SECOND REGROWTH

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ABSTRACT

This study aims to determine the effect of early cutting age on morphology, biomass production, and nutrient content of sunn hemp (*Crotalaria juncea* L.) in the second regrowth. The experimental design in this study used a completely randomized design in a unidirectional pattern for three initial cutting ages, 6, 7, and 8 weeks, each with three replications of plots. Plants were planted in plots measuring 1.5x1.2 m with 15x15 cm spacing for one plant, resulting in 48 plants in each plot. Plants were maintained at 12, 13, and 14 weeks of age that had undergone two cuts (the first cut at 6, 7, and 8 weeks of age and the second cut at 12, 13, and 14 weeks of age) and the data of this study were measured at the second regrowth, 30 cm of stem was left from the ground surface. The variables measured were plant morphology (plant length and height, leaf length and width, and number of leaves), biomass production (fresh produce, dry matter, and organic matter), and nutrient content (dry matter, organic matter, and crude protein). Data were statistically analyzed using a one-way analysis of variance design, and differences between means were tested with Duncan's Multiple Range Test (DMRT). The results of the analysis showed that different initial cutting ages did not have a significant effect ($P>0.05$) on the length and height of plants and leaf width of sunn hemp plants harvested at the second regrowth, but had a significant effect ($P<0.05$) on the length and number of leaves, biomass production (fresh, dry matter, organic matter), and nutrient content (dry matter, organic matter, and crude protein). Sunn hemp with an early cutting age of 6 weeks had higher leaf length (13.09 cm), fresh yield (19.42 tons/ha), and crude protein (13.99%). Sunn hemp plants with an early cutting age of 7 weeks had a higher number of leaves (262.20 leaves), dry matter production (5.98 tons/ha), organic matter production (5.52 tons/ha), dry matter content (32.55%), and organic matter content (92.27%). Sunn hemp with an early cutting age of 8 weeks had lower morphology, biomass production, and dry matter content. It can be concluded that the initial cutting age of 6 weeks is suitable for using as a cutting date reference for sunn hemp until the third harvest as animal feed because it produces higher fresh biomass and protein content.

Key words: Biomass Production, *Crotalaria juncea* L., Early Cutting Age, Morphology, Nutrient Content, Second Regrowth