

**PENGARUH PEMBERIAN COLCHICINE TERHADAP KARAKTERISTIK
MORFOLOGI, PRODUKSI BIOMASSA, DAN PENINGKATAN
KUALITAS PADA RUMPUT RHODES (*Chloris*
gayana cv. Calide)**

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh perlakuan kolkisin pada perendaman biji terhadap peningkatan karakteristik morfologi, pertumbuhan dan produksi biomassa pada rumput rhodes (*Chloris gayana* cv. Callide). Penelitian dilakukan di Lahan Hijauan Makanan Ternak dan Pastura, Fakultas Peternakan, Universitas Gadjah Mada dan Laboratorium Hijauan Makanan Ternak dan Pastura, Fakultas Peternakan, Universitas Gadjah Mada. Perlakuan pada biji *Chloris gayana* cv. Callide dengan kolkisin pada konsentrasi 0,1% dengan lama perendaman 2, 4, 6, dan tanpa perlakuan perendaman. Masing-masing perlakuan mendapatkan 12 kali pengulangan sehingga didapatkan 48 *polybag*. Parameter yang diamati dalam penelitian yaitu tinggi tanaman, panjang tanaman, panjang daun, lebar daun, jumlah daun, jumlah tiller, warna daun, warna batang, dan panjang internode), dan produksi biomassa meliputi produksi segar, produksi bahan kering, dan produksi bahan organik pada umur panen 60 hari. Data hasil penelitian dianalisis menggunakan ANOVA, dan perbedaan antar perlakuan diuji dengan *Duncan's Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa pengaruh perendaman kolkisin (2 jam, 4 jam, dan 6 jam) pada konsentrasi 0,1% berpengaruh nyata ($P < 0,05$) terhadap tinggi tanaman, jumlah daun, panjang daun, lebar daun, jumlah tiller, diameter batang, produksi segar, produksi bahan kering, dan produksi bahan organik dengan hasil perendaman dengan kolkisin memberikan hasil yang lebih tinggi daripada tanaman tanpa perendaman dengan kolkisin. Perendaman kolkisin berpengaruh tidak nyata terhadap panjang tanaman dan panjang internode. Kesimpulan dari penelitian ini yaitu perlakuan perendaman selama 2 jam mampu meningkatkan panjang daun, lebar daun, dan diameter batang. Perendaman selama 4 jam mampu meningkatkan tinggi tanaman, dan perlakuan perendaman 6 jam meningkatkan jumlah daun, produksi segar, produksi bahan kering, dan bahan organik.

Kata kunci: *Chloris gayana* cv. Callide, Colchicine, Mutasi, Poliploid

THE EFFECT OF MORPHOLOGICAL CHARACTERISTICS, BIOMASS PRODUCTION, AND QUALITY TRAITS OF RHODES GRASS (*Chloris gayana* cv. Callide) BY COLCHICINE TREATMENT

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ABSTRACT

This study aimed to determine the effect of *colchicine* treatment on morphological characteristics, growth and biomass production on rhodes grass (*Chloris gayana* cv. Callide). The research was conducted at Green House Forage and Pasture Laboratory, and Forage and Pasture Laboratory, Faculty of Animal Sciences, Universitas Gadjah Mada. The seed treatment of *Chloris gayana* cv. Callide consisted of different soaking times of 2, 4, 6 hours, and the control with 0,1% *colchicine* solution. The treatment got 12 replication so there are 48 polybags. Parameters observed included plant height, plant length, leaf length, leaf width, number of leaves, number of tillers, leaf color, stem color, stem diameter, and internode length, and biomass production including fresh production, dry matter production, and organic matter production at 60 days after plants. Data was analyzed by ANOVA, and differences between treatments were tested with Duncan's Multiple Range Test (DMRT). The results showed that the effect of soaking with *colchicine* (2 hours, 4 hours, and 6 hours) at a concentration of 0.1% had a significant effect ($P < 0.05$) on plant height, leaf number, leaf length, leaf width, number of tillers, diameter stems, fresh production, dry matter production, and organic matter production with the result that *colchicine* gave higher yields on variables compare with no treatment. *Colchicine* immersion had no significant effect on plant length and internode length. The conclusion of the research was soaking for 2 hours increased leaf length, leaf width, and stem diameter. Soaking for 4 hours increased plant height, and soaking for 6 hours increased the number of leaves and fresh production, dry matter production, and organic matter production.

Keywords: *Chloris gayana* cv. Callide, *colchicine*, mutation, polyploid