

PENGARUH INDUKSI MUTAGEN KIMIA COLCHICINE TERHADAP KARAKTERISTIK MORFOLOGI DAN PRODUKSI BIOMASA RUMPUT RUZI (*Brachiaria ruziziensis* cv. Kennedy)

Efryda Zelina Wardhani
19/446017/PT/08271

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh induksi senyawa *colchicine* terhadap morfologi dan produksi biomasa rumput Ruzi (*Brachiaria ruziziensis* cv. Kennedy). Penelitian ini dilakukan di rumah kaca Laboratorium Hijauan Makanan Ternak dan Pastura, Departemen Nutrisi dan Makanan Ternak, Fakultas Peternakan, Universitas Gadjah Mada. Perlakuan terdiri dari dosis *colchicine* 0,1% dan lama perendaman *colchicine* yaitu 6 jam, 12 jam dan 18 jam. Masing-masing perlakuan mendapatkan 12 kali pengulangan sehingga didapatkan 48 *polybag*. Data yang diamati dalam penelitian yaitu morfologi tanaman (tinggi tanaman, panjang tanaman, panjang daun, lebar daun, jumlah daun, diameter *internode*, panjang *internode*, jumlah *tiller*, warna daun dan warna batang) dan produksi biomasa (produksi segar, produksi bahan kering dan produksi bahan organik). Data morfologi dan produksi biomasa dianalisis menggunakan analisis variansi (ANNOVA) mengikuti rancangan percobaan pola searah dilanjutkan dengan uji Duncan's Multiple Range Test (DMRT) jika terdapat perbedaan nyata pada perlakuan. Hasil penelitian menunjukkan bahwa morfologi dan produksi biomasa tanaman *Brachiaria ruziziensis* cv. Kennedy hasil perendaman menggunakan senyawa *colchicine* menunjukkan perbedaan nyata ($P < 0,05$) terhadap morfologi dan menunjukkan perbedaan tidak nyata terhadap produksi biomasa. Perendaman *colchicine* selama 12 jam menunjukkan perbedaan nyata ($P < 0,05$) dalam meningkatkan tinggi tanaman, panjang tanaman, jumlah daun, diameter *internode*, panjang *internode* dan jumlah *tiller*. Kesimpulan yang dapat diambil adalah perendaman selama 12 jam berpengaruh terhadap morfologi dan *Brachiaria ruziziensis* cv. Kennedy. Perendaman selama 6 dan 18 jam menurunkan morfologi dan produksi biomasa tanaman *Brachiaria ruziziensis* cv. Kennedy.

Kata kunci: *Brachiaria ruziziensis* cv. Kennedy, morfologi, produksi biomasa, *colchicine*.

THE EFFECT OF COLCHICINE CHEMICAL MUTAGEN INDUCTION ON MORPHOLOGICAL CHARACTERISTIC AND BIOMASS PRODUCTION OF RUZI GRASS (*Brachiaria ruziziensis* cv. Kennedy)

Efryda Zelina Wardhani
19/446017/PT/08271

ABSTRACT

The aim of this study was to evaluate the effect of *colchicine* induction on morphological characteristic and biomass production of Ruzi grass (*Brachiaria ruziziensis* cv. Kennedy). This study was conducted in green house forage and pasture laboratory and forage pasture pasture laboratory. The dose of *colchicine* treatment was 0,1% and soaking time of *colchicine* were 6 hours, 12 hours, and 18 hours. Each treatment got 12 replication to get 48 *polybags*. The observed data were morphology (plant height, plant length, leaf length, leaf width, number of leaf, *internode* diameter, *internode* length, number of *tiller*, leaf colour and stem colour). Morphology and biomass production data were analysed using Analysis of Variance (ANNOVA) following one way pattern experimental design followed by Duncan's Multiple Range Test if there were significantly different among the treatments. The results showed that *colchicine* treatment had significant effect ($P < 0,05$) on morphology, but not significant ($P > 0,05$) on biomass production. Soaking time of 12 hours had significant effect ($P < 0,05$) on the increase in plant height, plant length, leaf width, leaf length, number of leaf, *internode* diameter, *internode* length and number of *tiller*. The conclusion of this study was *colchicine* treatment had significant effect ($P < 0,05$) on morphology and biomass production *Brachiaria ruziziensis* cv. Kennedy. Soaking time 12 hours of *colchicine* treatment affected for *Brachiaria ruziziensis* cv. Kennedy to get biomass production and morphological character. Soaking time 6 hours and 18 hours can decrease morphology and biomass production of *Brachiaria ruziziensis* cv. Kennedy.

Key words: *Brachiaria ruziziensis* cv. Kennedy, morphology, biomass production, *colchicine* .