

PENGARUH UMUR PANEN DAN KONSENTRASI LARUTAN NUTRISI
TERHADAP MORFOLOGI, PRODUKSI BIOMASSA, KOMPOSISI KIMIA, DAN
KECERNAAN *IN VITRO HYDROPONIC FODDER JAGUNG*

INTISARI

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Penelitian bertujuan untuk mengetahui pengaruh umur panen dan konsentrasi larutan nutrisi terhadap morfologi, produksi biomassa, komposisi kimia, dan kecernaan *in vitro hydroponic fodder* jagung. Penelitian menggunakan biji jagung varietas pioneer 27 ditanam dengan larutan nutrisi hidroponik mengikuti rancangan acak lengkap pola faktorial (3x3) dengan ulangan 3 kali. Faktor pertama yaitu umur panen (U) 8, 10, dan 12 hari. Faktor kedua yaitu konsentrasi larutan nutrisi (K) 0, 4 dan 8 ml/l. Kerapatan benih yaitu 500 g/nampan dan ditanam menggunakan sistem hidroponik *deep water culture* (DWC). Variabel yang diukur meliputi tinggi tanaman, jumlah daun, produksi segar dan produksi kering, produksi organik, protein, kecernaan bahan kering dan kecernaan bahan organik, NDF dan ADF. Data yang diperoleh dianalisis menggunakan ANOVA jika berpengaruh nyata dilanjutkan uji *Duncan Multiple Range Test* (DMRT) untuk mengetahui beda antar rerata. Hasil penelitian menunjukkan bahwa umur panen 12 hari meningkatkan ($P<0,05$) morfologi meliputi tinggi tanaman (17,62 cm), jumlah daun (3,13 helai), produksi biomassa meliputi produksi segar (18,15 kg/m²), produksi kering (5,22 kg/m²), produksi bahan organik (5,07 kg/m²), protein (16,88 %), NDF (46,05%), ADF (16,25%), hemiselosa (29,80%) sedangkan pada kecernaan bahan kering terjadi penurunan (69,14%) dan kecernaan bahan organik (70,66%). Konsentrasi larutan nutrisi dapat meningkatkan ($P<0,05$) tinggi tanaman (16,37 cm), produksi biomassa meliputi produksi segar (16,29 kg/m²), produksi bahan kering (4,64 kg/m²), produksi bahan organik (4,41 kg/m²), protein (16,65%) dan hemiselulosa (27,11%). Terjadi interaksi antara umur panen dengan konsentrasi larutan nutrisi terhadap tinggi tanaman, produksi segar, produksi kering, produksi organik, protein, kecernaan *in vitro*, NDF dan ADF. Hasil penelitian dapat disimpulkan bahwa *hydroponic fodder* jagung umur panen 12 hari dengan konsentrasi larutan nutrisi 8 ml/l dapat meningkatkan tinggi tanaman, produksi biomassa, protein, NDF dan ADF.

Kata Kunci: *Hydroponic fodder*, Jagung, Umur panen, Larutan nutrisi, Morfologi, Produksi biomassa, Kecernaan

EFFECT OF HARVESTING AGE AND NUTRIENT SOLUTION
CONCENTRATION ON MORPHOLOGY, BIOMASS PRODUCTION,
CHEMICAL COMPOSITION, AND *IN VITRO* DIGESTIBILITY
OF *HYDROPONIC* MAIZE FODDER

ABSTRACT

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The study aimed to determine the effect of harvest age and concentration of nutrient solution on morphology, biomass production, chemical composition, and *in vitro* digestibility of *hydroponic* fodder corn. The study used maize seeds of pioneer 27 variety planted with *hydroponic* nutrient solution following a complete randomized design factorial pattern (3x3) with 3 replications. The first factor was harvest age (U) 8, 10, and 12 days. The second factor was nutrient solution concentration (K) 0, 4 and 8 ml/l. Seed density was 500 g/tray and planted using a deep water culture (DWC) *hydroponic* system. Variables measured included plant height, number of leaves, fresh and dry production, organic production, protein, dry matter digestibility and organic matter digestibility, NDF and ADF. The data obtained were analyzed using ANOVA if significantly influenced followed by Duncan Multiple Range Test (DMRT) to determine the difference between the means. The results showed that the harvest age of 12 days increased ($P < 0.05$) morphology including plant height (17.62 cm), number of leaves (3.13 strands), biomass production including fresh production (18.15 kg/m²), dry production (5.22 kg/m²), organic matter production (5.07 kg/m²), protein (16.88%), NDF (46.05%), ADF (16.25%), hemiselosa (29,80%) while in dry matter digestibility decreased (69.14%) and organic matter digestibility (70.66%). The concentration of nutrient solution can increase ($P < 0.05$) plant height (16.37 cm), biomass production including fresh production (16.29 kg/m²), dry matter production (4.64 kg/m²), organic matter production (4.41 kg/m²), protein (16.65%) and hemiselulosa (27,11%). There was an interaction between harvest age and nutrient solution concentration on plant height, fresh production, dry production, organic production, protein, *in vitro* digestibility, NDF and ADF. The results can be concluded that *hydroponic* fodder corn harvest age of 12 days with a nutrient solution concentration of 8 ml / l can increase plant height, biomass production, protein, NDF and ADF.

Keywords: *Hydroponic* fodder, Maize, Harvest age, Nutrient solution, Morphology, Biomass production, Digestibility