PENGARUH FREKUENSI PENGAIRAN TERHADAP PERTUMBUHAN, PRODUKSI DAN KECERNAAN *IN VITRO* RUMPUT SUDAN *(Sorghum sudanense)* YANG DITANAM DI TANAH PASIR

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh frekuensi pengairan terhadap pertumbuhan, produksi dan kecernaan *in vitro* rumput sudan (*Sorghum sudanense*) yang ditanam di tanah pasir. Penelitian ini dilaksanakan pada tanah pasir di rumah plastik KP4 UGM Kalitirto, Berbah, Sleman, Yogyakarta. Lahan seluas 9,1 m^2 dibagi 3 perlakuan frekuensi pengairan 2 hari sekali, 4 hari sekali dan 6 hari sekali. Data yang diambil adalah kebutuhan air, pertumbuhan (tinggi tanaman, lebar daun dan jumlah anakan), produksi bahan kering (BK), bahan organik (BO) dan protein kasar (PK) serta kecernaan *in vitro* bahan kering (BK) dan bahan organik (BO). Pemanenan dilakukan setelah tanaman berumur 84 hari. Data dianalisis variansi pola searah apabila terdapat perbedaan yang nyata dilanjutkan dengan uji *Duncan's multiple range test* (DMRT). Hasil penelitian menunjukkan perbedaan yang nyata ($P<0,05$) antara frekuensi 2, 4, dan 6 terhadap kebutuhan air yaitu 536,5 ml/ hari, 301,5 ml/ hari, dan 206,7 ml/ hari, pertumbuhan tinggi tanaman 16,3 cm/ minggu, 11,3 cm/ minggu dan 7,8 cm/ minggu, lebar daun 3,6 cm, 3,5 cm, 3,1 cm, jumlah anakan 14,8 anakan/ minggu, 8,6 anakan/ minggu, dan 7,8 anakan/ minggu, produksi BK 66,90 g/ tanaman, 24,55 g/ tanaman dan 12,82 g/ tanaman, produksi BO 59,91 g/ tanaman, 22,07 g/ tanaman dan 11,59 g/ tanaman, produksi PK 4,92 g/ tanaman, 2,11 g/ tanaman, dan 1,12 g/ tanaman, tetapi antara frekuensi 2, 4, dan 6 berpengaruh tidak nyata terhadap kecernaan *in vitro* BK dan BO yaitu 45,87%, 44,79% dan 44,46% dan 44,90%, 45,94% dan 47,13%. Berdasarkan hasil penelitian dapat disimpulkan bahwa tanaman rumput sudan yang ditanam di tanah pasir frekuensi pengairan 2 hari sekali berpengaruh terhadap pertumbuhan dan produksi (BK, BO dan PK), tetapi kecernaan *in vitro* BK dan BO tidak dipengaruhi oleh frekuensi pengairan.

Kata kunci: Air, Frekuensi pengairan, Pertumbuhan, Produksi, Kecernaan *in vitro*, Rumput Sudan, Tanah pasir.

THE EFFECT OF WATERING FREQUENCY ON THE GROWTH, PRODUCTION, AND *IN VITRO* DIGESTIBILITY OF SUDAN GRASS (*Sorghum sudanense*) PLANTED IN SANDY LAND

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ABSTRACT

This research was aimed to determine the effects of watering frequency on the growth, production, and *in vitro* digestibility of sudan grass (Sorghum *sudanense*) planted in sandy land. This research was done on sandy land in a modified *green house* belong to KP4 UGM, Kalitirto, Berbah, Sleman, Yogyakarta. The area of 9.1 m^2 was divided into 3 plants to place sudan grass for watering frequency treatments: every two days, every four days, and every six days. Data collected were: water quantity, growth (plant's height, leaves width and number of tiller), production of dry matter (DM), organic matter (OM) and crude protein (CP), and *in vitro* DM and OM digestibility. The plants were harvested after 84 days (12 week) of age. Data were analyzed using analysis of variance from one way experimental design, and continued by *Duncan's new multiple range test* (DMRT) when a significant differences was detected. The results showed that there were significant differences among level 2, 4 and 6, that were water quantity (536.5 ml/ day, 301.5 ml/ day, and 206.7 ml/day), growth plant's height (16.3 cm/ week, 11.3 cm/ week, and 7.8 cm/ week), leaves width (3.6 cm, 3.5 cm, and 3.1 cm), number of tiller (14.8 tiller/ week, 8.6 tiller/ week and 7.8 tiller/ week), DM production (66.90 g/ plant, 24.55 g/ plant and 12.82 g/ plant), OM (59.91g/ plant, 22.07g/ plant and 11.59 g/ plant), and CP production (4.92 g/ plant, 2.11g/ plant and 1.12 g/ plant). However there were no significant differences among level 2, 4 and 6 *in vitro* DM digestibility (45.87%, 45.69% and 44.79%) and OM digestibility (44.90%, 45.94% and 47.13%). Based on results, it can be concluded that watering plants every 2 days increased growth and production (DM, OM, and CP) of sudan grass, but the *in vitro* DM and OM digestibility were not effect by watering frequency.

Key words: Water, Watering frequency, Growth, Production, *In Vitro* digestibility, Sudan Grass (*Sorghum sudanense*), Sandy land.