ABSTRAK

APLIKASI *ARBUSCULAR MYCORRHIZAE* DAN JENIS PUPUK BERBEDA PADA KONDISI CEKAMAN KEKERINGAN TERHADAP MORFOLOGI DAN EFISIENSI PENGGUNAAN AIR RUMPUT PAKCHONG

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Penelitian ini bertujuan untuk mengetahui pengaruh pemberian level mikoriza dan jenis pupuk yang berbeda pada kondisi cekaman kekeringan serta interaksi antara keduanya terhadap morfologi dan efisiensi penggunaan air rumput pakchong. Penelitian ini dilaksanakan pada November 2022 – Januari 2023, dilakukan di Rumah kaca Laboratorium Lapang Terpadu, Fakultas Pertanian, Universitas Lampung. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) pola faktorial yang terdiri atas faktor mikoriza dan faktor pupuk. Faktor mikoriza terdiri dari 4 taraf perlakuan yaitu M0 (tanpa mikoriza), M1 (mikoriza 20 gram), M2 (mikoriza 40 gram), M3 (mikoriza 60 gram) dan faktor pupuk terdiri dari 3 taraf perlakuan yaitu P1 (pupuk kambing), P2 (pupuk NPK), P3 (pupuk NPK + pupuk kambing). Data yang diperoleh dianalisis menggunakan Sidik Ragam (*Analysis of Variance*) dan dilanjutkan dengan uji BNT (Beda Nyata Terkecil). Hasil penelitian pemberian mikoriza dan jenis pupuk tidak memberikan pengaruh nyata ($P>0,05$) terhadap morfologi tinggi tanaman, jumlah daun, rasio daun batang, luas permukaan daun dan efisiensi penggunaan air rumput pakchong serta tidak ada pengaruh antara kedua perlakuan. Pemberian mikoriza dan jenis pupuk berpengaruh nyata ($P<0,05$) terhadap bobot akar rumput pakchong, akan tetapi tidak ada interaksi antara kedua perlakuan. Hasil uji BNT (Beda Nyata Terkecil) pada bobot segar akar rumput pakchong menunjukkan bahwa perlakuan mikoriza M0 tidak berbeda nyata dengan perlakuan M1 dan M3, perlakuan mikoriza M2 tidak berbeda nyata dengan perlakuan M1 dan M3, dan perlakuan M0 berbeda nyata dengan perlakuan M2. Hasil uji BNT bobot segar akar rumput pakchong pada perlakuan pupuk menujukkan bahwa perlakuan P1 berbeda nyata dengan perlakuan P2 dan P3.

Kata kunci : efisiensi penggunaan air, mikoriza, morfologi, pupuk, rumput pakchong

ABSTRACT

APPLICATION OF *ARBUSCULAR MYCORRHIZAE* AND DIFFERENT TYPES OF FERTILIZER UNDER DROUGHT CONDITIONS ON MORPHOLOGY AND EFFICIENCY OF WATER USAGE IN PAKCHONG GRASS

By

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This research aims to determine the effect of different levels of mycorrhizal and fertilizer types under drought stress conditions and the interaction between the two on the morphology and water use efficiency of pakchong grass. This research was conducted in November 2022-January 2023, conducted in the Greenhouse of the Integrated Field Laboratory, Faculty of Agriculture, University of Lampung. This research used a completely randomized design (CRD) with a factorial pattern consisting of mycorrhizal factors and fertilizer factors. The mycorrhizal factor consisted of 4 treatment levels, namely M0 (without mycorrhiza), M1 (20 grams of mycorrhiza), M2 (40 grams of mycorrhizae), M3 (60 grams of mycorrhizae) and the fertilizer factor consisted of 3 treatment levels, namely P1 (goat fertilizer), P2 (NPK fertilizer), P3 (NPK fertilizer + goat fertilizer). The data obtained were analyzed using *Analysis of Variance* and continued with the BNt test (smallest significant difference). The results of the study showed that the application of mycorrhiza and the type of fertilizer had no significant effect ($P>0.05$) on the morphology of plant height, number of leaves, leaf-stem ratio, leaf surface area and water use efficiency of pakchong grass and there was no effect between the two treatments. The application of mycorrhiza and the type of fertilizer had a significant effect ($P<0.05$) on the root weight of Pakchong grass, but there was no interaction between the two treatments. The results of BNT (least significant difference) on the fresh weight of pakchong grass roots showed that the M0 mycorrhizal treatment was not significantly different from the M1 and M3 treatments, the M2 mycorrhizal treatment was not significantly different from the M1 and M3 treatments, and the M0 treatment was significantly different from the M2 treatment. The BNT test results on the fresh weight of pakchong grass roots in the fertilizer treatment showed that the P1 treatment was significantly different from the P2 and P3 treatments.

Keywords : fertilizer, morphology, mycorrhiza, pakchong grass,water use efficiency