ABSTRAK

Penelitian dilaksanakan pada bulan Maret hingga September 2024 yang berlokasi di lahan *Experimental Farm* Fakultas Peternakan Universitas Jenderal Soedirman. Penelitian bertujuan untuk mengetahui efektivitas penerapan sistem pertanaman campuran rumput Pakchong (*Pennisetum purpureum cv Thailand*) dan gamal (*Gliricidia sepium)* pada periode defoliasi berbeda terhadap jumlah anakan dan tinggi tanaman. Materi yang digunakan adalah rumput Pakchong, pupuk organik sebanyak 15 ton/ha dan pupuk NPK sebanyak 100 kg/ha. Luas lahan yang digunakan yaitu 230,4 m^2 dengan ukuran setiap petak 3 m x 3,2 m, jarak tanam 0,8 m x 0,6 m. Metode penelitian menggunakan Rancangan Acak Kelompok (RAK) berbasis *Split Plot Design* 2 x 3 dengan 4 kelompok sehingga terdapat 24 unit percobaan. Perlakuan *main plot* yaitu sistem tanam monokultur (M_1) dan sistem tanam campuran (M_2). Perlakuan *sub plot* yaitu umur panen (U) 42; 56; 70 hari setelah tanam (HST). Uji lanjut menggunakan uji DMRT (*Duncant Multiple Range Test*) dengan taraf 0,05 pada setiap faktor perlakuan. Penerapan sistem pertanaman campuran memberikan pengaruh yang nyata ($P<0,05$) terhadap jumlah anakan dan tinggi tanaman rumput Pakchong. Jumlah anakan pada perlakuan sistem pertanaman campuran sebesar 25.71 batang/rumpun dan perlakuan sistem monokultur sebesar 23.35 batang/rumpun. Hasil tinggi tanaman pada perlakuan sistem pertanaman campuran sebesar 216.92 cm dan perlakuan sistem monokultur sebesar 209.72 cm. Faktor umur panen 42, 56, dan 70 HST memberikan pengaruh nyata ($P<0,05$) terhadap jumlah anakan sedangkan terhadap tinggi tanaman rumput Pakchong berpengaruh sangat nyata ($P<0,01$). Jumlah anakan pada umur panen 42, 56, dan 70 HST secara berurutan sebesar 24.48; 27.86; dan 21,25 batang/rumpun sedangkan tinggi tanaman secara berurutan yaitu 142.65; 224.88; dan 272.44 cm. Berdasarkan hasil penelitian, disimpulkan bahwa sistem pertanaman campuran dapat meningkatan pertumbuhan tanaman ditinjau dari karakteristik morfologi rumput pakchong melalui penyediaan nitrogen oleh legum.

Kata kunci : Rumput pakchong, pertanaman campuran, monokultur, jumlah anakan, tinggi tanaman.

ABSTRACT

The research was carried out from March to September 2024 which is located on the land of the *Experimental Farm*, Faculty of Animal Science, Jenderal Soedirman University. The study aims to determine the effectiveness of the application of mixed planting systems of Pakchong grass (*Pennisetum purpureum cv Thailand*) and gamal (*Gliricidia sepium)* in different defoliation periods on the number of tillers and plant height. The materials used were Pakchong grass, organic fertilizer as much as 15 tons/ha and NPK fertilizer as much as 100 kg/ha. The land area used is 230.4 m^2 with the size of each plot of 3 m x 3.2 m, planting distance of 0.8 m x 0.6 m. The research method uses a Randomized Complete Block Design (RCBD) based on *Split Plot Design* 2 x 3 with 4 groups so that there were 24 experimental units. The *main plot* treatment is monoculture planting system (M1) and mixed planting system (M2). The *treatment of sub-plots* is the age of harvest (U) 42; 56; 70 days after planting (DAP). The further test used the DMRT (*Duncant Multiple Range Test*) test with a level of 0.05 for each treatment factor. The application of the mixed planting system significant increase ($P<0.05$) on the number of tillers and the height of Pakchong grass plants. The number of tillers in the mixed planting system treatment was 25.71 stems/clumps and the monoculture system treatment was 23.35 stems/clump. The hight in the mixed crop system treatment was 216.92 cm and the monoculture system treatment was 209.72 cm. The harvest age factors of 42, 56, and 70 DAP had a significant increase ($P<0.05$) on the number of tillers while the height of Pakchong grass plants had a strongly significant effect ($P<0.01$). The number of tillers at harvest age 42, 56, and 70 DAP respectively was 24.48; 27.86; and 21.25 stems/clumps while the height of the plants in order is 142.65; 224.88; and 272.44 cm. Based on the results of the study, it was concluded that a mixed planting system can increase plant growth based on morphological characteristics of pakchong grass through the provision of nitrogen by legumes.

Keywords: Pakchong grass, mixed crops, monoculture, number of tillers, plant height.