

RINGKASAN

Padi adalah salah satu jenis tanaman pangan. Sementara itu, padi gogo adalah jenis tanaman padi yang dapat di budidayakan pada lahan kering. Namun, budidaya tanaman padi gogo hanya bergantung pada curah hujan sebagai sumber utama ketersediaan air. Untuk mengatasi hal tersebut, sistem irigasi tetes otomatis menjadi salah satu solusi dalam pemberian air selama musim kemarau. Selain itu, penyemprotan pupuk organik cair juga, agar proses penyerapan air pada tanaman dapat maksimal. Oleh karena itu, perlu dilakukan penelitian dengan melibatkan 2 faktor, yaitu tingkat kadar air tanah dan variasi dosis pupuk organik cair. Tujuan dilakukan penelitian ini adalah untuk 1) Mengetahui pengaruh tingkat kadar air berbeda dengan irigasi tetes otomatis dan variasi pupuk organik cair terhadap pertumbuhan tanaman padi gogo varietas Inpago Unsoed Protani, 2) Mengatahui kondisi tingkat kadar air dan dosis pupuk organik cair yang tepat pada pertumbuhan tanaman padi gogo varietas Inpago Unsoed Ptorani.

Penelitian dilaksanakan di Laboratorium Agronomi Fakultas Pertanian, Universitas Jenderal Soedirman yang berlokasi di Desa Kedungrandu. Penelitian dilaksanakan pada bulan April – November 2024. Alat yang digunakan pada penelitian ini adalah alat budidaya tanaman padi gogo skala laboratorium, rangkaian instalasi irigasi tetes, kontrol penyiraman otomatis, alat hitung, alat bengkel, dan perangkat lunak *IBM SPSS Statisticks 25* dan *Microsoft Excel*. Metode yang digunakan pada penelitian ini adalah Rancangan Acak Lengkap (RAL) 2 faktor dengan 3 kali pengulangan, yaitu: 1) Tingkat kadar air sejumlah 40%, 60%, dan 80%, 2) Variasi dosis pupuk organik cair sebanyak 10 ml larutan, 20 ml larutan, dan 30 ml larutan. Variabel pengamatan yang diamati pada penelitian ini, yakni tinggi tanaman, jumlah daun, panjang daun, lebar daun, diameter batang, dan jumlah anakan. Analisis data yang digunakan pada penelitian ini adalah Uji *Analysis of Variance* (ANOVA), Uji Kruskal-Wallis, dan Uji *Duncan's Multiple Range Test* (DMRT) 5%.

Hasil penelitian menunjukkan perlakuan tingkat kadar air 40% berpengaruh nyata terhadap variabel tinggi tanaman, jumlah daun, panjang daun, lebar daun, dan diameter batang. Perlakuan variasi dosis POC 10 ml larutan berpengaruh nyata terhadap pertumbuhan tanaman padi gogo secara keseluruhan. Kombinasi perlakuan tingkat kadar air 80% dan variasi dosis POC 10 ml menunjukkan hasil yang berpengaruh nyata terhadap variabel tinggi tanaman, jumlah daun, panjang daun, diameter batang, dan jumlah anakan.

SUMMARY

Rice is a type of food crop. Meanwhile, upland rice is a type of rice plant that can be cultivated on dry land. However, upland rice cultivation only depends on rainfall as the main source of water availability. To overcome this, an automatic drip irrigation system is one of the solutions in providing water during the dry season. In addition, spraying liquid organic fertilizer is also required so that the process of water absorption in plants can be maximized. Therefore, it is necessary to conduct research involving 2 factors, namely the level of soil moisture content and variations in the dose of liquid organic fertilizer. The objectives of this research are to 1) Know the effect of different water levels with automatic drip irrigation and variations in liquid organic fertilizer on the growth of upland rice varieties Inpago Unsoed Protani, 2) Knowing the conditions of water levels and doses of liquid organic fertilizer that are appropriate for the growth of upland rice varieties Inpago Unsoed Ptorani.

The research was conducted at the Agronomy Laboratory of the Faculty of Agriculture, Jenderal Soedirman University located in Kedungrandu Village. The research was conducted from April to November 2024. The tools used in this research are laboratory-scale upland rice cultivation tools, drip irrigation installation circuit, automatic watering control, calculating tools, workshop tools, and IBM SPSS Statistics 25 and Microsoft Excel software. The method used in this research is a completely randomized design (CRD) of 2 factors with 3 repetitions, namely: 1) Water content levels of 40%, 60%, and 80%, 2) Dosage variation of liquid organic fertilizer as much as 10 ml solution, 20 ml solution, and 30 ml solution. The observation variables observed in this study were plant height, number of leaves, leaf length, leaf width, stem diameter, and number of tillers. Data analysis used in this study was Analysis of Variance (ANOVA) test, Kruskal-Wallis test, and Duncan's Multiple Range Test (DMRT) 5%.

The results showed that the treatment of 40% water content level had a significant effect on the variables of plant height, number of leaves, leaf length, leaf width, and stem diameter. The treatment of POC dose variation of 10 ml solution significantly affects the growth of upland rice plants as a whole. The combination of 80% water content level treatment and 10 ml POC dose variation showed results that significantly affected the variables of plant height, number of leaves, leaf length, stem diameter, and number of tillers.