

RINGKASAN

Padi gogo merupakan tanaman pangan alternatif yang cocok dibudidayakan di lahan marginal karena toleransinya terhadap cekaman air. Namun, agar pertumbuhannya optimal, dibutuhkan sistem irigasi yang efisien dan adaptif terhadap kondisi lingkungan. Penelitian ini bertujuan untuk menganalisis pengaruh perbedaan frekuensi irigasi tetes otomatis terhadap efisiensi irigasi dan pertumbuhan dua varietas padi gogo. Metode penelitian menggunakan Rancangan Acak Lengkap (RAL) dua faktor, yaitu frekuensi irigasi (1x, 2x, 3x per hari) dan varietas padi gogo (Situ Bagendit dan Inpago Unsoed Protani) yang ditanam pada media polibag. Parameter yang diamati meliputi pertumbuhan tanaman (tinggi, berat kering, jumlah anakan, malai) serta efisiensi sistem (debit, efisiensi aplikasi, dan keseragaman emitter). Hasil penelitian menunjukkan bahwa frekuensi irigasi satu kali sehari (A1) menghasilkan berat kering tertinggi (134,73 g) dan nilai efisiensi aplikasi tertinggi (92,23%), disertai keseragaman distribusi air di atas 90%. Varietas Inpago Unsoed Protani memperlihatkan performa pertumbuhan lebih unggul dibandingkan Situ Bagendit, terutama pada berat kering dan jumlah anakan. Namun, tidak terdapat pengaruh interaksi yang signifikan antara frekuensi irigasi dan varietas terhadap variabel hasil. Penelitian ini menyimpulkan bahwa sistem irigasi tetes otomatis frekuensi 1x/hari efektif dalam menunjang efisiensi air dan pertumbuhan vegetatif padi gogo di lahan marginal.

Kata kunci: irigasi tetes otomatis, padi gogo, frekuensi irigasi.

SUMMARY

Upland rice (padi gogo) is an alternative food crop well-suited for cultivation on marginal land due to its tolerance to water stress. However, to achieve optimal growth, an efficient and environmentally adaptive irrigation system is required. This study aims to analyze the effect of different frequencies of automated drip irrigation on irrigation efficiency and the growth of two upland rice varieties. The research employed a two-factor Completely Randomized Design (CRD), with irrigation frequency (once, twice, and three times per day) and upland rice variety (Situ Bagendit and Inpago Unsoed Protani) as factors. The rice was cultivated in polibag media. Observed parameters included plant growth (height, dry weight, number of tillers, panicles) and system efficiency (flow rate, application efficiency, and emitter uniformity). Results showed that irrigation once per day (A1) produced the highest dry weight (134.73 g) and the highest application efficiency (92.23%), along with water distribution uniformity above 90%. The Inpago Unsoed Protani variety demonstrated superior vegetative growth compared to Situ Bagendit, particularly in dry weight and tiller number. However, there was no significant interaction effect between irrigation frequency and variety on crop yield variables. This study concludes that an automated drip irrigation system with once-daily frequency is effective in supporting water efficiency and vegetative growth of upland rice on marginal land.

Keywords: automated drip irrigation, upland rice, irrigation frequency