

INTISARI

Sintasan dan Pertumbuhan Benih F2 Hibrida Ikan Nila Merah Nilasa (*Oreochromis sp.*) dengan Pemberian Variasi Dosis Probiotik *Klebsiella sp.* A2 pada Sistem Resirkulasi

Penelitian ini mengkaji pengaruh variasi dosis probiotik *Klebsiella sp.* isolat A2 terhadap sintasan dan pertumbuhan benih F2 ikan nila merah (*Oreochromis sp.*) dalam sistem resirkulasi akuarium selama 50 hari di Unit Kolam Pembelajaran (*Teaching Farm*) Departemen Perikanan Fakultas Pertanian Universitas Gadjah Mada. Benih ikan dengan berat 7-8 gram dan panjang 7-9 cm dipelihara dengan kepadatan 10 ekor per akuarium (80 L air), pemberian pakan komersial 3% biomassa per hari. Perlakuan dosis probiotik 0 (kontrol), 10^2 , 10^4 , serta 10^6 sel/mL yang diaplikasikan pada media air. Rancangan penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan 4 perlakuan dan 3 ulangan. Parameter yang diamati meliputi sintasan (SR), pertumbuhan berat mutlak dan spesifik (SGR berat), pertumbuhan panjang mutlak dan spesifik (SGR panjang), hisbah konversi pakan (FCR), serta kualitas air (suhu, O_2 terlarut, pH dan nitrat). Analisis data performa ikan dilakukan dengan ANOVA dan uji lanjut Duncan pada tingkat signifikansi 95%, sedangkan kualitas air dianalisis secara deskriptif. Hasil penelitian menunjukkan performa sintasan rata-rata tertinggi pada kontrol (66,67%) dan terendah pada dosis 10^6 sel/mL (46,67%), tanpa perbedaan nyata antar perlakuan. Pertumbuhan berat mutlak tertinggi (19,39 g) dan laju pertumbuhan berat spesifik (2,4614 %/hari) tercapai pada perlakuan kontrol, sementara pertumbuhan panjang mutlak terbaik (5,60 cm) dan laju pertumbuhan panjang spesifik (1,0271 %/hari) pada dosis probiotik 10^4 sel/mL, dengan perbedaan tidak nyata secara keseluruhan. *Feed Conversion Ratio* (FCR) berkisar 1,44-1,67 (terbaik pada dosis probiotik 10^2 sel/mL). Kualitas air tidak menunjukkan fluktuasi berlebihan (suhu 24,8-27,57°C; DO 4,55-6,66 mg/L; pH 7,3-7,89; nitrat 61,84-155,62 mg/L) sehingga sesuai untuk kehidupan ikan.

Kata kunci: *Klebsiella sp.*, nila merah F2, pertumbuhan, probiotik, resirkulasi, sintasan

ABSTRACT

Survival and Growth Performance of F2 Nilasa Red Tilapia Hybrid (*Oreochromis sp.*) Fry with Different Dosages of Probiotic *Klebsiella sp. A2* in Recirculating System

This study investigated the effects of different dosage levels of the probiotic *Klebsiella sp.* isolate A2 on the survival rate and growth performance of F2 red tilapia (*Oreochromis sp.*) fingerlings reared in an aquarium-based recirculating system for 50 days at the Teaching Farm, Department of Fisheries, Faculty of Agriculture, Universitas Gadjah Mada. Fingerlings with an initial body weight of 7–8 g and total length of 7–9 cm were stocked at a density of 10 fish per aquarium (80 L water volume) and fed a commercial diet at a feeding rate of 3% of total biomass per day. The experimental treatments consisted of probiotic doses of 0 (control), 10^2 , 10^4 , and 10^6 cells/mL applied directly to the rearing water. The study employed a Completely Randomized Design (CRD) with four treatments and three replicates. Parameters observed included survival rate (SR), absolute and specific weight growth (weight SGR), absolute and specific length growth (length SGR), feed conversion ratio (FCR), and water quality parameters (temperature, dissolved oxygen, pH, and nitrate). Fish performance data were analyzed using analysis of variance (ANOVA) followed by Duncan's multiple range test at a 95% confidence level, while water quality data were analyzed descriptively. The results showed that the highest mean survival rate was observed in the control treatment (66.67%), while the lowest was recorded at the probiotic dose of 10^6 cells/mL (46.67%), with no significant differences among treatments. The highest absolute weight gain (19.39 g) and specific weight growth rate ($2.4614\% \text{ day}^{-1}$) were achieved in the control treatment, whereas the highest absolute length gain (5.60 cm) and specific length growth rate ($1.0271\% \text{ day}^{-1}$) were observed at the probiotic dose of 10^4 cells/mL; however, these differences were not statistically significant. Feed Conversion Ratio (FCR) ranged 1,44-1,67 (optimal at dose of 10^2 cells/mL). Water quality remained stable (temperature 24,8-27,57°C; DO 4,55-6,66 mg/L; pH 7,3-7,89; nitrate 61,84-155,62 mg/L) indicating suitable conditions for fish survival and growth.

Keywords: *Klebsiella sp.*, F2 red tilapia, growth, probiotic, recirculation, survival rate