

INTISARI

Pengaruh Salinitas terhadap Sintasan dan Pertumbuhan Ikan Nila Merah (*Oreochromis sp.*) F2 Populasi Komposit

Penelitian ini bertujuan untuk menganalisis pengaruh perbedaan salinitas air terhadap sintasan dan pertumbuhan ikan nila merah (*Oreochromis sp.*) F2 populasi komposit, sekaligus menentukan tingkat salinitas optimal untuk budidaya. Penelitian dilaksanakan di Departemen Perikanan, Fakultas Pertanian, Universitas Gadjah Mada, pada bulan Maret - Mei 2025. Desain penelitian mencakup empat perlakuan salinitas (0, 5, 10, dan 15 ppt) dengan tiga kali pengulangan. Ikan uji berukuran 7 - 8 cm diperoleh dari Unit Kerja Budidaya Air Tawar (UKBAT) Cangkringan, Sleman, dan dipelihara dalam akuarium 80 L (15 ekor/akuarium) selama 60 hari dengan aerasi dan penyiponan rutin. Pakan diberikan sebanyak 3% dari total biomassa. Parameter yang diamati meliputi sintasan, pertumbuhan, rasio konversi pakan (*feed conversion ratio/FCR*), dan total produksi. Data dianalisis menggunakan *analysis of variance* (ANOVA) dan uji lanjut Duncan dengan tingkat kepercayaan 95%. Data yang signifikan diuji lebih lanjut dengan polinomial orthogonal. Data kualitas air dianalisis secara deskriptif. Perlakuan salinitas air yang berbeda (0, 5, 10, dan 15 ppt) tidak berpengaruh nyata terhadap sintasan dan rasio konversi pakan (*feed conversion ratio/FCR*), namun berpengaruh nyata terhadap pertumbuhan dan produksi total. Ikan nila merah tersebut dapat hidup (toleran) pada perlakuan salinitas air 0 - 15 ppt dengan sintasan 93 - 100 % dan FCR 1,11 - 1,20. Pertumbuhan dan produksi ikan nila merah pada salinitas 5, 10, dan 15 ppt tidak berbeda nyata, hasilnya sedikit lebih rendah daripada perlakuan salinitas air 0 ppt. Ikan nila merah yang dipelihara pada salinitas 5 - 15 ppt memberikan hasil pertumbuhan berat mutlak 24,0 - 29,0 g; laju pertumbuhan berat spesifik 2,2647 - 2,5113 %/hari; pertumbuhan panjang mutlak 4,4 - 5,2 cm dan laju pertumbuhan panjang spesifik 0,7777 - 0,9060 %/hari, sedangkan pada perlakuan salinitas 0 ppt memberikan hasil pertumbuhan berat mutlak 31,37 g; laju pertumbuhan berat spesifik 2,6722 %/hari; pertumbuhan panjang mutlak 5,57 cm dan laju pertumbuhan panjang spesifik 0,9646 %/hari. Kualitas air budidaya ikan nila merah yang dipelihara pada salinitas 0 - 15 ppt menunjukkan suhu 26,2 - 27,8 °C; pH 6,5 - 8,2; dan O₂ terlarut 4,9 - 7,1 mg/L.

Kata kunci: kualitas air, nila merah, pertumbuhan, sintasan, rasio konversi pakan

ABSTRACT

Effect of Salinity on Survival and Growth Rates of F2 Composite Population of Red Tilapia (*Oreochromis* sp.)

This study aimed to analyze the effect of different water salinity levels on the survival and growth of red tilapia (*Oreochromis* sp.) F2 composite population, while also determining the optimal salinity level for cultivation. The research was conducted at the Department of Fisheries, Faculty of Agriculture, Gadjah Mada University, from March to May 2025. The research design included four salinity treatments (0, 5, 10, and 15 ppt) with three repetitions. Test fish measuring 7 - 8 cm were obtained from the Freshwater Aquaculture Work Unit (UKBAT) in Cangkringan, Sleman, and were kept in 80 L aquariums (15 fish/aquarium) for 60 days with aeration and shiponing. Feed was given at 3 % of the total biomass. The parameters observed included survival rate, growth rate, feed conversion ratio (FCR), and total production. The data analyzed using analysis of variance (ANOVA) and Duncan's post hoc test with a 95 % confidence level. Significant data were further tested with orthogonal polynomials. The water quality data was analyzed descriptively. Different water salinity treatments (0, 5, 10, and 15 ppt) did not significantly affect survival and feed conversion ratio (FCR), but significantly affected growth rate and total production. The red tilapia could live (tolerant) at salinities of 0 - 15 ppt with survival rates of 93 - 100 % and a feed conversion ratio (FCR) of 1.11 - 1.20. The growth rate and production of red tilapia at salinities of 5, 10, and 15 ppt did not differ significantly, with results slightly lower than at 0 ppt salinity. Red tilapia cultivated at salinities of 5 - 15 ppt showed absolute weight gain of 24.0 - 29.0 g; specific weight growth rate of 2.2647 - 2.5113 %/day; absolute length growth of 4.4 - 5.2 cm and specific length growth rate of 0.7777 - 0.9060 %/day, while at 0 ppt salinity treatment, red tilapia showed absolute weight gain of 31.37 g; specific weight growth rate of 2.6722 %/day; absolute length growth of 5.57 cm and specific length growth rate of 0.9646 %/day. The water quality of the red tilapia aquaculture cultivated at salinity 0 - 15 ppt showed temperatures of 26.2 - 27.8 °C; pH levels of 6.5 - 8.2; and dissolved O₂ levels of 4.9 - 7.1 mg/L.

Key words: water quality, red tilapia, growth, survival, feed conversion ratio