

## INTISARI

### **Sintasan dan Pertumbuhan Benih F2 Hibrida Ikan Nila Merah Nilasa (*Oreochromis sp.*) pada Padat Tebar Berbeda dengan Aerasi *Microbubble Generator***

Penelitian ini bertujuan untuk menganalisis pengaruh padat tebar yang berbeda dengan aerasi *microbubble generator* terhadap sintasan dan pertumbuhan benih F2 hibrida ikan nila merah nilasa (*Oreochromis sp.*), sekaligus menentukan padat tebar yang optimal untuk budidaya. Penelitian dilaksanakan di Unit Kolam Pembelajaran Akuakultur (*Teaching Farm Aquaculture*), Departemen Perikanan, Fakultas Pertanian, Universitas Gadjah Mada, pada bulan Agustus – Oktober 2025. Rancangan penelitian ini meliputi empat perlakuan padat tebar secara berurutan sebanyak 50, 100, 150, dan 200 ekor/m<sup>3</sup> (5,10,15, dan 20 ekor/100 L air), masing-masing perlakuan dengan tiga kali pengulangan. Benih F2 hibrida ikan nila merah nilasa berukuran 7-8 cm diperoleh dari Balai Pengembangan Teknologi Perikanan Budidaya (BPTPB) Cangkringan, Sleman, dan dipelihara dalam akuarium 100 L air selama 60 hari dengan penambahan aerasi *microbubble generator* 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 padat tebar yang berbeda (50, 100, 150, 200 ekor/m<sup>3</sup>) memberikan pengaruh nyata terhadap sintasan, pertumbuhan, rasio konversi pakan, dan total produksi. Benih F2 hibrida ikan nila merah nilasa dengan padat tebar 50 ekor/m<sup>3</sup> memberikan pengaruh yang terbaik untuk sintasan yaitu 100 %; pertumbuhan berat mutlak yaitu 46,43 g; laju pertumbuhan berat spesifik yaitu 6,40 %/hari; pertumbuhan panjang mutlak yaitu 6,28 cm; dan laju pertumbuhan panjang spesifik yaitu 3,06 %/hari. Rasio konversi pakan untuk benih F2 hibrida ikan nila merah nilasa pada masing masing perlakuan berkisar antara 1,01-1,26. Perlakuan padat tebar 200 ekor/m<sup>3</sup> memberikan hasil total produksi yang paling baik yaitu sebesar 0,734 kg. Parameter kualitas air selama pemeliharaan ikan seluruh perlakuan padat tebar memperoleh nilai suhu berkisar 25,2-28,6 °C, pH berkisar 6,6-8,1, oksigen (O<sub>2</sub>) terlarut berkisar 5,0-8,2 mg/L<sup>-1</sup>, karbondioksida (CO<sub>2</sub>) bebas berkisar 2,1-15,3 mg/L<sup>-1</sup>, dan amonia (NH<sub>3</sub>) bebas berkisar 0,100-0,867 mg/L<sup>-1</sup>, secara umum layak untuk kehidupan dan pertumbuhan ikan nila.

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

## ABSTRACT

### Survival and Growth of F2 Nilasa Red Tilapia Hybrid (*Oreochromis sp.*) Fry at Different Stocking Densities with Microbubble Generator Aeration

This study aims to analyze the effect of different stocking densities with microbubble generator aeration on the survival and growth of F2 nilasa red tilapia hybrid (*Oreochromis sp.*) fry, while also determining the optimal stocking density for cultivation. The study was conducted at the Aquaculture Teaching Farm Unit, Department of Fisheries, Faculty of Agriculture, Gadjah Mada University, in August – October 2025. The study design included four stocking density treatments (50, 100, 150, and 200 fry/m<sup>3</sup> or 5, 10, 15, and 20 fry/100 L of water) with three replications. F2 nilasa red tilapia hybrid fry measuring 7-8 cm were obtained from the Center for Aquaculture Technology Development (BPTPB) Cangkringan, Sleman, and maintained in a 100 L aquarium for 60 days with the addition of microbubble generator aeration and regular siphoning. Feed was given as much as 3 % of the total biomass. Observed parameters included survival, growth, feed conversion ratio (FCR), and total production. Data were analyzed using analysis of variance (ANOVA) and Duncan's advanced test with a 95 % confidence level. Significant data were further tested using orthogonal polynomials. Water quality data were analyzed descriptively. Different stocking density treatments (50, 100, 150, 200 fish/m<sup>3</sup>) significantly affected survival, growth, feed conversion ratio, and total production. F2 nilasa red tilapia hybrid fry with a stocking density of 50 fish/m<sup>3</sup> had the best survival rate of 100 %; absolute weight growth of 46,43 g; specific weight growth rate of 6,40 %/day; absolute length growth of 6,28 cm; and specific length growth rate of 3,06%/day. The feed conversion ratio for F2 nilasa red tilapia hybrid fry in each treatment ranged from 1,01 to 1,26. The stocking density treatment of 200 fish/m<sup>3</sup> gave the best total production results of 0,734 kg. Water quality parameters during fish maintenance in all stocking density treatments obtained temperature values ranging from 25,2-28,6 °C, pH ranging from 6,6-8,1, dissolved oxygen (O<sub>2</sub>) ranging from 5,0-8,2 mg/L<sup>-1</sup>, free carbon dioxide (CO<sub>2</sub>) ranging from 2,1-15,3 mg/L<sup>-1</sup>, and free ammonia (NH<sub>3</sub>) ranging from 0,100-0,867 mg/L<sup>-1</sup>, generally suitable for the life and growth of tilapia.

Keywords : water quality, red tilapia, growth, feed conversion ratio, survival rate