

ABSTRAK

PERFORMA PERTUMBUHAN DAN STATUS KESEHATAN BENIH LELE (*Clarias* sp.) MELALUI OPTIMALISASI KUALITAS AIR DENGAN SISTEM RAS (*Recirculating Aquaculture System*) DAN PENAMBAHAN PROBIOTIK

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Penerapan *Recirculating Aquaculture System* (RAS) merupakan salah satu solusi dalam budi daya ikan, terutama dalam kondisi keterbatasan air dan kebutuhan akan kualitas air yang stabil. Namun, untuk meningkatkan efisiensi pakan dan ketahanan ikan terhadap penyakit, diperlukan penambahan probiotik. Penelitian ini bertujuan untuk: (1) menganalisis performa pertumbuhan benih lele (*Clarias* sp.); dan (2) mengevaluasi status kesehatan benih lele (*Clarias* sp.). Penelitian dilakukan selama 30 hari menggunakan dua perlakuan, yaitu (A) pemeliharaan dengan sistem RAS dan probiotik 10 ml/kg pakan, dan (B) pemeliharaan tanpa RAS dan tanpa probiotik, dengan dua ulangan. Hasil penelitian menunjukkan bahwa perlakuan dengan sistem RAS dan probiotik memberikan pengaruh yang berbeda nyata ($P < 0,05$) terhadap peningkatan performa pertumbuhan, yang ditunjukkan oleh pertambahan berat mutlak sebesar 2,78 g, laju pertumbuhan harian 0,09 g/hari, pertambahan panjang mutlak 5,42 cm, *Feed Conversion Ratio* (FCR) sebesar 0,55, dan tingkat kelangsungan hidup mencapai 76,14%. *Total Aeromonas Count* (TAC) pada minggu pertama tercatat sebesar $51,50 \times 10^3$ CFU/ml, minggu kedua $84,50 \times 10^3$ CFU/ml, dan minggu ketiga nilai TAC mengalami penurunan $67,50 \times 10^3$ CFU/ml. Parameter kesehatan seperti kadar hematokrit dan jumlah eritrosit tidak menunjukkan perbedaan nyata ($P > 0,05$), sedangkan total leukosit menunjukkan perbedaan nyata ($P < 0,05$) dengan hasil sebesar $5,6 \times 10^4$ sel/mm³. Pemeliharaan dengan sistem RAS dan penambahan probiotik 10 ml/kg pakan memberikan pengaruh efektif terhadap pertumbuhan serta mempengaruhi status kesehatan benih lele ditunjukkan melalui nilai leukosit yang berbeda nyata.

Kata kunci : *Clarias* sp., Pertumbuhan, Probiotik, *Recirculating Aquaculture System*

ABSTRACT

GROWTH PERFORMANCE AND HEALTH STATUS OF CATFISH (*Clarias* sp.) JUVENILE THROUGH WATER QUALITY OPTIMIZATION USING A *Recirculating Aquaculture System* (RAS) AND PROBIOTIC SUPPLEMENTATION

By

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The application of the *Recirculating Aquaculture System* (RAS) is one of the solutions in aquaculture, particularly under conditions of limited water availability and the need for stable water quality. However, to improve feed efficiency and fish resistance to disease, the addition of probiotics is necessary. This study was aimed to: (1) analyze the growth performance of catfish fry (*Clarias* sp.); and (2) evaluate the health status of catfish fry (*Clarias* sp.). The study was conducted over a 30-day period using two treatments: (A) rearing with the RAS system and probiotics at 10 ml/kg of feed, and (B) rearing without RAS and without probiotics, each with two replications. The results showed that the treatment with the RAS system and probiotics had a significant effect ($P < 0.05$) on improving growth performance, as indicated by a weight gain of 2.78 g, daily growth rate of 0.09 g/day, length gain of 5.42 cm, *Feed Conversion Ratio* (FCR) of 0.05, and a survival rate of 76.14%. *Total Aeromonas Count* (TAC) in the first week was recorded at 51.50×10^3 CFU/ml, increased to 84.50×10^3 CFU/ml in the second week, and decreased to 67.50×10^3 CFU/ml in the third week. Health parameters such as hematocrit levels and erythrocyte counts showed no significant differences ($P > 0.05$), while total leukocyte counts showed a significant difference ($P < 0.05$) with a result of 5.6×10^4 cells/mm³. As conclusion, rearing with the RAS system and probiotics at 10 ml/kg of feed had an effective impact on growth and influenced the health status of catfish fry, as indicated by the significantly different leukocyte values.

Keywords: *Clarias* sp., Growth, Probiotics, *Recirculating Aquaculture System*