

RINGKASAN

Budidaya ikan Nilem (*Osteochilus vittatus*) intensif dengan menggunakan sistem resirkulasi masih sangat jarang dilakukan. Sistem resirkulasi harus dapat mempertahankan kualitas air tetap baik agar kelangsungan hidup ikan dapat terjaga. Dua model sistem resirkulasi dibuat, masing-masing dengan filter yang berbeda: zeolit dan kangkung air (*Ipomoea aquatica*). Ke dua filter tersebut banyak digunakan dalam upaya menjaga kualitas air. Penelitian ini bertujuan untuk mengetahui kualitas air pada kolam sistem resirkulasi yang menggunakan media filtrasi berbeda yaitu zeolit dan kangkung air, juga untuk mengetahui kelangsungan hidup ikan yang dipelihara pada kolam sistem resirkulasi dengan filter berbeda. Penelitian ini menggunakan metode eksperimental rancangan acak lengkap (RAL) dengan tiga kali ulangan. Ikan nilem dipelihara pada sistem resirkulasi dengan padat tebar 100 ekor selama 60 hari. Pakan diberikan setiap hari sebanyak 5% bobot ikan nilem. Parameter kualitas air yang diukur meliputi TSS, suhu, DO, CO₂, pH, dan NH₃ dilakukan sebanyak tiga kali yaitu pada hari ke-0, 30, dan 60 serta jumlah kelangsungan hidup ikan nilem yang dihitung pada minggu ke-2, 6, dan 10. Analisis secara deskriptif dilakukan untuk mengetahui kualitas air pada masing-masing sistem resirkulasi dan hubungannya dengan kelangsungan hidup ikan nilem. Hasil penelitian menunjukkan bahwa kualitas air pada sistem resirkulasi yang menggunakan filter zeolit dan kangkung air tergolong baik kecuali untuk kandungan pH dan NH₃-nya. Konsentrasi TSS, suhu, CO₂, dan NH₃ naik serta penurunan DO dan pH selama pemeliharaan. Perbedaan kualitas air hanya ditunjukkan oleh DO dan NH₃. Kandungan DO lebih tinggi pada sistem resirkulasi dengan filter zeolit sedangkan kandungan NH₃ lebih rendah pada sistem resirkulasi dengan filter kangkung air.

Kata kunci: kualitas air, sistem resirkulasi, zeolit, kangkung air, kelangsungan hidup

SUMMARY

Intensive production of Nilem (*Osteochilus vittatus*) using recirculating system is not yet popular. Recirculating system must be able to maintain water quality which supports fishes' viability. Two models of recirculating system were made, with the only difference in type of filter: one using zeolites and the other using water spinach (*Ipomoea aquatica*). Both filters were frequently used in water remediation attempt. The purposes of this research were to identify water quality in a recirculating system which used either zeolites or water spinach as the filter as well as the survivability of fishes which were reared within those recirculating systems. Completely randomized experimental design with three replication was applied to this research. Nilems were reared in a recirculating system with a density of 100 individual per unit for 60 days. Feeds were given every day as much as 5% of the fishes' biomass. The measurement of water quality parameter including TSS, temperature, DO, CO₂, pH, and NH₃ was conducted three times on the day 0, 30, and 60 of the rearing period. While the measurement of Nilems' survivability was conducted in the week 2, 6, and 10 of the rearing period. The data were analyzed using descriptive method to identify water quality in each recirculating system and its relation to Nilem's survivability. The result showed that the water quality in zeolite filter-recirculating system and water spinach filter-recirculating system can be considered as good except for their pH and NH₃ content. TSS concentration, temperature, CO₂, and NH₃ tended to increase during the rearing period while DO and pH tended to decrease. The difference in water quality between two recirculating system was shown by DO and NH₃. DO content was higher in zeolite filter-recirculating system while NH₃ content was lower in water spinach filter-recirculating system.

Keywords: water quality, recirculating system, zeolite, water spinach, life sustainability