

INTISARI

Analisis Neraca Air dan Kualitas Air pada Pembesaran Lele (*Clarias* sp.) di Kampung Perikanan Budi Daya Kabupaten Bantul

Penelitian ini bertujuan untuk mengetahui neraca air, efisiensi penggunaan air, dan menganalisis kualitas air pembesaran lele di Kampung Perikanan Budi daya Kabupaten Bantul. Pengambilan data dilakukan di sentra budi daya lele yang berada di Kapanewon Srandakan dan Pleret. Metode penelitian menggunakan pendekatan deskriptif-kuantitatif dengan *purposive sampling*. Data utama yang dibutuhkan meliputi debit air masuk dan keluar, presipitasi, rembesan, evaporasi, dan produksi. Hasil penelitian menunjukkan bahwa *water gains* dan *water losses* berturut-turut di Kapanewon Srandakan adalah $2.859,36 \pm 250,90 \text{ m}^3$ dan $2.662,76 \pm 235,42 \text{ m}^3$. Sementara itu, di Kapanewon Pleret memiliki nilai yang lebih rendah yaitu $679,91 \pm 15,04 \text{ m}^3$ dan $481,41 \pm 11,67 \text{ m}^3$. Perhitungan efisiensi penggunaan air di Kapanewon Srandakan menghasilkan nilai indeks sebesar $6,55 \pm 0,46 \text{ m}^3/\text{kg}$, lebih tinggi dibandingkan dengan Kapanewon Pleret yang hanya $0,94 \pm 0,06 \text{ m}^3/\text{kg}$. Pergantian air masing-masing lokasi sebesar $425,69 \pm 8,91\%$ per hari dan $138,03 \pm 11,66\%$ per hari. Hasil kualitas air yang didapat diantaranya rerata pH di Kapanewon Srandakan dan Pleret berturut-turut sebesar 7,70 dan 7,55 berada pada kisaran optimal untuk budi daya lele. Rerata DO pada kedua lokasi juga tergolong baik, yaitu 7,54 mg/L, sehingga mampu memenuhi kebutuhan oksigen ikan. Rerata alkalinitas di Kapanewon Srandakan (178,76 mg/L) dan Pleret (344,19 mg/L) menunjukkan kapasitas penyangga yang baik terhadap perubahan pH. Namun, rerata suhu di Kapanewon Pleret, yakni $33,33^\circ\text{C}$ sedikit melebihi kisaran optimal budi daya lele, sedangkan rerata CO_2 bebas pada kedua lokasi relatif tinggi, yaitu 35,55 mg/L di Srandakan dan 39,77 mg/L di Pleret, melampaui batas optimal ($<12 \text{ mg/L}$).

Kata Kunci : efisiensi penggunaan air, Kampung Perikanan Budi Daya, neraca air, pembesaran lele

ABSTRACT

Analysis of Water Budget and Water Quality in Catfish (*Clarias* sp.) Grow-Out at Aquaculture Village in Bantul Regency

This study aimed to determine the water budget, analyze water use efficiency, and water quality in catfish grow-out farming systems at the Aquaculture Fisheries Village in Bantul Regency. Data were collected from catfish farming centers located in Srandakan and Pleret Districts. The research employed a descriptive-quantitative approach using purposive sampling. The primary data required included inflow and outflow water discharge, precipitation, seepage, evaporation, and production yield. The results showed that the water gains and water losses in Srandakan District were $2,850.36 \pm 250.90 \text{ m}^3$ and $2,662.76 \pm 235.42 \text{ m}^3$, respectively. Meanwhile, Pleret District exhibited lower values, with water gains and water losses of $679.91 \pm 15.04 \text{ m}^3$ and $481.41 \pm 11.67 \text{ m}^3$, respectively. The calculation of water use efficiency indicated an index value of $6.55 \pm 0.46 \text{ m}^3/\text{kg}$ in Srandakan District, which was higher than that of Pleret District at only $0.94 \pm 0.06 \text{ m}^3/\text{kg}$. The water exchange rates at the two locations were $425.69 \pm 8.91\%$ per day and $138.03 \pm 11.66\%$ per day, respectively. Water quality analysis revealed that the average pH values in Srandakan and Pleret Districts were 7.70 and 7.55 respectively, both within the optimal range for catfish culture. The average dissolved oxygen (DO) concentration at both locations was also considered favorable, at 7.54 mg/L, which adequately met the fish's oxygen requirements. The average alkalinity in Srandakan (178.76 mg/L) and Pleret (344.19 mg/L) indicated a good buffering capacity against pH fluctuations. However, the average water temperature in Pleret District (33.33°C) slightly exceeded the optimal range for catfish culture. In addition, the average free carbon dioxide (CO_2) concentrations at both locations were relatively high, reaching 35.55 mg/L in Srandakan and 39.77 mg/L in Pleret, exceeding the recommended optimal limit ($<12 \text{ mg/L}$).

Keywords: Aquaculture Village, catfish grow-out , water budget, water use efficiency