

Kajian Kualitas Air dengan Total Bakteri dan Total *Vibrio* sp.
pada Periode *Blind feeding* Tambak Intensif
Udang Vaname (*Litopenaeus vannamei* Boone)
di Pesisir Kuwaru Kabupaten Bantul

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INTISARI

Penelitian ini bertujuan untuk mengetahui hubungan antara kualitas air dengan total bakteri dan total *Vibrio* sp. pada periode *blind feeding* tambak intensif Udang Vaname (*Litopenaeus vannamei* Boone) di Pesisir Kuwaru Kabupaten Bantul. Metode yang digunakan pada penelitian adalah pengamatan (observasi) langsung pada tambak dan data sekunder dari teknisi tambak. Tambak yang diamati menggunakan konstruksi *biocrete* dengan lapis *High Density Poly Ethylene* (HDPE) dengan ukuran 60 x 60 m² dan kedalaman air 100 - 170 cm. Hasil penelitian selama umur pemeliharaan udang vaname (30 hari) menunjukkan kisaran kualitas air : oksigen terlarut 3,8 – 11,5 mg/L; derajat keasaman (pH) 7,7 – 9,4; suhu 27,7 – 30,7 °C; salinitas 19 – 22 ppt; nitrit 0,002 – 0,05 mg/L dan alkalinitas 74 – 148 mg/L termasuk optimal untuk budidaya udang vaname, sedangkan kualitas air : bahan organik 62 – 108 mg/L dan nitrat 0,350 – 10 mg/L termasuk kurang optimal. Total bakteri selama pengamatan bersifat fluktuatif dengan rentang total bakteri 5,0 x 10⁴ – 4,8 x 10⁶ cfu/ml dan rentang total *Vibrio* sp. 8,0 x 10¹ – 3,9 x 10³. Hubungan total bakteri (y₁) dan total *Vibrio* sp. (y₂) dengan bahan organik (x₁), oksigen terlarut (x₂), derajat keasaman (x₃), suhu (x₄), salinitas (x₅), nitrat (x₆), dan alkalinitas (x₇) dengan menunjukkan persamaan berupa $y_1 = -2,194 + 0,026 x_1 - 0,006 x_2 - 0,281 x_3 + 0,319 x_4 - 0,141 x_5 + 0,139 x_6 + 0,007 x_7$ (R₂ = 0,798) (Signifikansi = 0,045) dan $y_2 = -10,905 + 0,009 x_1 + 0,078 x_2 - 0,034 x_3 + 1,171 x_4 - 0,893 x_5 - 0,062 x_6 + 0,002 x_7$ (R₂ = 0,839) (Signifikansi = 0,022).

Kata Kunci : bakteri, bahan organik, suhu, udang, vibrio

Study of Water Quality with
Total Bacteria and Total *Vibrio* sp. during *Blind feeding* Period
in Intensive White Shrimp (*Litopenaeus vannamei* Boone) Ponds
on Kuwaru Coastal Area Bantul Regency

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Abstract

This study aimed to determine the relation between water quality and total bacteria as well as total *Vibrio* sp. during blind feeding period in intensive white shrimp (*Litopenaeus vannamei* Boone) ponds on Kuwaru coastal area Bantul Regency. The method used in the study were direct observation on the ponds and used secondary data from the pond technician. The observed ponds used biocrete construction with 60 x 60 m² High Density Poly Ethylene (HDPE) layer and 100 – 170 cm water depth. The result of this study for 30 days of white shrimp cultivation showed that the value range of dissolved oxygen 3,8 – 11,5 mg/L; pH 7,7 – 9,4; temperature 27,7 – 30,7 °C; salinity 19 – 22 ppt; nitrite 0,002 – 0,05 and alkalinity 74 – 148 mg/L wich were in optimal range for cultivation of white shrimp, while organic matter 62 – 108 mg/L and nitrate 0,035 – 10 mg/L were in less optimal range. The total bacteria during the observation period had shown to be fluctuative with range of total bacteria $5,0 \times 10^4$ – $4,8 \times 10^6$ cfu/ml and the range of total vibrio $8,0 \times 10^1$ – $3,9 \times 10^3$. The relation between total bacteria (y_1) as well as total *Vibrio* (y_2) and organic material (x_1), dissolved oxygen (x_2), pH (x_3), temperature (x_4), salinity (x_5), nitrate (x_6), alkalinity (x_7) were shown in this equation $y_1 = -2,194 + 0,026 x_1 - 0,006 x_2 - 0,281 x_3 + 0,319 x_4 - 0,141 x_5 + 0,139 x_6 + 0,007 x_7$ ($R^2 = 0,798$) (Significance = 0,045) and $y_2 = -10,905 + 0,009 x_1 + 0,078 x_2 - 0,034 x_3 + 1,171 x_4 - 0,893 x_5 - 0,062 x_6 + 0,002 x_7$ ($R^2 = 0,839$) (Significance = 0,022).

Key words : bacteria, organic matter, shrimp, temperature, vibrio