ABSTRAK

EFEKTIVITAS PENGGUNAAN SISTEM BANDUL DAN SISTEM KONVENSIONAL DALAM PEMBUANGAN AKUMULASI LIMBAH ORGANIK TERHADAP KUALITAS AIR PADA TAMBAK UDANG VANAME (*Litopenaeus vannamei*) SISTEM INTENSIF

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Intensifikasi budidaya udang vaname (*Litopenaeus vannamei*) menyebabkan peningkatan akumulasi bahan organik yang berakibat pada perubahan kualitas air dan berujung penurunan produktivitas, sehingga diperlukan sistem pembuangan yang efektif. Penelitian ini bertujuan untuk menganalisis efektivitas sistem pembuangan akumulasi limbah organik antara sistem bandul dan sistem konvensional terhadap kualitas air serta performa produksi tambak udang sistem intensif di PT. Dua Putra Perkasa, Sili, Sumbawa. Metode penelitian menggunakan pembuangan limbah tambak sistem konvensional dan bandul selama penelitian dilakukan pengamatan kualitas air serta performa produksi (SR, FCR, Biomassa) pada kedua perlakuan. Hasil penelitian menunjukkan bahwa secara statistik kepadatan plankton, TOM dan pH berbeda nyata ($P<0,05$) dengan nilai P1 masing-masing 1.139.556 ± 378.437 Ind/mL, *Total Organic Matter* (TOM) 100 ± 7,92 mg/L, dan pH 8,1 ± 0,264 lebih tinggi dari P2. Performa produksi P2 lebih tinggi yaitu nilai masing-masing FCR 1,83 ± 0,096, SR 54,53 ± 3,968%, Biomassa 12.470,09 ± 571,5 kg yang dipengaruhi oleh kualitas air, kualitas benur dan serangan penyakit. Kesimpulannya, perbedaan sistem pembuangan limbah belum efektif memberikan perbedaan nyata, namun lebih berdampak pada performa produksi udang.

Kata kunci: Kualitas Air, Sistem Bandul, Sistem Konvensional, Sistem Pembuangan Limbah, Udang Vaname

ABSTRACT

EFFECTIVENESS OF USING PENDULUM SYSTEM AND CONVENTIONAL SYSTEM IN THE DISPOSAL ACCUMULATION OF ORGANIC METER ON THE WATER QUALITY IN INTENSIVE PASIFIC WHITE SHRIMP (*Litopenaeus vannamei*) POND

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The intensification of pacific white shrimp (*Litopenaeus vannamei*) farming has led to increased accumulation of organic matter, resulting in changes in water quality and ultimately a decline in productivity; therefore, an effective drainage system is required. This study aimed to analyze the effectiveness of organic waste accumulation disposal systems, namely the pendulum system and the conventional system, on water quality and production performance in intensive shrimp ponds at PT. Dua Putra Perkasa, Sili, Sumbawa. The research method used conventional and pendulum pond waste disposal systems during the study, observing water quality and production performance (SR, FCR, Biomass) in both treatments. The results of the researched showed that statistically, plankton density, *Total Organic Matter* (TOM), and pH were significantly different (P<0,05) with P1 values of 1,139,556 ± 378,437 Ind/mL, TOM 100 ± 7.92 mg/L, and pH 8.1 ± 0.264 higher than P2. The production performance of P2 was higher, with FCR 1.83 ± 0.096, SR 54.53 ± 3.968%, and Biomass 12,470.09 ± 571.5 kg, which were influenced by water quality, seed quality, and disease attacks. In conclusion, differences in waste disposal systems have not yet effectively produced significant differences, but have had a greater impact on shrimp production performance.

Keywords: Conventional System, Pendulum System, Wastewater Disposal System, Water Quality, Whiteleg Shrimp