

Intisari

Pengaruh Garam Krosok Konsentrasi 5-25 ppt terhadap Kandungan Nitrat, Fosfat dan Densitas Plankton pada Budidaya Udang Vaname (*Litopenaeus vannamei* Boone, 1931) di Lahan Pedalaman

Lahan pesisir yang kurang tersedia untuk budidaya payau menjadikan budidaya udang di lahan pedalaman sebagai salah satu cara mengatasi masalah ketersediaan lahan tersebut dan penggunaan garam krosok yang dicampur dengan air tawar sebagai media budidaya yang memungkinkan sebagai pengganti air laut. Penelitian ini bertujuan untuk mengetahui pengaruh kadar garam krosok berbeda (5-25 ppt) terhadap kandungan nitrat, fosfat dan densitas plankton serta mencari salinitas optimum untuk budidaya berdasarkan kandungan nitrat, fosfat dan densitas plankton. Penelitian ini dilakukan dengan metode pengamatan pada percobaan budidaya udang vaname yang disusun menggunakan rancangan acak lengkap dengan 5 perlakuan (5, 10, 15, 20, dan 25 ppt) serta 3 kali ulangan. Media budidaya udang menggunakan garam krosok yang dicampur dengan air tawar. Pengambilan sampel air untuk pengamatan nitrat, fosfat dan densitas plankton serta pengukuran kualitas air dilakukan 2 minggu sekali. Data dianalisis menggunakan *analysis of variance* dengan tingkat kepercayaan 95%. Apabila diperoleh hasil berbeda nyata dilanjutkan dengan uji Duncan dan *polynomial orthogonal*. Hasil penelitian yang diperoleh yaitu nilai kandungan nitrat 496-1.075 mg/l, kandungan fosfat 24,1-68,0 mg/l, densitas fitoplankton 1.988-5.616 Ind/l, densitas zooplankton 675-1.891 Ind/l dan kualitas air memenuhi syarat untuk budidaya udang vaname. Hasil yang diperoleh menunjukkan bahwa kadar garam krosok yang berbeda (5-25 ppt) memberikan pengaruh beda nyata ($P < 0,05$) terhadap nitrat, fosfat, densitas fitoplankton dan densitas zooplankton. Konsentrasi optimal garam krosok untuk air budidaya udang vaname berdasarkan kandungan nitrat, fosfat dan densitas plankton adalah berkisar 19,2-25,0 ppt.

Kata Kunci : Densitas, fosfat, nitrat, plankton, salinitas

Abstract

Effect of Unrefined Salt at 5-25 ppt on Nitrate, Phosphate Contents and Plankton Density in inland Whiteleg Shrimp (*Litopenaeus vannamei* Boone, 1931) Aquaculture

Coastal land that is less available for brackish cultivation makes shrimp farming in inland lands one of the ways to overcome the problem of land availability and the use of unrefined salt solved with fresh water as a culture medium is possible as a substitute for sea water. This study aims to determine the effect of different unrefined salt levels (5-25 ppt) on the content of nitrate, phosphate and plankton density also to find the optimum salinity for vanamei shrimp culture based on the content of nitrate, phosphate and plankton density. This research was conducted by using the observation method in an experiment that was arranged using a completely randomized design with 5 treatments (5, 10, 15, 20, and 25 ppt) and 3 replications. Shrimp culture media used unrefined salt solved with fresh water. Sampling of water for observations of nitrate, phosphate and plankton density also measurement of water quality were carried out every 2 weeks. Data were analyzed using analysis of variance with 95% confidence level. If the results are significantly different, then proceed with Duncan's test and orthogonal polynomials. The results obtained that the value of the nitrate content was 496-1.075 mg/l, the phosphate content ranged 24.1-68.05mg/l, the density of fitoplankton ranged 1,988-5,616 Ind/l, the density of zooplankton ranged 675-1,891 Ind/l and the water quality met the requirements for vaname shrimp culture. The results showed that different unrefined salt levels (5-25 ppt) had a significantly different effect ($P < 0.05$) on nitrate, phosphate, phytoplankton density and zooplankton density. The optimal concentration of unrefined salt for vaname shrimp culture based on nitrate and fosfat content, and plankton density range of 19.2-25.0 ppt.

Keywords : Density, nitrate, phosphate, plankton, salinity