

ABSTRACT

HEMATOLOGY AND LIPID DROPLET PROFILE OF HEPATOPANCREATIC PENAEUS VANNAMEI SHRIMP (*Litopenaeus vannamei*) IN FIELD TESTS OF COMBINATION SUPPLEMENTATION Na- ALGINATE *Sargassum* sp. AND VITAMIN C

By

TUTI ADAWIYAH

Immunostimulation supplementation of Na-alginate and vitamin C has been proven to be effective in increasing the immunity of penaeus vannamei shrimp against pathogens on a laboratory scale. The purpose of this study was to determine the effect of combined supplementation of Na-alginate *Sargassum* sp. and vitamin C in field tests on the hematological profile and hepatopancreas lipid droplets of penaeus vannamei shrimp (*Litopenaeus vannamei*). This study used two treatments, namely providing commercial feed without any additions (P1) and providing commercial feed with the addition of Na-alginate 100 ml/kg feed and vitamin C 3 g/kg feed (P2). Feeding was carried out at different levels. The study was conducted in a pond with an area of 3,500 m² with a stocking density of 100 fish/m². Hemolymph sampling was carried out on DOC 35 and DOC 50 to observe the number of total hemocytes (THC), total plasma protein (TPP), and hepatopancreas lipid droplets and to check air quality. The research data by the T test, and the data quality was analyzed descriptively. The results of the study by adding Na-alginate supplementation of 100 ml/kg feed and vitamin C 3 g/kg feed in vaname shrimp cultivation were able to increase THC in DOC 50 to 5.99 x10⁶ cells/ml, TPP values in DOC 35 to 655 mg/ml, and hepatopancreas lipid droplet values ranging from 71% -77%. The conclusion is that the application of a combination of Na-alginate and vitamin C in vaname shrimp is expected to be used as the body's immunity against shrimp diseases.

Keyword : *hematology, hepatopancreatic lipid droplets, Na-alginate, Pacific white shrimp, vitamin C*

ABSTRAK

PROFIL HEMATOLOGI DAN *LIPID DROPLET* HEPATOPANKREAS UDANG VANAME (*Litopenaeus vannamei*) PADA UJI LAPANG SUPLEMENTASI KOMBINASI Na-ALGINAT DAN VITAMIN C

Oleh

TUTI ADAWIYAH

Suplementasi imunostimulan Na-alginat dan vitamin C terbukti efektif meningkatkan imunitas udang vaname terhadap patogen pada skala laboratorium. Tujuan dari penelitian ini adalah untuk menentukan pengaruh suplementasi kombinasi Na-alginat *Sargassum* sp. dan vitamin C pada uji lapang terhadap profil hematologi dan *lipid droplet* hepatopankreas udang vaname (*Litopenaeus vannamei*). penelitian ini menggunakan dua perlakuan yaitu pemberian pakan komersil tanpa penambahan apapun (P1) dan Pemberian pakan komersil dengan penambahan Na-alginat 100 ml/kg pakan dan vitamin C 3 g/kg pakan (P2). Penelitian dilakukan di tambak dengan luas 3.500 m² dengan padat tebar 100 ekor/m². Pengambilan hemolim dilakukan di DOC 35 dan DOC 50 untuk mengamati *total haemocyte count* (THC), total protein plasma (TPP), dan *lipid droplet* hepatopankreas serta pengecekan kualitas air. Data hasil penelitian yang diperoleh ditabulasi menggunakan Microsoft Excel kemudian dilanjutkan dengan uji T, dan data kualitas air dianalisis secara deskriptif. Hasil penelitian dengan menambahkan suplementasi Na-alginat 100 ml/kg pakan dan vitamin C 3 g/kg pakan pada budi daya udang vaname mampu meningkatkan THC pada DOC 50 hingga $5,99 \times 10^6$ sel/ml, nilai TPP pada DOC 35 hingga 655 mg/ml, dan nilai *lipid droplet* hepatopankreas berkisar 71%-77%. Kesimpulannya adalah pengaplikasian kombinasi Na-alginat dan vitamin C pada udang vaname diharapkan dapat digunakan sebagai imun tubuh terhadap penyakit udang.

Kata Kunci : *hematologi, lipid droplet hepatopankreas, Na-alginat, Udang vaname, vitamin C.*