

ABSTRAK

Analisis histopatologi hepatopankreas dan aktivitas enzim *superoxide dismutase* (SOD) udang vaname (*Litopenaeus vaname*) yang diinfeksi virus WSSV dan diberi *crude* protein *Zoothamnium penaei*.

Renita Efa Ratna Sari

Penelitian ini bertujuan untuk mengetahui kemampuan proteksi *crude* protein *Zoothamnium penaei* terhadap udang vaname yang diinfeksi virus WSSV. Selain itu, penelitian ini bertujuan untuk menemukan dan mengimplementasikan imunostimulan yang ramah lingkungan dan aman untuk udang vaname serta konsumen. Penelitian ini menggunakan metode eksperimental, hewan uji menggunakan udang vaname (*Litopenaeus vannamei*). Parameter yang diuji yaitu perubahan patologi anatomi, kerusakan histopatologi hepatopankreas dan kadar enzim SOD udang vaname. Dosis imunostimulan yang digunakan yaitu 3 mg/l. konsentrasi virus WSSV yang diinjeksikan pada udang vaname yaitu 10^{-3} . Hasil penelitian menunjukkan bahwa udang vaname yang diberi *crude* protein *Zoothamnium penaei* tidak mengalami perubahan patologi anatomi yang signifikan, kerusakan histopatologi hepatopankreas yang rendah, dan kadar enzim SOD yang tinggi. Sebaliknya udang vaname yang tidak diberi *crude* protein *Zoothamnium penaei* ditemukan terdapat kerusakan histopatologi hepatopankreas berupa hipertropi, inklusi bodi, vakuolisasi, dan lisis sel. Kadar enzim SOD pada perlakuan ini juga lebih kecil, dan ditemukan perubahan patologi anatomi yang lebih nyata.

Kata Kunci : *Litopenaeus vannamei*, WSSV, imunostimulan, histopatologi, SOD

ABSTRACT

Histopathological analysis of hepatopancreas and superoxide dismutase (SOD) activity of Pacific White Shrimp (*Litopenaeus vannamei*) infected by WSSV and exposed protein crude of *Zoothamnium Penaei*

Renita Efa Ratna Sari

This study aims to determine the protective ability of crude protein of *Zoothamnium penaei* against vaname shrimp infected with WSSV. In addition, this study aims to find and implement environment friendly and safe immunostimulants for Pacific White Shrimp and consumers. This study uses an experimental method, the test animals use Pacific White Shrimp. The parameters tested were changes in anatomic pathology, histopathological damage of hepatopancreas and SOD enzyme levels. The immunostimulant dose used is 3 mg / l. the concentration of WSSV virus injected on vaname shrimp is 10^{-3} . The results showed that vaname shrimp given crude protein *Zoothamnium penaei* did not experience significant anatomic pathological changes, low histopathological damage to hepatopancreas, and high SOD enzyme levels. On the other hand, vaname shrimps that were not given crude protein *Zoothamnium Penaei* were found to have histopathological damage in the form of hepatopancreas in the form of hypertrophy, body inclusion, vacuolization, and cell lysis. SOD enzyme levels in this treatment were also smaller, and more marked anatomic pathology changes were found.

Keywords : *Litopenaeus vannamei*, immunostimulant, anatomic pathology, histopathology, SOD