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ABSTRAK

Bakteri Asam Laktat (BAL) adalah bakteri yang memiliki kemampuan dalam memfermentasi gula atau karbohidrat yang menghasilkan produk akhir asam laktat. BAL banyak digunakan sebagai probiotik dan pengawet makanan karena bersifat aman, mampu berkompetisi dengan bakteri patogen dan menghasilkan bakteriosin yang bersifat antagonis. BAL biasanya terdapat pada usus hewan seperti usus udang. Permasalahan yang dialami petambak udang adalah terserangnya penyakit seperti vibriosis yang disebabkan oleh *Vibrio harveyi* yang dapat menyebabkan kegagalan panen. Oleh karena itu diperlukan antibakteri dalam menghambat pertumbuhan *Vibrio harveyi*. Tujuan dari penelitian ini yaitu untuk mengetahui apakah di dalam usus udang Vannamei terdapat BAL, apakah BAL pada usus udang Vannamei dapat menghambat pertumbuhan *Vibrio harveyi* dan bakteri jenis apa saja yang terdapat pada usus udang vaname. Isolasi BAL menggunakan media MRSA + CaCO₃ 1% dengan teknik pourplate. Karakterisasi BAL meliputi uji Gram, katalase, motility dan uji zona bening. Identifikasi bakteri menggunakan uji biokimia mengacu pada buku identifikasi Cowan and Steel's 1992. Hasil penelitain didapatkan sebanyak 70 isolat bakteri berhasil diisolasi pada media MRSA, kemudian di karakterisasi untuk mendapatkan Bakteri Asam Laktat, dari 70 isolat didapatkan 4 isolat terduga BAL yaitu isolat nomor 2,3,7,dan 61 karena memiliki Gram positif, katalase negatif, motility negatif dan memiliki zona bening. Empat isolat BAL di uji antibakterinya dan dihasilkan zona hambat terbesar diperoleh isolat nomor 2 dengan diameter zona hambat rata-rata $4,25 \pm 1,77$. Kategori zona hambat tersebut dikatakan lemah karena kurang dari 5 mm. Identifikasi bakteri dilakukan sampai pada tingkat genus menggunakan uji biokimia seperti (Gram, katalase, oksidase, motility, OF, glukosa, TSIA, MR, VP, dan gula-gula. Hasil uji biokimia menunjukkan isolat 2,3,61 merupakan bakteri genus *Pediococcus* sp. dan isolat 61 termasuk bakteri genus *Gemella* sp.

Kata kunci : Bakteri Asam Laktat (BAL), Udang Vannamei (*Litopenaeus vannamei*), *Vibrio harveyi*

Ah. Bayhaqi. NIM 180341100062. ACTIVITY OF LACTIC ACID BACTERIA (LAB) FROM THE INTONES OF VANNAMEI SHRIMP (*Litopenaeus vannamei*) IN INHIBITING THE GROWTH OF *Vibrio harveyi*. Under the guidance of Insafitri, S.T., M.Sc, Ph.D

ABSTRACT

Lactic Acid Bacteria (LAB) are bacteria that have the ability to ferment sugar or carbohydrates to produce lactic acid as a final product. LAB is widely used as probiotics and food preservatives because they are safe, able to compete with pathogenic bacteria and produce bacteriocins that are antagonistic. LAB is usually found in the intestines of animals such as shrimp intestines. The problem experienced by shrimp farmers is the attack of diseases such as vibriosis caused by *Vibrio harveyi* which can cause crop failure. Therefore, antibacterial is needed to inhibit the growth of *Vibrio harveyi*. The purpose of this study was to find out whether there was LAB in the vannamei shrimp's intestines, whether the whitewashed shrimp's intestines could inhibit the growth of *Vibrio harveyi* and what types of bacteria were found in the vannamei shrimp's intestines. Isolation of LAB using MRSA + CaCO₃ 1% media with pourplate technique. LAB characterization includes Gram test, catalase, motility and clear zone test. Identification of bacteria using biochemical tests refers to the kand Steel's 1992 identification book. The results of the study found that 70 isolates of bacteria were isolated on MRSA media, then characterized to obtain Lactic Acid Bacteria, from 70 isolates obtained 4 isolates suspected of LAB, namely isolate number 2,3 , 7, and 61 because they have positive Gram, negative catalase, negative motility and have a clear zone. Four LAB isolates were tested for antibacterial and the largest inhibition zone was obtained, isolate number 2 was obtained with an average inhibition zone diameter of 4.25 ± 1.77 . The inhibition zone category is said to be weak because it is less than 5 mm. Identification of bacteria was carried out at the genus level using biochemical tests such as (Gram, catalase, oxidase, motility, OF, glucose, TSIA, MR, VP, and sugars. The results of biochemical tests showed isolates 2,3,61 were bacteria of the genus *Pediococcus* sp. and 61 isolates including bacteria of the genus *Gemella* sp.

Keywords : Lactic Acid Bacteria (LAB), Vannamei Shrimp (*Litopenaeus vannamei*), *Vibrio harveyi*