INTISARI

Bakteri asam laktat (BAL) merupakan salah satu bakteri yang dapat memproduksi asam laktat. BAL dapat ditemukan di berbagai sumber seperti saluran pencernaan manusia, hewan, dan berbagai jenis makanan fermentasi. BAL dapat dimanfaatkan sebagai agen probiotik karena asam laktat yang dihasilkan dapat berperan untuk mengatur pertumbuhan dan kolonisasi bakteri di sistem pencernaan pada manusia dan hewan. Penelitian ini dilakukan untuk mendapatkan isolat bakteri dari udang dogol (*Metapenaeus ensis*) yang berpotensi menghambat pertumbuhan *Vibrio harveyi* dan *Aeromonas hydrophila*. BAL diisolasi dengan metode *pour plating* pada medium MRS agar yang mengandung $CaCO_3$ 1%. Produksi asam laktat diuji dengan metode titrasi dengan titran berupa NaOH dan kemampuan penghambatan terhadap bakteri patogen *Vibrio harveyi* dan *Aeromonas hydrophila* dilakukan dengan metode *agar well diffusion*. Identifikasi bakteri dilakukan dengan pendekatan molekular 16s rRNA. Hasil penelitian menunjukkan 21 isolat bakteri asam laktat berhasil diisolasi dan berdasarkan seleksi diperoleh 4 isolat terpilih dengan produksi asam laktat tertinggi yakni UC10, BC8, KC10, dan B22 secara berturut-turut sebesar 27,565 g/L, 26,348 g/L, 26,112 g/L, dan 22,576 g/L. Isolat BC8 dan B22 mampu menghambat bakteri patogen *Vibrio harveyi* dengan *inhibition score* 0,8 dan 0,37. Berdasarkan hasil karakterisasi morfologi sel, karakterisasi biokimia, dan analisis molekuler 16s rRNA, isolat unggulan BC8 berbentuk *coccus* dan diidentifikasi sebagai *Pediococcus pentosaceus*.

Kata kunci: asam laktat, bakteri asam laktat, udang dogol (*Metapenaeus ensis*), *Pediococcus pentosaceus*.

ABSTRACT

Lactic acid bacteria (LAB) is bacteria that produce lactic acid. LAB can be found in various sources such as the digestive tract of humans, animals, and various types of fermented foods. LAB can be used as a probiotic agent as the lactic acid produced can play a role in regulating the growth and colonization of bacteria in the digestive system of humans and animals. This research was conducted to obtain bacterial isolates from dogol shrimp (*Metapenaeus ensis*) which have the potential to inhibit the growth of *Vibrio harveyi* and *Aeromonas hydrophila*. LAB was isolated using the pour plating method on MRS agar medium containing 1% $CaCO_3$. Lactic acid production was tested using the titration method with NaOH titrant. The inhibitory ability against pathogenic bacteria *Vibrio harveyi* and *Aeromonas hydrophila* was evaluated using the agar well diffusion method. Bacterial identification was carried out using the 16s rRNA molecular approach. The research results showed that 21 isolates of lactic acid bacteria were successfully isolated and based on selection, 4 isolates were selected with the highest lactic acid production, namely UC10, BC8, KC10, and B22 respectively at 27,565 g/L, 26,348 g/L, 26,112 g/L, and 22,576 g/L. Isolates BC8 and B22 were found to inhibit the pathogenic bacteria *Vibrio harveyi* with inhibition scores of 0,8 and 0,37. Based on the results of cell morphology characterization, biochemical characterization, and 16s rRNA molecular analysis, isolate BC8 has a coccus shape and was identified as *Pediococcus pentosaceus*.

Keywords: lactic acid, lactic acid bacteria, dogol shrimp (*Metapenaeus ensis*), *Pediococcus pentosaceus.*