

INTISARI

Bakteri asam laktat (BAL) merupakan bakteri yang bermanfaat bagi kesehatan dan pangan, serta umum berada dalam pencernaan makhluk hidup termasuk hewan laut seperti udang. Penelitian ini bertujuan untuk mendapatkan isolat BAL baru penghasil bakteriosin dari udang Jerbung (*Fenneropenaeus merguensis de Man*) Pantai Gunungkidul. Isolasi dilakukan dengan metode *pour plating* pada medium MRS agar yang ditambah CaCO_3 terhadap sampel kepala, usus dan Daging udang Jerbung. Isolat BAL ditandai dengan zona bening disekitar koloni. Seleksi BAL dilakukan dengan 3 metode, yaitu *disc diffusion method*, *well diffusion method*, dan *agar dilution method* terhadap bakteri indikator *Pediococcus acidilactici* F11. Aktivitas bakteriosin diuji dengan *paper disc diffusion method* terhadap bakteri patogen, *Aeromonas hydrophila* dan *Vibrio harveyi*. Hasil isolasi didapatkan 30 isolat BAL dan 5 isolat diantaranya menunjukkan kemampuan dapat menghambat bakteri *Pediococcus acidilactici* F11 serta bakteri patogen. Lima isolat tersebut adalah U7, U8, D2, K1, K4 dan isolat K4 menunjukkan penghambatan terbesar, yaitu 4800 AU/mL. Produksi bakteriosin oleh isolat K4 berlangsung maksimum pada jam ke-12 hingga 28 dengan aktivitas bakteriosin terhadap *Pediococcus acidilactici* F11 5000 AU/mL.

Kata Kunci : Isolasi, Seleksi, Bakteri Asam Laktat, Bakteriosin, Udang

Abstract

Lactic acid bacteria (LAB) are bacteria that are beneficial to health and food, and are common in the digestion of living things including marine animals such as shrimp. This study aims to obtain new bacteriocin producing LAB isolates from Jerbung shrimp (*Fenneropenaeus merguensis de Man*) Gunungkidul Beach. Isolation was carried out by pour plating method on MRS agar medium which was added with CaCO₃ toward the head, intestine and body samples of Jerbung shrimp. LAB isolates were known as marked with a clear zone around the colony. LAB selection was carried out by 3 methods, namely disc diffusion method, well diffusion method, and agar dilution method against indicator bacteria, *Pediococcus acidilactici* F11. Bacteriocin activity was tested by paper disc diffusion method against pathogenic bacteria, *Aeromonas hydrophila* and *Vibrio harveyi*. The isolation results obtained 30 LAB isolates and 5 isolates of which showed the ability to inhibit the *Pediococcus acidilactici* F11 bacteria and pathogenic bacteria. The five isolates were U7, U8, D2, K1, K4 and isolate K4 showed the greatest inhibition, 4800 AU / mL. The maximum bacteriocin production by K4 isolates took place at 12 to 28 hours with bacteriocin activity against *Pediococcus acidilactici* F11 bacteria 5.000 AU / mL.

Keywords: isolation, selection, lactic acid bacteria, bacteriocin, shrimp