RINGKASAN

Pelabuhan Kualatungkal Ilir di Kabupaten Tanjung Jabung Barat merupakan salah satu kawasan perairan yang rentan terhadap pencemaran minyak akibat aktivitas pelabuhan, seperti bongkar muat kapal, pengisian bahan bakar, serta pembuangan limbah domestik dari masyarakat sekitar. Pencemaran minyak ini mengandung senyawa hidrokarbon yang berbahaya bagi ekosistem perairan. Salah satu solusi penanganan yang ramah lingkungan dan secara biologis adalah melalui bioremediasi, yaitu pemanfaatan bakteri indigenous yang hidup secara alami di lingkungan tersebut dan mampu mendegradasi senyawa minyak. Namun, informasi terkait keberadaan dan potensi bakteri indigenous dari wilayah perairan Pelabuhan Kualatungkal Ilir di Kabupaten Tanjung Jabung Barat masih terbatas. Penelitian ini bertujuan untuk mendapatkan isolat bakteri yang berpotensi mendegradasi minyak dan untuk mengetahui keanekaragaman bakteri indigenous yang memiliki potensi sebagai agen pendegradasi minyak Metode penelitian yaitu *purposive sampling* yang dilakukan dengan pengambilan sampel air tercemar minyak yang kemudian ditumbuhkan dalam media selektif *Stone Mineral Salt Solution* (SMSS) yang diperkaya minyak solar. Proses isolasi dilakukan menggunakan teknik *pour plate* dan *streak plate* untuk memperoleh kultur murni. Selanjutnya, dilakukan karakterisasi isolat melalui pengamatan makroskopis, mikroskopis, serta berbagai uji biokimia seperti katalase, motilitas, indol, TSIA, MR, uji Gram, dan MacConkey agar. Hasil penelitian menunjukkan bahwa sebanyak sembilan isolat bakteri berhasil diidentifikasi, yang terdiri dari enpat genus utama yaitu *Micrococcus* (isolat 1 dan 2), *Alcaligenes* (isolat 4, 5, dan 6), *Klebsiella* (isolat 8) dan S*taphylococcus* (isolat 3, 7 dan 9). Keempat genus ini menunjukkan kemampuan tumbuh di media selektif SMSS, sehingga berpotensi sebagai agen pendegradasi hidrokarbon. Berdasarkan penelitian yang telah dilakukan menunjukkan bahwa bakteri indigenous dari perairan Pelabuhan Kualatungkal Ilir memiliki potensi besar untuk dimanfaatkan dalam proses bioremediasi pencemaran minyak.

Kata kunci: Hidrokarbon, Bioremediasi, Bakteri Indigenous, Pelabuhan Kualatungkal Ilir

SUMMARY

Kualatungkal Ilir Harbor in West Tanjung Jabung Regency is one of the water areas that is vulnerable to oil pollution due to port activities, such as loading and unloading of ships, refueling, and disposal of domestic waste from the surrounding community. This oil pollution contains hydrocarbon compounds that are harmful to aquatic ecosystems. One of the environmentally friendly and biological treatment solutions is through bioremediation, which is the utilization of indigenous bacteria that live naturally in the environment and are able to degrade oil compounds. However, information related to the presence and potential of indigenous bacteria from the Kualatungkal Ilir Harbor water area in Tanjung Jabung Barat Regency is still limited. This study aims to obtain bacterial isolates that have the potential to degrade oil and to determine the diversity of indigenous bacteria that have the potential as oil degradation agents. The research method is purposive sampling which is carried out by taking oil polluted water samples which are then grown in selective Stone Mineral Salt Solution (SMSS) media enriched with diesel oil. The isolation process was carried out using pour plate and streak plate techniques to obtain pure cultures. Furthermore, isolates were characterized through macroscopic, microscopic observations, as well as various biochemical tests such as catalase, motility, indole, TSIA, MR, Gram test, and MacConkey agar. The results showed that a total of nine bacterial isolates were identified, consisting of six main genera namely *Micrococcus* (isolates 1 and 2), *Alcaligenes* (isolates 4, 5, and 6), *Klebsiella* (isolate 8) and *Staphylococcus* (isolates 3, 7 and 9). These four genus showed the ability to grow in SMSS selective media, so they have the potential as hydrocarbon degrading agents. Based on the research conducted, it shows that indigenous bacteria from Kualatungkal Ilir Harbor waters have great potential to be utilized in the bioremediation process of oil pollution.

Keywords: Hydrocarbon, Bioremediation, Indigenous Bacteria, Kualatungkal Ilir Harbor