ISOLATION AND IDENTIFICATION OF *Staphylococcus* spp. ISOLATED FROM RED TILAPIA (*Oreochromis niloticus*)

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ISOLATION AND IDENTIFICATION OF *Streptococcus* spp. ISOLATED FROM RED TILAPIA (*Oreochromis niloticus*)

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ABSTRACT

Streptococcus spp. is one of the most significant diseases in tilapia culture worldwide and particularly in indoor system. *Streptococcus* spp. is the largest problem in intensive tilapia rearing systems throughout the world. Streptococcal infections in fish result in septicemic diseases that have been reported worldwide causing severe economic losses in fish production. This study was conducted to isolate and identify the *Streptococcus* spp. from red tilapia (*Oreochromis niloticus*). In this present study, a total of 127 red tilapias (*Oreochromis niloticus*) were caught in tilapia cage culture in Sungai Manir (Terengganu), Sungai Arau (Perlis), Sungai Kodiang (Kedah), Sungai Tunjang (Kedah) and Aquaculture Development Centre, Jitra, Kedah. The fishes then were dissected and the organs of brain, eye and kidney were streaked directly on Blood Agar (Merck, Germany) containing 5% of human blood. The bacterial colonies then were subcultured on TSA media (Merck, Germany) to get the pure colony. The gram staining process was carried out to all isolates and only five out of 127 isolates turned out to be positive. Out of these, only three isolates showed negative result for catalase test. Phenotypic characterization was performed using combination of a standard conventional method and a commercial Identification System kit (BBL Crystal, USA). Two isolates were identified as *Streptococcus agalactiae* and one isolate was identified as *Streptococcus anginosus*.

ABSTRAK

Streptococcus spp. adalah salah satu bakteria pembawa penyakit yang nyata di dalam penternakan ikan tilapia di seluruh dunia. *Streptococcus* spp. juga merupakan masalah terbesar di dalam penternakan ikan tilapia secara sistem intensif di dunia pada masa kini. Jangkitan Streptococcal terhadap ikan menyebabkan penyakit septik yang telah dilaporkan dari seluruh dunia sehingga menyebabkan kejatuhan teruk ekonomi di dalam sektor pengeluaran ikan. Kajian ini telah dijalankan dengan memencil dan mengidentifikasi *Streptococcus* spp. daripada ikan tilapia merah (*Oreochromis niloticus*). Di dalam kajian yang telah dijalankan, sejumlah 127 ekor ikan tilapia merah (*Oreochromis niloticus*) telah ditangkap di tempat penternakan ikan tilapia merah dalam sangkar dekat Sungai Manir (Terengganu), Sungai Arau (Perlis), Sungai Kodiang (Kedah), Sungai Tunjang (Kedah) and Pusat Pengembangan Akuakultur, Jitra, Kedah. Ikan-ikan tersebut kemudian dibedah. Bahagian organ otak, mata dan buah pinggang digaris halus di atas media agar darah yang mengandungi 5% darah manusia. Koloni bakteria itu kemudian disubkulturkan di atas media TSA (Merck, Jerman) untuk mendapatkan koloni yang tulen. Proses 'gram staining' telah dijalankan ke atas semua pemencilan dan hanya lima pemencilan dari keseluruhan 127 pemencilan mendapat keputusan positif. Daripadanya, hanya tiga pemencilan menunjukkan ke keputusan negatif untuk ujian catalase. Ciri-ciri kefenotipan telah ditunjukkan melalui kaedah kombinasi konvensional dan sistem kit identifikasi (BBL Crystal, USA). Dua pemencilan itu adalah merupakan *Streptococcus agalactiae* manakala satu lagi pemencilan merupakan *Streptococcus anginosus*.