

SCREENING OF COLIFORM BACTERIA AND *Salmonella* spp. FROM
SHORT NECKED CLAM, *Orbicularia obiculata* (LALA) AT
SEMERAK, PASIR TUTUH, KELANTAN.

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FACULTY OF AGRICULTURE AND FOOD SCIENCE
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KELANTAN.

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Abstract

Shellfish are filter feeders. They are able to ingest particles in suspension that may carry pathogenic microorganisms. The short necked clam, *Orbicularia orbiculata* locally named as lala were purchased from three different stalls (each 100 grams samples of each stalls) at Semerak, Pasir Puteh. They were screened for coliform bacteria and *Salmonella* spp. via Most Probable Number (MPN) method and identified to species level using 13 biochemical and morphological tests. The pathogens such as *Escherichia coli*, *Klebsiella* spp. and *Salmonella* spp. were isolated from *Orbicularia orbiculata*. These pathogens are common cause of food borne illness associated with seafood consumption. Pure cultures of *Escherichia coli*, *Klebsiella* spp. and *Salmonella* spp. obtained from positive results were tested for their growth pattern by streak plate methods and biochemical test for confirmation. Different selective media like EMB (Merck,Germany) MacConkey (Merck,Germany) and XLD (Merck,Germany) were used to isolate bacteria. Initial analysis from the MPN/Index table showed high coliform bacteria in raw meat short necked clams. These indicated of the presence of *Escherichia coli*, *Klebsiella* spp. and *Salmonella* spp. *Escherichia coli* and *Salmonella* spp. were isolated from *Orbicularia orbiculata* that purchased from all different stalls, while, *Klebsiella* was isolated only from *Orbicularia orbiculata* purchased from stall B. In this respect, the consumption of raw *Orbicularia orbiculata* can cause food borne diseases in humans.

Abstrak

Organisma bercangkerang merupakan pemakan secara menapis. Organisma ini berupaya untuk memakan pelbagai jenis partikel termasuk mikroorganisma patogenik. Lala, *Orbicularia orbiculata* dibeli daripada tiga gerai yang berasingan (100 gram setiap gerai) di Semerak, Pasir Putih, Kelantan. Lala ini kemudian diuji untuk kehadiran bakteria koliform dan *Salmonella* spp. melalui kaedah *Most Probable Number* (MPN) dan spesies bakteria tersebut dikenalpasti dengan menggunakan 13 ujian fisiologikal dan biokimia. Patogen seperti *Escherichia coli*, *Klebsiella* spp. dan *Salmonella* spp. dipencilkan daripada *Orbicularia orbiculata*. Patogen-patogen ini adalah penyebab utama keracunan makanan yang berkaitan dengan makanan laut. Kultur tulen *Escherichia coli*, *Klebsiella* spp. dan *Salmonella* spp. yang diperolehi daripada keputusan positif MPN telah diuji bagi mengetahui corak perkembangan melalui kaedah penyebaran atas agar dan ujian biokimia sebagai pengesahan. Media *selective* yang berlainan seperti EMB (Merck, Germany), MacConkey (Merck, Germany) dan XLD (Merck, Germany) digunakan untuk memencilkan bakteria. Analisis awal daripada jadual MPN/Indeks menunjukkan kadar bakteria koliform yang tinggi di dalam daging mentah lala. Ini menunjukkan kehadiran *Escherichia coli*, *Klebsiella* dan *Salmonella* spp. *Escherichia coli* dan *Salmonella* spp. dapat dipencilkan daripada lala yang dibeli di setiap gerai, manakala *Klebsiella* spp. dapat dipencilkan daripada *Orbicularia orbiculata* dalam gerai B sahaja. Ini membuktikan bahawa, pengambilan *Orbicularia orbiculata* secara mentah boleh menyebabkan keracunan makanan terhadap manusia.