

ABSTRAK

Bumbu mengandung antioksidan alami yang dapat menangkal radikal bebas dalam tubuh. Limbah logam berat timbal (Pb) merupakan zat pencemar yang berbahaya bagi tubuh manusia dan dapat memicu terjadinya radikal bebas. Kepiting bakau (*Scylla olivacea*) memiliki potensi yang besar dapat tercemar logam timbal karena habitatnya berada di daerah hilir yang menerima pasokan limbah dari hulu. Penelitian ini bertujuan untuk mengetahui apakah terdapat pengaruh bumbu terhadap kadar Pb dalam daging kepiting bakau. Sampel kepiting bakau diambil dari tambak Pasir Sakti Lampung Timur. Penelitian ini merupakan penelitian eksperimen dengan Rancangan Acak Lengkap (RAL). Penelitian ini menggunakan 4 perlakuan, 1 sebagai kontrol dan 3 perlakuan dengan variasi bahan bumbu yang berbeda (5, 10, dan 12 jenis bahan bumbu). Masing-masing perlakuan memiliki 8 ulangan. Kemudian sampel dianalisis kadar Pb menggunakan Metode Spektrofotometer UV-Vis. Berdasarkan hasil analisis statistik, $F_{hitung} = 25,27 \geq F_{tabel} = 2,95$ maka H_0 ditolak sehingga dapat disimpulkan bahwa terdapat pengaruh perlakuan variasi bahan bumbu terhadap kadar Pb pada daging kepiting bakau. Berdasarkan analisis uji BNJ, perlakuan C merupakan perlakuan yang paling tepat dalam menurunkan kadar timbal pada daging kepiting bakau (*Scylla olivacea*), persentase penurunan kadar logam timbal pada perlakuan C yaitu sebesar 42,21%. Data hasil penelitian dikembangkan menjadi sumber belajar biologi dalam bentuk LKPD. Berdasarkan hasil analisis validasi, nilai berada pada rentang 76% - 100% atau pada kriteria "Baik" maka LKPD ini layak dijadikan sebagai sumber belajar biologi.

Kata kunci: bumbu, kepiting bakau (*Scylla olivacea*), timbal (Pb), LKPD

ABSTRACT

Spices contain natural antioxidants that can counteract free radicals in the body. Heavy metal waste lead (Pb) is a pollutant that is harmful to the human body and can trigger the occurrence of free radicals. Mangrove crab (*Scylla olivacea*) has a great potential to be contaminated with lead metal because its habitat is in the downstream area which receives a supply of waste from upstream. This study aims to determine whether there is an effect of seasoning on Pb levels in mud crab meat. Mangrove crab samples were taken from Pasir Sakti ponds, East Lampung. This research is an experimental study with a completely randomized design (CRD). This study used 4 treatments, 1 as control and 3 treatments with different variations of spices (5, 10, and 12 types of seasonings). Each treatment had 8 replications. Then the samples were analyzed for Pb levels using the UV-Vis Spectrophotometer Method. Based on the results of statistical analysis, $F_{count} = 25.27$ $F_{table} = 2.95$ then H_0 is rejected so it can be concluded that there is an effect of spice variation treatment on Pb levels in mud crab meat. Based on the analysis of the Tukey's HSD test, treatment C was the most appropriate treatment in reducing lead levels in mud crab meat (*Scylla olivacea*), the percentage reduction in lead metal levels in treatment C was 42.21%. The research data was developed into a biology learning resource in the form of LKPD. Based on the results of the validation analysis, the value is in the range of 76% - 100% or on the "Good" criteria, this LKPD is worthy of being used as a source of learning biology.

Keywords: seasoning, mud crab (*Scylla olivacea*), lead (Pb), LKPD