

**ANTIOXIDANT , TOXICITY AND PROXIMATE  
ANALYSIS FROM SEDIMENT OF *Manihot esculenta*  
(TAPIOCA)**

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## ABSTRACT

### ANTIOXIDANT, TOXICITY, AND PROXIMATE ANALYSIS OF SEDIMENT FROM *Manihot esculenta* (TAPIOCA)

Cassava well known as *Manihot esculenta* was a types of grown roots while the leaves is considered as the by-product. Its stems, leaves and the roots contain their own antioxidant level, toxicity and nutrient composition. The roots was the main part of the cassava that usually consumed by the people in tropical and subtropical countries as the carbohydrates content is higher. In the production of chips, the cassava's sediment usually disposed and not been used that might content beneficial nutrition that give advantage to the environment. Therefore the research was done to identify the antioxidant level in the sediment of *Manihot esculenta*, to determined the toxicity level of the sediment from *Manihot esculenta* and to identify the proximate analysis of sediment from *Manihot esculenta*. The antioxidant was identified by using the DPPH free radical scavenging activity with different concentration level such as 1000,500,400,300,200,100 µg/ml. The result showed that the highest antioxidant activity of the sediment was 88.79%(1000µg/ml) followed by 84.73% (500µg/ml), 80.68%(400 µg/ml), 71.17%(300µg/ml), 57.47(200µg/ml) and the lowest concentration was 100µg/ml with 38.01%. Next, the toxicity level was identified by using Brine shrimp lethality test with different concentration such as 100 mg/ml, 50 mg/ml, 25 mg/ml, 12.5 mg/ml,6.25 mg/ml, 3.125 mg/ml and 1.5625 mg/ml. Lethal concentration (LC<sub>50</sub>) of the sediment was 4.244 showed that non toxicity level as was higher than 1mg/ml. Other than that, the nutrient content of the sediment was identified by using protein analysis and drying oven method. The cassava's sediment containing higher carbohydrate (85.46%) followed by moisture content (11.85%), ash content (1.42%), fat content (1.37%) and the lowest content was protein with 0%. This study showed that the sediment also might be potential to produce a healthy food since it has high carbohydrate content, high antioxidant with non toxicity level.