Determination of Lead in Ostrea rizophora at Jobos Bay

Colon, Nicole

Some species such as oysters can change their vital functions and/or their genetic composition, becoming bioindicators, when there are alterations in their environment. The hypothesis is: if Ostrea Rhizophora has the capacity to accumulate pollutants, then it can be used as a bioindicator of contaminants to identify the presence of lead. Oysters that were caught by a fisherman at Jobos Bay were used for this research. After calcination, acid digestion was carried out using a 1:1 solution of nitric and hydrochloric acid. The samples were centrifuged to separate the solid particles from the liquid to extract the supernatant. The supernatant was processed using the atomic absorption spectrophotometry method to measure the absorbance. The calibration curve was prepared using the standards: 0.05, 0.25, 0.5, 1, 2 and 5 ppm lead. The analysis of samples evidenced that there was no presence of lead. It is important to emphasize that in one of the samples the result was 0.004 ppm presence of lead, however, this result did not fall within the calibration curve used nor exceeded the maximum of lead in mollusks allowed by the FDA , which is 1.5 µg / g to 6.3 µg / g. It was concluded that Jobos Bay is free of the presence of lead as evidenced by using oysters as bioindicatos. Therefore, the hypothesis was rejected since most of the samples were negative. For future research oysters samples from different places and at different times of the year, especially during the rainy season, can be considered.

Awards Won: