



# Profiling of Heavy Metals in 'Kawakawa' (*Euthynus affinis*) and Seawater and Bottom Sediments in Sarangani Coastline, Mindanao, Philippines

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## Abstract

Heavy metals have the ability to accumulate in the human body and disrupt functions of some vital organs. These metals can find their way into humans by consumption of metal-contaminated fish. In this study, the presence of heavy metals was assessed in muscle tissues of 'kawakawa' tuna (*Euthynus affinis*) from General Santos City Fish Port (GSCFP) and in Kiamba fish landing site, as well as seawater and bottom sediments along Sarangani coastline. The heavy metals cadmium (Cd) and lead (Pb) were analyzed using atomic absorption spectrophotometry; while for mercury (Hg) cold vapor atomic absorption spectrophotometry was used. Results revealed that heavy metals in the three 'kawakawa' samples from GSCFP had Hg concentration ranging from 0.045 to 0.108 mg·kg<sup>-1</sup> which were below the limit set by the United States Food and Drug Administration. This implies that in general, the tuna samples do not pose a serious threat to the health of the consumers. Sediments obtained from Sarangani coastline showed presence of Pb at 62.27 mg·kg<sup>-1</sup> which is below the 128 mg·kg<sup>-1</sup> limit. Assessment of the pollution status of the study area revealed that the bottom sediments can be classified as unpolluted to moderately polluted from all levels of Cd, Pb, and Hg, which implies minimal heavy metal exposure of tuna species in the area. To ensure that no further contamination of seawater and bottom sediments occurs, possible sources of heavy metals such as the industries, should be regulated by implementing more stringent effluent standards.