

BIOACCUMULATION OF HEAVY METALS IN
FISH MUSCLE AT THE LIKAS BAY,
KOTA KINABALU

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JULY 2016

ACKNOWLEDGEMENTS

First and Foremost, I would like to thank to Allah S.W.T for giving me the chance to complete this project. I would also like to express my very gratitude to my supervisor, Mr. Ajimi Hj Jawan because giving me guidance and encouragement throughout completing this final year project. Without his encouragement, i would not be able to finish this research project on time.

I would also like to extend my appreciation to my family especially my parents because giving me supports in terms of finance, moral and continuously giving me encouragement to finish this project.

I'm also giving my gratitude to my colleagues especially Zul Izzah binti Zulkifli, Mohd Yuery Wazlan and Mohd Abdul Fikri bin Indara for accompany me during sampling throughout this project.

I'm also appreciate the lab assistants that give cooperation especially, Mr. Mohamad hanafi bin Sadli, Mr. Amzah Hj. Jaafar, Mrs. Noor Ezawaanie Hj Moulton, Mrs. DK. Suhana AK Yunos and Mrs. Atifah Remat. I would also like to extend my gratitude to Mr Awang, the fisherman in Kg Bangka-Bangka for their cooperation during collecting my samples.

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ABSTRACT

BIOACCUMULATION OF HEAVY METAL IN FISH MUSCLE AT THE LIKAS BAY, KOTA KINABALU

Heavy metal can cause a potential hazard to human such as gastrointestinal effect and cancer. This study aim to identify the concentration of heavy metal namely Cadmium (Cd), Copper (Cu), and Iron (Fe) in the water and fish sample located in 5 station in Likas Bay, Kota Kinabalu and correlates the relationship between the heavy metals in both water and fish. Moreover, the physiochemical parameters were also determined along the station. The detection of heavy metal in both water and fish were compared with the maximum permissible limit in various organizations to assess the safe consumption in human. Acid digestion was used to digest both fish and water sample and only 0.5g composite samples of muscle part of the fish were taken to analyzed. Atomic Absorption Spectrometry (AAS) was used to analyze all samples in this study. From the study, it is found that all fish fall below the maximum permissible limit by various organizations established by FAO/WHO limit (1989), WHO (1989), England (2000), and Malaysian Food Act 1983 & Food Regulation 1985. However, in water samples, only copper meet the standard of the maximum permissible limit meanwhile Iron and Cadmium exceed the standard. The current study also showed that Iron, Fe is the most found heavy metal in the water and fish compared to the Cadmium and Copper and were further supported by a strong positive correlation of heavy metals in *Hexanematichrys sago* accumulation toward iron with the spearman correlation value of 0.733.