

**UNIVERSITI TEKNOLOGI MARA**

**BIOACCUMULATION OF HEAVY METALS IN  
DRIED SQUIDS (*LOLIGO SP.*) IN MELAKA  
TENGAH DISTRICT**

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**Project submitted in partial fulfillment of the requirement for the Degree of  
Bachelor in Environmental Health and Safety (Hons.)**

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## Declaration by Student

Project entitled “Bioaccumulation of Heavy Metals in Dried Squids (*Loligo sp.*) in Melaka Tengah District” is a presentation of my original research work. Wherever contributions of others involved, every effort is made to indicate this clearly, with due reference to the literature and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor Miss Farah Ayuni binti Shafie. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for Bachelor of Degree in Environmental Health and Safety (Hons).

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## ABSTRACT

### **Bioaccumulation of Heavy Metals in Dried Squids (*Loligo sp.*) in Melaka Tengah District**

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Anthropogenic activities continuously increase the amount of heavy metals in the environment, especially in aquatic ecosystem. As heavy metals cannot be degraded thus, they are deposited in water, sediment and aquatic animals. Therefore, heavy metals can be bioaccumulated and biomagnified via the food chain and finally assimilated by human consumers resulting in health risks. Dried squids were purchased randomly from different markets in Melaka Tengah district and selected according to the species and size range from 30 to 40 cm. The samples were homogenized and been ash using muffle furnace. Heavy metals were analysed using Graphite Furnace Atomic Absorption Spectrophotometer (GFAAS). From this study, the heavy metal concentrations revealed an order of  $Zn > Cu > Cd$ . Besides, there are no significant difference between heavy metal concentrations in samples from batch 1 and batch 2. In addition, for the point of view for the public, all the studied heavy metal concentrations were below the maximum permissible levels that had been set according to Malaysia Food Act 1983 and Regulations. The concentrations were also below the levels regarded by several selected food safety guidelines. Moreover, the hazard index for both batches of dried squids from *Loligo sp.* was less than 1.0. This value indicates that the intake of the heavy metals from the consumption of the dried squids does not pose an appreciable hazard to humans. The results could establish a baseline for heavy metals deposited in squids in order to monitor heavy metal pollution trends in the future.

**Key words :** dried squid (*Loligo sp.*), heavy metals, bioaccumulation, hazard index.