ASSESSMENT OF CADMIUM (Cd) AND LEAD (Pb) IN THE ORGANS OF *Nemipterus japonicus* FROM WET MARKETS AND SUPERMARKETS IN KLANG VALLEY

GOH SOOK KUAN

B. Sc. (Hons.) FOOD SCIENCE & NUTRITION
FACULTY OF APPLIED SCIENCES
UCSI UNIVERSITY

2010

ABSTRACT

Heavy metals are non-degradable and tend to accumulate in human body after the consumption of metal contaminated fish. There were no studies has been done with the fishes sold in the Malaysia wet markets and supermarkets. The objectives of present study were (i) to assess and compare the levels of heavy metals (cadmium and lead) in the brain, muscle, gills, liver, intestine and kidney of *Nemipterus japonicus* sold in wet markets and supermarkets within Klang Valley (ii) to evaluate the food safety of the commercial *Nemipterus japonicus* sold in Klang Valley markets. The fish samples were collected from five wet markets and supermarkets. The heavy metals in the mentioned fish organs were extracted via wet digestion and analysed with flame atomic absorption spectrometer (FAAS). Brain of *Nemipterus japonicus* was found to accumulate the highest levels of cadmium and lead, followed by kidney, liver, intestine, gills and muscle. Each heavy metal content in the fish organs sampled from wet markets showed no significant differences with those from supermarkets, except the lead content in liver, intestine and kidney. However, the heavy metal contents in supermarkets were slightly higher than wet markets. Present result showed that the cadmium (0.3791 mg/kg – 0.5566 mg/kg) and lead (0.2923 mg/kg - 0.5915 mg/kg) contents in the muscle of *Nemipterus japonicus* sampled from the ten markets had exceeded the standard limit set by FAO/WHO (1984) but were allocated well under the permissible level set by Malaysia Food Regulation (1985). The estimated weekly intake of *Nemipterus japonicus* from the ten different markets in Klang Valley were lower than the PTWI set by JECFA (2000, 2004) which indicated that the *Nemipterus japonicus* used in present study were safe for consumption according to Malaysian standards.