



UNIVERSITI TEKNOLOGI MARA

**ASSESSMENT OF HEAVY METAL (LEAD, NICKEL,
ZINC) IN PALM OIL PLANTATION SOIL AND ITS
POTENTIAL HEALTH RISK AT PASIR SALAK,
PERAK.**

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Declaration by Student

Project entitled “ Assessment of Heavy Metal in oil palm plantation soil and its potential health risk at Pasir Salak, Perak” is a presentation of my original research work. Whenever contribution of others are involved, every effort is made to indicate this clearly, with due to reference to literature, and acknowledgement of collaborative research and discussion. The project was done under the guidance of En. Razi Ikhwan Bin Md. Rashid as Project Supervisor. It has been submitted to the Faculty of Health Science in partial fulfillment of the requirement for the Degree of Bachelor in Environmental and Safety (Hons.)

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Abstract

Assessment of heavy metal (Lead, Nickel, ZInc) in oil palm plantation soil and its potential health risk

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According to Justice O. Odoi (2011), soil heavy metals have been a useful sign to the environmental quality. Soils are functioning in providing the basis for food and biomass production, controlling and regulating environmental interactions, providing valued habitats and sustaining biodiversity. Study location was selected at two oil palm plantation at Kg.Changkat Rambai, Pasir Salak. Chemical analysis was used for analysis of lead, nickel and zinc. A statistical analysis that is statistical package for the social science (SPSS) version 18 was used in this study. Concentration of Pb, Ni and Zn have been detected in all sampling points. But the concentration are varies for each heavy metal. In addition, there was significant difference between lead concentration in soil and sampling location ($p < 0.05$). While there were no significant difference between both nickel and zinc concentration with sampling location ($p > 0.05$). Only zinc concentration for both sampling point comply with the Contaminated Land Management and Control Guidelines while nickel concentration for both sampling point are exceed the guideline. All heavy metal concentration for both sampling location were comply with the Canadian Environmental Quality Guideline. Health risk assessment found out that there is no adverse health effect ($HI < 1$) associated with the exposure of all heavy metal via dermal contact and inhalation for farmers.

Keywords: Soil, Palm Oil Plantation, Lead, Nickel, Zinc, Farmers.

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