

## Human health risks of heavy metals in okra (*Abelmoschus esculentus*) and lettuce (*Lactuca sativa*) collected from selected farms in Peninsular Malaysia

### ABSTRACT

The present study investigated the concentrations of Cu, Fe, Ni, Pb and Zn in fruit okra (*Abelmoschus esculentus*) and leafy lettuce (*Lactuca sativa*) collected from selected farms in Peninsular Malaysia, based on cited and unpublished data. For the leafy lettuce, the metal concentrations (mg/kg dry weight) were 1.18-13.9 for Ni, 1.67-24.7 for Cu, 19.0-120 for Zn, 0.20-2.12 for Pb and 71.5-306 for Fe. For the fruit okra, the metal concentrations (mg/kg dry weight) were 1.19-14.4 for Ni, 5.93-20.2 for Cu, 23.7-123 for Zn, 0.01-2.21 for Pb and 43.9-172 for Fe. To estimate the human health risk assessment, all values of target hazard quotient for the 5 metals in the adults of Malaysian population were found below 1.00. This showed that there was no non-carcinogenic risk of the 5 metals via the consumption of okra and lettuce from the present study. Still, it is highly recommended that frequent monitoring of toxic chemicals besides heavy metals should be carried out for possible chemical contamination in the edible vegetables in Malaysia.

**Keywords:** Heavy metals; Health risk assessment; Okra; Lettuce