

Invited Talk 6.1

NORMs in cultivated honey in Malaysia and concomitant dose to the consumers

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Food consumption is one of the main pathways that lead to the radiation exposure to human body. Honey is well known for its nutritional value, thus finds great demand by the world communities including by Malaysian. This study assess the concentrations of natural and artificial radionuclides (especially ²²⁶Ra, ²²⁸Ra, ⁴⁰K and ¹³⁷Cs) in 8 category of honey produced in Malaysia via High Purity Germanium γ -ray spectrometry. Activity concentration of ²²⁶Ra, ²²⁸Ra and ⁴⁰K radionuclides in honey samples found to be in the range of 3.5 ± 0.4 – 4.5 ± 0.4 Bqkg⁻¹, 1.0 ± 0.4 – 1.7 ± 0.4 Bqkg⁻¹ and 41.4 ± 3.3 – 105 ± 7 Bqkg⁻¹, respectively. Present study show no data for ¹³⁷Cs or it was below the detection limit. The average committed effective dose via consumption of honey are estimated to be <1 μ Sv/y, which is much lower than the permissible limit 290 μ Sv/y (for all sources of natural radiation) given by the UNSCEAR. Such a lower dose is attributed to the very little consumption of honey by Malaysian population. This study shows no significant radiological threat to human health and safe to consume in daily life.

Keywords: Honey; HPGe γ -ray spectrometry; Natural and fall out radionuclides; Committed effective dose