## E1-03: An investigation of the presence of radionuclides in dried fish

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South and South West coast beaches in Sri Lanka have been reported to indicate radiation levels (0.8 to 7.0 μSv/h) due to the presence of monozite. This motivated a search for a possible contamination of dried fish with radioactive material present on the beach sand during processing.

20 dried fish varieties (both local and imported) were collected from the local market and spectral measurements of unwashed samples were conducted using a Gamma ray spectrometer equipped with a Hyper Pure Germanium (HPGe) detector. The measurements revealed that the natural radionuclides namely $^{40}K$, $^{232}Th$ and $^{238}U$ with activity concentrations 212±1 - 943±49 Bq/kg, 46±2 - 215±19Bq/kg and 34±9 - 61±15 Bq/kg respectively were present in both local and foreign dried fish varieties. Washed dried fish samples showed a significant decrease in the activity concentration with a remarkable average decrease of ~37% of $^{40}K$. The activity concentration of $^{40}K$ in the washed samples is within the corresponding range of values for fresh fish (i.e.200-400 Bq/kg). The excess activity concentration of $^{40}K$ observed for unwashed samples may be attributed to the contamination with $^{40}K$ indirectly introduced due to processing methods of dried fish and human activities in the areas of production and storage. Foreign samples had activity below detection limits for $^{238}U$ once washed. However, the $^{238}U$ and $^{232}Th$ concentrations in the local washed samples did not decrease significantly suggesting that these radionuclides are