NT-06

TRANSFER OF NATURAL RADIONUCLIDES FROM SOIL TO *Centella asiatica*, A MEDICINAL PLANT GROWN IN COLOMBO DISTRICT, SRI LANKA

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Natural radionuclides are taken up by the herbs from the environment and are accumulated in varied concentrations in different parts of the plant. Therefore, it is considered as a type of contaminant in herbal medicines, which may harm consumers by long term usage. *Centella asiatica* (L) Urban is a weedy plant grown in Sri Lanka, which is widely used in folk medicine and also routinely consumed as a green leafy vegetable by majority of population. The objective of the present study is to determine the transfer of natural radionuclides from soil to *C. asiatica* grown in Colombo district and assess the safety level of routine consumption. The plant and surface soil samples were collected from 10 different locations within Colombo district from where the samples are mainly supplied to local markets. The activity of radionuclides were determined by analysing gamma spectroscopy obtained using HPGe detector. The average activity concentration of 238U, 232Th and 40K in the plants were 116 ± 38 Bq kg^{-1},115 ± 38 Bq kg^{-1} and 1108 ± 298 Bq kg^{-1} respectively. The average soil to plant transfer factor of 238U, 232Th and 40K were 0.5, 0.4 and 15 respectively. The threshold consumption rates for plant samples were ranged from 1 to 28 kg yr^{-1}. The calculated average committed effective dose for annual intake of the C. *asiatica* samples was 0.1 mSv yr^{-1}, while the world average annual effective dose is reported as 0.3 mSv yr^{-1}. The results of the present study suggest, that the routine usage of *C. asiatica* as a medicinal plant as well as an edible plant is safe in terms of the radiological health hazards.

Keywords: Natural Radionuclides, medicinal plants, transfer factor, safety level