

# **AN INVESTIGATION OF THE QUNTITY OF HEAVY METALS IN DRINKING WATER RESOURCES OF KULUGAMMANA, SRI LANKA**

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Throughout history, the quality of drinking water has been a factor in determining human welfare. There is no such thing as naturally pure water. In nature, all water contains some impurities. Some of the heavy metals are among the most harmful chemical pollutants and are of particular concern because of their toxicities to humans. Many studies have shown that, agricultural practices like, cultivation, fertilization, pesticide application in farm lands are principal causes of heavy metal contamination in ground and surface water, because fertilizers are usually not sufficiently purified during the processes of manufacture, they usually contain several impurities including heavy metals. Also heavy metals often form a part of the active compounds of pesticides.

This study was aimed to determine the levels of six heavy metals; cadmium, chromium, copper, lead, manganese and zinc in water resources of Kulugammana, a village in central Sri Lanka, where pesticides and fertilizers are used frequently in agriculture. A field study was carried out prior to sampling and five types of water resources were identified- Agro wells, domestic wells, tap water, tube wells and springs. Most of the villagers use domestic wells as the source of drinking water. Atomic Absorption Spectrometry was used to determine the concentration of each of the six heavy metals.. Manganese, copper and zinc were detected in all the five types of water resources. However the levels of heavy metals in drinking water resources of Kulugammana found to be within the WHO and Sri Lanka standards. Only the copper concentration in partially flushed tap water found to be significantly higher than that of domestic well water. The differences in levels of all the other metals in the different types of resources were not significant.