

ANALYSIS OF GROUND WATER SAMPLES TO IDENTIFY FOR CONTRIBUTORS OF CKDU

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Chronic Kidney Disease of unknown etiology (CKDu) that emerged in the North Central Province in the mid-1990s is a leading concern at present in Sri Lanka. Though the root cause of CKDu is still mysterious, it is found to be endemic in the agricultural communities. Places with high ground water hardness, high fluoride and heavy metals concentrations correlate with the geographical distribution of CKDu in Sri Lanka. As such, CKDu emerging Bedirekka of Mahaoya Divisional Secretariat and CKDu non reported agricultural community, Pottuvil, located in Ampara district were selected as probable candidates for the study. In this preliminary study, the physicochemical parameters of water (hardness, pH, temperature, turbidity and electrical conductivity) that the residents of Bedirekka and Pottuvil consume were analyzed to determine their contribution to CKDu endemic in the area. Samples (n=6) from ground water of Bedirekka and Pottuvil were collected and examined for hardness and physical parameters. They were statistically analyzed for comparison to come to a possible conclusion. When two sample *t*-test was performed at 5% significance level ($\alpha=0.05$, n=4), hardness (p=0.308), pH (p=0.417) and turbidity (p=0.155) showed any significant difference while electrical conductivity (p=0.001) and temperature (p=0.026) showed a significant difference between the two sets of sample. The significant difference displayed by electrical conductivity and temperature is due to the location of Pottuvil near to the coastal area. Hence it was concluded that the parameters analyzed hold no significant correlation with CKDu.

Key words: CKDu, Bedirekka, agricultural communities, hardness, electrical conductivity