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**ASSESSMENT OF WELL WATER QUALITY IN
SINNASIPPIKULAM VILLAGE, VAVUNIYA DISTRICT**

BY

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ABSTRACT

Ground water quality is important as it is the main factor determining its suitability for drinking, domestic, agricultural and industrial purposes. Scarcity of clean drinking water is being felt by billion of people around the world. Therefore, a clean and efficient use of water resources seems to be a very important issue. Increasing population, rapid depletion of resources and pollution make it difficult to have clean and health water resources. This study aimed to assess and compare the well water quality with WHO standards in sinnasippikulam village, 210A, Sinnasippikulam G.N Division in Cheddikulam G.S Division, Vavuniya District.

Twenty locations were selected randomly and three water samples have been taken from each location. Three hundred well water samples were collected since February 2014 to June 2014 to analyze the physical and chemical parameters at laboratory of Agricultural Engineering, Faculty of Agriculture, Eastern University, Sri Lanka and laboratory of water board, Vavunatheevu. Physical parameters tested include Total Dissolved Solids, Electrical Conductivity, pH and Temperature while chemical parameters such as hardness, nitrate and phosphate. The mean values of these parameters of well water at Sinnasippikulam village during study period were obtained as pH (8.70 ± 0.49), temperature (27.32 ± 1.66 °C), electrical conductivity ($1539.90 \pm 579.31 \mu\text{s/cm}$), total dissolved solid (753.8 ± 294.71 mg/l), turbidity (1.23 ± 0.80 FAU), total hardness (693.22 ± 178.69 mg/l), phosphate (0.74 ± 0.26 mg/l) and nitrate (3.03 ± 1.62 mg/l). Among these parameters hardness and pH were considerably high from WHO permissible limits for drinking water.

Questionnaire survey was carried out in this village. A number of fifty households were selected randomly to collect data. Based on the questionnaire survey, 30% of people were affected by kidney problem. In this circumstance, hardness of the water might be one of the reasons for this problem. This study suggests that regular monitoring of water quality should be practiced and water treatment plants should be installed by local government to provide quality drinking water.

Key words: Water quality, WHO standards and Sinnasippikulam village

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