DETERMINATION OF COPPER, IRON AND ZINC HANDLES WELL WATER FOR HUMAN CONSUMPTION

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The decrease in the quality of surface water for consumption, due to contamination by human activities, or to high consumption in urbanized areas, has increased the use of groundwater to ensure water supply and food security. However, in some regions, groundwater has a compromised quality, mainly because of the presence of toxic metals. The metals that are present in the water, when deficient or excessive in the human body, may lead to health problems. Therefore, analyzing the quality of groundwater in some wells for the presence of such metals has been the objective of this work. Five wells with an average depth of 63.2 m and flow of 12,800 L/h, in the western region of Santa Catarina were selected; and iron, zinc and copper were the analyzed metals, through the quantification by atomic absorption spectrometry (AAS) VARIAN® model 55B. Water was collected in three periods over a year and analyses were performed in triplicate. The values found among the samples during the process were: iron 0.021 to 0.029 mg/L, zinc 0.000 to 0.129 mg/L copper and 0.000 to 0.040 mg/L. The results meet Ordinance 2914, December 2011, of Ministry of Health, which defines the limits of potability for iron, zinc and copper, respectively as: 0.30 mg/L, 5 mg/L and 2 mg/L. It was observed that the samples are within the standards of quality and suitable for consumption, which indicates that the metals selected in study are not harmfully present in the selected wells, thus presenting no risks to human health.