

Water quality analysis of solar still distillate produced from various water sources of El Oued region Algeria

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ABSTRACT

Arid regions of Algeria have an abundance of saline and non-potable groundwater. These regions also have huge potential for solar energy. Solar distillation is an important solution for producing drinking water in such areas. In this study, solar distillation using hemispherical solar still in the climatic conditions of the Oued region has been carried out. To compare the characteristics of the saltwater of the El Oued region and the distilled water resulting from solar distillation, seven water samples from different areas of the region of El Oued have been collected. The physical and chemical parameters of the saltwater and distilled water were tested. The experimental results showed that the daily productivity ranges between 4 to 5 kg/m² and the quality of the produced water is suitable for drinking according to the standards of the World Health Organization (WHO).

Keywords: Desalination; Water quality; Solar energy; Arid regions; Hemispherical solar still

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