VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

A

PROJECT REPORT ON

EVALUATION STUDIES ON SOLAR STILL STERILIZATION USING DISTILLATION TECHNIQUE

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ABSTRACT

In present scenario, Water is the essence of life and it plays a key role in the development of an economy and in turn for the welfare of nation. Non-availability of drinking water is one the major problem faced by both developed and developing countries all over the world. Due to rapid industrialization and urbanization many of fresh water sources are depleting both in terms of quality and quantity.

Solar distillation is the simple technique used for the purification of contaminated water resources. It is suitable for remote, arid and semi-arid areas where drinking water shortage is major problem and solar radiation is high. These places mostly suffer also from energy shortage.

The present study is carried out to check the feasibility of treating the lake water using solar distillation process. Here an attempt is made to evaluate the performance of the solar still for different sampling points of lake water. Each sample drawn at 8 locations were subjected to distillation for a period of 7 days which has proved efficient for the removal of microbial count.

Physico-chemical and bacteriological analyses were carried out for 8 different samples of lake water along with the microbial count analysis. Other parameters such as nitrates, phosphates and sulphates were also analysed. The phosphate removal efficiency was dominant (90%) when compared to nitrates (37.5%) and sulphates (57.69%). This research work has yielded 100% and 99.99% removal efficiencies in total coliform and fecal coliform respectively.

Key words: ***Renewable Energy, Solar Still, Solar Distillation Technique, Kukkarahalli Lake Water, Condensed Water***