

Effect Of Variations in Absorber Plate Material on The Performance of Solar Water Distilator Absorbing Fin Type. Siti Diah Ayu Febriani S.Si, M.Si as a Chief Counselor

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ABSTRACT

The need for water to the development of the population at this time continues to increase from various sectors that aim to improve the welfare of life in the community. The need for water includes from the agricultural sector, industry, economy, development and other sectors. Solar distillation is a method of separating and refining from liquids in the form of seawater into water vapor by utilizing solar energy as the main energy source. The study was conducted to find out the variations of brass, copper and aluminum plates used as absorbers to maximize the value of freshwater quantity and efficiency value. This distillator is equipped with a reflector with a surface area of absorbent plates of 0.3969 m² with a volume capacity of seawater that can be accommodated in a ±24 liter container. This distillator consists of three main parts, namely the cover, reservoir, and distillator stand. Testing of a distillator with a variation of absorber plates is carried out for 4 hours at the same place. The highest quantity value is obtained on copper plates as much as 0.206 liters with the quality of fresh water products already meeting the standards for use, but requires further testing to find out the standards on eligibility for consumption. The highest Efficiency value was obtained on copper plates by 9.08% and the average of each absorbent plate was 5.23%, 6.68% and 5.24%. The efficiency of the distillator is greatly influenced by the intensity of solar radiation received by the distillation device, the higher the intensity of solar radiation received, the higher the rate of evaporation of seawater in the reservoir so that freshwater production is also high and has an impact on the efficiency of distillation tools. All tests conducted from each absorber plate are located on the rooftop of the Engineering Building.

Keywords: *Distillation, absorber plates, seawater, radiation intensity.*