

Uji karakteristik alat desalinasi merek x di Indonesia menggunakan air payau = Characteristics testing of brand x desalination technology in Indonesia using brackish water

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Abstrak

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Seiring dengan berkembangnya peradaban dan bertumbuhnya populasi penduduk di Indonesia, kebutuhan air tawar semakin meningkat. Namun, dengan minimnya akses dan sumber untuk mendapatkan air tawar, masih banyak penduduk di Indonesia yang tidak dapat menggunakan air tawar. Penduduk yang tinggal di daerah muara, hanya bisa mengkonsumsi air payau hasil intrusi air laut dan air sungai dimana tingkat salinitas airnya berkisar antara 5 permil-30 permil. Teknologi desalinasi bertenaga surya menjadi solusi tepat untuk negara kepulauan seperti Indonesia. Penelitian ini bertujuan untuk menguji karakteristik salah satu teknologi desalinasi merek X. Penelitian dilakukan selama April-Mei 2018 dengan menguji sudut inklinasi merek X dengan memvariasikan sudut, menguji merek X ketika kosong, menguji dengan air tawar, dan menguji dengan air payau. Dari penelitian ini didapatkan kesimpulan bahwa sudut inklinasi 20 merupakan sudut efektif merek X di Indonesia, waktu operasional merek X yaitu dari pukul 06.00-18.00 dengan waktu efektif pukul 10.00 ndash; 13.00, air payau berhasil di desalinasi dengan produktivitas air tawar yang dihasilkan sebesar 1,37 l/m /hari.

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ABSTRACT

As Indonesia develops and the population grows, the need of fresh water increases. But, there are still problems in obtaining freshwater for many people out there. People who live near the estuary, suffer from this problem where they use brackish water, which salinity is around 5 permil 30 permil, in daily life. Indonesia as a country consisting of 70 sea and 30 land and because the sun shines throughout the year, there is a great deal of potential for solar energy when it comes to desalination. The desalination technology comes up as something that can solve this problem with the potential of unlimited water and abundant solar energy in Indonesia. This experiment aims to test the characteristics of Solar still x. Several tests were conducted by varying the inclination angle, measuring its temperatures and humidity, and varying the feed water which are ground water and brackish water. The results show that the most effective inclination angle of Solar still x in Indonesia is 20 , the operational hours of Solar still x should be at 06.00 a.m-06.00 p.m, while the effective hours would be around 10.00 a.m-1 p.m. The brackish water was successfully desalinated, with the productivity of freshwater reached 1,37 l m day.