

APLIKASI ARANG AKTIF DARI TEMPURUNG KELAPA UNTUK PENURUNAN KESADAHAN AIR PDAM DESA PLESUNGAN KECAMATAN GONDANGREJO KARANGANYAR

(Activated Charcoal Application from Coconut Shell for PDAM Water Hardness Degradation in Plesungan Village, Gondangrejo District, Karanganyar City)

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INTISARI

Limbah tempurung kelapa yang terdapat pada masyarakat melimpah. Manfaat yang bisa diambil dari tempurung kelapa antara lain untuk bahan baku pembuatan arang aktif. Arang aktif mengandung senyawa karbon yang dapat digunakan untuk penurunan pH dan juga penurunan kesadahan. Kualitas air di Desa Plesungan sangat memperhatikan, diduga air tersebut mempunyai tingkat kesadahan yang tinggi. Tujuan penelitian ini untuk mengetahui cara pembuatan arang aktif dari tempurung kelapa dan mengetahui apakah arang aktif dapat memperbaiki kualitas air PDAM, diantaranya yaitu pH dan kesadahan di Desa Plesungan, Gondangrejo.

Penelitian ini dilakukan dengan menggunakan variasi waktu perendaman 2 jam dan 4 jam terhadap sampel air. Variasi waktu perendaman terhadap sampel dipilih karena untuk mengetahui kemampuan arang aktif menurunkan pH dan kadar kesadahan air PDAM di Desa Plesungan.

Hasil penelitian menunjukkan bahwa sampel A, sampel B, dan sampel C pada variasi waktu perendaman 2 jam mampu menurunkan pH sampel air yang semula 9,80 menjadi 8,09 dan kadar kesadahan sampel air yang semula 202,9 mg/l menjadi 181,5 mg/l.

Kata kunci: Tempurung kelapa, arang aktif, pH, kesadahan.

ABSTRACT

Coconut shell waste existed in the society is overflow. Another benefits which can be taken from this coconut shell is to be a raw material for activated charcoal making. Activated charcoal contains carbon compound which can be used for the degradation of pH and hardness. Water quality in Plesungan Village is very alarming, and it is suspected that the water has high hardness level. The purpose of this research is to find out how to make activated charcoal from coconut shell and to find out whether activated charcoal can fix the quality of PDAM water, such as its pH and hardness in Plesungan Village, Gondangrejo.

This research was conducted using a variety of immersion time towards the samples. Variation of Immersion time towards the samples is 2 hours and 4 hours, it has been decided so in order to find out the ability of activated charcoal to decrease the pH and hardness level of PDAM water in Plesungan Village.

The results of the research, it can be concluded that sample A, sample B and sample C at 2 hours time variation of the water sample pH lowered the original 9,80 to 8,09, and the hardness level 2 hours variation of water sample which was originally 202,9 mg/l to 181,5 mg/l.

Keywords: Coconut shell, activated charcoal, pH, hardness.