

INTISARI

PERBEDAAN KADAR BESI (Fe) & MANGAN (Mn) AIR SUMUR GALI SEBELUM DAN SESUDAH PENGGUNAAN METODE CASCADE AERATOR

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Latar Belakang : Air merupakan komponen kehidupan yang tidak dapat dipisahkan dengan kehidupan manusia. Terdapat beberapa parameter yang harus diperhatikan salah satunya adalah parameter kimia berupa besi (Fe) dan mangan (Mn). Kadar besi (Fe) dan mangan (Mn) didalam air dengan jumlah yang berlebihan akan menyebabkan masalah kesehatan dan lingkungan sehingga diperlukan pengolahan air guna mengatasi masalah tersebut.

Tujuan Penelitian : diketahuinya perbedaan kadar besi (Fe) dan mangan (Mn) air sumur gali sebelum dan sesudah perlakuan dengan metode *cascade aerator*.

Metode Penelitian : Penelitian ini merupakan penelitian *quasi eksperimen* dengan desain *Pre Test Post Test Group Design*. Penelitian dilaksanakan pada bulan November 2021-Januari 2022. Obyek penelitian ini adalah air sumur gali milik ibu Y yang berlokasi di Dusun Sawit, Panggungharjo, Sewon, Bantul. Penelitian dilakukan dengan metode *cascade aerator* dengan dimensi ukuran tinggi setiap undakan 25 cm diameter undakan 30 cm dan lebar 28 cm. sampel yan didapatkan 5 sampel *pre* dan 5 sampel *post*.

Hasil penelitian : Ada perbedaan antara kadar besi (Fe) sebelum dan sesudah perlakuan dengan *cascade aerator*, rata-rata penurunan kadar besi (Fe) setelah penyaringan 24,97%. Hasil uji *T-Test* terikat diperoleh nilai *sig* 0,005. Ada perbedaan antara kadar mangan (Mn) sebelum dan sesudah perlakuan dengan *cascade aerator*, rata-rata penurunan kadar mangan (Mn) setelah penyaringan 26,07%. Hasil uji *T-Test* terikat diperoleh nilai *sig* 0,010. Dari data tersebut dapat disimpulkan bahwa *cascade aerator* dapat menurunkan kadar besi (Fe) dan mangan (Mn) air sumur gali.

Kata Kunci : pengolahan air, *cascade aerator*, besi (Fe), mangan (Mn)

ABSTRACT

DIFFERENCE LEVELS OF IRON (Fe) & MANGANESE (Mn) IN DUG WELLWATER BEFORE AND AFTER USE CASCADE AERATOR METHOD

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Background: Water is a component of life that cannot be separated from human life. There are several parameters that must be considered, one of which is chemical parameters in the form of iron (Fe) and manganese (Mn). Excessive levels of iron (Fe) and manganese (Mn) in water will cause health and environmental problems, so water treatment is needed to overcome these problems.

Research objective: to find out the difference in levels of iron (Fe) and manganese (Mn) in dug well water before and after treatment with the cascade aerator method.

Research Methods: This research is a quasi-experimental research with Pre Test Post Test Group Design. The research was conducted in November 2021-January 2022. The object of this research is the dug well water belonging to Mrs. Y which is located in Sawit Hamlet, Panggungharjo, Sewon, Bantul. The research was conducted using the cascade aerator method with dimensions of height for each step of 25 cm, diameter of steps of 30 cm and width of 28 cm. samples obtained were 5 pre samples and 5 post samples.

Result: There is a difference between the levels of iron (Fe) before and after treatment with a cascade aerator, the average decrease in levels of iron (Fe) after filtering is 24.97%. The results of the bound T-Test obtained a sig value of 0.005. There is a difference between the levels of manganese (Mn) before and after treatment with a cascade aerator, the average decrease in manganese (Mn) levels after filtering is 26.07%. The results of the bound T-Test obtained a sig value of 0.010. From these data, it can be concluded that the cascade aerator can reduce the levels of iron (Fe) and manganese (Mn) in dug well water.

Keywords: water treatment, cascade aerator, iron (Fe), manganese (Mn)