Politeknik Kesehatan Kemenkes RI Bandung
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Abstrak

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PERBEDAAN JARAK KETINGGIAN PLATFORM TERHADAP PENURUNAN KADAR BESI (Fe) PADA AIR BERSIH DENGAN METODE MULTIPLE PLATFORM AERATOR DI PT. LINICO INDONESIA

viii + 77 halaman + 11 tabel + 10 Lampiran

Air bersih PT. Linico Indonesia bersumber dari air tanah. Kadar besi (Fe) pada air bersih di PT. Linico Indonesia setelah dilakukan pemeriksaan adalah 6,11 mg/L dan melebihi baku mutu. Maka dilakukan proses aerasi dengan metode *multiple platform aerator.* Tujuan : menurunkan kadar besi (Fe) pada air bersih dan mengetahui perbedaan jarak ketinggian *platform* pada proses aerasi dengan metode *multiple platform aerator* dengan jarak ketinggian *platofrm* 30 cm, 40 cm, dan 50 cm. Jenis penelitian : eksperimen dengan desain penelitian *pretest-posttest without control*. Populasi : seluruh air bersih yang digunakan di PT. Linico Indonesia dengan besar sampel adalah 21,6 liter. Pengambilan sampel dilakukan dengan teknik *grab sampling.* Teknik pengumpulan data : pemeriksaan kadar Fe di laboratorium, pengukuran suhu dan pH air bersih. Alat pengumpul data : spektrofotometer, *thermometer* air, dan pH meter. Hasil penelitian : rata-rata kadar besi (Fe) awal pada air bersih yaitu 6,11 mg/L. Rata-rata kadar besi (Fe) pada air bersih setelah dilakukan proses aerasi dengan jarak ketinggian *platform* 30 cm yaitu 3,29 mg/L dengan persentase penurunan 47,74%, 40 cm yaitu 2,63 mg/L dengan persentase penurunan 54,79% dan 50 cm yaitu 0,80 mg/L dengan persentase penurunan 86,45%. Hasil uji statistik dengan uji *One-Way Anova* : *p. value* 0,002 < 0,05 sehingga terdapat perbedaan jarak ketinggian *platform* pada proses aerasi dengan metode *multiple platform aerator* terhadap penurunan kadar besi (Fe). Saran : melakukan pengolahan lanjutan untuk menyaring endapan besi yang terbentuk.

DAFTAR PUSTAKA : 23 (2001 – 2019)

KATA KUNCI : Kadar besi, air bersih, proses aerasi, *multiple platform aerator*

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Abstract

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THE DIFFERENCES OF PLATFORM HEIGHT DISTANCE TO THE DECREASE OF IRON (Fe) LEVELS IN GROUNDWATER WITH MULTIPLE PLATFORM AERATOR METHOD IN PT. LINICO INDONESIA

viii + 77 pages + 11 table + 10 attachment

The source of tap water in PT. Linico Indonesia is from groundwater. Iron (Fe) level in groundwater at PT. Linico Indonesia after checked is 6.11 mg/L and exceeds the quality standard. Then the groundwater treatment is carried out with the aeration process using the multiple platform aerator method. The purpose : to reduce iron (Fe) levels in groundwater and to determine the difference in platform height distances in the aeration process with the multiple platform aerator method with a platform height of 30 cm, 40 cm, and 50 cm. This type of research : experimental research with a pretest-posttest without control research design. The population : all of the groundwater used at PT. Linico Indonesia with sample size is 21,6 liters. The sampling technique is grab sampling. Collection data techniques : checking iron (Fe) level in laboratory, measurement temperature and pH of groundwater. Collection data instruments : spektrophotometer, thermometer for water, and pH meter. Research result : the average initial iron (Fe) content in groundwater is 6.11 mg/L. The average level of iron (Fe) in groundwater after the aeration process with a platform height distance of 30 cm is 3.29 mg/L with a percentage of 47.74%, 40 cm is 2.63 mg/L with a percentage of 54.79% and 50 cm which is 0.80 mg/L with a percentage of 86.45%. One-Way Anova test results : the p value 0.002 < 0.05 so that there is a difference in the distance of the platform height in the aeration process with the multiple platform aerator method on the decrease in iron (Fe) content. Recommendation : carry out further processing to filter the formed iron deposits.

REFERENCES : 23 (2001 – 2019)

KEYWORDS : Iron level, groundwater, aeration process, multiple platform aerator