

## ABSTRAK

Kementerian Kesehatan RI  
Politeknik Kesehatan Kemenkes Surabaya  
Jurusan Kesehatan Lingkungan  
Program Studi Sanitasi Program Diploma III Kampus Magetan  
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Atika Lailatul Masruroh

### **”Pengaruh Variasi Waktu Aerasi Terhadap Penurunan Kadar Mn Pada Air Minum Di Desa Pilangkenceng Kecamatan Pilangkenceng Kabupaten Madiun Pada Tahun 2024”**

vi Halaman Permulaan + 58 Halaman Isi + 13 Tabel + 7 Gambar + 10 Lampiran

Air dengan kadar Mn tinggi dapat menyebabkan gangguan kesehatan hati dan ginjal serta gangguan lingkungan seperti bau dan rasa pada air minum dan noda kuning pada pakaian putih. Oleh karena itu, perlu diturunkan dengan metode aerasi. Menurut Hartini, 2012 metode aerasi dapat menurunkan kadar Mn dengan itu saya ingin melakukan penelitian ini. Tujuan penelitian adalah untuk mengetahui variasi waktu antara aerasi gelembung aerator dan penurunan kadar Mn.

Jenis penelitian ini adalah pra eksperimen dan menggunakan desain penelitian one group pretest-posttest only design. Ada empat kelompok yang berbeda dalam waktu aerasi yaitu sebelum perlakuan, 1 jam, 2 jam dan 3 jam. Untuk masing-masing kelompok, pengulangan dilakukan 6 kali jumlah total sampel adalah 24 sampel. Untuk analisis data, digunakan uji anova satu arah.

Kadar Mn sebelum perlakuan aerasi sebesar 0,205 mg/l, kemudian kadar Mn rata-rata meningkat sebesar 8% dengan variasi waktu aerasi 1 jam sebesar 0,221 mg/l, kadar Mn turun sebesar 28% dengan variasi waktu aerasi 2 jam sebesar 0,148 mg/l, kemudian variasi waktu aerasi 3 jam turun sebesar 20% dengan kadar Mn sebesar 0,164 mg/l, Berdasarkan hasil uji one-way anova didapatkan hasil p-value > 0,05 maka ada pengaruh penurunan kadar Mn.

Didapatkan hasil yang signifikan yaitu dengan variasi waktu aerasi 2 jam. Pemeriksaan pH dan suhu air sebelum dan setelah perlakuan aerasi diperlukan untuk mengetahui pengaruh pH dan suhu terhadap penurunan kadar Mn.

**Kata Kunci :** Mn, Aerasi, *Bubble Aerator*

## **ABSTRACT**

*Indonesian Ministry of Health  
Ministry of Health Surabaya Health Polytechnic  
Department of Environmental Health  
Sanitation Study Program Diploma III Program, Magetan Campus  
Scientific Writing, June 20 2024*

*Atika Lailatul Masruroh*

***"The Effect of Varying Aeration Time on Reducing Mn Levels in Clean Water in Pilangkenceng Village, Pilangkenceng District, Madiun Regency in 2024"***

*vi Beginning Page + 58 Content Pages + 13 Tables + 7 Figures + 10 Attachments*

*Air with high Mn levels can cause liver and kidney health problems as well as environmental disturbances such as odor and taste in drinking water and yellow stains on white clothes. Therefore, it needs to be lowered using the aeration method. According to Hartini, 2012 the aeration method can reduce Mn levels, so I want to do this research. The aim of the research was to determine the variation in time between aeration of the aerator bubbles and the decrease in Mn levels.*

*This type of research is pre-experimental and uses a one group pretest-posttest only design research design. There were four groups that differed in aeration time, namely before treatment, 1 hour, 2 hours and 3 hours. For each group, repetition was carried out 6 times, the total number of samples was 24 samples. For data analysis, a one-way ANOVA test was used.*

*The Mn level before aeration treatment was 0.205 mg/l, then the average Mn level increased by 8% with a 1 hour aeration time variation of 0.221 mg/l, Mn levels decreased by 28% with a 2 hour aeration time variation of 0.148 mg/l, then the variation in aeration time of 3 hours decreased by 20% with Mn levels of 0.164 mg/l. Based on the results of the one-way ANOVA test, the p-value was  $> 0.05$ , so there was an effect of decreasing Mn levels.*

*Significant results were obtained with variations in aeration time of 2 hours. Checking pH and air temperature before and after aeration treatment is necessary to determine the effect of pH and temperature on reducing Mn levels.*

***Keywords:*** *Mn, Aeration, Bubble Aerator*