

**FAKULTAS ILMU KESEHATAN
UNIVERSITAS SILIWANGI
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PROGRAM STUDI KESEHATAN MASYARAKAT
PEMINATAN KESEHATAN LINGKUNGAN
2024**

ABSTRAK

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**HUBUNGAN JARAK DISTRIBUSI AIR TERHADAP KADAR SISA
KLOR PADA AIR KONSUMEN PERUMDA AIR MINUM TIRTA
SUKAPURA**

Keberadaan sisa klor perlu diperhatikan pada air distribusi hingga sampai ke konsumen karena dapat mengurangi risiko tumbuhnya mikroorganisme dan risiko terjadinya kontaminasi sepanjang pendistribusiannya. Jika sisa klor tidak sesuai Permenkes RI No.2/Menkes/2023 yaitu sebesar 0,2 - 0,5 mg/l, maka daya kerja klor akan melemah sehingga dapat menyebabkan *waterborne disease*. Tujuan penelitian ini adalah untuk mengetahui hubungan jarak distribusi air dengan kadar sisa klor pada air konsumen Perumda Air Minum Tirta Sukapura. Metode penelitian ini adalah kuantitatif dengan jenis penelitian observasional analitik dengan desain penelitian *cross sectional*. Populasi dalam penelitian ini sebanyak 30.414 konsumen dan sampel sebanyak 380 konsumen Perumda Air Minum Tirta Sukapura. Analisis data yang digunakan adalah analisis univariat dan bivariat menggunakan korelasi *Spearman*. Rata-rata sisa klor pada air konsumen belum memenuhi baku mutu yaitu hanya 0,098 mg/l. hasil penelitian menunjukkan bahwa semakin jauh jarak distribusi maka sisa klor akan semakin menurun, dengan nilai $p < 0,001$ dengan nilai $r = 0,886$. Berdasarkan penelitian tersebut maka disarankan untuk melakukan penginjeksian klor di tengah pendistribusian agar sisa klor tidak habis sebelum mencapai konsumen dengan jarak terjauh dari reservoir Gunung Tajur.

Kata Kunci: air, sisa klor, jarak distribusi.

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ABSTRACT

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RELATIONSHIP BETWEEN DISTRIBUTION DISTANCE AND
RESIDUAL CHLORINE LEVELS IN CONSUMER WATER OF
SUKAPURA DRINKING WATER COMPANY

The presence of residual chlorine needs to be considered in the distribution of water until it reaches consumers because it can reduce the risk of microorganism growth and the risk of contamination throughout its distribution. If the residual chlorine does not meet the requirements of Permenkes RI No.2/Menkes/2023, which is between 0,2 – 0,5 mg/l then the effectiveness of chlorine will weaken, leading to the possibility of waterborne diseases. This research aims to determine the relationship between the distance of water distribution and residual chlorine levels in consumer water of the Perumda Air Minum Tirta Sukapura. Quantitative is used as a research method with analytical observational research type and cross-sectional study design. The population in this study consists of 30.414 customers, with a sample of 380 customers of the Perumda Air Minum Tirta Sukapura. Data analysis used univariate and bivariate analysis using Spearman correlation. The average residual chlorine level in customer water does not meet the standard, it is only 0,098 mg/l. the result show that there is a very strong relationship between distribution distance and residual chlorine, indicating that the farther the distribution distance, the smaller the residual chlorine with a significance value of $p < 0,001$ and a correlation coefficient of $r = -0,886$. Based on the research, it is suggested to inject chlorine in distribution so the chlorine residual will not run out before reaching the consumer with farthest distance from Gunung Tajur reservoir.

Key words: water, residual chlorine, distribution distance.