

EVALUASI KUALITAS MIKROBA ANAEROB DAN AEROB PADA INSTALASI PENGOLAHAN AIR LIMBAH RSIM HASANAH KOTA MOJOKERTO

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ABSTRAK

Konsentrasi fosfat hasil pengolahan Instalasi Pengolahan Air Limbah (IPAL) RSIM Hasanah Kota Mojokerto pada tahun 2018 tidak memenuhi baku mutu, namun setelah dilakukan penambahan mikroba pada bak anaerob dan bak aerob konsentrasi fosfat memenuhi baku mutu. Tujuan penelitian ini adalah mendapatkan gambaran tentang kualitas mikroba anaerob dan aerob pada Instalasi Pengolahan Air Limbah (IPAL) RSIM Hasanah Mojokerto.

Jenis penelitian ini adalah observasional dengan pendekatan deskriptif. Pengamatan mikroba dilakukan pada tahap anaerob dan tahap aerob di Instalasi Pengolahan Air Limbah (IPAL) RSIM Hasanah Mojokerto. Pemeriksaan pH, suhu, *BOD*, *COD*, *TSS*, fosfat, *NH₃*, *MLVSS*, dan *ORP* diperlukan untuk mengetahui beban pencemar dan kondisi anaerob dan aerob IPAL. Data diperoleh dari hasil uji laboratorium yang dilakukan oleh rumah sakit dan dari hasil uji yang dilakukan oleh peneliti. Data yang diperoleh dan ditampilkan dalam bentuk tabel, kemudian dibandingkan dengan *Pergub Jatim* Nomor 72 tahun 2013 tentang Baku Mutu Air Limbah Bagi Industri Dan/Atau Kegiatan Usaha.

Larva dan bakteri berbentuk batang dengan pergerakan tidak aktif ditemukan di tahap anaerob sedangkan di tahap aerob ditemukan larva, dan telur cacing. Konsentrasi fosfat di outlet rata-rata 2.2118 ppm sedangkan baku mutu fosfat di Jawa Timur 2 ppm. Kondisi mikroba sangat tidak baik hal ini bisa dilihat dari mikroba yang ditemukan yaitu hanya larva, bakteri berbentuk batang yang pergerakannya tidak aktif serta telur cacing. Kondisi mikroba berbanding lurus dengan konsentrasi fosfat, tidak baiknya kondisi mikroba menyebabkan konsentrasi fosfat tidak memenuhi baku mutu. Kualitas mikroba anaerob dan aerob jelek hal ini menyebabkan konsentrasi fosfat tidak memenuhi baku mutu.

Pengolahan Air Limbah (IPAL) RSIM Hasanah Kota Mojokerto tidak optimal saat penambahan mikroba tidak dilakukan, sehingga perlu dilakukan penambahan mikroba dan pemantauan mikroba di bak anaerob dan bak aerob.

Kata kunci: Evaluasi, kualitas mikrobiologi, fisik, kimia, IPAL Rumah Sakit.

ANAEROBIC AND AEROBIC QUALITY EVALUATION ON WASTE WATER TREATMENT PLANT RSIM HASANAH MOJOKERTO CITY

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ABSTRACT

The phosphate concentration of the results of processing the Wastewater Treatment Plant (IPAL) RSIM Hasanah Mojokerto in 2018 did not meet quality standards. However, after adding microbes to the anaerobic and aerobic tanks, the phosphate concentration met the quality standard. The purpose of this study was to obtain an overview of the quality of anaerobic and aerobic microbes at the Wastewater Treatment Plant (IPAL) RSIM Hasanah Mojokerto.

This type of research is observational with a descriptive approach. Microbial observations were carried out in the anaerobic and aerobic stages at the Wastewater Treatment Plant (IPAL) RSIM Hasanah Mojokerto. Examination of pH, temperature, BOD, COD, TSS, phosphate, NH₃, MLVSS, and ORP is needed to determine the pollutant load and anaerobic and aerobic conditions of WWTP. The data were obtained from the results of laboratory tests conducted by hospitals and from the results of tests conducted by researchers. the data obtained and displayed in tabular form, then compared with the East Java Governor Regulation Number 72 of 2013 concerning Wastewater Quality Standards for Industry and/or Business Activities.

Larvae and rod-shaped bacteria with inactive motility were found in the anaerobic stage while in the aerobic stage larvae and worm eggs were found. The concentration of phosphate at the outlet average is 2.2118 ppm, while the quality standard for phosphate in East Java is 2 ppm. Microbial conditions are not very good, this can be seen from the microbes found, namely only larvae, rod-shaped bacteria whose movements are not active and worm eggs. Microbial conditions are directly proportional to the concentration of phosphate, bad microbial conditions cause the concentration of phosphate not to meet the quality standards. The quality of anaerobic and aerobic microbes is poor, this causes the phosphate concentration not to meet the quality standards.

Wastewater Treatment (WWTP) Hasanah Hospital, Mojokerto City is not optimal when the addition of microbes is not carried out, so it is necessary to add microbes and monitor microbes in anaerobic and aerobic tanks.

Keywords : Microbiological, physical, chemical quality evaluation of hospital WWTPs.