

ABSTRAK

PENGARUH KARAKTERISTIK ALIRAN TERHADAP PERUBAHAN KUALITAS AIR SUNGAI YANG TERCEMAR LIMBAH CAIR INDUSTRI TAHU *(Studi Kasus Desa Kalisari, Kecamatan Cilongok, Kabupaten Banyumas)*

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Desa Kalisari diketahui sebagai desa sentra industri tahu yang cukup besar di Kabupaten Banyumas. Diketahui beberapa produsen tahu yang masih membuang limbah cair tahu di sungai, sebanyak 28 produsen tahu. Penelitian ini bertujuan untuk mengetahui, apakah karakteristik aliran berpengaruh terhadap perubahan kualitas air sungai yang tercemar limbah cair tahu. Dengan mengukur kecepatan dan suhu aliran selama 10 hari pada tiga titik yaitu; hulu, titik pembuangan dan hilir, lalu mengambil sampel limbah cair tahu untuk diuji di laboratorium agar mendapatkan nilai BOD, COD, dan DO dan membandingkan dengan baku mutu. Jika nilai BOD, COD, dan DO melebihi baku mutu yang telah ditentukan, itu artinya limbah cair tahu tersebut sangat berpotensi tercemar di aliran Sungai Ciroyom. Lalu dikorelasikan antara karakteristik aliran tersebut dengan karakteristik limbah, apakah kedua karakteristik tersebut saling berpengaruh. Hasil analisis menunjukkan bahwa nilai BOD dan COD pada limbah cair tahu tersebut sangat jauh dari baku mutu, juga korelasi antara karakteristik aliran (kecepatan, debit, dan suhu) dan karakteristik limbah saling berpengaruh satu sama lain. Debit aliran sungai, semakin ke hilir, semakin besaar, menyebabkan nilai BOD pun semakin besar. Begitu juga korelasi nilai COD dengan debit aliran, pada penelitian ini debit aliran semakin ke hilir semakin besar, maka semakin besar pula nilai COD. Kebalikan dari nilai BOD dan COD, jika debit aliran semakin ke hilir semakin besar, maka nilai DO menunjukkan dari hulu hingga hilir semakin kecil.

Kata kunci: karakteristik aliran, BOD, COD, DO.

ABSTRACT

THE INFLUENCE OF FLOW CHARACTERISTICS ON THE CHANGES OF RIVER WATER QUALITY CONTAMINATED BY INDUSTRIAL LIQUID WASTE

(Case Study of Kalisari Village, Cilongok District, Banyumas Regency)

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Kalisari Village is known as a village of large tofu industrial centers in Banyumas Regency. It is known that there are 28 tofu producers who still dispose of liquid tofu waste in rivers, as many as 28 tofu producers. This study aims to determine whether the flow characteristics affect the change in river water quality in tofu liquid waste. By measuring the speed and temperature of the flow for 10 days at three points namely; upstream, discharge point and downstream, then take tofu liquid waste samples to be tested in the laboratory in order to get the value of BOD, COD, and DO and compare with the quality standard. If the value of BOD, COD, and DO exceeds the specified quality standard, that means the waste liquid tofu is very potentially polluted in the Ciroyom River. Then correlate the characteristics of the flow with the characteristics of the waste, whether the two characteristics are mutually influential. The results of the analysis show that the BOD and COD values in the tofu wastewater are very far from the quality standard, also the correlation between flow characteristics (speed, discharge, and temperature) and the characteristics of the waste influence each other. The flow of the river, the more downstream, the bigger, causing the BOD value to be even greater. Likewise, the correlation between the COD value and the flow rate, in this study the greater the downstream flow rate, the greater the COD value. Opposite of the BOD and COD values, if the flowrate is getting downstream getting bigger, then the DO value shows from upstream to downstream getting smaller.

Keywords: flow characteristics, BOD, COD, and DO.