

## **ABSTRAK**

*Salah satu penyebab langkanya air bersih di Indonesia adalah rendahnya kualitas air yang tersedia. Banyak aliran sungai yang telah tercemar dan tidak layak lagi dikonsumsi untuk berbagai kebutuhan. Kondisi kualitas air sungai yang berasal dari kawasan seperti pemukiman, sawah, hutan dan kebun sangat erat kaitannya dengan kondisi penggunaan lahan yang ada serta pengaruhnya terhadap kualitas air sungai. Penelitian yang dilakukan di daerah aliran Sungai Opak bertujuan untuk mencari hubungan serta pengaruh berbagai komponen penggunaan lahan terhadap kualitas air parameter mikrobiologi. Pengambilan sampel air dilakukan di 11 titik di sepanjang aliran Sungai Opak dan dilakukan Pengujian dengan metode Most Probable Number (MPN) pada media BGLB untuk Total Coliform dan Fecal Coliform. Sedangkan untuk uji Escherichia Coli dilakukan dengan metode pour plate pada media CCA. Hasil dari pengujian kualitas air akan dianalisis pengaruhnya terhadap empat komponen penggunaan lahan yaitu pemukiman, sawah, hutan dan kebun. Hasil penelitian menyimpulkan bahwa kualitas air yang ada di sungai opak tergolong tercemar ringan dan perlu adanya pengelolaan secara berkala. Disamping itu analisis menggunakan korelasi spearman yang mencari hubungan antara kualitas air parameter mikrobiologi dengan komponen tata guna lahan untuk pemukiman berkisar antara 0,382-0,564. Untuk hubungan terhadap lahan hutan yaitu 0,038-0,162. Lahan perkebunan berkisar antara -0,400-0,618 dan terhadap lahan sawah berkisar antara 0,273-0,636.*

*Kata Kunci : Sungai Opak, Mikrobiologi, Korelasi Spearman, Bakteri Coliform, Most Probable Number (MPN)*

## ABSTRACT

*One of the causes of the scarcity of clean water in Indonesia is the low quality of the available water. Many rivers have been polluted and no longer suitable for various needs. The conditions of water quality of the river streams that comes from some area such as residential areas, rice fields, forests, and gardens are strongly related to the conditions of land use and its effects on the water quality of the river. Research that were conducted in the Opak River streams are purposed to looking for the relation and also determines the components of land use for the quality of microbiological parameters. Water sampling was conducted at 11 points along on the Opak river streams and tested by using Most Probable Number (MPN) method on BGLB media for Total Coliform and Fecal Coliform. As for the Escherichia Coli test, is done by using the pour plate method on the CCA media. The results of testing the rivers water quality will be analyzed for its effects on land use of four components on above which is residential areas, rice fields, forests, and gardens. The results of the research concluded that the quality of the water in the opak is slightly polluted and needs to be maintained by the Government at regular basis. In addition, the analysis uses spearman correlation that is looking for a relationship between water quality of microbiological parameters and residential areas components were ranged between 0.382-0.564, for the forests areas are between 0.038-0.162, for the gardens areas are between -0,400-0,618, and for the rice fields areas were ranged between 0.273-0,636.*

*Key words : Opak River, Microbiological, Spearman Correlation, Coliform Bacteria, Most Probable Number (MPN)*