

ABSTRACT

In the manual control of diarrheal diseases (2010) it is estimated more than 55% of children in Indonesia hit by diarrhea caused by infection with *Escherichia coli*. Research was doing to find the difference between mercury resistant of *Escherichia coli* from four locations in the Kahayan River in Central Kalimantan, which indicates resistance to antibiotics. The levels of mercury found in the Bawan Village Subdistrict Banama Tingang District of Pulang Pisau worth 0.235 mg/L; The Village of Sepang Subdistrict Sepang Kota District of Pulang Pisau worth 0,233 mg/L; The Village of Kampuri Subdistrict Mihing Raya District of Gunung Mas worth: 0,206 mg/L; and Gunung Mas Village the result is 0,185 mg/l. Results *Echerichia coli* resistance test of mercury obtained: sample 1 *Escherichia coli* keep growing as much as 9 MPN/100 ml; Sample 2 *Escherichia coli* keep growing as much as 17 MPN/100 ml; Sample 3 *Escherichia coli* keep growing as much as 22 MPN/100 ml and Sample 4 *Escherichia coli* keep growing as much as 34 MPN/100 ml. Antibiotic resistance test results of four samples are obtained: the Cloramphenicol were tested to isolate *Escherichia coli* samples 1, 2, 3 and 4 show the results in susceptible; Tetracycline is were tested to isolate *Escherichia coli* samples 1, 2, 3 and 4 shows the result of varying, sample 1; sample 2 = resistance; 3 = intermediate and sample 4 in suceptible; Ciprofloxacin is tested against *Escherichia coli* isolate samples 1, 2, 3 and 4 show the results in susceptible; and Ampicillin were tested to isolate *Escherichia coli* sample 1, 2 and 3 shows the result of resistance while a sample of 4 shows the result of intermediate. From this study researcher found there is a difference of four levels of mercury into water samples, there are differences of resistance against *Escherichia coli*, and there is a difference in mercury resistance of antibiotics to four sample where the higher mercury levels then the bacteria *Escherichia coli* resistant to antibiotics. Moreover, it can be concluded Ampicillin and Tetracyclin antibiotics were ineffective again diarrhea cause *Escherichia coli* from the Kahayan River waters of Central Kalimantan while Chloramphenicol and Ciprofloxacin are still effective.

Keyword: Diarrheal Diseases, *Escherichia coli*, Plasmid, Mercury Resistance, Antibiotic Resistance.