Removal of E.coli and Total Coliform Count from Polluted Water Using Bio-waste

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This study aims to investigate the effectiveness of using bio-waste to remove the total coliform count and Escherichia coli in raw river water. The goal of the investigation is to help villagers and residents to get clean water supply using natural and economical resources for emergency use. Experiments were carried out to find types of bio wastes which has antibacterial properties such as bamboo clam shell, orange peel, mulberry leaf, enzyme and guava leaf extract. Further studies involved the testing of the effect of volume used and soaking time by using guava leaves extract and enzyme. Lastly, the bio-waste is compared with chlorine in terms of its effectiveness in removing the TCC and Escherichia coli in the raw river water. Results showed that guava leaf extract and enzyme are effective in removing the TCC and E.coli in the raw river water. 5ml enzyme in 6 hours treatment showed 100% removal with a significant of $P<0.05$. Whereas autoclaved guava leaves extract and non-autoclaved guava leaves extract showed more than 85% of removal of TCC and E.coli after 1 hour treatment with a significant difference of $P<0.01$.A ratio of 5:5 ml of guava leaves extract and enzyme are as effective as chlorine in reducing the amount of coliform counts and E.coli. Therefore, we concluded that guava leaf extracts and enzymes are effective in removing TCC and E.coli in the water. There are possibility of using guava leaf in removing coliforms and E.coli in raw water for an emergency drinking usage.

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