# UNIVERSITI TEKNOLOGI MARA

# EFFECTS OF TEAK LEAVES (*Tectona grandis*) AND TALISAY LEAVES (*Terminalia catappa*) ON WATER QUALITY PARAMETERS OF FRESHWATER

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of the requirements for the degree of
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**(Biology)**

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# AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with regulations of Universiti Teknologi MARA. It is original and is the results of my own word, unless otherwise indicated or acknowledged as referenced work. This thesis has not been summited to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with Academic Rules and Regulations for Pre Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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# ABSTRACT

At present, researchers have been studying the possibility of using biological natural coagulant to decrease the hazards of using inorganic coagulants. This study aimed to evaluate the effects of teak leaves, talisay leaves and their combination powder towards physical parameters of freshwater water quality by using different dosages of the coagulant. The teak leaves and talisay leaves were collected from that already fallen on the ground and were dried before being grinded finely into powder. The water samples were collected from Tasik Elham of UiTM Cawangan Perlis and their initial reading of physical parameters such as pH, salinity, conductivity, dissolved oxygen, total dissolved solid and absorbance were recorded before and after the experiment when applied with different dosages (0.5 g, 1.5 g, 2.5 g and 3.5 g) of natural coagulants in jar test. Characterization of natural coagulants were determined before and after treatment using FTIR. Based on the result, most of the lower dosages for all the coagulants show positive effects towards the parameters observed except for absorbance reading. Ultimately, the usage of teak leaves powder as the natural coagulant showed the best result as it gave positive result to a few parameters including increment of pH level with 9.02 %, highest decrement of conductivity with 16.83 %, highest improvement of the dissolved oxygen level with 76.19 %, lowered the total dissolved solid with 21.70 % which was higher compared to other two coagulants. Hence, it can be concluded that teak leaves powder showed the highest potential as natural coagulant to help in improving quality of freshwater water sample.

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