UNIVERSITI TEKNOLOGI MARA

EFFECT OF USING DIFFERENT TYPES OF ORGANIC ANIMAL MANURE (CHICKEN, GOAT AND COW) ON ABUNDANCE OF PHYTOPLANKTON AND GROWTH OF AFRICAN CATFISH (*Clarias gariepinus*) CULTURED IN POLYETHYLENE TANK

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of the requirements for the degree of
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AUTHOR'S DECLARATION

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

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

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ABSTRACT

African catfish (*Clarias gariepinus*) is one of the well-known freshwater aquaculture species around the world which introduced worldwide purposes to enlarge food production for accommodating the demand of food for an increasing world population. The objective of this study is to evaluate the growth performance of *C. gariepinus* towards different types of treatment tank, to determine the abundance of phytoplankton presence in different types of treatment tank and to determine the relationship between the growth performance of *C. gariepinus* and different types of treatment tank. This study conducted under four different treatments using different types of animal manure including chicken, goat, cow, and no manure as a control. The preparation of treatment tank was done by fertilized the water with animal manure for 14 days to stimulate the production of phytoplankton. The identification and quantification of phytoplankton was observed under compound light microscope and their abundance was calculated. Meanwhile, the growth rate including the length and weight of the *C. gariepinus* were determined in the period of 35 days. One ways ANOVA used in this study to determine the relationship between the growth performance of *C. garipinus* and different types of treatment tank. The data shows a higher diversity of phytoplankton was recorded in no manure treatment with nine species compare to chicken manure treatment with three species. While, the highest abundance of phytoplankton was recorded in cow manure treatment with 157 800 cell/L compared to the no manure treatment with 13 900 cell/L/. Overall, the manured tank dominate the abundance of phytoplankton compared to no manured tank. The cow manure treatment recorded the highest average weight at 9.12 g with gain of weight at 16.32 g and the average length at 10.64 cm while the length gain is 7.68 cm. However, there were no significant differences ($p>0.05$) between growth performance of *C. gariepinus* with four different types of treatment. Survival rates of *C. gariepinus* resulted higher in manure treatment compared to no manure treatment with average survival rates which is 67.86%. Growth performance of *C. gariepinus* was higher in manure treatment especially in cow manure treatment. Therefore, it is recommended that for better growth and survival in aquaculture practices, *C. gariepinus* should be rise in manure treatment especially in cow manure treatment.

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