

UNIVERSITI TEKNOLOGI MARA

**THE EFFECTS OF DIFFERENT
TEMPERATURES AND pH
LEVELS ON GROWTH RATE
AND SURVIVAL OF JUVENILE
Pomacea canaliculata IN
CONTROLLED ENVIRONMENT**

MARIE URAI CLEMENT

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ABSTRACT

Invasive apple snail, *Pomacea canaliculata* is one of the major pests that affected the production of rice in Malaysia. With the unpredictable changes on global climatic in Malaysia, it is important to have knowledge on the effect of water temperature and pH on growth and survival rate of *P. canaliculata* in water body, in order to avoid loss in paddy field and its adversely affect to the ecosystem. Water temperature and pH are parts of the most important environmental factors influencing the survival, growth rate, reproduction and behaviour of freshwater snails. This study is focused on the juvenile *P. canaliculata* due to scarce research study of juvenile snail. Moreover, this study can be served as foundation knowledge of *P. canaliculata* in Malaysia. The aim of this study is to evaluate the growth and survival rate of juvenile *P. canaliculata* at different temperatures and pH levels. The experiment was planned in a Randomized Complete Block Design (RCBD). 10 replications were assigned for each treatment. Growth and survival of juvenile *P. canaliculata* were evaluated at different constant water temperatures (15, 20, 25, 30 and 35°C). The findings show, at 30° C the growth rate of *P. canaliculata* is higher compare with the other temperature, however with low survival rate. Meanwhile, at room temperature (21 - 24°C), higher survival rate (100%) is recorded. For pH water level, growth and survival rate of juvenile *P. canaliculata* were also evaluated at different pH levels (4-4.9, 5-5.9, 6-6.9 and 7-7.9 pH). The results showed significant different of 4-4.9 pH from other treatments, $p < 0.05$. The juvenile *P. canaliculata* in treatment 4-4.9 showed the lowest growth and survival rate while, the highest showed at pH level 6-6.9. The results showed that different water temperatures and pH levels affect the growth and survival rate of *P. canaliculata* and it is an important indicator for predicting and understanding the changes of water temperature when controlling this pest.

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