

**THE EFFECTIVENESS OF SYNTHETIC MOLLUSCICIDES
AGAINST THE ADULTS OF GOLDEN APPLE SNAIL
(*Pomacea canaliculata*, Lamarck)**

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ABSTRACT

THE EFFECTIVENESS OF SYNTHETIC MOLLUSCICIDES AGAINST THE ADULTS OF GOLDEN APPLE SNAIL (*Pomacea canaliculata*, Lamarck)

Pomacea canaliculata or its common name golden apple snail is a potential species to be the major pest of paddy plants in Malaysia. Malaysia has warm climate which is suitable for the reproduction of the snails. In order to control the population of the snails, the use of synthetic molluscicides is seen to be the best option to control it. But the over usage of molluscicides will cause hazardous effect to non-target organism and even to human. Due to the invasive characteristics of the golden apple snails, it causes high damage to paddy plants. The study identifies the effective synthetic molluscicides dosage and later prolongs their effectiveness. Golden apple snail has three developmental stages namely egg, pre-adult and adult. The egg of golden apple snail is bright pink in colour, deposited on any objects that is above the water level and will hatch one to two weeks after deposition. Maturity of snails is 60 to 90 days after hatching; the diameter of the shell for adult snail is in the range of 3cm to 8cm. All experiments and observations were carried out in the Entomology Laboratory, Science and Agrotechnology Laboratory Complex UiTM Sabah. In this study, bioassay against the adults of *Pomacea canaliculata* was conducted. The samples were first collected from paddy fields in Kota Belud, Sabah and snails were sorted according to shell's height. The snails were then acclimated for 1 week before the experiment. The synthetic molluscicides used in this study consist of three types which are MOSTOX® 5 GR, Bayluscide WP 70® and Brand X® 5 GR. By using recommended rate for each molluscicides, five different concentrations were prepared and tested against the snails. Mortality rate for the tested snails were recorded after 48 hours of experiment. Dead snails do not react and retract when being probed by needle. The study identified the most effective synthetic molluscicides against *Pomacea canaliculata* is Bayluscide WP 70®, followed by MOSTOX® 5 GR and Brand X® 5 GR respectively.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Pomacea canaliculata or the common name Golden apple snail is generally known as one of the most destructive and critical pest species for the paddy plants (Sallehet *al.*,2012). This pest has several potentially invasive characteristics. Among the characteristics are it acts to be a food generalist and has the higher rate of reproduction. With the climate of tropical warmth in southeast asia, *P. canaliculata* is able to reproduce three to four times a year (Wang *et al.*, 2012). The most favourable parts of the paddy plants are the leaves of paddy and young stems. The pests could ingest 7-24 rice seedlings per day which in turn cause the great loss to the rice growing area (Salleh *et al.*, 2012). Of the 60% world population, paddy is the main food supply for the people and the plants are mainly produced in Asian region.

The crop growing of paddy rice in Malaysia covers about 204,246 ha of land. Wet paddy is cultivated in the most paddy field in Malaysia, while dry land paddy covers very small area and mostly located in the region of Sabah and Sarawak (Rosdiyani and Hajar, 2012).