Effect of crowding, food quality and body size on food utilization of *Pomacea canaliculata* (Lamarck), (Gastropoda: Ampullaridae), an introduced potential snail pest of the rice paddy in Sri Lanka.

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A study was conducted to investigate the effect of crowding, food quality and body size on food utilization of an introduced freshwater snail, *Pomacea canaliculata*, a potential snail pest of the rice paddy in Sri Lanka. Snails were divided into three weight classes; young (0-3.0 g), intermediate (3.0 - 10.0) and old (> 10.0g). Snails were fed separately with *Hydrilla verticillata*, *Salvinia mollesta* and *Azolla sp.*, for a period of one week at three stocking densities of 5, 10 and 15 snails per aquarium in the laboratory. Food consumption and faecal output were measured daily. Initial and final weights of individuals (inclusive of shell) were also obtained. The results were used to compute feeding, absorption conversion and metabolic rates as well as absorption and conversion efficiencies (food utilization). An increase in body size caused a decrease in food utilization, irrespective of the quality of food supplied. The values obtained for food utilization were highest for the snails reared under low stocking densities and the lowest for the snails reared at high stocking densities.

It was observed that the mean feeding rate for *P. canaliculata* fed on *Hydrilla* was significantly high (i.e. for young snails 4.92, intermediate snails 1.96 and old snails 1.55 mg/g live wet weight of individuals/ day) while the other parameters measured such as absorption, conversion rate etc. were slightly high, when they were fed on other feed types. This confirms that if given a choice of these plants, *Hydrilla* was the most preferred food of these snails. Highest absorption efficiency (59.39%) was recorded when snails were fed with *Azolla*, whereas conversion efficiency was highest (20.44%) when snails were fed with *Hydrilla*. The food utilization by different sizes, based on dry weights decreased in the following order, i.e. *H. verticillata*, *Azolla* and *S. molesta*. An increase in body size caused a decrease in food utilization and conversion efficiency, but the latter was not significantly different ($p > 0.05$).