

**Filtration rate of the marine clam, *Katelysia* sp. at
different light intensities and fed with microalgae
Isochrysis galbana and *Chaetoceros calcitrans***

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Abstract

Filtration rate of the marine clam, *Katelysia* with body lengths ranging from 5-6 cm and body weight from 45-65 g were determined by using the indirect method of suspension depletion and monitored by direct algal cell count. The effects of light intensity and algal species on the feeding behavior of the clam were determined. The first treatment involves total darkness where the basins containing the clams were covered with black plastic bag. In the second treatment, the basins with the clams were placed under ordinary light condition (12h light; 12h dark) and in the third treatment, the basins with the clams were positioned under a 20-watt bulb with continuous illumination (24h light).

Results showed significant differences in the filtration rates of clams in different light intensities. It showed higher filtration rate in the total darkness treatment ($F=0.132555907$) followed by the 12h light:12h dark treatment and lowest at the treatment provided with 24 h illumination. Apparently, illumination affected valve opening and siphon extension of the clam which also affected the filtration rate of *Katelysia*. Under total darkness treatment, the clams opened their valves and extended their siphons. Hence, there was highest ingestion of algae or filtration in total darkness which showed to be the optimum condition to stimulate or promote feeding.

In the algal species preference experiment, the food used were either *Isochrysis galbana*, *Chaetoceros calcitrans* or a mixture of both. Results showed that *I. galbana* had the highest number of cells ingested by the clams and removed from suspension. This is considered to be the preferred algal species ($F=0.119713$) followed by a mixture of both and lowest on the treatment where *C. calcitrans* was used as food. The preference of the clam on *Isochrysis galbana* over *Chaetoceros calcitrans* could be its smaller size based on dry weight.