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**Stomach Content of the Green Mussel  
Perna viridis (L.) in Relation to the Plankton  
Composition and Some Physico-chemical Characteristics  
of Mussel Culture Farms in Bacoor Bay, Cavite**

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by

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## ABSTRACT

This study examined the stomach contents of the green mussel Perna viridis (L.). It quantitatively and qualitatively compared the plankton content in the stomach of the mussel with the plankton found in its immediate water environment. Physico-chemical factors of the environment were also taken into account and interrelated with the plankton composition and distribution in both the water and stomach of mussels.

Results of the study showed that Perna viridis (L.) is an omnivore filter feeder, feeding on a wide variety of plankton from the nanoplankton (phytoflagellates & bacteria) to the barnacle nauplius about 0.184 mm in body width and 0.224 mm in body length. Dominant food organisms were comprised by the diatoms (80.73%), then followed by tintinnids (11.96%), dinoflagellates (3.34%), chlorophytes, mollusks, coelenterates, nematodes, eggs of vertebrates and echinoderms, radiolarians, etc. (3.9%). Other materials like sponge spicules, plant debris, organic detritus, sand and silt particles were also observed in the stomach. Amount of plankton in the stomach were largely determined by the abundance of plankton in the water and partly by size of mussel itself. Plankton size seemed to be the determining factor that limits

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the kind of plankton ingested by mussels.

A high correlation in plankton count and species/group abundance were observed in both the stomach of mussels and bay water. Except in few cases, plankton count and species/group abundance were usually in decreasing amount from near surface to bottom layers. Differences were however, found insignificant except during the November collection when relatively high temperature values (28.92 C) and salinity (27.23 ppt) as well as another undetermined factor which possibly have caused high phytoplankton counts in Station 2.

Differences in plankton count and composition in the water were attributed to changes in water temperature, salinity, amounts of nitrates and orthophosphates, location and grazing. Whether each factor acted singly or in combination was difficult to quantify.

Water temperature was directly correlated to plankton density in water, highly correlated with plankton count in stomach, species/group abundance in both stomach and bay water, as well as pH and salinity, but highly and inversely correlated with amounts of orthophosphates, & depth of water, and inversely correlated with transparency.