Marine Microalgae: Natural Nutritious Food Source for Clam Larvae (Meretrix meretrix)

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(a) To assess the nutritional value of three microalgae (MAs) as the diet for clam larvae Meretrix meretrix, which is one of the most nutrient-dense seafood that's available for human health, actively produce the larvae source for commercial clam production, improving the survival rate of clam larvae, and increase the adaptability to the natural conditions. (b) • Using native MAs as food for clam larvae, to increase the adaptability to natural conditions. • Application of the microalgae technology in setting up a clam larvae rearing system. • Evaluate the effect of marine MAs on the growth stages of clam larvae. (c) The three tested species were Chaetoceros sp. TH01, Pavlova sp. TH03 and Thalassiosira sp. TH06 which were isolated in Vietnam. These MAs have various fatty acids compositions (range from C12 to C24), especially contained important unsaturated fatty acids (UFAs). The application of the MAs culture technology combined with clam larvae rearing system in a closed recirculation process. Three species of MAs that we selected all showed survival rate >78% in larvae stages, the average length of shells was >73.5 (D-veliger); >109.4µm (Umbo); 323.6 µm (Spat). Throughout growth stages, Pavlova sp. TH03 has the highest proportion among all. (d) Three MAs contain important UFAs that are valuable in bivalve larvae culture. Built a closed model for feeding Meretrix meretrix clam larvae with the combination of microalgae culture system and the reproduction control system of the clam larvae with completely circulating and automatic process. Three species of MAs showed good growth in larval size and improved survival rate. Pavlova sp. TH03 was the most suitable for the growth stages of clam larvae, the average length of shells met the standard of growth stages of clam.

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