

Pests, diseases and natural food for Abalone (*Haliotis squamata*) larvae

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Abstract

The development of seawater cultivation (marineculture) leads to important economic commodities, one of which is shellfish such as abalone shells (Haliotis squamata). Abalone is very popular among people both domestically and abroad, this has caused the demand for abalone to increase. However, most of the abalones are obtained from wild catches. This is what causes the abalone population in nature to decline. Therefore, abalone cultivation, especially seeding, is one way to meet market demand. Problems arise when the larvae are in the larvae phase, which is susceptible to pest attacks and disease and feed that is appropriate to the size of the abalone larvae. This research is descriptive research where the primary data collection method is carried out in 3 ways, namely observation, active participation and interviews. This activity aims to find out pests and diseases that attack abalone larvae and the type of feed that suits the size of the abalone larvae.

Keywords: Abalone, Broodstock, *Haliotis squamata*

Introduction

The development of seawater cultivation (mariculture) is focused on high economic value commodities such as grouper (*Epinephelus* sp.), snapper (*Lutjanidae* sp.), and seaweed (*Gracilaria* sp.). Apart from that, there are also shellfish commodities such as abalone (Novia et al., 2010). Until now, marine fisheries production in Indonesia is still dominated by wild catches. Market demand, both domestic and international, continues to increase (Andriyanto & Listyanto, 2010). Abalone, with a price of around IDR 400,000 per kilogram, is a commodity that is worthy of being developed and cultivated sustainably as a superior species in seawater commodities (Hayati et al., 2018).

Abalone production is obtained from natural catching. It is not uncommon for wild catching to be carried out non-selectively so that it can threaten the sustainability of abalone in nature. Currently, abalone has high market demand accompanied by very high selling prices, however, to meet market demand for abalone shells, it still relies on

catching it from the wild. This activity aims to find out pests and diseases that attack abalone larvae and the type of feed that suits the size of the abalone larvae.

Methods

This research is descriptive research whose main data collection methods are carried out in three ways, namely observation, active participation, and interviews with several sources (Dadiono & Insani, 2020). Meanwhile, secondary data collection uses literature studies to collect information from various related literature sources to enrich the discussion, by comparing the results obtained with previous research (Halim et al., 2021).

Results and Discussions

Pests and diseases

Pests are organisms that can disrupt the production process and damage the life of an organism, especially abalone in cultivation containers. If not handled properly, damage caused by pests can result in death (Arifianto,

2017). These pests enter the rearing tank through the natural food provided. In the field, pests found in prospective abalone broodstock tanks include small crabs, small clams, and sea snails, as seen in Figure 1.



Figure 1. Pests in Abalone Tanks

Natural Food for Abalone Larvae

Diatom plankton feeding is carried out before the abalone larvae are stocked, with plankton stocked a maximum of seven days before the larvae are stocked. The availability of natural food can be met by culturing natural food in a controlled space. The natural food used for abalone larvae is *Nitzschia* sp diatoms, and *Chaetoceros* sp. This is in line with the opinion of Permana et al. (2017) regarding the types of diatoms that are suitable as food for abalone larvae. The natural food culture location is in a closed room close to the abalone hatchery. The aim of culturing in a controlled room is to obtain diatoms that are pure and not contaminated by other types of plankton. After that, the density of *Nitzschia* sp was calculated. using a tool called a hemocytometer.

The first stage in carrying out culture is the process of washing and sterilizing the equipment. The steps taken include:

1. Wash the culture media using laundry soap and a sponge for plastic containers, and using HCl for glass containers.
2. Make sure the culture container is washed thoroughly, so that there are no remaining plankton still attached, because remaining plankton can inhibit the growth of new plankton that will be cultured.
3. After washing thoroughly, the containers are dried by air-drying.

4. After drying, the inside of the container is sprayed with 75% alcohol.

For the water used in plankton culture activities, use a mixture of sea water and fresh water. For the culture of *Nitzschia* sp. There are several compositions so that cultured plankton can grow. For example, we want to culture *Nitzschia* sp. at a volume of 2 liters, 1500 ml of water that has been prepared is put into an Erlenmeyer tube. Then insert the *Nitzschia* sp larvae. 500 ml, then 2 ml of KW 21 fertilizer was added, then 1 ml of silicate was added which had been diluted with distilled water. The culture time in a small medium such as 2 L lasts for \pm 4 days, then transferred to a larger container such as 10 L, which can then be stored for 5 days and is ready for distribution. Then observations were also made on the diatom type *Nitzschia* sp. which is carried out using a microscope in a biology laboratory, observations are made on the first day of culture. Observation of *Nitzschia* sp. This is also to calculate the initial number during culture.

Conclusion

Pests that often attack the broodstock tanks and abalone larvae include small crabs, small clams and sea snails. Feeding diatom plankton is carried out before the abalone larvae are stocked. Plankton is stocked at a maximum of 7 days after the larvae are stocked. The availability of natural food can be met by culturing natural food in a controlled space. The natural food used to feed abalone larvae is *Nitzschia* sp diatoms.

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