



THE EFFECT OF *Daphnia* sp. ON THE WATER QUALITY, MAINTENANCE MEDIA AND GUPPY FISH (*Poecilia reticulata*) ACTIVITY IN FRESHWATER FISH SEED CENTER, CIMAHI CITY

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ABSTRACT

Guppy fish (*Poecilia reticulata*) is one type of decorative fish that is quite attractive, because of its various types, and its maintenance and cultivation are quite easy. During maintenance feed is an important factor because the nutritional content of the feed can affect optimal growth. Natural feed has better nutritional content than commercial feed, and can reduce production costs that are heavily incurred for feed. One of the natural feed that are often used in the maintenance of ornamental fish is *Daphnia* sp. The administration of *Daphnia* sp. on guppy fish farming was carried out at the Cimahi City Freshwater Fish Seed Center (BBIAT). The thing that was observed was the effect of giving *Daphnia* sp. on the quality of the water for the maintenance media and the activity of the guppies. The method used in this field work practice is the method of observation and field practice, carried out starting from the culture of *Daphnia* sp. conventionally as well as observing changes in the maintenance media and guppies after giving *Daphnia* sp. with the intensity of giving once a day. The parameters measured were the water quality of the maintenance media and the activity of the guppies. Based on the observations made, it was found that giving *Daphnia* sp. on the water quality of the maintenance media and the activity of the guppies had a positive effect.

Keywords: *Daphnia* sp., Guppy fish, Fish activity, Water quality

INTRODUCTION

The Cimahi City Freshwater Fish Seed Center (BBIAT) is located on Cihanjuang Street, Cibabat, North Cimahi District, Cimahi City, West Java. Information related to these companies includes Phone number (022) 6656754 and Postal Code 40513. UPT BBIAT is located in Cimahi Tengah Village, adjacent to the administrative center of Cimahi City District. By location BBIAT is located in the Nata Endah Cihanjuang Complex, Cimahi City. (BBIAT Cimahi 2019).

Guppy fish (*Poecilia reticulata*) is one type of decorative fish that is quite popular because of its various types, and its maintenance and cultivation are fairly easy.

This fish has a high commercial value in domestic and foreign markets. The price of premium quality guppy fish can reach the price range of eight hundred thousand rupiah per pair. Aquaculture profile data in Indonesia, shows an average growth per year of 64.8% (Sarida et al. 2011). The high demand for guppy fish must also be balanced with an increase in the amount of production, so that it can meet market needs (To'bungan 2017).

Feed is an important factor in fish maintenance. Natural feed has a fairly good nutritional content compared to commercial feed. The provision of natural feed can also reduce production costs which are widely

used for feed. *Daphnia* sp. is one type of natural food that is cultivated to meet the needs of freshwater fish maintenance (Maulidiyanti et al. 2015). Provision of *Daphnia* sp. The maintenance of guppy fish is expected to have a good effect and become an alternative feed that can be used in BBIAT Cimahi City. This activity aims to determine the effect of giving *Daphnia* sp. on the quality of the maintenance media and the activity of guppy fish in BBIAT Cimahi.

METHODS

Time and Place

Field Work Practice carried out at Cimahi City Freshwater Fish Seed Center (BBIAT) having its address at Cihanjuang Street, Cibabat, North Cimahi District, Cimahi City, West Java. The implementation time is from December 2, 2020 - December 16, 2020.

Working Methods

The methods used in this field work practice are direct observation and practice, namely methods by doing direct practice in accordance with directions and observing. Starting from the culture of *Daphnia* sp. as natural food for guppy fish maintenance, giving *Daphnia* sp. once a day, as well as observing changes in the maintenance media and behavior of guppies.

The parameters observed were the water quality of the maintenance media and the activity of the guppies after giving *Daphnia* sp. Observations were made during the field work practice activities for eight meetings. Observations were made after feeding at around 10.00 WIB.

Data Analysis

Observational data were analyzed descriptively and comparatively. Observation data obtained in the form of changes in water quality and guppy fish activity were analyzed and compared with previous research results.

Work Procedure

1. Culture of *Daphnia* sp.

The following is the working procedure used to culture *Daphnia* sp.:

- a) The aquarium is prepared for culture media.
- b) Water is put into the aquarium as much as two liters.
- c) Aeration is put into the aquarium as oxygen supply for *Daphnia* sp.
- d) *Daphnia* sp. put into the aquarium
- e) Catfish pond water is also put into the aquarium as food for *Daphnia* sp.
- f) Wait two to three days then *Daphnia* sp. that has been cultured can be used.

2. Guppy Fish Maintenance By Giving *Daphnia* sp.

The following is the working procedure used for guppy fish maintenance by administering *Daphnia* sp.:

- a) The aquarium is dissipated with an intensity every two days to maintain water quality.
- b) Water is replenished to restore water discharge to the aquarium.
- c) Krosok salt is added to prevent guppies from disease.
- d) Guppy fish are sorted according to size and type.
- e) *Daphnia* sp. taken from the culture aquarium using a small cylinder to be given to the guppies.
- f) Giving *Daphnia* sp. done using a small seser with an intensity once a day.

RESULTS AND DISCUSSION

Culture of *Daphnia* sp.

Culture of *Daphnia* sp. done to increase the availability of *Daphnia* sp. as a natural food for guppies. Culture of *Daphnia* sp. What is done is the conventional way, using a starter from the Muara Ornamental Fish Market on Peta Street. Culture begins by preparing the medium in the form of an aquarium, then filling it with 1-2 liters of water. The aerator is put into the aquarium

as oxygen supply for *Daphnia* sp., Then the parent *Daphnia* sp. put into the aquarium slowly. For feed *Daphnia* sp. can be given catfish pond water, this is done because catfish pond water has a high content of organic matter which has the potential to be used as a medium and a source of nutrients in the cultivation of *Daphnia* sp. (Akmal et al. 2019). In addition, the use of wastewater is expected to reduce pollution and save production costs. If you have been given *Daphnia* sp. can be used after 2 - 3 days.

Effect of Daphnia sp. Towards Water Quality

During the maintenance of guppy fish, several types of feed are given, one of which is *Daphnia* sp. *Daphnia* sp. has the potential to be used as natural feed because it contains high nutritional value, namely 68.12% protein and 13.52% fat (Akmal et al 2019). This nutritional content made the hall want to try giving *Daphnia* sp. as a natural food for guppies. Feeding *Daphnia* sp. guppy fish is also done because, during fish rearing, it requires high nutritional feed consisting of protein and amino acids, fats, carbohydrates, and vitamins and minerals so that the fish that are raised can grow well. The high protein content in *Daphnia* sp. able to meet the protein needs of guppy fish by 30-40% (Subandiyah et al 2014). Another advantage of using *Daphnia* sp. as guppy fish feed is slow movement, so it is easily caught by fish and the level of pollution to guppy fish maintenance media is lower than the use of artificial feed (Darmawan 2014).

Feeding in the form of *Daphnia* sp. guppy fish is done once a day. This is done to optimize the feed given so that it runs out and does not change the water quality. In addition, this is done to reduce production costs, which are mostly used for feed purchases. Aquaculture in general requires more costs for the purchase of feed than other production costs (Hasyim et al. 2018). Feeding combined with *Daphnia* sp. is

expected to be a solution to overcome the high costs incurred for purchasing feed because *Daphnia* sp. has the advantage of being easily cultivated by utilizing organic waste, namely catfish pond water. However, giving *Daphnia* sp. guppy fish feed also has weaknesses, namely its short life cycle and uncertain availability from culture results. This led to the administration of *Daphnia* sp. has not become the main feed in the maintenance of guppy fish at BBIAT Cimahi. Provision of *Daphnia* sp. adjusted to the availability of other feed (*Tubifex* sp. and pellets).

Effect of giving *Daphnia* sp. the maintenance of guppy fish at BBIAT Cimahi is that the water quality is more maintained. This is because *Daphnia* sp. does not reduce water quality (Akmal et al. 2019) and the level of pollution to guppy fish rearing media is lower than the use of artificial feed. In addition, the provision of *Daphnia* sp. also does not reduce water quality in the guppy fish rearing media. Water quality is important during the maintenance of guppy fish because water quality can affect the survival and growth of fish. In addition, poor water quality can affect the fish's decreased appetite and cause fish to become susceptible to disease. Meanwhile, good water quality in maintenance has a good impact on fish survival (Maulidiyanti et al 2015). Good water quality during administration of *Daphnia* sp. on the maintenance of guppy fish also because *Daphnia* sp. very sensitive to changes in water quality (Darmawan 2014). So, if the water quality is bad, *Daphnia* sp. will die and pollute the water on the maintenance media. *Daphnia* sp. does not pollute and pollute the water because, including live food side by side with guppy fish (Purbomartono and Suwarsito 2012).

Effect of Daphnia sp. Towards Fish Activity

Natural feeding in the form of *Daphnia* sp. The maintenance of guppy fish which is carried out once a day not only affects water quality but also affects the activity of guppy fish. Provision of *Daphnia* sp. as one of the feeds during guppy fish maintenance, it stimulates fish and increases fish activity. This is because *Daphnia* sp is a slow-moving live feed that is easy to catch by fish (Darmawan 2014). In addition, the movements of *Daphnia* sp. will stimulate fish to eat it (Purbomartono and Suwarsito 2012). In addition, fish activity can affect growth due to high predation of fish to *Daphnia* sp. who are actively moving and attracting fish to eat them (Buwono et al. 2019)

CONCLUSIONS

Based on the practical fieldwork activities that have been carried out, the following conclusions are obtained:

1. *Daphnia* sp. done conventionally by using catfish pond water to maintain the availability of *Daphnia* sp. as one of the natural foods in guppy fish maintenance.
2. Giving *Daphnia* sp. The water quality has a positive effect because it does not reduce the water quality of the guppy fish maintenance medium.
3. Giving *Daphnia* sp. guppy fish activity also has a positive effect because, *Daphnia* sp. is live food that is actively moving so that it can increase guppy fish predation.

SUGGESTION

Guppy fish maintenance activities by giving *Daphnia* sp. can be continued because it has a positive effect on guppies. As well as this PKL activity it would be better if the time given was longer or with more frequency so that the knowledge gained in the field would be more.

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