

ABSTRACT

EFFECT OF HARMFUL ALGAL BLOOMS (HABs) FOR FISH MORTALITY ON CAGE CULTURE IN RINGGUNG BEACH LAMPUNG BAY

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Fish mortality in the Lampung Bay not only affects wild fish, but also farmed fish in cages, especially Ringgung Beach. The fish deaths allegedly caused by harmful algal blooms that occur due to increased input contaminants from both natural and anthropogenic sources. Natural sources come from fish feed, feces and urine of farmers who stay at the location of cages. While chemical contaminants derived from waste and other chemicals used cultivators.

This study aims to analyze the influence of harmful algal blooms (HABs) the amount and frequency of fish mortality in cage culture Ringgung Beach Lampung Bay. The results of this study are expected to provide information about the harmful algal that causes the fish mortality. With so may be a reference as an attempt to optimize the yield of farmed fish. The study was conducted at three research stations based on the density of cage culture. Cage culture first station is a solid, the second station is nothing cage culture, and the third station is a rare cage culture.

The results of the study found 33 species of phytoplankton. 14 species have potential as HABs could the fish mortality, they are *Cerataulina bergonii*, *Nitzschia lanceolata*, *Pirodinium bahamense*, and *Pseudo-nitzschia* of Bacillariophyceae group; *Ceratium furca*, *Ceratium tripos*, *Dinophysis homunculus*, *Gonyaulax apiculata*, *Gymnodinium*, *Noctiluca scintilans*, *Prorocentrum lima*, *Protoperdinium*, and *Cochlodinium* of Dinophyceae group; and *Trichodesmium erythraeum* of Cyanophyceae group. With a burst rate of different populations. Of the 14 species, the highest is *Cochlodinium* explosion that reached 63.738 cells/ liter. The population explosion occurred on June 19, 2013 at 3 stations that allegedly caused 20 fish mortality in the cages. On that date, the lowest DO is 4.42. Compared to two other stations are 5.31 at station 1 and 5.24 at station 2.

Phytoplankton diversity index with the lowest value occurred at station 3 on June 19, 2013 is 0.705. This happens because there is the possibility of heavily polluted water quality. Thus the condition of the waters in an unstable condition, increasing fish mortality. The highest phytoplankton diversity values occurred at Station 2 on June 12, 2013 is 2.451. This is presumably because there has been no activity cages at station 2 Value uniformity Ringgung Beach phytoplankton in

waters obtained in the high category with a value above 0.5 or close to 1, which indicates that the spread of the individual of any kind relatively evenly. Except at station 3 which has a relatively low value (0.228 on June 19, 2013, 0.291 on June 26, 2013, and 0.446 on July 3, 2013).

Effect of HABs on the fish mortality rate is indicated by regression analysis. Correlation coefficient at station 1 shows the value of 0.5208. While on station 2 shows 0.6937. Harmful algal blooms affect fish mortality in cage culture Ringgung Beach. They have triggered reduced oxygen levels in the water that could potentially cause the mortality of wild fish and on cage culture.

Keywords: *fish mortality, harmful algal, cage culture*