

## **APPLICATION OF SMALL GROUP DISCUSSION LEARNING MODEL TO IMPROVE CATCH FISH LIVESTOCK BUSINESS RESULTS USING BIOFLOC SYSTEM IN ABIANSEMAL VILLAGE, BADUNG**

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### **ABSTRACT**

*Abiansemal village is one of the villages that become priority catfish farmers. One of the livestock business community in Abiansemal that has been formed is POKDAKAN BOGA SEGARA. Problems of business groups that must be solved are (1) There is no break-even point in the business group, (2) The cost of feed is quite high, not in accordance with the cost of goods sold, suitable fee. This business group desperately needs assistance in providing solutions to farmers in the production process, lack of knowledge of farmers about biofloc systems and need time to change our paradigm that still uses conventional methods. This catfish breeders group needs assistance and training by expertise to help fish breeders in general and assist in the production of quality fish. In addition, to increase production, a biofloc system is needed from the shape of ponds, regulating air, providing alternative assistance by providing probiotics, airrate / oxygen and density of stocking to increase the quality of catfish farming. Catfish Business Group Distributors also ask for assistance with production management in accordance with market expectations and demands. This group of community in Abiansemal village who is expected to be able to develop in the field of community business in the village. Method of Implementation carried out in this activity with the method of small group discussion, training and mentoring by expertise and Undhira Lecturers. This paper discusses to Open information on improving livestock business results and increasing markets. Results agreed in the implementation of this program Improve business results by an average of 25% per month and be able to increase the cost of fish feed by 7.4 kg / month from conventional methods.*

**Keywords:** Increased Business Results, Catfish Livestock Group, Biofloc System

### **INTRODUCTION**

Catfish farming is a culture that is currently favored by Abiansemal villagers, besides increasing catfish needs, catfish cultivation is one of the business potentials with great potential. Seen from the needs of catfish every year that continues to increase. According to (Statistics of the Bali provincial fisheries Department) the need for catfish in Bali reaches 12 tons / year from catfish pecel traders and fishing fish and the production of catfish in Bali is only 5 tons / year the rest comes from Java. From this, this cultivation is a vital group for the sustainability of the Abiansemal community in raising catfish.

In the village of Abiansemal, a catfish group was formed called POKDAKAN BOGA SEGARA which is chaired by Mr. Agung Lanang, which has been formed from 2012 until now. -70%. so there is no breakeven point in the group's business because it still uses conventional methods (IGusti Ayu Agung Sinta Diarini, 2019 (16)).

The purpose of this research is to increase catfish production and be able to reduce the cost of fish feed with the applied biofloc method. There are several stages carried out in this study including; (1) Bring in resource persons from the Bali provincial fisheries service to help catfish breeders, especially in the Abiansemal areas by socializing to change the community paradigm from conventional systems to biofloc systems, (2) Direct practice with Small Group Discussion methods to conduct direct

experiments from ponds, water management system, stocking, giving molasses, and giving probiotics and catfish products can be seen up to 2-3 months.

The results of this study are expected to provide solutions to these problems, so as to increase production and reduce feed costs. Of course this group effort can improve the welfare of the community, especially to the farmers BOGA SEGARA POKDAKAN group and catfish business groups in the village Abiansema, Badung.

## **METHODS**

The method used in this group effort is by survey techniques, interviews, small group discussions and practices starting from the planning stage, the preparation stage of the pool media, the stage of pond preparation, the stage of seedling preparation until the seedling stage. In addition, the catfish community business group also received information dissemination and assistance from the expertise of the fisheries service to change the community's main set of the biofloc system as well as a solution in the effort of this livestock group, especially to suppress fish feed because basically in this business the high cost of feed. There are several steps that can be done including:

### **Preparation Stage for Pond Making**

At this stage the preparation is carried out for 2 days from the preparation of ponds with a diameter of 3 meters, the installation of an iron frame, the installation of rubber gutters, installation of pipes, tarpaulin, installation of drainage and installation of waterways.

### **Preparation Stage Pool Water Media**

At this stage, the catfish business group made preparations by putting 2 kg of dolomite lime into the pond, putting clean water into the pool with a height of 80cm and preparing rice water but in this case used 4kg of bran that had been soaked for 15 minutes and filtered which was put into pool and shrimp paste that has been destroyed then added molasses and probiotics as much as 50cc in an activated aerator.

### **Preparation Stage Seedling**

In the preparation for seedling, the first steps before sowing are: from pool cleaning, filling water in this case with a 3 meter diameter pool is given a 5.6m<sup>3</sup> water volume, then probiotics in this case use probio 7 which has been registered in the lab test as much as 50cc and 50cc molasses aimed at developing bacteria in pond water, then giving 2kg dolomite lime which serves to reduce acid, rice water or bran water that has been soaked for 15 minutes by 4 kg with the benefit to grow or multiply plankton by continuing to fill salt into water as much as 1/2 kg. In preparation for spreading these seeds the aerator machine in water remains active.

## **FINDINGS AND DISCUSSIONS**

### **Seed Spreading**

After 10 days of media preparation and seedling, there were 4200 seedlings spread into ponds, with the following details:

$$\begin{aligned} V &= \pi \times r^2 \times T \\ &= 3.14 \times 1.5\text{m} \times 1.5\text{m} \times 0.80\text{ cm} \\ &= 5.652\text{ m}^3 = 5.6\text{m}^3 \end{aligned}$$

The seeds that are stocked are 750 head  $\times$  5.6 m<sup>3</sup> = 4,200 tails into a 3 meter diameter pond. Fish mass weight is calculated every week from spreading seedlings in the first week: size of seedlings stocked with a size of 8 cm with a mass data weight of 20 tail sampling. Looking for mass weight is the average sampling weight is the amount of mass weight / sampling. Overall mass weight is the result of the average

sampling weight x total number of fish, to find the amount of feed per day is  $0.3 \times$  the overall mass weight. (Source; I Gusti Ngurah Lanang Dauh, S.E). So in this activity can be obtained: 1 kg of seeds of 100 heads so that the mass weight of 100 heads so that the mass weight per head is  $1000 \text{ grams} / 100 \text{ heads} = 10 \text{ grams} / \text{head}$ . Looking for overall mass weight =  $10 \text{ grams} \times 4200 \text{ heads}$  (total number of seedlings the size of a pond diameter of 3 meters) = 42kg, to find the amount of fish feed per day =  $0.3 \times 42 \text{ kg} = 1.26 \text{ kg}$ . The amount of feed per day is divided into 2 namely morning and evening. Substitution of water is also carried out starting at the end of the second week and in the next initial method every 3 days the water is removed through the bottom of the pond as much as 20 cm from the surface then added with new water and sprinkled with probiotics in this case used probio 7 as much as 15cc and molasses as much as 30cc. This process is from calculating the mass and weight of fish and counting the amount of fish feed continuously every week until the mass of production is 2.5 to 3 months. The findings can be seen from the following table.

Table 1. Mass of Fish [with Biofloc Systems]

No	Information	Sampling	Sampling Weight (tail)	Average /tail sampling	Average/tail sampling	Total Mass Weight (kg)	Total feed (kg)
1	Spreading seedlings	20	200	10	0%	42	1.2
2	Week 1	20	300	15	50%	63	2.0
3	Week 2	20	420	21	40%	88.2	2.64
4	Week 3	20	560	28	33.33%	117.6	3.52
5	Week 4	20	710	35.5	26.7%	149.1	4.47
6	Week 5	20	870	43.5	22.5%	182.7	5.48
7	Week 6	20	1040	52	17.2%	218.4	6.55
8	Week 7	20	1220	61	17.3%	256.2	7.68
9	Week 8	20	1410	70.5	15.57%	296.1	8.88
10	Week 9	20	1630	81.5	15.6%	342.3	10.26
11	Week 10	20	1920	96	17.23%	403.2	12.09
12	Week 11	20	2240	112	16.6%	470.4	14.11
13	Week 12	20	2840	142	26.7%	596.4	17.89

Table 2. Mass of Fish [with Conventional Methods]

No	Information	Sampling	Sampling Weight (tail)	Average /tail sampling	Average/tail sampling	Total Mass Weight (kg)	Total feed (kg)
1	Spreading seedlings	20	200	10	0%	42	1.2
2	Week 1	20	280	14	40%	58.8	1.7
3	Week 2	20	380	19	31.5%	79.8	2.3
4	Week 3	20	500	25	31.5%	105	3.1
5	Week 4	20	600	30	20%	126	3.7
6	Week 5	20	840	42	40%	176.4	5.2
7	Week 6	20	960	48	14.2%	201.6	6.04
8	Week 7	20	1220	56	16.6%	235.2	7.05
9	Week 8	20	1260	63	12.5%	264.6	7.93
10	Week 9	20	1580	79	25.3%	331.8	9.95
11	Week 10	20	1900	95	20.2%	399	11.97
12	Week 11	20	2180	109	14.7%	457.8	13.7
14	Week 13	20	2820	141	21.5%	592.2	17.76
15	Week 14	20	2840	142	0.7%	596.4	17.89

Formulas:

Sampling Weight = Mass Weight Per Tail: Amount of Sampling

Average Per Tail Sampling = Total Sampling Weight: Number of Sampling

Total Mass Weight = Amount of Sampling Mass Weight x Total Amount of Seeds stocked

Number of Feed Per Day = Total Mass Weight x 0.03

From table 2.1. (With Biofloc System) Total Mass Weight of Catfish at week 12 reaches 596.4kg while in table 2.2. (With Conventional Methods) seen at week 14 reaches the total weight mass of the same fish which is 596.4kg, so the conventional method requires more time long time, thus according to table 2.1 with conventional methods require more amount of feed compared to the biofloc system, it can be seen the average increase in catfish production per head by the biofloc method by 24.8% in 12 weeks, with a mortality rate of 5% from the start stocking of 4200 seedlings to 4000 tails and with yields of  $4000 \times 142 = 568$  kg, whereas with conventional methods the average business group increased production by 22% within 14 weeks.

## CONCLUSION

From the discussion above it can be concluded that the biofloc system is very helpful for catfish farmers in business continuity and provides a solution to the problem that is seen in increasing production growth with an average increase of 24.8% with a faster time of 12 weeks with a total mass weight of 596.4 kg, compared to conventional methods it takes 14 weeks with an average increase in fish production of 22% with a total mass of fish mass of 596.4kg so that it can be compared that the biofloc system is able to reduce the cost of feed by eating an average of 8.06kg/week. For 12 weeks while using the conventional method of eating feed amounted to 9.07kg per week for 14 weeks.

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