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Assistance for catfish farming using the biofloc method in Tanjungkalang Village, Nganjuk Regency

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ABSTRACT

This community service aims to assist fish farmers on how to cultivate fish properly. Good fish farming certainly requires a place for breeding, hatchery, and growing fish. This service aims to assist the community in cultivating catfish using biofloc media. This assistance has an economic impact on the community, namely helping to meet food needs without buying fish at the market. In addition, it is also efficient to make because all the ingredients for fish farming are easy to get and are readily available around the house. This community service activity included a group of fish cultivators (Pokdakan) in Tanjungkalang Village, Nganjuk Regency. This activity results in a biofloc media with specifications of 4 m in diameter and about 0.8 m – 1 m in height. One biofloc can accommodate as many as 4000 catfish seeds.

ABSTRAK

Pengabdian masyarakat ini bertujuan untuk mendampingi petani ikan tentang bagaimana cara membudidayakan ikan dengan baik. Budidaya ikan yang baik tentunya membutuhkan tempat untuk penangkaran, pembenihan, dan pembesaran ikan. Pengabdian ini bertujuan untuk membantu masyarakat dalam membudidayakan ikan lele dengan media bioflok. Pendampingan ini memiliki dampak ekonomis bagi masyarakat yaitu membantu memenuhi kebutuhan makanan tanpa harus membeli di pasar ikan. Selain itu, juga efisien untuk dibuat karena semua bahan pembuatan tempat pembudidayaan ikan mudah didapat dan sudah tersedia di sekitar rumah. Peserta pada kegiatan pengabdian masyarakat ini adalah kelompok pembudidaya ikan (Pokdakan) di Desa Tanjungkalang, Kabupaten Nganjuk. Hasil dari kegiatan ini yaitu sebuah media bioflok yang memiliki spesifikasi yaitu diameter 4 m dan tinggi sekitar 0,8 m – 1 m. Satu bioflok bisa menampung ikan lele sebanyak 4000 benih.

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1. Introduction

Conventional catfish farming methods cause many problems but few results. The problem is dirty water resulting from a mixture of water and catfish droppings, so it must be replaced periodically. Polluted water is certainly not economical because it requires electricity and energy to replace or purify it again. One alternative to overcome this problem is the biofloc method. According to Faridah [1], the biofloc method is a method of raising catfish by cultivating microorganisms that process catfish farming waste into small lumps, which can then be used as natural food for fish. The biofloc method can simultaneously solve many problems in catfish farming, namely water and electricity efficiency, economical fish feed, and increased productivity of catfish.

One area that has a catfish farming group is Tanjungkalang Village in Nganjuk Regency. In this area, catfish farming still uses conventional methods. Cultivation in this area still needs to implement a better method, namely the biofloc method. This service activity aims to assist the people in the village in making biofloc for catfish farming. Of course, this assistance is an effort so that the community can independently make biofloc to increase people's income by applying efficient, effective, and economical catfish farming methods [2-6].

Figure 1. Biofloc method.

2. Method

Biofloc ponds can be made using fiber, plastic, tarpaulin, woven iron, or concrete. The shape of the pool should not form an angle. It can also be round. An example of a biofloc pond can be seen in Figure 2. In this figure, you can see a pond made with a woven iron frame. According to the picture, the materials used to make the pool are a plaiting iron, hacksaw, scissors, a 2-inch PVC pipe, wire, two knee pieces, a tarp, and 2 mm thin fiber. Tarpaulin is used for the walls and bottom of the pool, while thin fiber is used for lining the walls [7-10].

The steps for making a biofloc pond are first. The woven iron is cut and shaped according to what you want. Then the books are tied with wire so that the shape is round. Next, the tarp is cut and placed on the inside of the pond. So that it does not leak, the tarpaulin is sewn and glued. This service activity is carried out in three stages: planning, implementation, and evaluation. In the preparation stage, observations are made, making plans, and making activity schedules. At the implementation stage, pond design planning is carried out by considering cost, time, and effort. In the last stage, activities are evaluated, lifts are distributed, and reports are prepared.

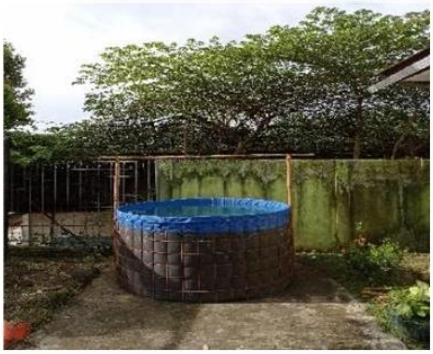

Figure 2. Biofloc design.

3. Results and Discussion

This service activity begins with observing and discussing with partners. The area that will be used for this community service to be carried out is Tnajungkalang Village, Nganjuk Regency, after knowing the problems experienced by the village community, namely the catfish farming system, which is the main livelihood for some communities. These problems include catfish farming, which needs to be more efficient and effective because it requires expensive costs.

The alternative method proposed by our community service team is the biofloc method. This method is one solution to the problems that occur. The team introduced the method. After the community agreed to cultivate using the biofloc method, assistance was provided to make biofloc ponds. Materials and tools used for making ponds are prepared in advance. After that, a community service team accompanied the community-made biofloc ponds. After the pool is finished, several checks are carried out so there are no leaks or other deficiencies.

The pond must be cleaned before the pool is filled with water. The pond is filled with water to an 80-100 cm height. The water put into the pool is given chlorine with a specific dose. The more detailed installation process can be seen in [5-10]. After the biofloc pond has been made, it is checked several times to complete it correctly, and there are no deficiencies. After that, an examination was carried out regarding the response and satisfaction of the community. From the inspection results, positive community responses were obtained, and the assistant participants felt that biofloc ponds would be helpful for them for catfish farming. This activity results in a biofloc media with specifications of 4 m in diameter and about 0.8 m – 1 m in height. One biofloc can accommodate as many as 4000 catfish seeds.

4. Conclusion

This community service activity for fish farming groups in Tanjungkalang Village, Nganjuk Regency, went smoothly and according to the plans that had been made. Some of the results obtained are the availability of alternatives for making catfish ponds that are efficient and economical using the biofloc method. The biofloc method can also minimize and recycle waste into the feed so that catfish farming is environmentally friendly, sustainable, and efficient in using water and feed. Something that can be done to maximize the biofloc is to place it strategically close to the spring to be more effective and efficient. Biofloc should be provided with a lighting device to make it easier to monitor routinely. In addition, biofloc should be marked or information about the age of the catfish, as well as the rules for feeding catfish.

REFERENCE

[1] Faridah, F., Diana, S., & Yuniati, Y. (2019). Budidaya ikan lele dengan metode bioflok pada peternak ikan lele konvesional. *Caradde: Jurnal Pengabdian kepada Masyarakat*, vol. 1, no. 2, pp. 224-227.

[2] Adharani, N., Soewardi, K., Syakti, A. D., & Hariyadi, S. (2016). Manajemen kualitas air dengan teknologi bioflok: Studi kasus pemeliharaan ikan lele (Clarias Sp.). *Jurnal Ilmu Pertanian Indonesia*, vol. 21, no. 1, pp. 35-40.

[3] Sudaryati, D., Heriningsih, S., & Rusherlistyani, R. (2017). Peningkatan produktivitas kelompok tani ikan lele dengan teknik bioflok. *JPPM (Jurnal Pengabdian dan Pemberdayaan Masyarakat)*, vol. 1, no. 2, pp. 109-115.

[4] Churiyah, M., Sholikhan, S., Basuki, A., & Dharma, B. A. (2019). Adopsi teknologi budidaya ikan lele dengan sistem bioflok. *Jurnal Graha Pengabdian*, vol. 1, no. 2, pp. 160-169.

[5] Salamah, S., & Zulpikar, Z. (2020). Pemberian probiotik pada pakan komersil dengan protein yang berbeda terhadap kinerja ikan lele (Clarias sp.) menggunakan sistem bioflok. *Acta Aquatica: Aquatic Sciences Journal*, vol. 7, no. 1, pp. 21-27.

[6] Fuadi, A., Sami, M., Usman, U., & Saifuddin, S. (2020). Teknologi tepat guna budidaya ikan lele dalam kolam terpal metode bioflok dilengakapi aerasi nano buble oksigen. *Jurnal Vokasi*, vol. 4, no. 1, pp. 39-45.

[7] Hudaidah, S., & Yusup, M. W. (2017). Pemberdayaan masyarakat melalui pengembangan budidaya ikan lele teknologi bioflok di Kelurahan Pinang Jaya, Bandar Lampung, Lampung. *Jurnal Pengabdian kepada Masyarakat Sakai Sambayan*, vol. 1, no. 1, pp. 17-22.

[8] Nugrahadi, D. T., Mazdadi, M. I., Saragih, T. H., & Wianto, T. (2021). Penerapan kolam terpal bioflok ikan lele tenaga surya bagi warga aliran Anak Sungai Kemuning di Kelurahan Loktabat Utara. *Jurnal Pengabdian ILUNG (Inovasi Lahan Basah Unggul)*, vol. 1, no. 1, pp. 9-15.

[9] Baihaqi, B., Latief, A., AS, A. P., & Suwardi, A. B. (2020). Pemberdayaan Pokdakan Tanah Berongga-Sido Urep melalui budidaya lele bioflok autotrof di Kabupaten Aceh Tamiang. *Jurnal Pengabdian UntukMu NegeRI*, vol. 4, no. 2, pp. 180-186.

[10] Viena, V., Rahmiati, T. M., & Mujiburrahman, M. (2021). Manajemen kualitas media air budidaya ikan lele dengan metode bioflok pada kolam terpal. *Rambideun: Jurnal Pengabdian Kepada Masyarakat*, vol. 4, no. 3, pp. 112-122.