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Catfish (Clarias gariepinus) Fry Growth at Reduced Feeding Level in the Biofloc Culture System in Bandung Regency, Indonesia

Dr.Rita Rostika[1*], Dr.Yayat Dhahiyat[2] and Muhamad Muzni, SPi[3]

[1,2,3,]*Universitas Padjadjaran- Indonesia*

Abstract

The aim of the research was to observe catfish (Clarias gariepinus) growth at reduced feeding level in the biofloc culture system. Feed residues and metabolites from catfish farms contain toxic ammonia that can affect water quality and organism growth. However, the existing organisms involved in the biofloc system can change ammonia into a non-toxic nitrite. Biofloc can also be used as catfish feed.The research was carried out at the hatchery Fish Breeding Centers Ciparay Bandung Regency from April 2014 until June 2014. The research employed the Completely Randomized Design (CRD) design of experiment, which involved six different feeding level reduction treatments, each of which having a different amount of feed but the same amount of biofloc. The research administered the following treatments: (A) 0% feeding level reduction (positive control), (B) 5% feeding level reduction, (C) 10% feeding level reduction, (D) 15% feeding level reduction, (E) 20 % feeding level reduction, (F) 25% feeding level reduction. Each treatment was repeated three times.The parameter observed was Average Daily Gain (gram/day). Treatments A through F yielded the following results respectively: 0.32; 0.30; 0.29; 0.26; 0,29 and 0.30. Statistically, the results indicated no significant difference. In other words, reduction of feeding level for catfish fry had no effect on Average Daily Gain, and a 25% reduction even yielded the highest result. The water quality parameters observed, namely temperature, pH level, and dissolved oxygen (DO), indicated optimum figures for catfish fry rearing.

Keywords— catfish rearing, biofloc, reducted feed, Average Daily Gain.

Introduction

Waste from fish farms is dominated by biodegradable organic matter such as proteins, carbohydrates, and fats from unconsumed feed and its faeces. Such waste materials are organic matter which may be used by heterotrophic bacteria as a potential source of nutrition for biofloc supporting organisms, both as fish feed and water quality control. Biofloc is a combination of macro-and microorganisms including bacteria, microalgae, fungi, protozoa, metazoan, and nematodes (Tacon et al., 2002 in Kurniasari, 2010). Floc biomass formed in bodies of water may be consumed by fish as additional sources of feed and as water purifier (Aiyushirota, 2009).

In the biofloc technology, heterotroph bacteria are the organisms quickly converting NH_3 into bacteria biomass. NH_3 is a toxin, yet on the other hand provides the energy

*All correspondence related to this article should be directed to Dr.Rita Rostika, Universitas Padjadjaran- Indonesia
Email: ritarostika_unpad@yahoo.com