ISSN-L 1454-7368
PRINT ISSN 1454-7368
ELECTRONIC ISSN 2067-2330
CD-ROM ISSN 2284-6964

UNIVERSITATEA DE ŞTIINŢE AGRICOLE
ŞI MEDICINĂ VETERINARĂ
"ION IONESCU DE LA BRAD" DIN IAŞI
University of Applied Life Sciences and Environment

SCIENTIFIC PAPERS
ANIMAL SCIENCES
LUCRĂRI ŞTIINŢIFICE
SERIA ZOOTEHNIE

VOL. 62 (19)

EDITURA "ION IONESCU DE LA BRAD" IAŞI

2014

PREVENTION OF *Vibrio harveyi* INFECTION AT THE FRESH WATER SHRIMP (*Macrobrachium rosenbergii)* USE OF BIOFLOCKS AGGREGATION

Rostika Rita[1*], Lili Walim[1]

[1] *Fisheries and Marine Science Faculty, Universitas Padjadjaran, Indonesia*

Abstract

Bioflocs acts as a purifier in culture medium and is an important contributor to carbon and nitrogen cycle as it can decipher protein polymers such as starch and pectin. Heterotrophic bacteria are present in flocks utilizing the feed is not eaten, faeces, and other organic materials as a source of protein to be converted into inorganic ammonia. Thus, there will be reduction of inorganic nitrogen in water and microbial protein produced can be utilized as an efficient protein source for fish. This research conducted in the Central Seed Development of Brackish Water and Marine Fish (BPBIAPL) Pamarican, Ciamis, for three month, starting in May 2011 until July 2011. The research method used Completely Randomized Design Experimental (CRD). The treatments are the addition of bioflocs media as much as 0 %, 5 %, 10 %, 15 % and 20 % of the total media. Then media culture infected with bacterium Vibrio harveyi with a density of 10^5 CFU / ml. Parameters observed is the survival rate and water quality. Results showed that addition of bioflocs media give positive effects on survival rate. The addition of 10 % bioflocs produced the highest survival rate (73.75 %). The temperature of the aquarium during the study ranged from 25.75^{0}C - 27.88^{0}C; DO range from 5.69 to 8.89 ppm, and pH ranged from 5.7 to 6.8.

Key words: Bioflocs, Fresh water shrimps, Vibrio harveyi, Survival rate

INTRODUCTION

The main factors causing pathogens developed is the reduction of water quality, which usually caused the contaminants from outside the culture media or food remains and faeces of shrimp. Decrease in water quality will have an impact on the appearance of both pathogenic viruses, bacteria, fungi and protozoa that disrupt and damage the seed shrimp. Treatment can be done up to now is the administration of antibiotics, but the use of antibiotics can lead to bacterial resistance to antibiotics, as well as standards on the export of shrimp that will not be allowed to use antibiotics. Therefore, prevention of diseases and pathogens that can be done is by improving the quality of water as the medium of cultured shrimps. Among the types of diseases that attack the shrimps, usually this is caused by bacteria. According [11], direct effects of the attack of pathogenic bacteria can cause disease, spoilage and toxins that can cause the shrimps death. One type of bacteria that attack the shrimp and fish that Vibrio sp., which is an opportunistic pathogen that can develop from saprophytic become pathogenic if the conditions are right. Pathogenic vibrio bacterium that can live outside the body of an organism with a attached or within the body [5]. The presence of Vibrio sp. shrimp in captivity do not always lead to mass mortality of shrimp, but a certain level of density and environmental conditions unfavourable larvae cause opportunistic pathogen vibrio turned into [10]. One way to improve the environmental conditions of the best in pond aquaculture shrimps is to use media as a medium of cultivation bioflock. Bioflock can transform inorganic nitrogen from the wastewater through assimilation by the microbial cultivation of a protein by the addition of carbon material [2]. This technology is able to prevent the accumulation of nitrogen waste in the form of toxic ammonia and nitrite compounds into harmless levels. The basic principle is to change

*Corresponding author: ritarostika_unpad@yahoo.com
The manuscript was received: 17.07.2012
Accepted for publication: 20.09.2012