

**TITLE:** BACTERIAL CHARACTERIZATION FROM BIOFLOCS OF SHRIMP FARMING

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### **ABSTRACT**

Microorganisms are fundamental in the efficiency of the biofloc system (BFT). On the other hand, bacteria play a prominent role with opportunistic pathogens, causing significant losses in shrimp production. Bacterial isolation from the production environment of *Litopenaus vannamei* in BFT, at the end of the production cycle, in greenhouse of 35 t of useful volume was made on a previously study. Now the characterization of 160 strains was carried out considering the antagonist substance production, colony morphology and gram stain. To evaluate the antagonist activity the over layer method was performed using three different culture medium (BHI, Muller Hinton - MH, nutritive - N) and 13 different indicator reference strains, that included important bacterial for shrimp and human. Size, elevation, edges, structure, brightness, color and appearance were considered for the morphology. Among the strains tested, 146 expressed the antagonism at any moment considering different mediums and indicator strains. The best medium for the expression of antagonism was MH with 44.65% of inhibition and *Enterococcus faecalis*, ATCC51299 and *Staphylococcus aureus* ATCC25904 were most sensitive (19% and 17% inhibition respectively). From isolation 22 (M1-M22) different morphotypes were identified, however just 12 was able to express the antagonism being 56.41% of strains gram positive bacilli. If it has been observed on isolation plate that M3 inhibit M17, on tests for antagonist substance production, the M1 morphotype expressed better results (25.64%). Using MH, substances expression can increase significantly. The profile of antagonism, considering the morphotypes isolated, suggests that this interaction is important between bacterial in BFT. These results are promising once they indicate that the antagonistic substances producers can be used in BFT, inhibiting pathogens and improving shrimp management.

**Keywords:** Bacterial isolation, antagonist activity, culture medium, bacterial morphotyps

**Development Agencies:** CNPq, FAPEMIG

