TITLE: CHARACTERIZATION OF BACTERIAL COMMUNITY IN AQUACULTURE ENVIRONMENTS IN THE SOUTH OF BRAZIL

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ABSTRACT

Fish farming systems are constantly monitored and adjusted in order to offer the animals optimum conditions of development, coupled with the provision of specific feeds and the use of antimicrobials, form a habitat of unique conditions for the development of a bacterial community of its own. The objective of this research was to characterize the bacterial community in aquaculture systems in the southern region of Brazil. Six water and three sediment samples were obtained from a fish farm in São Leopoldo-RS. In the ponds are developed crops with the following fishes: *cará, carpa, dourado, kinguio, lambari, pacu, piava, pintado, surubim* and *tilápia.* After processing of the samples and inoculation by spread plate, the quantification of Total Cultivar Heterotrophic Bacteria (BHCT) was done by Standard Plate Count and the results expressed in Colony Forming Units per gram/milliliter (CFU/g,ml). Colonies with distinct macroscopic characteristics were isolated and submitted to identification in MALDI-TOF equipment. The BHCT counts in the water samples varied between 10^2 and 10^3 CFU/ml while in the sediment samples 10^2 and 10^4 CFU/g. 160 colonies were isolated, of which 127 were identified in MALDI-TOF, 25 genera and 40 species. The species identified were: *Acidovorax temperans* (3), *Acinetobacter baylyi* (1), *A. tandoii* (1), *Aeromonas jandaei* (3), *A. veronii* (2), *Bacillus altitudinis* (7), *B. cereus* (5), *B.koreensis* (3), *B. luciferensis* (1), *B. marisflavi* (2), *B. megaterium* (6), *B. pumilus* (5), *B. simplex* (1), *B. weihenstephanensis* (1), *Burkholderia cepacia* (1), *B. difusa* (1), *Chryseobacterium* sp. (1), *Corynebacterium variabile* (1), *Curtobacterium albidum* (1), *Edwardsiella hoshinae* (1), *Enterococcus casseliflavus* (15), *E. faecalis* (20), *E.hirae* (2), *Kosakonia cowanii* (3), *Lysinibacillus boronitolerans* (1), *Micrococcus luteus* (8), *Moraxella osloensis* (2), *Neisseria subflava* (3), *Pectobacterium betavasculorum* (1), *Plesiomonas shigelloides* (1), *Pseudomonas vuscovaginae* (1), *Ralstonia pickettii* (1), *Rhodococcus equi* (3), *Serratia marcescens* (2), *Sphingomonas trueperi* (2), *Staphylococcus aureus* (1), *S. capitis* (4), S. *epidermidis* (3), *Streptococcus salivarius* (1) e *Streptomyces lavendulae* (1). Knowing the bacterial community in these systems is useful in assessing the severity of cases of bacterial diseases in animals, besides showing possible strains with potential for the treatment of effluents and in the production of probiotics for aquaculture.

Keywords: Bacteria aquatic ecosystems, Bacterial communities, Microbial ecology, Pisciculture

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