methodology that could help improve the efficiency of biological filters and reduce levels of nitrogen compounds. The objective of this study was to analyze the effect of the implementation of heterotrophic bacteria in the water quality of a recirculation system with juvenile red porgy (*Pagrus pagrus*) during activation of the biological filters. Three trials were performed (with fish fed, with fish fasting, and fish fed a commercial mixture of more heterotrophic bacteria) having as its goal to compare the three activation conditions of the biofilter, on its duration and to determine the behavior of the levels of nitrogen compounds (ammonium, nitrite and nitrate). The activation of the biological filter in all the trials progressed, resulting in the shortest time of activation and low levels of ammonia in fish fed the test and the addition of the commercial mixture of heterotrophic bacteria. These results extend the growing body of information on the implementation of heterotrophic bacteria and improving water quality at different stages in aquaculture systems.

MS13 PCR-DGGE ANALISYS OF ARSENIC INFLUENCE ON PLANKTONIC AND SESSILE BACTERIAL COMUNITIES FROM DRINKING WATER.

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Several microorganisms growing in aquatic environments are able to adhere, multiply and develop on solid surfaces in interacting and organized 3D structures named *biofilms*. Many problems in drinking water networks, such as corrosion, obstruction, increased resistance to biocides or contaminants and persistence of pathogenic species are due to the existence of biofilms. On the other hand, arsenic (As) in natural waters is a serious global problem due to its adverse impact on human health. However there are many microorganisms able to tolerate or metabolize this contaminant. The goals of this work were to study the effect of As on: 1) the planktonic bacterial community present in drinking water, 2) biofilms formed on several substrates used in drinking water distribution systems and 3) culturable bacteria isolated from As-containing waters in the presence of different As concentrations. With these aims, two closed drinking water circuits with a 50L tank storage coupled to a polypropylene pipe (200 cm) with a removable cell were built. Coupons of 1x1x0.02 cm of four substrata: a low carbon steel (Fe), zinc (Zn), a copper alloy (Cu) and polypropylene (PP) were placed in the cell. Water was impelled with a pump at laminar flux. In one of the circuits, the drinking water was supplemented with 5 mg L^{-1} As(V). To characterize planktonic communities, 1L water from the tap (at the beginning of the experiment) and 1L water from both circuit tanks (at the end of the experiment) were filtered through 0.22 µm sterile membrane. Then, four coupons of each material were extracted to study the structure of sessile community. Each coupon was rinsed with sterile physiologic solution, scrapped with sterile scalpel and poured into 1ml sterile physiologic solution. One of them was used to analyze culturable sessile bacterial community in nutrient broth with different As(V) concentrations (50, 200 and 300 mg L^{-1}), the remaining 3 coupons were combined. Both total and culturable sessile and total planktonic DNA was extracted using a commercial kit and amplified by PCR using 341F-GC clamp and 907R primers. The microbial ecological analysis of the communities was performed by denaturing gradient gel electrophoresis (DGGE). The results indicate that the presence of 5 mg L^{-1} As(V) produced a change in the total planktonic community structure, diminishing their diversity. The results obtained on biofilms showed a higher diversity in those biofilms formed on materials susceptible to bacterial colonization (Zn, Fe) in the presence of As. This could be related to a defense mechanism against the presence of arsenic. The presence of As did not provoke a significant difference in the bacterial community developed on those materials less susceptible to bacterial colonization (Cu, PP). It was possible to obtain culturable bacteria tolerating up to 300 mg L^{-1} As from all the biofilms, however, the diversity of those cultures diminished when the As concentration increased.