Title: Detection of Anammox bacteria in samples of psychoses

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The disposal of nitrogen compounds in water bodies is a recurrent challenge in fish farming, since the main form of fish excretion is ammonia, its excess can cause protein inhibition and consequent fish death. The most common forms of ammoniacal nitrogen removal are volatilization and the nitrification / denitrification process. This work aimed to investigate the presence of Anammox bacteria in fish culture environments and is the first step of a project to investigate the Anaerobic Ammonium Oxidation (ANAMMOX) process as an alternative for the treatment of ammonia contaminated effluents. This process, carried out by Anammox bacteria, has advantages over conventional methods because it does not require aeration, generate less sludge, reduce CO2 emissions by up to 50% and occupy a smaller area. The collection was carried out in the excavated tanks of Fonte Boa Pisciculture, municipality of Mateus Leme, Minas Gerais, which supplies fish for human consumption. Nine samples of excavated tanks, ponds, and greenhouses were collected, each sample with its particularity. Samples were run in buffer. DNA extraction was carried out using the MoBio kit, and the presence of Anammox bacteria in the samples collected from the fish culture was verified from the polymerase chain reaction with the primers Pla46f and Am820r. The positive result was obtained by electrophoresis in 1% agarose gel. The next step will be to use these sludges to enrich them in bioreactors to evaluate if it is possible to develop Anammox activity and biomass from selected inocula after one year of cultivation.

Keywords: Anammox, psychoses, PCR, source of inoculum

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