**DETERMINATION OF THE INFLUENCE OF DIFFERENT ENVIRONMENTAL CONDITIONS ON *IN VITRO* GROWTH OF *Aeromonas spp.***

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**Abstract:**

The *Aeromonas* spp is an opportunistic pathogen that causes diseases in fish and may affect human health. These bacteria may be found in several environments including fresh water, soil, food and animal microbiota, being able to develop virulence factors in many environmental conditions. This research aims to evaluate the *in vitro* growth of *Aeromonas* spp. subjected to different environmental factors, such as pH, temperature and ammonia concentration. Six isolated of *Aeromonas* spp. were used, with different profiles of virulence genes. To simulate different environments, sterile solution containing 1 M of NaOH and 1 M of HCl was added to the Tryptic Soy Agar (TSA) medium, obtaining pH of 5.0; 7.0; 8.0; 9.0; and 10. To reach temperatures of 22, 25, 28, 31 and 34ºC a microbiological incubator or a cooled room were used. For the obtaining of different ammonia concentrations (0.1; 0.3; 0.6; 0.9 e 1.2 mg/L), ammonium sulfate 1M solution was added to TSA. A bacterial inoculum of 136 UFCs/ml$^{-1}$ was inoculated on the surface of a plate, in triplicate for each point tested and the plates were incubated during 24 hours for obtaining of colony forming units. A generalized linear mixed model was applied in analyzes. The pH 10.0 demonstrated differ in the control group (pH 7.0) ($p \leq 0.05$) restricting the growth of bacteria. All temperatures affected the *in vitro* growth of *Aeromonas* spp. and in all treatments there was a reduction of bacterial growth when compared to the control group (28 ºC) ($p \leq 0.05$). For ammonia concentration variable could be observed that the concentration of 0.9 mg/L was significant compared to control group (0.1 mg/L), having promoted greater bacterial growth.

**Keywords**: *Aeromonas*, ammonia, environments, virulence

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