

TITLE: MICROBIOLOGICAL CHARACTERIZATION OF THE DIGESTIVE TUBE OF OYSTERS *Crassostrea brasiliana* FROM CULTIVATION IN COMMUNITIES OF THE NORTHEAST OF PARÁ, BRAZIL

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ABSTRACT: The cultivation of oysters for human consumption is a practice of great economic importance in the coast of the state of Pará, but the consumption of bivalve organisms from contaminated water can cause diseases such as gastroenteritis or even viral hepatitis. Bivalve molluscs are efficient filters and accumulate in their tissues an enormous amount of microorganisms being able, therefore, to transmit diverse disease-causing pathogens to humans. This study aimed to perform the microbiological characterization of *Crassostrea brasiliana* oysters, widely commercialized in Pará, determining the concentration of total coliforms (CT) and thermotolerant coliforms (CTT) and presence of *Escherichia coli* bacteria, in addition to evaluating the occurrence of hepatitis A virus (HAV) and hepatitis E (HEV) in the analyzed samples. The samples were collected in areas of ostreiculture, in Curuçá, São Caetano de Odivelas, Salinópolis and Augusto Corrêa municipalities located in the northeastern state of Pará. The quantification of the Most Likely Number (MLN/100g) of CT and CTT was determined by the technique of multiple tubes. The viral RNA extraction was performed with the Viral QIAamp RNA kit. Detection of hepatitis A virus was performed by nested-PCR with amplification of the VP1/2A region of the genome using Taq platinum DNA polymerase, followed by sequencing for confirmation of positive samples. The analysis of the occurrence of hepatitis E virus was performed by the RT-qPCR technique. The MLN of CT ranged from <1 to 3.5 x10⁶ MLN/100g, whereas the CTT ranged from <1 - 1,1x10⁶ MLN/100g in the four communities sampled. It was possible to recover *E. coli* isolates in all localities, with Salinópolis being the municipality where the largest number of positive samples (73%) was found, while Augusto Corrêa showed the lowest detection (27%). The National Program for the Sanitary Control of Bivalve Molluscs that establishes criteria for the quality of bivalve molluscs in Brazil defines smaller numbers than 4.6 x10⁴ MLN/100 g for *E. coli*, therefore, some of the oysters were classified as suspended for consumption. Of the total of 44 study samples, 11.4% presented a positive result in the detection of the genetic material of HAV, but no sample was positive in the study of HEV. The results, although preliminary, call attention to the need to monitor the quality of this food because of the risks associated with its consumption with the levels of contamination found.

Keywords: viral hepatitis, *Escherichia coli*, coliform index, oysters of consumption, molecular diagnosis

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