TITLE: BIOFILM PRODUCTION BY *ESCHERICHIA COLI* IN SAMPLES OF THE CITY OF ARACAJU-SE

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ABSTRACT:

Studies that aim to characterize potential strains of patotypes are still scarce in Brazil, it is known that the ability of biofilm synthesis promotes a greater potentiality of pathogenesis, and being an enteropathogenic bacterium, it is necessary the present study. Bacterial adhesion in human body tissues is marked by the formation of microcolonies that are the first step in biofilm formation. The microbial biofilm consists of communities of microorganisms that may be adhered to biotic or abiotic surfaces. These microorganisms are surrounded by a complex matrix composed of polysaccharides that are directly linked to the persistence of the colonies in the adhered place, in addition to confer resistance to antimicrobials. Thus the objective of the present study was to detect the ability of biofilm synthesis in 21 strains of Escherichia coli isolated from meat, water, and oysters of the city of Aracaju / SE. For this, two presumptive tests were used to detect biofilm production by isolated strains. The first one was the Congo Red Agar (CRA), which is characterized by the formation of dark halo around the colony in positive cases and the second test was characterized by the cultivation of the strains in saccharose agar with glass cane, and later use of the indicator of Andrade for detection of the biofilm synthesis, having red color when positive. In the first test with the CRA 95% of the total strains reacted positively, while in the glass cane test, with subsequent use of the Andrade indicator, the result was 80.95% for positive results. In real values of the 15 water samples 13 were positive for the CRA and 12 were positive for the test with the Andrade indicator. Of the 3 oyster samples, 2 were positive for the CRA test and 3 were positive for the indicator. The only two viable meat and soil samples were negative for the CRA and positive for the indicator test, while the standard E. coli was positive for both tests. It was also interesting to note that the sampled sites commonly used by the population had positive strains for the two tests and because the biofilm guarantees adhesion to surfaces, the stability generated allows the proliferation of the microorganisms by the environment, which in this case can generate public health problems by it is an indicator bacterium of microbiological quality with enteropathogenic potential.

Keywords: *Escherichia coli,* microbial adhesion, resistance, biofilm, enterotoxic.

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