TITLE: ISOLATION OF ENTEROBACTERIA IN HOUSE FLY (*MUSCA DOMESTICA*) CAPTURED AT RESTAURANTS IN MUNICIPALITY OF SERRA TALHADA, PERNAMBUCO, BRAZIL.

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ABSTRACT:

House flies (Diptera, Muscidae, *Musca domestica*) are synanthropic insects that are attracted to populated areas with inadequate sanitations system, thus urban areas provide a strong interaction between humans and these insects. It is known that *Musca domestica* is an important mechanical vector of microorganisms, including pathogenic bacteria that can cause food bourn disease. This study aimed the isolation and identification of potentially pathogenic bacteria (fecal coliforms and enterobacteria) from *M. domestica* captured in municipality of Serra Talhada, Pernambuco, Brazil. The capture of insects was carried out at two points of food commercialization named local 1 and 2, where illuminated trap was installed. A total of 45 flies were captured (24 from local 1, and 21 from local 2) and groups of 3 insects, totalizing 15 samples, were stored into test tubes containing 10 mL of sterile peptone solution (1%), which were used for microbial analyses. For total coliforms search, 0.1 ml from each sample was transferred to Lauryl Triptose Broth (LTB) and incubated at 35 ºC for 48 hours; if positive in CLB, 0.1 mL was transfer to Bright Green Broth (BGB) and incubated at 35 ºC for 48 hours. For the detection of fecal coliforms, if positive for total coliforms, 0.1 mL was inoculated from BGB into EC-Broth and incubated at 45 °C for 48 hours. The isolation and biochemical identification of enterobacteria was performed inoculating an aliquot from positive EC-broth tubes onto the surface of MacConkey Agar, Methylene Blue Eosin Agar, *Salmonella/Shigella* Agar, in Petri dishes; and into Triplice Sugar Iron Agar in tests tubes, and incubated at 35ºC. After 24 hours, phenotypic characteristics of the isolated colonies were observed and bacterial biochemical identification was performed according to the methodology described by the culture media manufacturer. All 15 samples were positive for fecal coliforms. Thirteen colonies (8 from local 1, and 5 from local 2) of enterobacteria were characterized and identified as *Escherichia coli*, *Citrobacter*, *Proteus*, *Klebsiella* and *Salmonella*. The presence of *Salmonella* is a concerning result since this bacteria is the main agent of food borne diseases. In conclusion, the presence of *Musca domestica* in locals of food consumption presents a potential risk of contamination by foodborne illness to customers. These results can be used as a basis for the elaboration of actions to eliminate house flies from the studied locals.

Keywords: Bacteria, Mechanical vector, Foodborne disease.

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