

Virulence factors of *Escherichia coli* isolated from inspected and artisanal cheeses in the North of Paraná

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Cheese is a high nutritious product constituted of proteins, lipids, carbohydrates, minerals, calcium, phosphor and vitamins. The ripeness of cheese is made with controlled temperature and relative humidity of air. Due to these conditions and being a product ready for consumption, it can be easily contaminated with pathogens, bacteria and fungus, some of these being deteriorative, leading to an unpleasant appearance, reducing its commercial value. Among the most common pathogens found in cheese is *Enterobacteriaceae* family. Diarrheagenic *E. coli* (DEC) is associated and it can show virulence factors such as adhesins, invasins and toxins. The aim of this study was to detect virulence genes of DEC isolated from inspected and craft cheese. We collected eighteen cheeses with inspection stamp and fifty-four artisanal cheese sold at municipal markets in the North of Paraná. *Escherichia coli* isolates were isolated from MacConkey agar and identified by biochemical tests using EPM, MILi and Simmons Citrate culture media. To detect the major virulence gene from DEC were used two Multiplex-PCR with modifications for detection of following genes: *ipaH* (Enteroinvasive - EIEC), *elt* and *est* (Enterotoxigenic - ETEC), *aggR* (Enteroggregative - EAEC), *eae* (Enteropathogenic - EPEC), *stx1* and *stx2* (Shiga-toxin *E. coli* producer - STEC). In the inspected cheese was not found *E. coli* isolates, although we isolated thirty-six colonies of *E. coli* from artisanal cheese. All isolates not showed Diarrheagenic *E. coli* genes indicating that colonies found in the artisanal cheese would be from microbiota or others pathotypes such as Extraintestinal Pathogenic *E. coli* (ExPEC). The presence of this bacterial specie only craft cheese in this study showed that the processing type of these cheeses is important for bacterial contamination.

Keywords: *E. coli*, diarrhea, cheese, virulence factors, contamination.

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