



The modern human diet consists of a wide variety of food materials from different sources. The active promotion of fruits and vegetables as an important part of a healthy diet has led to a significant increase in fresh produce being eaten all over the world. Recent outbreaks of foodborne illnesses related to consuming fresh produce have heightened concerns that these foods might be a source of an increased source of illness. The minimal processing required for fresh and freshly cut produce, which omits any effective microbial elimination steps, results in food products that naturally carrying microorganisms, some of which may be potentially hazardous to the human health.

Some of the foodborne pathogens like *Salmonella* spp., *E. coli*, *Citrobacter* spp., and *Enterobacter* spp. produce curli, which help in during the initial steps of biofilm formation and enhances the resistance of cells in biofilms for against sanitizers and disinfectants. Curli are proteinaceous components of a complex extracellular matrix and are produced by many *Enterobacteriaceae*. They are thin, coiled fibers expressed on the surface of cells that bind several matrix matrices and plasma proteins such as fibronectin, laminin, plasminogen, and azo dyes like Congo red. Raw vegetables, fruits, and unpasteurized juices contain a number of curli-producing foodborne pathogens which that are associated with food-related diseases. These curli producers form biofilms on fresh produce as well as on food contact surfaces, and resulting in the cross-contamination of produce. Curli-producing bacterial strains are characterized by their ability to bind Congo red, which provides a simple screening method for *in vitro* curli production. The Congo red binding technique has a qualitative approach, as well as a quantitative approach. Curli producers were isolated from fresh produce and unpasteurized carrot juice using a modified Luria Bertani (LB) medium. Curli-producing organisms form dry red rough colonies on modified LB medium, while nonproducers form smooth white colonies. The parameters that control curli production, such as temperature and osmolarity, were evaluated using the Congo red binding technique.

Commented [E1]: Consider deleting “and freshly cut” unless there is a noteworthy difference between these terms that you expect the reader will understand.

The ~~ressitance~~resistance of biofilms formed by ~~eurli-curli~~curli-producing organisms was evaluated; ~~it was and~~ found that curli production increases resistance to various commercially used sanitizers.

Formatted: Indent: First line: 0.5", Line spacing: Double