

Influence of addition of probiotic bacteria to yoghurt on survivability of some food borne pathogens

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Abstract

Two experiments were performed to know the efficacy of probiotic strain *Lactobacillus casei* ATCC393 (*L. casei*) on *Staphylococcus aureus* (*S. aureus*) and *Escherichia coli* O175:H7 (*E. coli* O157:H7) in yoghurt. The aim of first experiment was to investigate the ability of probiotic strain to inhibit foodborne pathogens using agar well diffusion method. The obtained results revealed that *L. casei* inhibited all of tested pathogens. *L. casei* had the strongest effect on *E. coli* O175:H7 followed by *S. aureus*. The results also revealed strong positive linear relationship of correlation coefficient between pH and tested pathogens at different inoculation ratios with and without the inoculation of *L. casei*. The second experiment aimed to test inhibition of foodborne pathogens in the presence of *L. casei* during milk fermentation under controlled pH conditions. Obtained results proved the ability of *L. casei* to significantly reduce the number of both pathogen and eliminate them. The difference in *E. coli* O157:H7 and *S. aureus* counts between regular yoghurt inoculated with pathogens only and yoghurt inoculated with pathogens plus *L. casei* may be attributed to additional antibacterial substances from *L. casei*. This study declared that tested *L. casei* was capable of delaying growth of many foodborne pathogens in yoghurt. Co-inoculation of *L. casei* with yoghurt starter seems to be beneficial during yoghurt manufacture.