P 196

DETERMINATION OF THE SURVIVAL LEVELS OF ACID-ADAPTED *ESCHERICHIA COLI* O157:H7 IN FERMENTED TURKISH-TYPE SAUSAGES (SUCUK)

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Escherichia coli O157:H7 causes hemorrhagic colitis and hemolytic uremic syndrome (Cheng and Chou 2001). Traditionally, it had been believed that acidic foods were safe. However, several investigators have found that *E. coli* O157:H7 can persist in acidic foods (pH 4.5) such as apple cider, mayonnaise, fermented sausage, and salad dressing (Yuk and Marshall 2004). This study aimed to determine the time taken for *E. coli* O157:H7 to adapt to different types of acids, and the effect of acid adaptation on the survival level of *E. coli* O157:H7 in Turkish-type fermented sausage (sucuk). *E. coli* O157:H7 cells were adapted to acids in a Tryptic Soy Broth (TSB) set to pH: 5.5 for 1, 2, 3 and 4-hour periods using inorganic (HCl) and organic acids (acetic, lactic and citric). The acid tolerance of acid-adapted and non-treated cells was determined in pH 3.5 TSB. And then the acid-adapted and the non-treated *E. coli* O157:H7 (10^5 CFU/g) was added to sucuk. The results of the study showed that the acid adaptation of *E. coli* O157:H7 increased depending on the type of acid and the duration of the adaptation process. It was determined that the survival rate of *E. coli* O157:H7 in sucuk was significantly increased through acid adaptation. As a result, it was understood that acid-adapted *E. coli* O157:H7 can maintain its viability in acidic foods such as sucuk for at least 15 days. Therefore, acid adaptation is an important mechanism in E. coli O157:H7 and should be considered in food challenges studies.

Keywords: *E. coli* O157:H7, acid adaptation, Turkish-type fermented sausage, sucuk

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