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SUMMARY

A total number of 200 raw meat products (50 each of minced meat, beef burger, kofta and oriental sausage) were collected from different markets in Cairo and Giza governorates. Samples were transferred to laboratory for bacteriological examination.

E. coli O157:H7 was detected in 1, 3 and 2 samples from minced meat, beef burger and kofta respectively with percentage of 2, 6 and 4% while the organism failed to be detected in samples of oriental sausage.

Experimental design were prepared in order to evaluate the effectiveness of chilling, freezing, using of nisin, lactic acid and mixture of both in reduction of *E. coli* O157:H7 count in minced meat. Washed cells of *E. coli* O157:H7 were inoculated into minced beef and mixed well then the meat were divided into 4 equal portions to the 1st one nisin were added to make final concentration of 500 IU/g, to the 2nd portion lactic acid were added to make a final concentration of 2% in ground beef more a mixture of nisin 500 IU/g and lactic acid 2% were added to the 3rd portion while the 4th one left untreated as control positive.

After mixing each of treated and untreated portions, it were divided into 17 portions, seven were held at 4°C for 7 days, examined daily and nine portions were held at -18°C,

examined every week in the 1st month, then every 2 weeks for the further 2 months of storage.

Samples stored at 4°C, the mean count of *E. coli* O157:H7 in untreated samples slightly decreased during the 7th days of storage from 5 $\log_{10}$ CFU/g to 4.99 $\log_{10}$ CFU/g.

Addition of 500 IU/g nisin resulted in noticeable decrease in count of *E. coli* O157:H7 from the 4th day of preservation.

Addition of 2% lactic acid induced a significant reduction in count of *E. coli* O157:H7 from 5 $\log_{10}$ CFU/g to 4.9 $\log_{10}$ CFU/g at the 7th day of storage.

Combined addition of both nisin and lactic acid induced a much more reduction in the viable cells of *E. coli* O157:H7 which reached 4.8 $\log_{10}$ CFU/g at the end of storage time.

Results in samples stored at -18°C were demonstrated that the count of *E. coli* O157:H7 in untreated minced meat decreased from 5 $\log_{10}$ CFU/g to 4.44 $\log_{10}$ CFU/g after 3 months of freeze storage.

Addition of 500 IU/g nisin induced reduction in count of *E. coli* O157:H7 from 5 $\log_{10}$ CFU/g to 3.7 $\log_{10}$ CFU/g after 3 months of freeze storage.

Addition of 2% lactic acid resulted in 3.13 $\log_{10}$ CFU/g reduction in *E. coli* O157:H7 count during freeze storage.

Combined addition of both nisin and lactic acid induced 3.3 $\log_{10}$ CFU/g decrease in *E. coli* O157:H7 count during freeze storage.