P-04-25

The effect of alginate coating containing pomegranate peel extract on shelf life, texture and color characteristics of chicken breast meat (#575)

Majid Javanmard Dakheli[1], Paria Rahnemoon[2], Mahboobe Sarabi Jamab[3]

[1] Iranian Research Organization for Science and Technology (IROST), Department of Food Technologies, Tehran, Iran; [2] Ph. D. Student, Institute of Food Science and Technology, Department of Food biotechnology, Mashhad, Iran; [3] Institute of Food Science and Technology, Department of Food biotechnology, Mashhad, Iran

Introduction

In this research pomegranate peel extract was used alone or in combination with alginate to coat raw chicken breast meat pieces to evaluate the effect of this extract on its shelf life. Also, the effectiveness of these coating to inhibit the activity of some microorganism in chicken meat was investigated.

Methods

In this study, pomegranate peel extract was used alone and along with alginate solution to coating chicken breast. Effect on the survival and decontamination of selected index microorganisms was investigated. Also, Texture and color analysis of chicken breast (coated and uncoated) was carried out on thesamples.

Results

The coated sample with alginate containing the extract in comparison to the extract coating alone and control samples (the sample submersed in sterile distilled water and the coated sample with alginate solution without extract) was more resistant to microbial contamination (*Salmonella enteritidis*, *Escherichia coli*, *Listeria monocytogenes* and *Staphylococcus aureus*) in all of the samples increased over time, the increasing rate in the sample coated with alginate containing extract was 1 to 3 logarithmic cycles less than other samples.

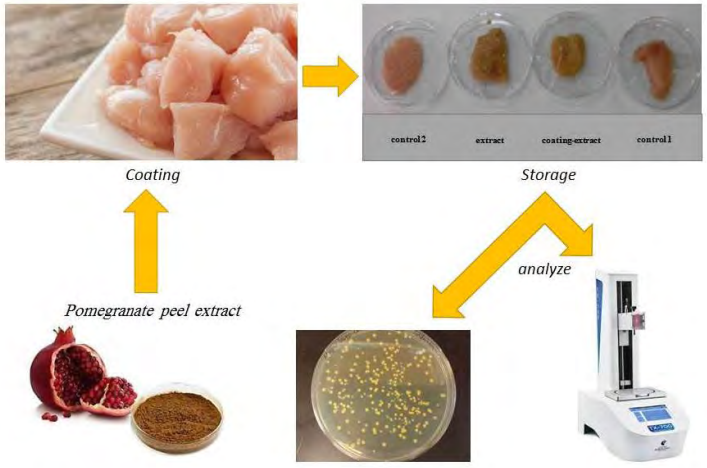
The results of texture analysis showed that extract had a significant effect. Hardness and cohesiveness were diminished but adhesiveness and reactiveness were increased in all samples. Based on color analysis, a* and b^* factors in coated samples with extract alone and containing alginate were more than samples submersed in distilled water and alginate. The mentioned samples showed the least amount of factor L^* ($p<0.05$).

Conclusion

Alginate coating containing pomegranate peel extract had positive effect on chicken breast meat shelf life.

The increasing rate of inoculated bacteria count in the sample coated with alginate containing extract was 1 to 3 logarithmic cycles less than other samples.

The extract of pomegranate peel increased a^* and b^* factors of color and adhesiveness of chicken meat.



The effect of alginate coating containing pomegranate peel extract on shelf life, texture and color

Notes