

Chapter 1: Introduction

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Chapter 2: Literature Review

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Chapter 3: Co-factorial influence of pH-concentration on antimicrobial activity of chitosan against *E. coli* O157:H7

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Chapter 4: Differential biocidal actions of chitosan and acetic acid against *E. coli* O157

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Chapter 5: Antibacterial action of chitosan-arginine against

***Escherichia coli* O157 in chicken juice**

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Chapter 6: Susceptibility of *Escherichia coli* O157 to chitosan-arginine in beef juice is affected by bacterial cell growth phase

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Chapter 7: Preparation of novel antimicrobial meat packaging using chitosan-arginine

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Chapter 8: General discussion

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Appendix

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Appendix 3: A comparison of the microbiological quality of meat packaged in Woolcool® boxes compared to conventional EPS boxes.

Appendix 4: Photographs of experimental apparatus

Appendix 1: Survival and metabolic activity of lux-marked *Escherichia coli* O157:H7 in different types of milk

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Appendix 2: Testing of surface spoilage bacteria in meats by application of Woolcool[®] packaging

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Appendix 3: A comparison of the microbiological quality of meat packaged in Woolcool® boxes compared to conventional EPS boxes

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Appendix 4: Photographs of experimental apparatus