APPLICATIONS OF LACTIC ACID AND ITS DERIVATIVES IN MEAT PRODUCTS AND METHODS TO ANALYZE RELATED ADDITIVES IN RESTRUCTURED MEAT

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ABSTRACT

Lactic acid and its derivatives are widely applied to various processed food products for multiple functions. In this research, the antimicrobial study of lactic acid was investigated; the analysis methods for lactic acid by HPLC and FTIR were used to analyze different types of meat; Meat performance comparison in restructured meat was studied with other meat binders. Quantitative and qualitative properties of sodium alginate in restructured meat were investigated using FTIR.

The results showed that when STEC-8 were exposed to 55 °C lactic acid, there were 5.7-6.0 and 1.8 log reductions for pure culture strains and beef brisket, respectively. When use an electrostatic sprayer, there were no significant differences between spray times and different temperatures. Results from lactic acid analysis with HPLC and FTIR showed that compared with HPLC, FTIR method cannot provide extract values, it only predicted the amounts. Results from comparison fish balls performance with different effects of binders showed that Activa® RM binder showed the best functionality, following with FG+ and FG treatments. Determination of sodium alginate in restructured meat analysis with FTIR combined with PLS and PCA at wavenumber of 800 cm-1 showed that directly drying method could be used to analyze sodium alginate in meat samples. In summary, this study is important to the food industry. The promising results could contribute to consumer health. The purpose of this project was to provide

reference data for food safety, including both shelf life study and chemical residual testing, which may provide solutions for processing added-value meat samples.