POTENTIAL EFFECT OF *Citrus aurantifolia, Citrus microcarpa* AND *Citrus hystrix* MARINATES ON MEAT TENDERIZING

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TABLE OF CONTENTS

		PAGES
ACKNOWLEDGEMENTS		i
TABLE OF CONTENTS		ii
LIST OF TABLES		iv
LIST OF FIGURES		v
LIST OF ABBREVIATION		vi
ABSTRACT		vii
ABSTRAK		viii
CHAPTER 1: INTRODUCTION		
1.1	Background of Study	1
1.2	Problem Statement	2
1.3	Significance of Study	3
1.4	Objectives of Study	3
CHAPTER 2: LITERATURE REVIEW		
2.1	Buffalo meat	4
	2.1.1 Slaughtering of buffaloes	5
	2.1.2 Silver side of buffaloes	6
2.2	*Citrus aurantifolia* (Limau Nipis)	6
2.3	*Citrus hystrix* (Limau Purut)	7
2.4	*Citrus microcarpa* (Limau Kasturi)	8
2.5	Proteolytic Enzyme	9
	2.5.1 Bromelain	10
CHAPTER 3: METHODOLOGY		
3.1	Materials	
	3.1.1. Raw Materials	12
	3.1.2. Chemicals	12
	3.1.3. Apparatus	12
3.2	Method	
	3.2.1 Sample Preparation	13

3.2.2 Fruit Extraction Preparation 13
3.2.3 Marination 13
3.2.4 pH and Moisture Content Determination 14
3.2.5 Water Holding Capacity 14
3.2.6 Texture Profile Analysis 15
3.2.7 Enzyme Assay
3.2.7.1 Preparation of 50mM phosphate buffer in pH 7.4 15
3.2.7.2 Preparation of Tyrosine Standard 16
3.2.7.3 Analysis of Calibration of Tyrosine Standard 16
3.2.7.4 Preparation of Samples for Enzyme Proteolytic Activity 16
3.2.7.5 Analysis of Samples for Proteolytic Enzyme 17
3.3 Statistical Analysis 17

CHAPTER 4: RESULTS AND DISCUSSION
4.1 Physiochemical characteristic
4.1.1 pH Determination 18
4.1.2 Moisture Content 20
4.1.3 Water Holding Capacity 22
4.2 Texture Profile Analysis 25
4.3 Enzyme Assay 28

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS 30

CITED REFERENCES 31
APPENDICES 35
CURRICULUM VITAE 50

ABSTRACT

POTENTIAL EFFECT OF *Citrus aurantifolia, Citrus microcarpa* AND *Citrus hystrix* MARINATES ON MEAT TENDERIZING

Meat production increased rapidly up to 20% in just 10 years and caused higher demands on meat quality. Therefore, this study was conducted to analyze and to compare the potential of used *Citrus aurantifolia* (Limau Nipis), *Citrus hystrix* (Limau Purut) and *Citrus microcarpa* (Limau Kasturi) as a tenderizer for buffalo meat with the commercial bromelain as positive control based on the physiocochemical properties of the buffalo meat after the treatment. The buffalo meat chunks were marinated with 40% *Citrus aurantifolia*, 40% *Citrus hystrix*, 40% *Citrus microcarpa*, 40% commercial bromelain meat tenderizer (positive control) and distilled water (negative control) for 24 hours at 4°C. The treated samples were cooked at 100°C for 20 minutes. The cooked samples were subjected to physicochemical analyses. There are only two samples was significantly lower pH ($p<0.05$) for cooked meat chunks observed in all treated samples compared to control. *Citrus hystrix* and *Citrus microcarpa* showed lowest pH at 3.77±0.08 and 3.72±0.03, respectively, indicated that the meat chunks were well tenderized. *Citrus hystrix* treated sample recorded the highest ($p<0.05$) expressible water compared to others except for commercial bromelain. The moisture content of cooked sample did not had any significant ($p<0.05$) in all treated samples compared to control (distilled water). The hardness from TPA decreased significantly ($p<0.05$) for all treated samples compared to control (distilled water). On the other hand, proteolytic activities observed by measure the absorbance from UV-VIS spectrophotometer. The result showed that *Citrus hystrix* had highest proteolytic activity with 0.073±0.00 compared to other citrus group. It can be suggested that *Citrus hystrix* has the potential to be used as meat tenderizer with the ability to retain the moisture content as compared to other well-known and commercial meat tenderizers.