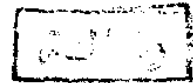


TECHNOCHEMICAL COMPARISON OF PREDOMINANT
INHIBITORS IN SOME FOOD STUFFS

By

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A thesis submitted in partial fulfillment
of
the requirements for the degree of



DOCTOR OF PHILOSOPHY

in

Agricultural Science

(Food Science & Technology)



664.07
N. M

61244

Food Science Department
Faculty of Agriculture
Ain Shams University

1991

Approval Sheet

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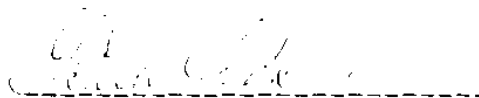
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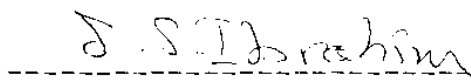
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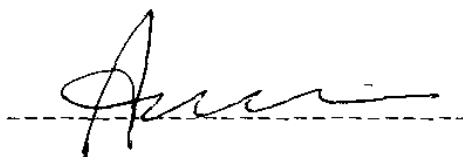
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ABSTRACT

The problem at hand is dealing with the activity of alpha amylase inhibitor in some legumes; i.e. lentile, white bean and soybean. The activity of the inhibitor was considered after specific heat treatment; i.e. 95°C for 3 min followed by soaking in plain water for 30 min. On the other hand, the aforementioned legumes were processed in the form of lentil soup, cooked white bean and roasted soybean and the thermal as well as the kinetic aspects of the alpha amylase inhibitor were concerned for comparison between the tested samples.

The calculation of activation energy that required for inhibiting one mole of the two fractions of alpha amylase inhibitor isolated from the investigated samples was also considered.

On the other hand, the organoleptic evaluations of the processed lentil, white bean and soybean samples were given.

The presence of (HCN) as an inhibitor in plums, apricots and grapes samples was studied. Such inhibitor was also determined in the dried forms of the previous samples i.e., prunes, apricots and raisins. The changes that occur in (HCN) concentration during steps of processing as well as during storage for 6 months at room temperature of the aforementioned dried samples were also given.

Trials were carried out for the isolation of protease inhibitor from potato tubers. The resultant inhibitor was used in manufacturing of beef sausage and chicken patties.

X-ray analysis, infrared spectrum, free amino acids, and Transmission electron as well as scanning electron microscopes were used to trace the capability of the added protease inhibitor to control the activity of proteases enzymes during storage of the investigated samples for two weeks at 4°C.

ACKNOWLEDGEMENTS

My gratitude is due to Prof. Dr. M. AMIN ABD ALLAH, Food Science Department, Faculty of Agriculture, Ain Shams University for his valuable criticism through the years of study, supervision and discussion of the thesis.

My sincere appreciations are also due to Prof. Dr. FERIAL M. ABU SALEM, Professor of Food Technology, National Research Centre, Food Technology and Dairy Dept., for her immense suggestions, helpfull supervision and constructive criticism.

Deep thanks to Dr. NEVERTY F. GAMAL, Associate Prof., Food Sci. Dept., Fac. of Agric., Ain Shams University for her continuous encouragement through the supervision of the thesis as well as for all the effective advices she offered.

Many special thanks are extended to Prof. Dr. MOHAMED HELAL; Chairman of the Egyptian Organization for Standardization and quality control for the great help through X-ray analysis of the samples. The efforts of Dr. ZAKARIA SALEH, Fac. of Agric., Food Science Dept., Suez Canal University; give me the possibility for fractionating the investigated inhibitors.

The facilities offered to me by the National Cancer Institute through the inspection of the samples by Transmission Electron Microscope and those of the physicochemical Laboratory; National Research Centre through inspection of the samples by Scanning Electron Microscope as well as what had been given by El-Mehy engineering organization for amino acid analysis are acknowledged by the author.

C O N T E N T S

	Page
* INTRODUCTION	1
* REVIEW OF LITERATURE	6
PART I: ALPHA AMYLASE INHIBITOR	6
1. Occurrence and general properties	6
2. Toxicological and nutritional aspects	11
PART II: HCN AS ONE OF THE INHIBITORS PRESENTED IN SOME FOOD STUFFS	15
1. Occurrence in some food stuffs	15
2. Methods of determination	21
PART III: USING OF PROTEASE INHIBITOR IN MANUFA- CTURING OF BEEF SAUSAGE AND CHICKEN PATTIES	24
1. Occurrence of protease inhibitor	24
2. X-ray analysis	25
3. Infrared spectrum	27
4. Transmission electron microscope	28
* MATERIALS AND METHODS	31
A. Materials	31
A.1. The investigated legume samples	31
A.2. Commercial samples of fruits	31
A.3. Beef meat, spices and chicken samples	31
A.4. Potato tubers (alpha variety)	32
B. Technological Treatments	32
B.1. Traditional cooking and fried methods for preparing the investigated legumes	32
B.2. Microwave preheat treatments before app- plying the previous traditional methods	34
B.3. Drying of the tested fruit samples	35
B.4. Extraction of protease inhibitor	36
B.5. Beef sausage and chicken patties	37

	Page
C. Methods of analysis	38
C.1. Legume samples	38
C.1.1. Major chemical constituents	38
C.1.2. Bulk density	39
C.1.3. Activity of alpha amylase inhibitor	39
C.1.4. Purification and fractionation of alpha amylase inhibitor	40
C.1.5. Activation energy	41
C.1.6. Q10 value	41
C.1.7. Kinetics of thermal inactivation of alpha amylase inhibitor	42
C.1.8. Amino acids	42
C.2. Fruit samples	43
C.3. Beef sausage and chicken patties	43
C.3.1. X-ray fluorescence	43
C.3.2. Infrared spectrum	44
C.3.3. Scanning electron microscopy (SEM) specimens	45
C.3.4. Transmission electron microscope	45
C.3.5. Purification of protease inhibitor	47
C.3.6. Free amino acids	47
C.3.7. Degree of firmness	48
C.4. Statistical and organoleptic evaluation	48
C.4.1. Statistical analysis	48
C.4.2. Organoleptic tests	48
C.4.2.1. Triangular method for the legume samples	48
C.4.2.2. Overall acceptability method for beef sausage and chicken patties	50
 * RESULTS AND DISCUSSION	 51
 PART I: THE ACTIVITY OF ALPHA AMYLASE INHIBITOR IN LENTIL, WHITE BEAN AND SOYBEAN SAMPLES	 51
A. Relation between the activity of alpha amy- lase inhibitor and soaking periods	53
B. The activity of alpha amylase inhibitor as a function of preheat treatments followed by different soaking periods	62
C. Thermal characteristics of the two purified fractions of alpha amylase inhibitor	74

	Page
D. Activation energy and Q_{10} of the two purified fractions of alpha amylase inhibitor	85
E. Quality assurance within the reduction % in the activity of alpha amylase inhibitor	92
F. Organoleptic evaluation of the processed lentil, white bean and soybean samples	98
PART II: THE PRESENCE OF HCN AS AN INHIBITOR IN PLUMS, APRICOTS AND GRAPES SAMPLES	102
A. Occurrence of HCN in the fresh and in the dried forms of plums, Apricots and grapes	102
B. Changes in HCN content during storage of dried prunes, Apricots and Raisins	114
C. Intrinsic elimination factor of HCN within the investigated samples	126
PART III: USING OF PROTEASE INHIBITOR IN MANUFACTURING OF BEEF SAUSAGE AND CHICKEN PATTIES	132
A. X-ray, biogel and infrared patterns of crude and purified protease inhibitor	133
A.1. Full scanning X-ray analysis of crude and purified protease inhibitor	133
A.2. Biogel chromatographic pattern of crude protease inhibitor	141
A.3. Infrared spectrum of crude and purified protease inhibitor	144
B. Application of the crude protease inhibitor in processing of beef sausage and chicken patties	150
B.1. X-ray diffraction of beef sausage and chicken patties	150

	Page
B.2. Infrared spectroscopy	163
B.2.1. Infrared spectrum of beef sausage samples	163
B.2.2. Infrared spectrum of chicken patties samples	182
B.3. Histochemical inspection of beef sausage and chicken patties manufa- ctured with and without protease in- hibitor	187
B.3.1. Histochemical inspection based on light microscope	188
B.3.2. Histochemical inspection based on transmittion as well as sca- ning electron microscope	192
B.4. Free amino acids and analysis of hard- ness (Degree of firmness)	205
B.4.1. Free amino acids	205
B.4.2. Analysis of hardness (Degree of firmness)	210
B.5 Organoleptic evaluations	218
* SUMMARY AND CONCLUSION	223
* REFERENCES	235
* APENDEXES:	250
APPENDEX 1: The activity of Alpha amylase in- hibitor in lentil, white bean and soybean samples.	250
APPENDEX 2: Some enzymes inhibited by cyanide	260
APPENDEX 3: Full scanning of X-ray fluoresce- nce of crude and purified protease inhibitor as well as that of beef sausage and chicken patties.	264
* ARABIC SUMMARY	-

LIST OF TABLES

No.	Title	Page
1	Relation between the activity of alpha amylase inhibitor (Δ O.D. %) and soaking periods in hours.	55
2	Some selected chemical constituents of lentile white bean and soybean samples(Calculated on dry matter base).	58
3	Activity and inhibition level of alpha amylase inhibitor as a function of preheating and soaking periods.	63
4	Regression analysis (Liner and reciprocal models) between the activity of alpha amylase inhibitor and soaking periods.	70
5	Analysis of variance between the activity of lentil alpha amylase inhibitor at different preheating treatments and soaking periods/min	71
6	Analysis of variance between the activity of white bean alpha amylase inhibitor at different preheating treatments and soaking periods/min.	72
7	Analysis of variance between the activity of soybean alpha amylase inhibitor at different preheating treatments and soaking periods/min	73
8	Activity, "D" and "Z" values of the two fractions of alpha amylase inhibitor purified from lentil sample.	76

No.	Titel	Page
9	Activity, "D" and "Z" values of the two fractions of alpha amylase inhibitor purified from white bean sample	79
10	Activity "D" and "Z" values of the two fractions of alpha amylase inhibitor purified from soybean sample	81
11	Amino acids content of the fraction I of the alpha amylase inhibitor separated from the investigated samples	84
12	Reduction % in the activity (Δ O.D %) of the two fractions of alpha amylase inhibitor as a function of heat treatment.(Lentil sample)	86
13	Reduction % in the activity (Δ O.D %) of the two fractions of alpha amylase inhibitor as a function of heat treatment.(White bean sample)	87
14	Reduction % in the activity (Δ O.D %) of the two fractions of alpha amylase inhibitor as a function of heat treatment. (Soybean sample)	88
15	Analysis of variance of the time of thermal treatment/min required to inhibit fraction 1 of the alpha amylase inhibitor purified from lentil sample within a temperature range of 60 to 100 C.	93
16	Analysis, of variance of the time of thermal treatment/min required to inhibit fraction 2 of the alpha amylase inhibitor purified from lentil sample within a temperature range of 60 to 100 C.	93
17	Analysis of variance of the time of thermal treatment/min required to inhibit fraction 1 of the alpha amylase inhibitor purified from white bean sample within a temperature range of 60 to 100 C.	94

No.	Title	Page
18	Analysis of variance of the time of thermal treatment/min required to inhibit fraction 2 of the alpha amylase inhibitor purified from white bean sample within a temperature range of 60 to 100°C.	94
19	Analysis of variance of the time of thermal treatment/min required to inhibit fraction 1 of the alpha amylase inhibitor purified from soybean sample within a temperature range of 60 to 100°C.	95
20	Analysis of variance of the time of thermal treatment/min required to inhibit fraction 2 of the alpha amylase inhibitor purified from soybean sample within a temperature range of 60 to 100°C.	95
21	Comparison between the reduction % in the activity of the alpha amylase inhibitor as a result of specific technological treatments.	96
22	Triangle test for evaluating the effect of pre-heating at 95 C for 3 min + soaking for 30 min in plain water on the color of the samples under investigation.	99
23	Triangle test for evaluating the effect of pre-heating at 95°C for 3 min + soaking for 30 min in plain water on the taste of the samples under investigation.	101

No.	Title	Page
24	Changes in HCN content (ppm, DM base) of plums apricots and rrapes samples during processing in dried forms.	104
25	HCN content (ppm) of the investigated samples and their difference out of the recommended safe level.	113
26	Relation between HCN content (ppm; DM) of prunes, apricots and raisins as a function of storage at room temperature for 6 months.	115
27	Regression analysis between HCN content (ppm) of the rprunes samples and storage periods in months.	120
28	Regression analysis between HCN content (ppm) of the apricots samples and storage periods in months.	121
29	Regression analysis between HCN content (ppm) of the raisins samples and storage periods in months.	122

No.	Title	Page
30	Sequence changes as ppm and the relative elimination value of HCN per month in prunes, apricots and raisins samples	128
131	Intrinsic elimination factor (I.E.F.) of HCN in prunes, apricots and raisins samples	131
32	X-ray angels and the intensities (K count/sec) of the responded 31 elements of the crude and purified protease inhibitor.	136
33	Comparison between the relative area % of the distributed elements of the crude and purified protease inhibitor	138
34	Biogel chromatographic pattern of crude protease inhibitor (P.I.)	142
35	Functional groups (F.G.) and their wave numbers of the investigated protease inhibitor.	145
36	Element groups and their relative distribution areas in beef sausage samples processed with and without protease inhibitor	155
37	Element groups and their relative distribution areas in chicken patties samples processed with and without protease inhibitor	157
38	Wave numbers in cm^{-1} of the infrared spectrum of the unstored beef sausage samples and their functional chemical groups	165