

**APPENDIX A**  
**Analysis of Pesticide Residue**

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**Appendix A-1**  
**Analysis of Pesticide Residue**

Analysis of pesticide residue was followed the method of Steinwandter (1985). The 25 g sample was added with 50 ml acetone, 40 ml dichloromethane and 10 g NaCl. The mixture was then homogenized at 10,000 rpm for 2 min. The extracted solution was transferred into Erlenmeyer flask, added 30 g sodium sulfate anhydrous, and let to stand for 10 min. The 50 ml solution was evaporated to dryness. The dried sample was diluted to 5 ml by ethyl acetate. Then 2 ml fraction was evaporated to dryness before adding 2 ml of hexane:dichloromethane at a ratio of 4:1. Next, the sample was cleaned up with SPE silica gel column. Consequently, it was eluted in a graded hexane:dichloromethane ( 5 ml of a mixture of hexane :dichloromethane mixed at a ratio of 4:1 and 10 ml of a mixture of hexane:dichloromethane mixed at a ratio of 1:1) and then evaporated. The volume of the sample was adjusted to 2 ml by hexane and injected to GC/micro ECD.

## Appendix A-2

## Test Report of Pesticide Residue of Sweet Corn



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บริษัท ห้องปฏิบัติการกลางตรวจสอบผลิตภัณฑ์เกษตรและอาหาร จำกัด

Laboratory Center for Food and Agricultural Products Co.,Ltd. : LCFA  
 สาขาเชียงใหม่ : 164/86 หมู่ 3 ตำบลดงแก้ว อำเภอแม่ออน จังหวัดเชียงใหม่ 50180 ประเทศไทย  
 Chiangmai Branch : 164/86 Moo 3 Dankaew, Maerin, Chiangmai 50180 Thailand  
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Issue Date: December 1, 2006  
 Report No.: TR (CM) 49/03925  
 Page: 1 of 1

## TEST REPORT

Customer Name and Address	FACULTY OF AGRO-INDUSTRY Chiang Mai University
Sample Description	Sweet corn (ATS-5)
Sample Code	CM - 49/07994
Sample Characteristic and Condition	Sample was packed in plastic bag and kept at room temperature Quantity : 1 bag, weight 1,800 g., good condition when received.
Received Date	November 27, 2006
Test Date	November 27 - 30, 2006

## Analysis Results

Test Items	Test Results	Units	Reference Methods
<b>Pyrethroid group</b>			In house method based on Steinwandter, H. 1985, Universal 5 min on-line Method for Extracting and Isolating Pesticide Residues and Industrial Chemicals, Fresenius Z. Chem No.1155
Bifenthrin	ND	mg/kg	
Permethrin	ND	mg/kg	
L-Cyhalothrin	ND	mg/kg	
Cypermethrin	ND	mg/kg	
Cyfluthrin	ND	mg/kg	
Fenvalerate	ND	mg/kg	
Deltamethrin	ND	mg/kg	

Remark : LOD (Limit of Detection) for Pyrethroid group = 0.005 mg/kg ( Accept Permethrin, Cypermethrin = 0.01 mg/kg )  
 LOQ (Limit of Quantification) for Pyrethroid group = 0.01 mg/kg ( Accept Permethrin, Cypermethrin = 0.02 mg/kg )  
 ND = Not Detected



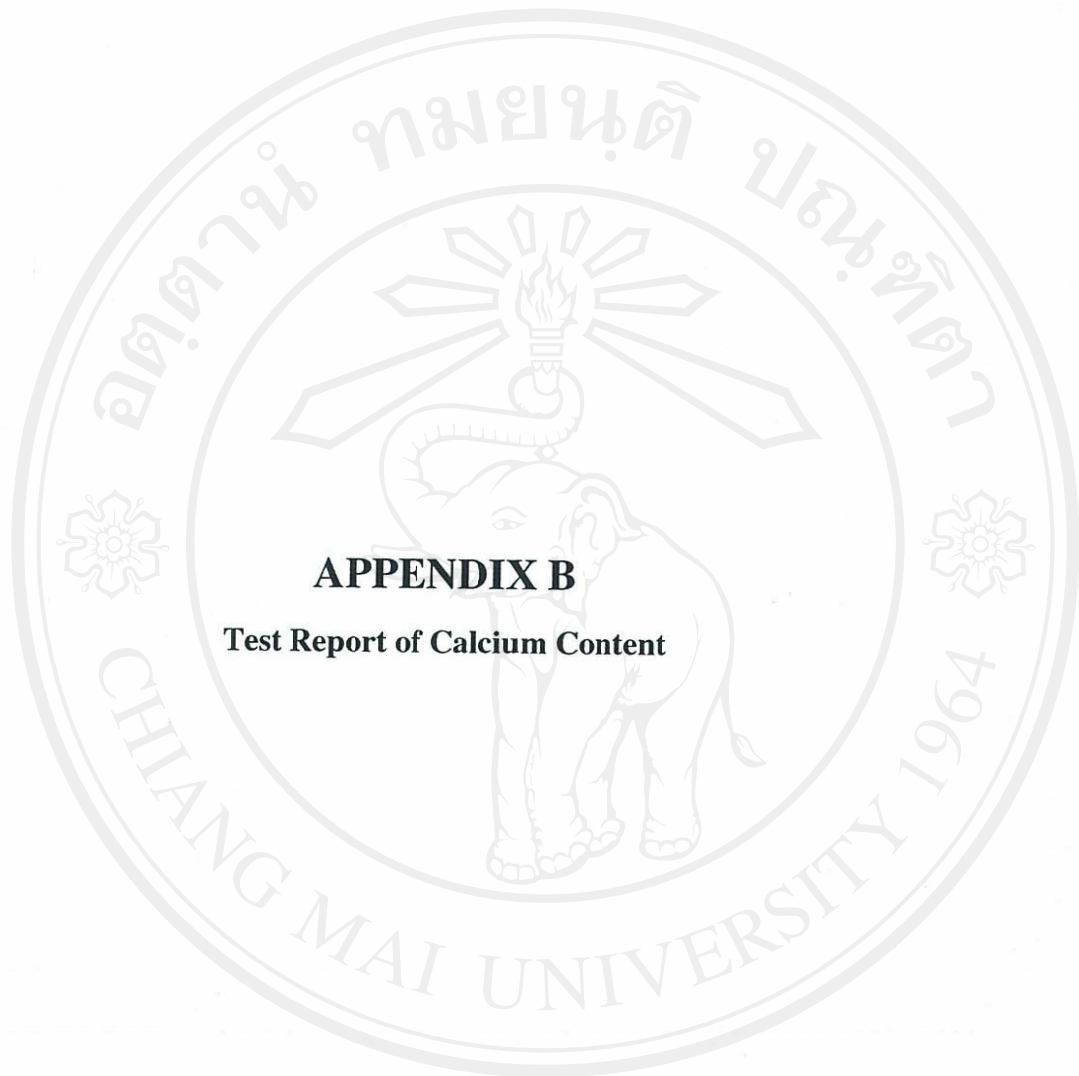
CERTIFIED

Signed for and on behalf of  
LCFA Co., Ltd.

Mr. Ekachai Nakachai  
 Deputy Director,  
 Laboratory Service Department  
 Chiangmai Office

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**APPENDIX B**

**Test Report of Calcium Content**

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## Appendix B-1

## Test Report of Calcium Content in Corn Milk



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Laboratory Center for Food and Agricultural Products Co.,Ltd. : LCFA

สาขาเชียงใหม่ : 164/86 หมู่ 3 ตำบลดงแก้ว อำเภอแม่ออน จังหวัดเชียงใหม่ 50180 ประเทศไทย

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## TEST REPORT

Customer Name and Address	Department of Food Science and Technology, Faculty of Agro-Industry Chiangmai University
Sample Description	Corn milk
Sample Code	CM - 49/08647
Sample Characteristic and Condition	Sample was packed in plastic bag, tightly sealed and kept at frozen temperature Quantity : two bags total weight 670 g, good condition when received
Received Date	December 27, 2006
Test Date	December 27 - January 4, 2007

## Analysis Results

Test Items	Test Results			Units	Reference Methods
	Repeat I	Repeat II	Average		
Calcium	5.77	5.78	5.78	mg/100g	In house method base on AOAC (2000) 984.27

Remark : sample was detected by ICP-OES model Optima 4300 DV (USA)

Signed for and on behalf of  
LCFA Co., Ltd.

Mr. Ekachai Nakachai

Deputy Director,

Laboratory Service Department

CERTIFIED Chiangmai Office

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## Appendix B-2

## Test Report of Calcium Content in Sodium Caseinate



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 Laboratory Center for Food and Agricultural Products Co.,Ltd. : LCFA  
 สาขาเชียงใหม่ : 164/86 หมู่ 3 ตำบลดอนแก้ว อำเภอแม่ริม จังหวัดเชียงใหม่ 50180 ประเทศไทย  
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 Page: 1 of 1

## TEST REPORT

Customer Name and Address	Department of Food Science and Technology, Faculty of Agro-Industry Chiangmai University
Sample Description	Sodium caseinate
Sample Code	CM - 49/08648
Sample Characteristic and Condition	Sample was packed in plastic bag, tightly sealed and kept at room temperature Quantity : one bag total weight 120 g, good condition when received
Received Date	December 27, 2006
Test Date	December 27 - January 4, 2007

## Analysis Results

Test Items	Test Results			Units	Reference Methods
	Repeat I	Repeat II	Average		
Calcium	94.95	95.34	95.14	mg/100g	In house method base on AOAC (2000) 984.27

Remark : sample was detected by ICP-OES model Optima 4300 DV (USA)



for and on behalf of  
 LCFA Co., Ltd.  
 Mr. Ekachai Nakachai  
 Deputy Director,  
 Laboratory Service Department  
 Chiangmai Office

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**APPENDIX C**

**Questionnaire for Sensory Evaluation**

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**Appendix C**  
**Questionnaire for Measuring the Preference of Yogurt**

**Yogurt**

Name \_\_\_\_\_ Date \_\_\_\_\_

Please clean up your palate by taking the unsalted crackers follow by water between samples. Please identify your preference on each attribute by using the following scores:

1 = dislike very much

2 = dislike moderately

3 = dislike slightly

4 = neither like nor dislike

5 = like slightly

6 = like moderately

7 = like very much

Product attributes

Sample code

appearance

color

texture

flavor

mouth feel

sweetness

sourness

after taste

total preference

Suggestion \_\_\_\_\_

Thank you for your participation





**APPENDIX D**  
**SPME-GC-MS Chromatograms**

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**Appendix D**  
**SPME-GC-MS Chromatograms**

**Abundance**

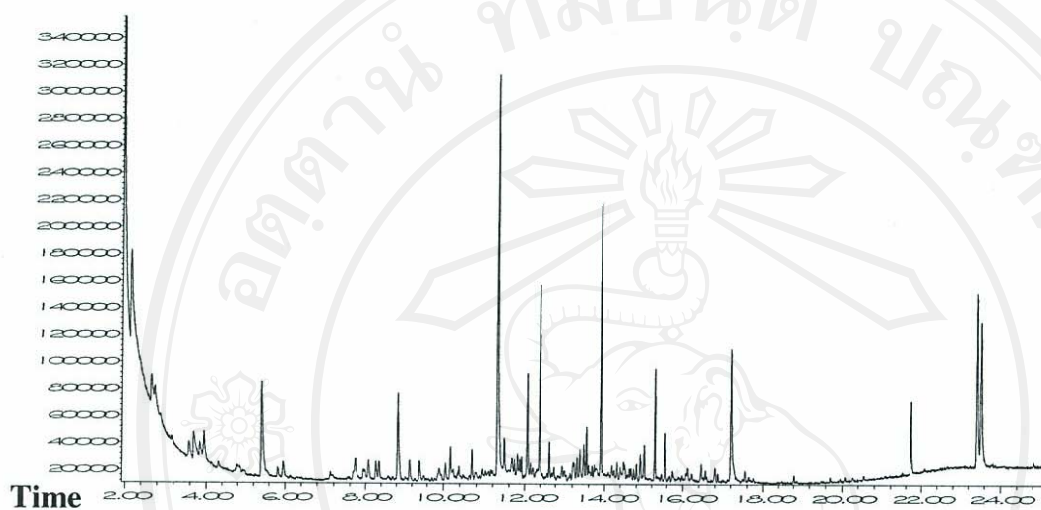


Figure D-1 SPME-GC-MS Chromatogram of flavor composition of corn milk.

**Abundance**

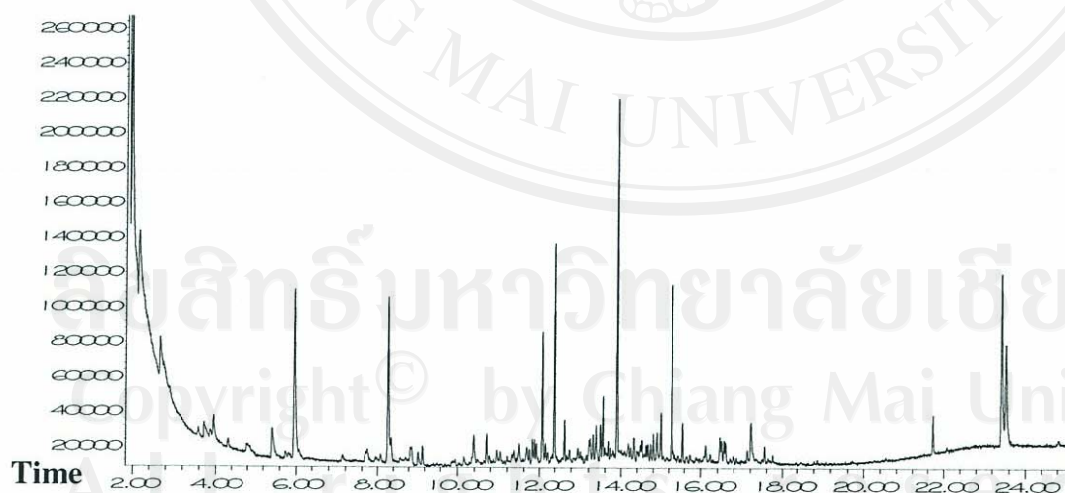


Figure D-2 SPME-GC-MS Chromatogram of flavor composition of corn milk mixture.

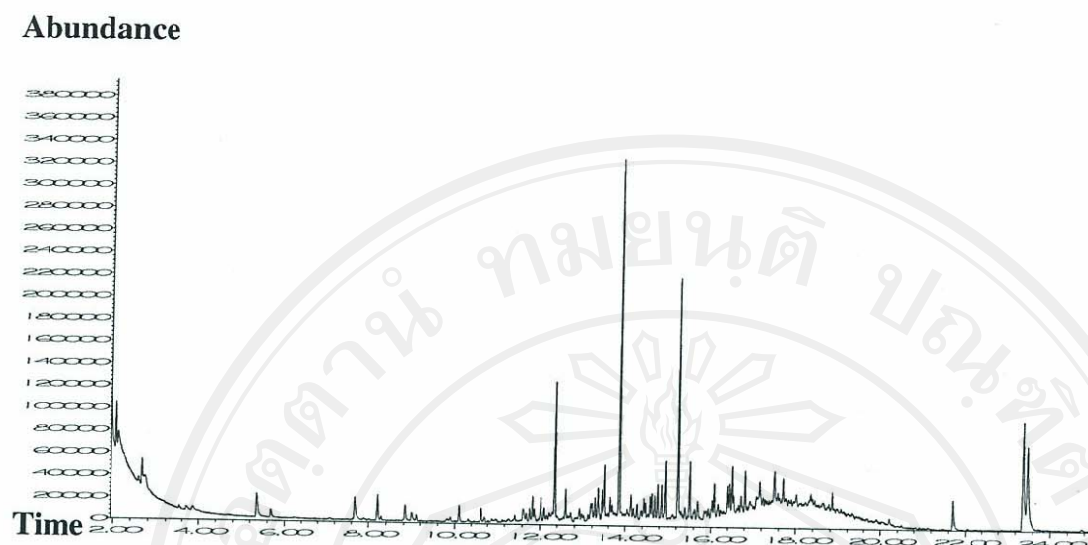


Figure D-3 SPME-GC-MS Chromatogram of flavor composition of corn milk yogurt at the first day of storage.

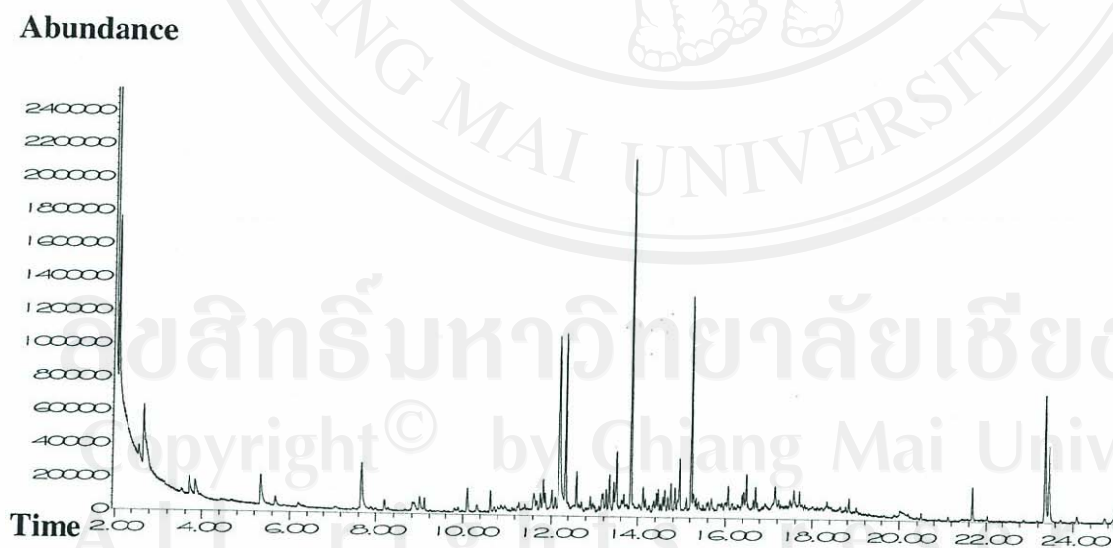


Figure D-4 SPME-GC-MS Chromatogram of flavor composition of corn milk yogurt at 7 days of storage.

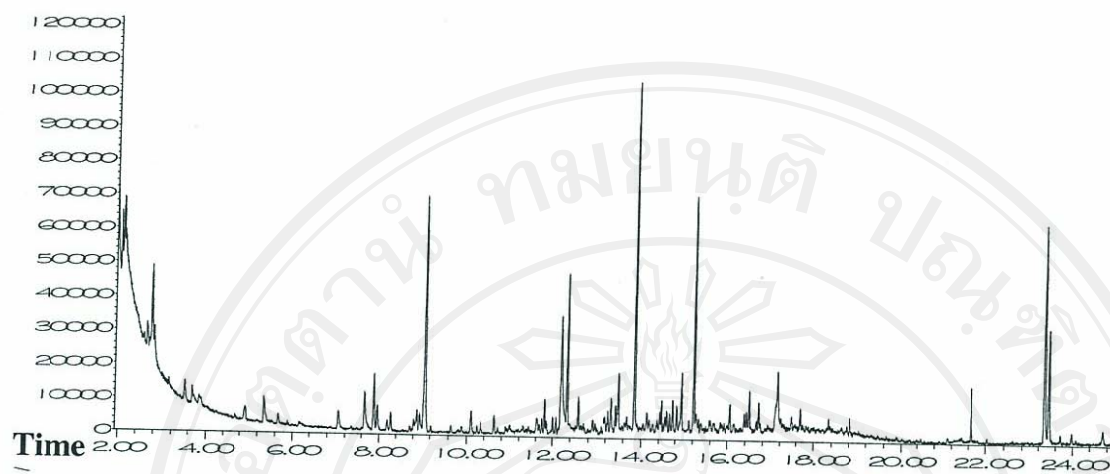
**Abundance**

Figure D-5 SPME-GC-MS Chromatogram of flavor composition of corn milk yogurt at 14 days of storage.

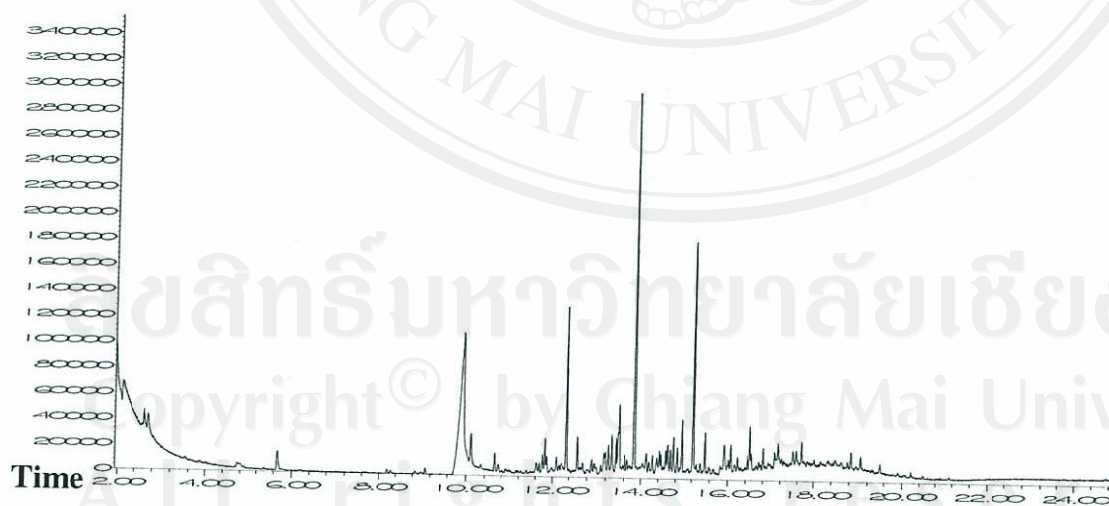
**Abundance**

Figure D-6 SPME-GC-MS Chromatogram of flavor composition of commercial yogurt at the first day of storage.

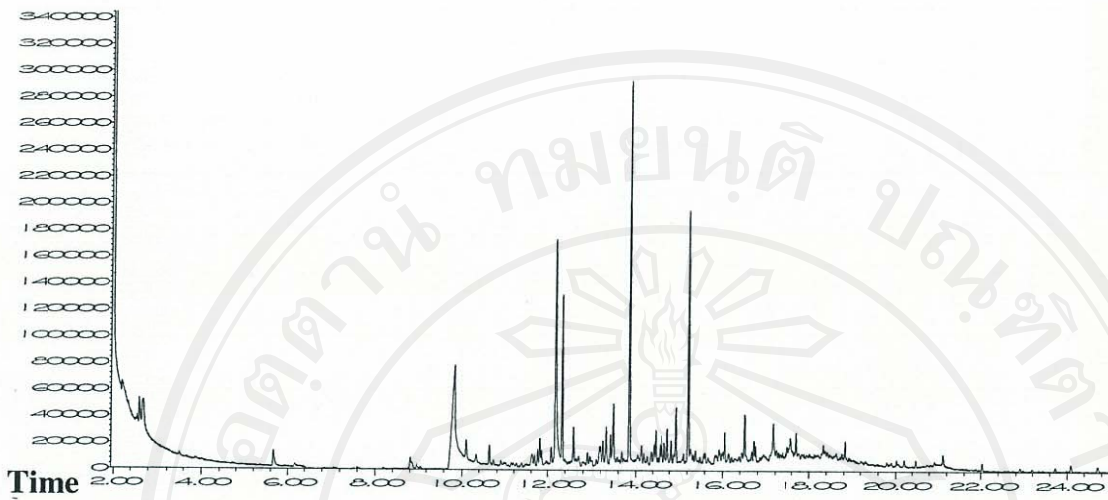
**Abundance**

Figure D-7 SPME-GC-MS Chromatogram of flavor composition of commercial yogurt at 7 days of storage.

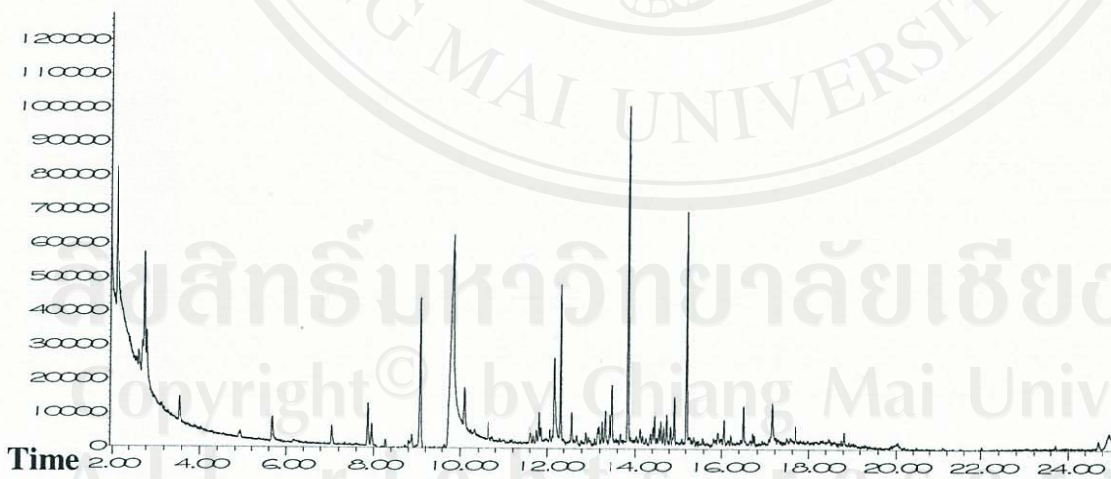
**Abundance**

Figure D-8 SPME-GC-MS Chromatogram of flavor composition of commercial yogurt at 14 days of storage.

### CURRICULUM VITAE

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<b>Education</b>	<p>1994 Master of Science degree in Food Science, Kasetsart University, Bangkok, Thailand</p> <p>1991 Bachelor of Science degree in Food Science and Nutrition, Sri Nakharinwirot University, Bangkok, Thailand</p>
<b>Experience</b>	1994-present Lecturer, Pibulsongkram Rajabhat University, Phitsanulok, Thailand

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