

# CONTENTS

	Page
Acknowledgement	c
Abstract in Thai	f
Abstract in English	h
List of tables	m
List of figures	s
List of abbreviation	w
Statement of Originality in Thai	z
Statement of Originality in English	aa
Chapter 1 Introduction	1
Chapter 2 Literature review	3
2.1 Hot Springs	3
2.2 Factors influencing the distribution of microalgae	9
2.3 Diatoms	10
2.4 Diatom Identification	11
2.5 Thermotolerant diatoms	11
2.6 Benefit of thermotolerant diatoms	13
2.7 Diatoms cultivation	14
2.8 Effect of physical factor on diatoms	15
2.9 Diatoms for lipid production	21

## CONTENTS (continued)

	Page
Chapter 3 Water properties and distribution of hot spring diatoms in northern Thailand	26
3.1 Introduction	26
3.2 Materials and Methods for the preliminary investigation	27
3.3 Results and discussions for the preliminary investigation	38
3.4 Materials and Methods for Investigation of Diatom Diversity	49
3.5 Results for Investigation of Diatom Diversity	53
3.6 Discussion for Investigation of Diatom Diversity	81
3.7 Conclusion	87
Chapter 4 Diatom, <i>Achnantheidium exiguum</i> AARL d025-2, in cultivation for lipid production	142
4.1 Introduction	142
4.2 Materials and methods	144
4.3 Results	149
4.4 Discussions	157
4.5 Conclusion	159
Chapter 5 General discussions and conclusions	160
5.1 General discussions	160
5.2 Conclusions	166
5.3 Recommendations	167

## CONTENTS (continued)

	Page
References	169
List of Publication	195
Appendices	196
Appendix A	196
Appendix B	199
Appendix C	204
Appendix D	213
Appendix E	230
Curriculum Vitae	233

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## LIST OF TABLES

Table	Page
2.1 Types of hot springs classified by surface temperature	6
2.2 The classification based on pH is divided into 6 classes	6
2.3 The classification based on usage is divided into 4 classes	7
3.1 Location and some description of 9 hot springs sampling sites	35
3.2 Physicochemical factors of nine study sites in the wet and dry seasons	39
3.3 Distribution of diatom taxa during the wet season at nine hot spring sites	47
3.4 Distribution of diatom taxa during the dry season at nine hot spring sites	48
3.5 p-value for diatom taxa during wet and dry season at nine hot spring sites	49
3.6 Location of 8 hot spring sampling sites	52
3.7. Relationships between the species ordination scores (NMDS) and the influenced environmental factors	78
3.8 Shannon's diversity index, evenness and the species richness of benthic diatoms in 8 hot springs in northern Thailand during December 2015 – April 2016	79
3.9 The list of benthic diatoms in 8 hot spring sampling sites during December 2015 - April 2016	134
4.1 Maximum specific growth rate and division rate of <i>A. exiguum</i> AARL D025-2, cultivated at various pH values and temperatures	150
4.2 The comparison of pH level and growth rate from diatoms cultivated in different conditions	152
4.3 Oil content of some microalgae	154
4.4 Biomass Lipid and FAME production of <i>A. exiguum</i> AARL D025-2 cultivated at various pH values and temperatures	155
4.5 FAME profile of <i>Achnanthes exiguum</i> AARL D025-2	156
6.1 The results of physico-chemical in wet season	197
6.2 The results of physico-chemical in dry season	198
6.3 The results of counted diatom cell in hot spring sampling sites in dry season	200

6.4 The results of counted diatom cell in hot spring sampling sites in wet season	202
6.5 The results of physico-chemical in San Kamphang hot spring	205
6.6 The results of physico-chemical in Theppanom hot spring	206
6.7 The results of physico-chemical in Ta Pai hot spring	207
6.8 The results of physico-chemical in Pong Ang hot spring	208
6.9 The results of physico-chemical in Chae Sorn hot spring	209
6.10 The results of physico-chemical in Mae Chok hot spring	210
6.11 The results of physico-chemical in Wat Salaeng hot spring	211
6.12 The results of physico-chemical in Ban Su Men hot spring	212
6.13 The results of counted diatom cell in hot spring sampling sites	214
6.14 The measurement of water temperature in 24 hours	231

## LIST OF FIGURES

Figure	Page
2.1 The distribution of hot springs in Thailand classified by temperature range	4
2.2 The natural cycle of hot springs and geothermal vitality in northern Thailand modified from International Network for Sustainable Energy (INFORSE)	5
2.3 Diatom cell structure modified from Ian Nettleton	10
3.1 Flowchart diagram of hot spring diatoms and water properties analysis	28
3.2 Map of Thailand giving 9 sampling sites of hot springs in northern Thailand	32
3.3 Hot Springs sampling sites in northern Thailand	33
3.4 Hot Springs sampling sites in northern Thailand	34
3.5 Comparison of water temperature ( $^{\circ}\text{C}$ ) in the investigated localities between wet and dry season	40
3.6 Comparison of pH in the investigated localities between wet and dry season	40
3.7 Comparison of Conductivity ( $\mu\text{s.cm}^{-1}$ ) in the investigated localities between wet and dry season	41
3.8 Comparison of $\text{NO}_3\text{-N}$ ( $\text{mg.l}^{-1}$ ) in the investigated localities between wet and dry season	41
3.9 Comparison of $\text{NH}_4\text{-N}$ ( $\text{mg.l}^{-1}$ ) in the investigated localities between wet and dry season	42
3.10 Comparison of SRP ( $\text{mg.l}^{-1}$ ) in the investigated localities between wet and dry season	42
3.11 Comparison of $\text{SiO}_2$ ( $\text{mg.l}^{-1}$ ) in the investigated localities between wet and dry season	43
3.12 Comparison of $\text{S}^{2-}$ ( $\text{mg.l}^{-1}$ ) in the investigated localities between wet and dry season	43
3.13 Comparison of alkalinity ( $\text{mg.l}^{-1}$ as $\text{CaCO}_3$ ) in the investigated localities between wet and dry season	44

## LIST OF FIGURES (continued)

Figure	Page
3.14 Comparison of total hardness in the investigated localities between wet and dry season	44
3.15 Relative abundance of diatoms in nine sampling sites in the dry season	46
3.16 Relative abundance of diatoms of nine sampling sites in the wet season	46
3.17 Water temperatures of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	54
3.18 pH of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	54
3.19 Conductivity of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	57
3.20 Nitrate–nitrogen of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	57
3.21 Ammonium–nitrogen of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	58
3.22 Soluble reactive phosphorus (SRP) of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	58
3.23 Silicon dioxide of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	59
3.24 Alkalinity of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	59
3.25 Total hardness of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	61
3.26 Sulfide of 8 hot springs sampling sites in 4 temperature ranges and Tmax ( $T > 55^{\circ}\text{C}$ )	61
3.27 Water temperature fluctuations of each sampling sites at San Kamphaeng hot springs in 24 hours	62

## LIST OF FIGURES (continued)

Figure	Page
3.28 Water temperature fluctuations of each sampling sites at Theppanom hot springs in 24 hours	62
3.29 Water temperature fluctuations of each sampling sites at Ta Pai hot springs in 24 hours	63
3.30 Water temperature fluctuations of each sampling sites at Pong Ang hot springs in 24 hours	63
3.31 Water temperature fluctuations of each sampling sites at Chae Sorn hot springs in 24 hours	64
3.32 Water temperature fluctuations of each sampling sites at Mae Chok hot springs in 24 hours	64
3.33 Water temperature fluctuations of sampling sites at Wat Salaeng hot springs in 24 hours	65
3.34 Water temperature fluctuations of each sampling sites at Pong Gi hot springs in 24 hours	65
3.35 Relative abundance percentage of diatom genera in hot springs sampling sites	66
3.36 The comparison of cluster dendrogram and number of cluster analyzed by 7 methods carried out with the R package NbClust	71
3.37 Cluster dendrogram and heat map of sampling sites according to the physico-chemical factors in 8 hot spring sampling sites analyzed by 6 methods carried out with the R package NbClust	73
3.38 Cluster dendrogram and heat map of sampling sites according to the physico-chemical factors in 8 hot spring sampling sites analyzed by ward.D2	74
3.39 The plot of explained variance by different principal components	75



## LIST OF FIGURES (continued)

Figure	Page
3.40 PCA 3D plot graph, cluster dendrogram and heat map showing relationship between of sampling sites according to the physico-chemical factors in 8 hot spring sampling sites analyzed by ward.D2 carried out with the R package NbClust	76
3.41 Non-metric multidimensional scaling (NMDS) ordination diagram of the hot springs based on species composition.	77
3.42 Diagram of diatom cells	89
3.43 Suborders of pennate diatoms with associated raphe types	89
3.44 Diagrams to show valve and girdle shapes	90
3.45 Diagrams to show valve apices	91
3.46 Some general features of pennate diatoms (composite diagram)	92
3.47 Valve striation in pennate diatoms	92
3.48 Light micrograph of benthic diatoms from some hot springs in the northern Thailand during December 2015 to April 2016	111
3.49 Drawing of benthic diatoms from some hot springs in the northern Thailand during December 2015 to April 2016	112
3.50 Scanning electron microscope photographs of some hot spring diatoms in 8 sampling sites during December 2015 – April 2016	127
4.1 Flowchart diagram of hot spring diatoms cultivation for lipid production	144
4.2 The experiment set up of <i>Achnantheidium exiguum</i> AARL D025-2	146
4.3 Growth of <i>Achnantheidium exiguum</i> AARL D025-2 in BBM medium without pH adjustment at different temperatures and compared with pH 7 adjusted-BBM medium at 30°C.	151
4.4 Growth of <i>Achnantheidium exiguum</i> AARL D025–2 at 30 °C and pH values	152
4.5 Growth of <i>Achnantheidium exiguum</i> AARL D025–2 at 40 °C and pH values	153
4.6 Growth of <i>Achnantheidium exiguum</i> AARL D025–2 at 50 °C and pH values	153

## ABBREVIATIONS

Aulamb	<i>Aulacoseira ambigua</i> (Grunow) Simonsen
Aulgra	<i>Aulacoseira granulata</i> Ehrenberg
Melvar	<i>Meloseira varians</i> Agardh
Achexi	<i>Achnantheidium exiguum</i> (Grunow) Czarnecki
Achmin	<i>Achnantheidium minutissimum</i> (Kützing) Czarnecki
Achsp	<i>Achnantheidium</i> sp.
Ampmon	<i>Amphora montana</i> Krasske
Ampova	<i>Amphora ovalis</i> (Kützing) Kützing
Anopha	<i>Anomoeneis sphaerophora</i> (Ehrenberg) Pfitzer
Anosp	<i>Anomoeneis</i> sp.
Calbac	<i>Caloneis bacillum</i> (Grunow) Mereschkowsky
Calmol	<i>Caloneis molaris</i> (Grunow) Krammer
Cocpla	<i>Cocconeis placentula</i> Ehrenberg
Craaci	<i>Craticula acidoclinata</i> Lange-Bertalot & Metzeltin
Craamb	<i>Craticula ambigua</i> (Ehrenberg) Mann in Round, Crawford & Mann
Cracus	<i>Craticula cuspidata</i> (Kützing) Mann
Cymtum	<i>Cymbella tumida</i> (Brébisson) Van Heurck
Diacon	<i>Diadesmis confervacea</i> Kützing
Diabal	<i>Diatomella balfouriana</i> Greville
Dipell	<i>Diploneis elliptica</i> (Kützing) Cleve 1894
Dipova	<i>Diploneis subovalis</i> Cleve, 1894
Epizeb	<i>Epithemia zebra</i> (Ehrenberg) Kützing 1844
Fracro	<i>Fragillaria crotonensis</i> Kitton
Gomaff	<i>Gomphonema affine</i> Kützing
Gomaug	<i>Gomphonema augur</i> var. <i>sphaerophorum</i> Lange-Bertalot
Gomgra	<i>Gomphonema gracile</i> Ehrenberg 1838
Gompar	<i>Gomphonema parvulum</i> (Kützing) Van Heurck
Halfon	<i>Halamphora fontinalis</i> (Hustedt) Z. Levkov
Hanamp	<i>Hantzchia amphioxys</i> (Ehrenberg) Grunow in cleve et Grunow

Navgri	<i>Navicula grimmei</i> Krasske in Hustedt
Navros	<i>Navicula rostellata</i> (Kützing) Cleve
Navsub	<i>Navicula subrhynchocephala</i> Hustedt
Nitamp	<i>Nitzschia amphibia</i> Grunow
Nitcla	<i>Nitzschia clausii</i> Hantzsch
Nitign	<i>Nitzschia ignorata</i> Krasske 1929
Nitpal	<i>Nitzschia palea</i> (Kützing) W. Smith
Pinaba	<i>Pinnularia abaujensis</i> (Pantoscek) Ross
Pinbor	<i>Pinnularia borealis</i> Ehrenberg 1843
Pinsap	<i>Pinnularia saprophila</i> Lange–Bertalot, Kobayashi and Krammer
Pinmes	<i>Pinnularia mesolepta</i> (Ehrenberg) Smith
Plalan	<i>Planothidium lanceolatum</i> (Breb.) Round & Bukhtiyarova
Rhogib	<i>Rhopalodia gibberula</i> (Ehrenberg) O.F. Müller
Sellan	<i>Sellaphora lanceolata</i> D.G. Mann & S. Dropp in Mann <i>et al.</i>
Staanc	<i>Stauroneis anceps</i> Ehrenberg
Staell	<i>Staurosira elliptica</i> (Schumann) D.M. Williams & Round
Surbis	<i>Surirella biseriata f. amphioxys</i> (W. Smith) Hustedt
Surele	<i>Surirella elegans</i> Ehrenberg
Synuln	<i>Synedra ulna</i> (Nitzsch) Ehrenberg
SK	San Kamphaeng Hot Springs
TPN	Thep Phanom Hot Springs
TP	Tha Pai Hot Springs
CHD	Pong Ang Hot Springs
JS	Jae Sorn Hot Springs
MJ	Mae Chok Hot Springs
SL	Sa Leang Hot Springs
SM	Su Men Hot Springs
NG	Pong Gi Hot Springs
D	Dry season
W	Wet season
e	epipelagic/epilithic
p	periphytic

AARL	Applied Algal Research Laboratory
FAME	Fatty acid methyl ester
PUFAs	Polyunsaturated fatty acids
TAG	Triacylglycerols
rpm	Revolutions per minute
OD <sub>450</sub>	Optical density at 450 nm
BBM	Bold Basal medium
DW	Dry weight
$\mu\text{mol.m}^{-2}.\text{s}^{-1}$	Micromol per square meter per second
mL	Milliliter
L	Liter
mM	Millimol
$\text{mg L}^{-1} \text{ d}^{-1}$	Milligram per liter per day

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## ข้อความแห่งการริเริ่ม

- 1) วิทยานิพนธ์นี้ได้นำเสนอการศึกษาการกระจายตัวและความหลากหลายของไดอะตอมในน้ำพุร้อน  
บางแหล่งในภาคเหนือของประเทศไทย และการเพาะเลี้ยงเพื่อการผลิตลิพิด
- 2) งานวิจัยที่อยู่ในวิทยานิพนธ์นี้ได้ศึกษาระหว่างเดือนตุลาคม 2556 ถึงเดือนเมษายน 2559 ซึ่งงานวิจัย  
นี้ไม่เคยนำถูกเสนอในระดับปริญญาหรืออนุปริญญาของสถาบันการศึกษาใดๆ มาก่อน

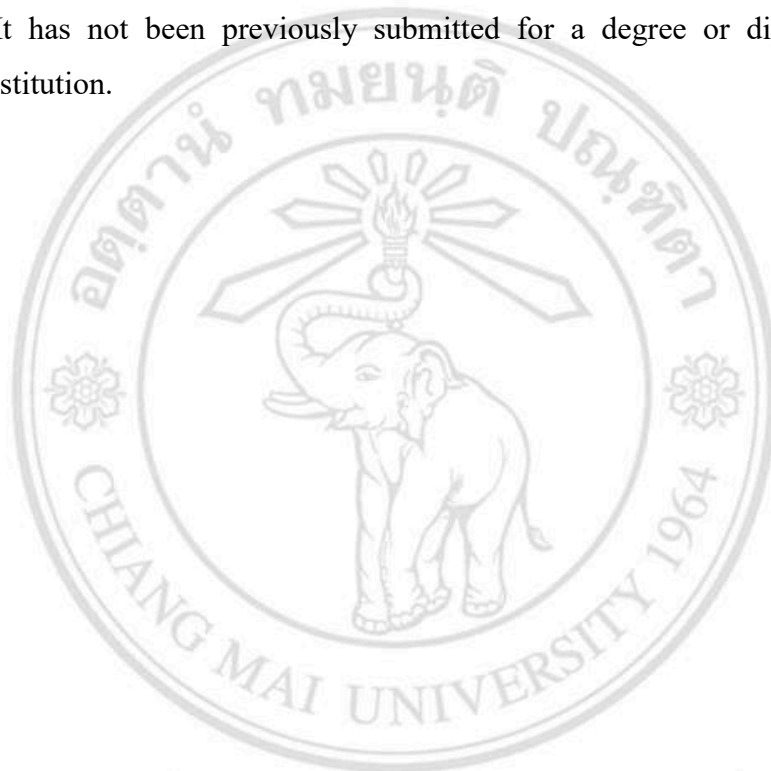


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## STATEMENT OF ORIGINALITY

1) This thesis was conducted to study the distribution, diversity of hot springs diatoms in northern Thailand and the cultivation for the lipid production.

2) The research work comprised in this thesis was conducted between October 2013 and April 2016. It has not been previously submitted for a degree or diploma at any educational institution.



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