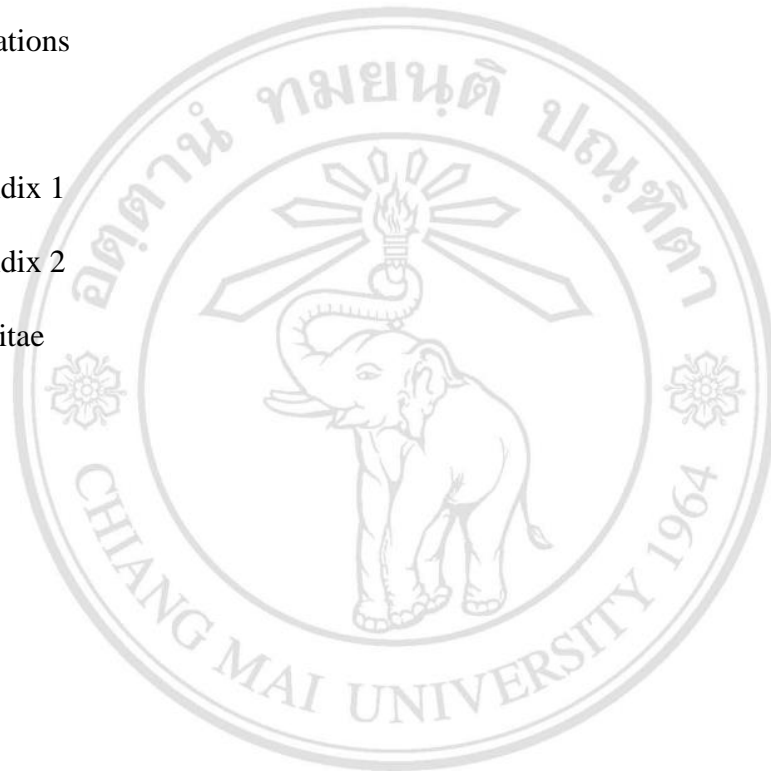


CONTENTS

	Page
Acknowledgement	c
Abstract in Thai	d
Abstract in English	e
List of Tables	h
List of Figures	i
List of Abbreviations	k
List of Symbols	l
Chapter 1 Introduction	1
1.1 An important aroma compound; 2-acetyl-1-pyrroline (2AP)	1
1.2 Environmental factors effecting on aromatic compounds in rice grain	3
1.3 Hydroponics	3
1.4 Chemometrics	4
1.5 Literature Reviews	4
1.6 Research Objectives	6
Chapter 2 Experimental and Method	7
2.1 Chemicals, Apparatus and Instruments	7
2.2 Design of experiment (DOE)	8
2.3 Determination of 2-acetyl-1-pyrroline (2AP) in rice grains	12
2.4 Chemometrics analyses	13
Chapter 3 Results and discussion	22
3.1 PLS prediction and coefficients	24
3.2 SSOM analysis	36

3.3 Effects of salt stress and nitrogen fertilizer	37
3.4 Relationship between grain yield, shoot dry weight and numbers of tillers and 2AP contents	38
Chapter 4 Conclusion	39
Suggestions	40
References	41
List of Publications	47
Appendix	48
Appendix 1	48
Appendix 2	49
Curriculum Vitae	51



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LIST OF TABLES

	Page
Table 2.1 Coded values and the concentrations of N and NaCl added to the standard Hoagland's nutrient solution for the central composite design (CCD)	9
Table 2.2 Growing data of the rice plant	10
Table 2.3 Yield component data	11
Table 3.1 Regression coefficients, coefficient of determination (Q^2) and F-test values of the predicted second-order polynomial models for the growth parameters	27
Table 3.2 Regression coefficients, coefficient of determination (Q^2) and F-test values of the predicted second-order polynomial models for the yield components	28
Table 3.3 Observed and predicted 2AP concentrations (ppm) in the rice grains using PLS	30
Table 3.4 PLS coefficients and VIP values for the design, growth parameter and yield component data	32
Table A1 Chemicals and concentrations of the nutrient solution for rice	48
Table A2 RMSE and Q^2 from predictive results of PLS	50

LIST OF FIGURES

		Page
Figure 1.1	Chemical structure of 2-acetyl-1-pyrroline	1
Figure 1.2	Pathway of 2AP biosynthesis in rice (a) BADH2-dependent 2AP synthesis, (b) BADH2-independent 2AP synthesis	2
Figure 1.3	Water culture system for growing the rice plant	3
Figure 2.1	Example of lattices used for SOMs	16
Figure 2.3	$P \times Q$ map with J weights containing a total of K map units and the corresponding weight matrix W .	17
Figure 2.3	Schematic of the SOM training process	20
Figure 3.1	The rice plants after transplanting	23
Figure 3.2	Response surface contour plots showing interactive effect of N and Na concentrations on the growth parameters.	25
Figure 3.3	Response surface contour plots showing interactive effect of N and Na concentrations on the yield components.	26
Figure 3.4	A correlation graph between predicted and observed 2AP values	29
Figure 3.5	A null distribution for confirming the significance of PLS coefficients. The red dotted line indicate the coefficients of the studied parameters	33
Figure 3.6	Supervised color shading map. The BMUs are labeled based on the treatments and corresponding replication numbers	34
Figure 3.7	(a) a response plane of the 2AP values and (b)-(w) component planes for each of the parameters	36

Figure 1A The predictive results of the PLS modeling using (a) raw data, (b) square root scaling and mean centring and (c) standardization 49



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LIST OF ABBREVIATIONS

2AP	2-Acetyl-1-Pyrroline
ANOVA	Analysis of variance
BMU	Best Matching Unit
CCD	Central Composite Design
2, 6-DMP	2, 6-Dimethoxyphenol
DOEs	Design of Experiments
GC-NPD	Gas Chromatography-Nitrogen Phosphorous Detector
LOOCV	Leave-one-out cross-validation
MB-PLS	Multiblock PLS
N	Nitrogen
Na	Sodium
NaCl	Sodium chloride
NH ₄ NO ₃	Ammonium nitrate
PCA	Principal component analysis
ppm	Part per million (gram per liter)
PT1	Pathum Thani1 rice variety
KDML 105	Khao Dawk Mali 105 rice variety
PLS	Partial least square regression
Q ²	Coefficient of determination for cross validation
R ²	Coefficient of determination
RMSECV	Root Mean Square Error of Cross Validation
RSM	Response surface methodology
SHS-GC	Static Headspace Gas Chromatography
S-PLS	Serial PLS
SOM	Self-organizing map
SSOM	Supervised self-organizing map
VIP	Variable influence on projection

LIST OF SYMBOLS

X	Predictor matrix
c	Response vector
$P \times Q$	Size map
J	Number of variables
w_k	Weight vector
W	Weight matrix
T	Total number of iterations
φ	Neighbourhood width
φ_0	Initial neighbourhood width
φ_t	Neighbourhood width for iteration t
ψ	Learning rate
ψ_0	Initial learning rate
ψ_t	Learning rate for iteration t
ω	Neighbourhood weight
ω_{kt}	Neighbourhood weight of map unit k for iteration t

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