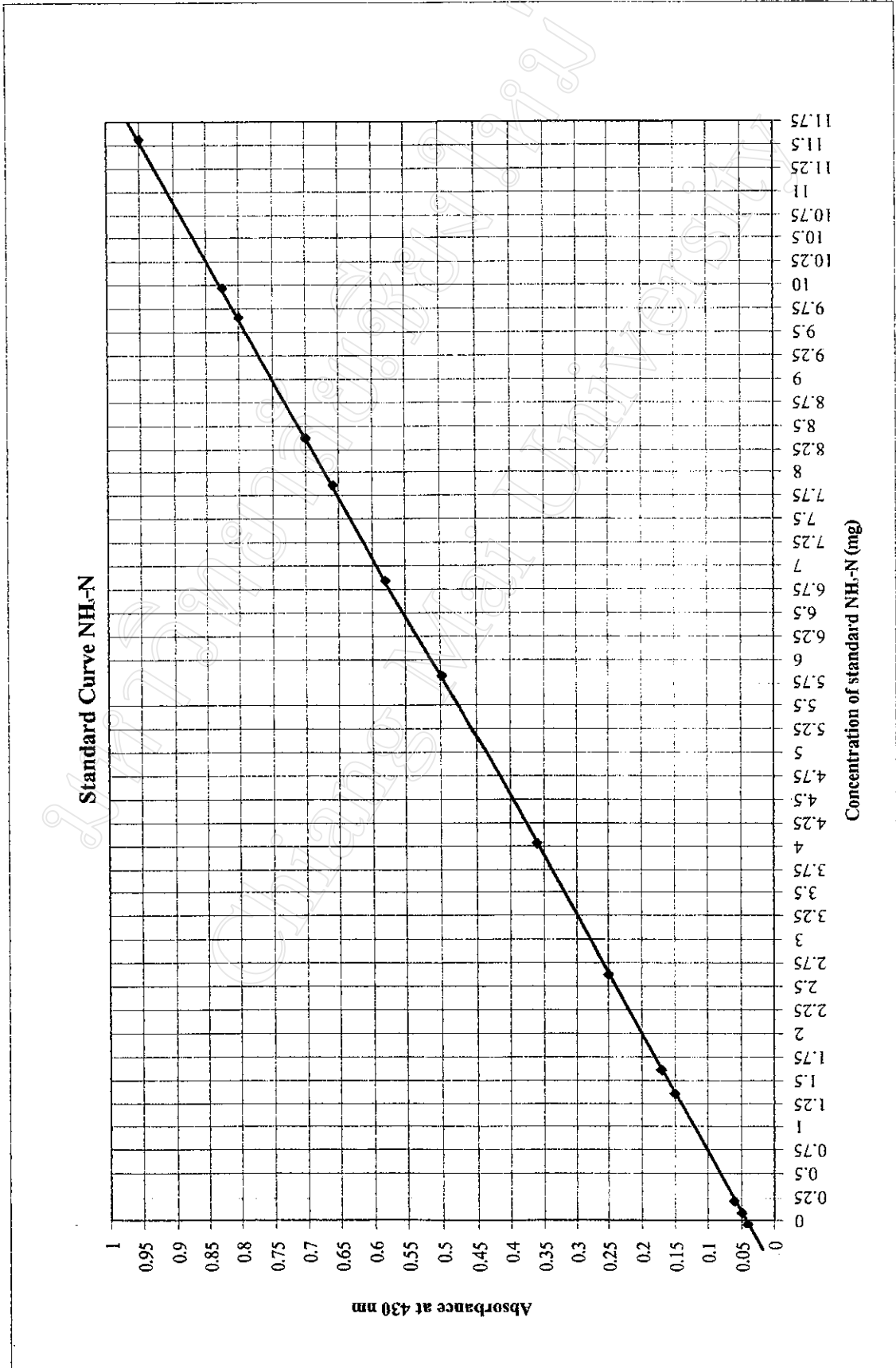


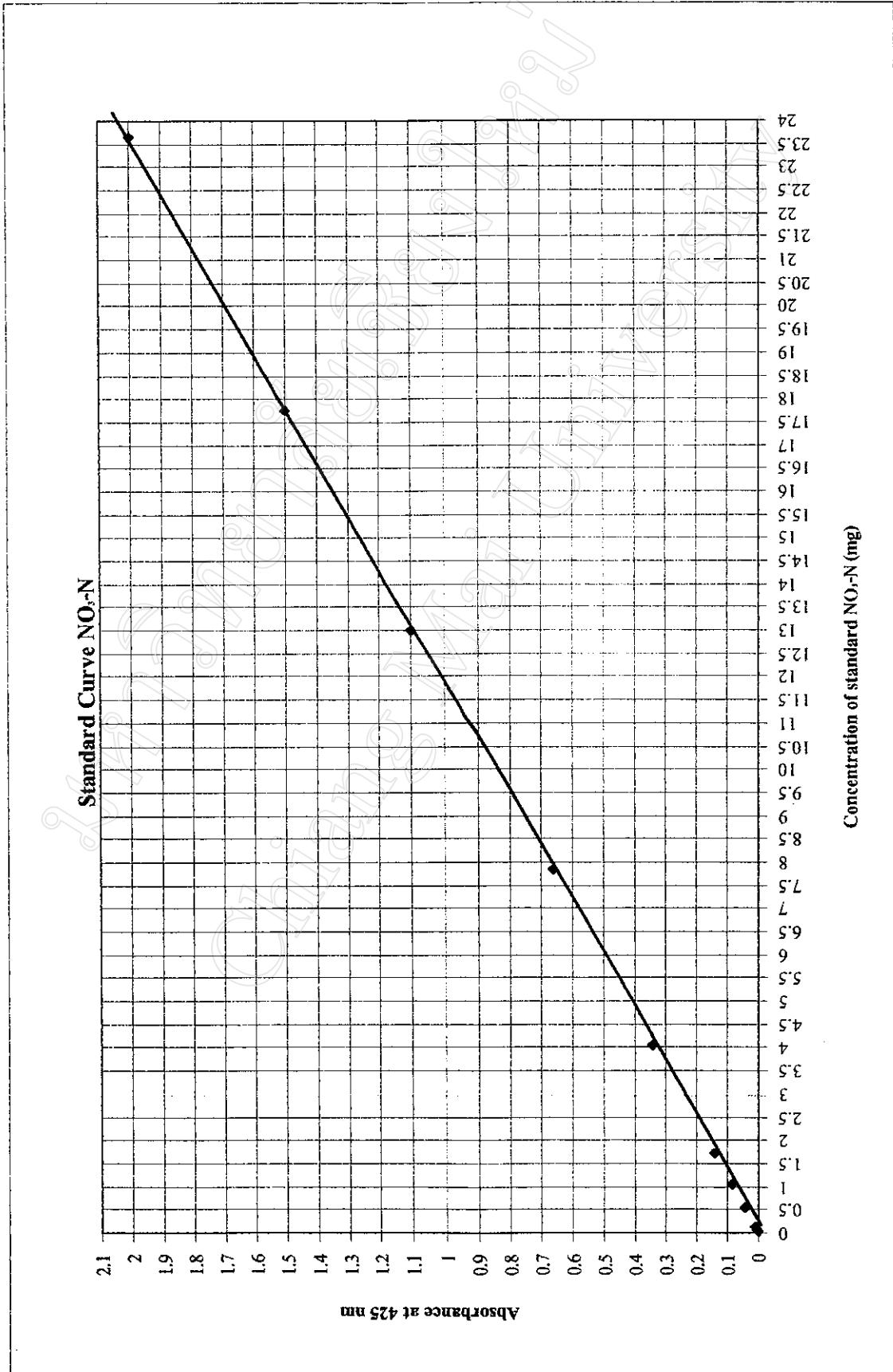
**APPENDICES**

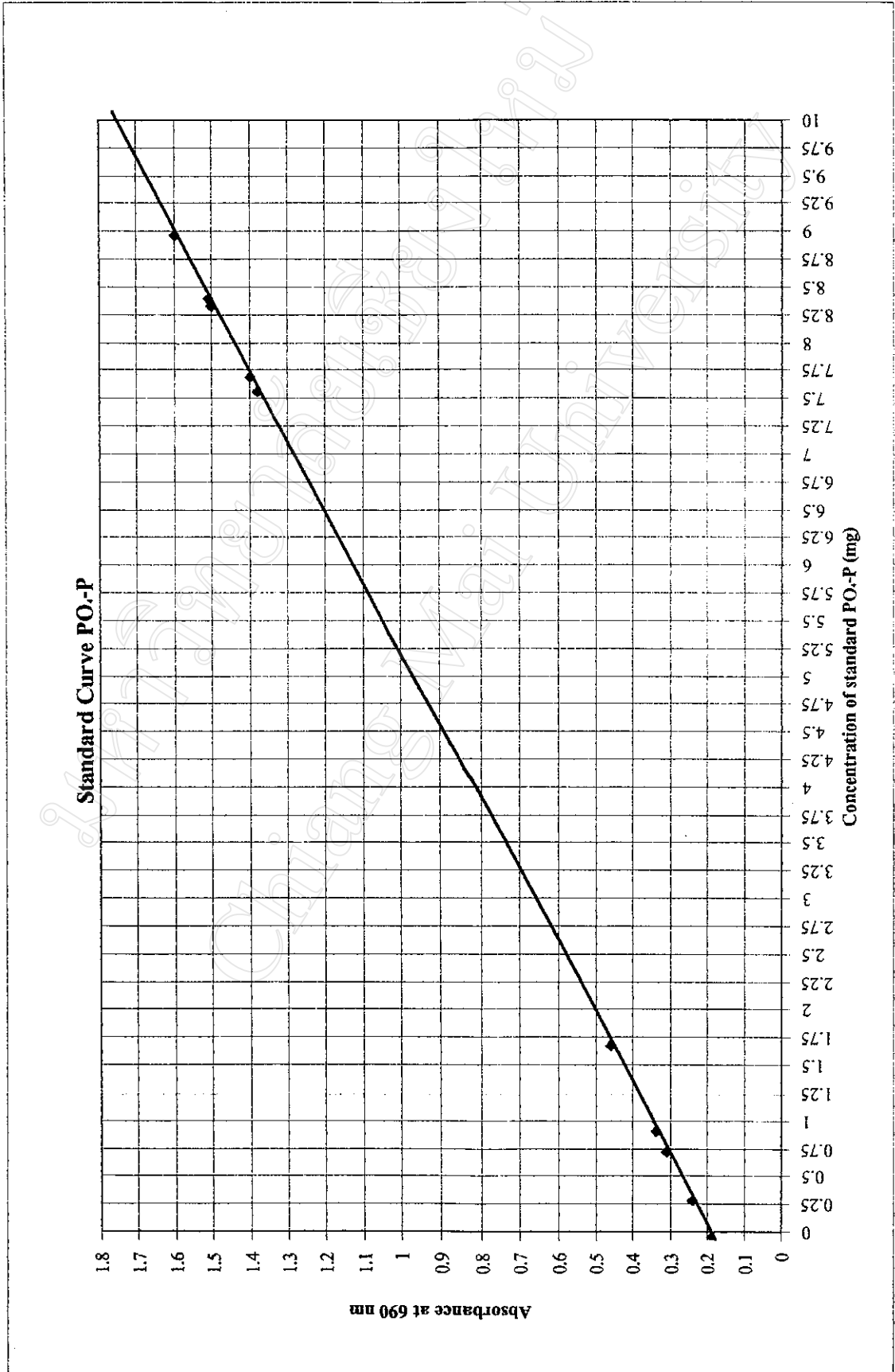
มหาวิทยาลัยเชียงใหม่  
Chiang Mai University

**Appendix 1: The standard curves for nutrient-parameters**

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**Appendix 2 : The statistical analysis for chemical parameters**

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**Analysis of Variance (ANOVA) Table of BOD<sub>5</sub> - data from the stage before physical change of wetland. ( before 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	240043.6230	60010.9058	61.7950*	.0000
Within Groups	30	29133.8414	971.1280		
Total	34	269177.4644			

**LSD Analysis Table of BOD<sub>5</sub> - data from the stage before physical change of wetland. ( before 5th April 1998)**

Mean	Group	Group				
		5	3	4	2	1
	Grp5					
	Grp3					
	Grp4					
	Grp2					
	Grp1	*	*	*	*	

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of BOD<sub>5</sub> - data from the stage after physical change of wetland. ( after 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	2062.1045	515.5261	12.8860*	.0076
Within Groups	5	200.0333	40.0067		
Total	9	2262.1378			

**LSD Analysis Table of BOD<sub>5</sub> - data from the stage after physical change of wetland. ( after 5th April 1998)**

Mean	Group	Group				
		4	5	3	2	1
	Grp4					
	Grp5					
	Grp3					
	Grp2	*	*			
	Grp1	*	*	*	*	

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of COD - data from the stage before physical change of wetland. ( before 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	1048997.555	262249.3889	9.0510*	.0023
Within Groups	10	289745.2355	28974.5235		
Total	14	1338742.791			

**LSD Analysis Table of COD - data from the stage before physical change of wetland. ( before 5th April 1998)**

Mean	Group	Group				
		5	3	4	2	1
	Grp5					
	Grp3					
	Grp4					
	Grp2					
	Grp1	*	*	*	*	

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of COD - data from the stage after physical change of wetland. ( after 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	4459.8277	1114.9569	2.0855	.2204
Within Groups	5	2673.1423	534.6285		
Total	9	7132.9700			

**LSD Analysis Table of COD - data from the stage after physical change of wetland. ( after 5th April 1998)**

Mean	Group	Group				
		5	3	4	2	1
	Grp5					
	Grp3					
	Grp4					
	Grp2					
	Grp1					

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of NH<sub>3</sub>-N - data from the stage before physical change of wetland. ( before 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	3438066.727	859516.6817	14.8767*	.0000
Within Groups	30	1733281.042	57776.0347		
Total	34	5171347.769			

**LSD Analysis Table of NH<sub>3</sub>-N - data from the stage before physical change of wetland. ( before 5th April 1998)**

Mean	Group	Group				
		2	4	3	5	1
	Grp2					
	Grp4	*				
	Grp3	*				
	Grp5	*				
	Grp1	*	*	*	*	

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of NH<sub>3</sub>-N - data from the stage after physical change of wetland. ( after 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	99508.1398	24877.0350	9.7380*	.0140
Within Groups	5	12773.1149	2554.6230		
Total	9	112281.2547			

**LSD Analysis Table of NH<sub>3</sub>-N - data from the stage after physical change of wetland. ( after 5th April 1998)**

Mean	Group	Group				
		5	4	1	2	3
	Grp5					
	Grp4					
	Grp1	*	*			
	Grp2	*	*			
	Grp3	*	*			

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of NO<sub>3</sub>-N - data from the stage before physical change of wetland. ( before 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	4764.9202	1191.2301	3.3274*	.0228
Within Groups	30	10740.3028	358.0101		
Total	34	15505.2230			

**LSD Analysis Table of NO<sub>3</sub>-N - data from the stage before physical change of wetland. ( before 5th April 1998)**

Mean	Group	Group				
		4	5	3	2	1
	Grp4					
	Grp5					
	Grp3					
	Grp2					
	Grp1	*	*	*	*	

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of NO<sub>3</sub>-N - data from the stage after physical change of wetland. ( after 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	52.3306	13.0826	2.3112	.1914
Within Groups	5	28.3024	5.6605		
Total	9	80.6330			

**LSD Analysis Table of NO<sub>3</sub>-N - data from the stage after physical change of wetland. ( after 5th April 1998)**

Mean	Group	Group				
		2	4	3	1	5
	Grp2					
	Grp4					
	Grp3					
	Grp1					
	Grp5	*				

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of PO<sub>4</sub>-P - data from the stage before physical change of wetland. ( before 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	139897.6042	34974.4011	2.4916	.0642
Within Groups	30	421105.7148	14036.8572		
Total	34	561003.3191			

**LSD Analysis Table of PO<sub>4</sub>-P - data from the stage before physical change of wetland. ( before 5th April 1998)**

Mean	Group	Group				
		2	1	5	4	3
	Grp2					
	Grp1					
	Grp5	*				
	Grp4	*				
	Grp3	*				

\* significant at 0.05 % level

**Analysis of Variance (ANOVA) Table of PO<sub>4</sub>-P - data from the stage after physical change of wetland. ( after 5th April 1998)**

Source	D.F.	SS.	MS.res	F-Ratio	F-Prob.
Between Groups	4	4114.3656	1028.5914	2.7404	.1492
Within Groups	5	1876.7220	375.3444		
Total	9	5991.0976			

**LSD Analysis Table of PO<sub>4</sub>-P - data from the stage after physical change of wetland. ( after 5th April 1998)**

Mean	Group	Group				
		5	1	3	4	2
	Grp5					
	Grp1					
	Grp3					
	Grp4					
	Grp2	*				

\* significant at 0.05 % level

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1998 Master's Degree of Science in Environmental Science,  
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1994 Bachelor's Degree of Science in Microbiology,  
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**Work Experience**

1998 Part-time Research Worker for Wetland Section  
Biogas Advisory Unit (BAU),  
Institute for Science and Technology Research  
and Development (IST), Chiang Mai University.

1995-1996 Science/Biology Teacher  
at Lanna International School, Chiang Mai.

- 1994-1996      Research & Development Officer  
Dhammanaat Foundation for Conservation  
and Rural Development, Chiang Mai
- 1992-present      Freelance Translator  
for science papers, researches, thesis and books
- 1992-1993      Student Volunteer  
Tamada Shop green product shop
- 1987-1996      Big Brother/Volunteer Teacher  
Rompoh Foundation for Orphans and Poor Children,  
Wat U-Mong, Chiang Mai.
- 1987-Present      Private Tutor  
General Science, Environmental Science, Biology, Mathematics  
and English to primary, secondary school students and university,  
both undergraduate and graduated school, students.
- Publication**
- 1998      Translator (English to Thai) of a pamphlet  
“Ob Luang National Park Nature Trail” produced by  
Dhammanaat Foundation & Ob Luang National Park
- 1996      Translator (English to Thai) of published book  
“Biology Basic Facts” written by T.A. Ms Cahill Gem.