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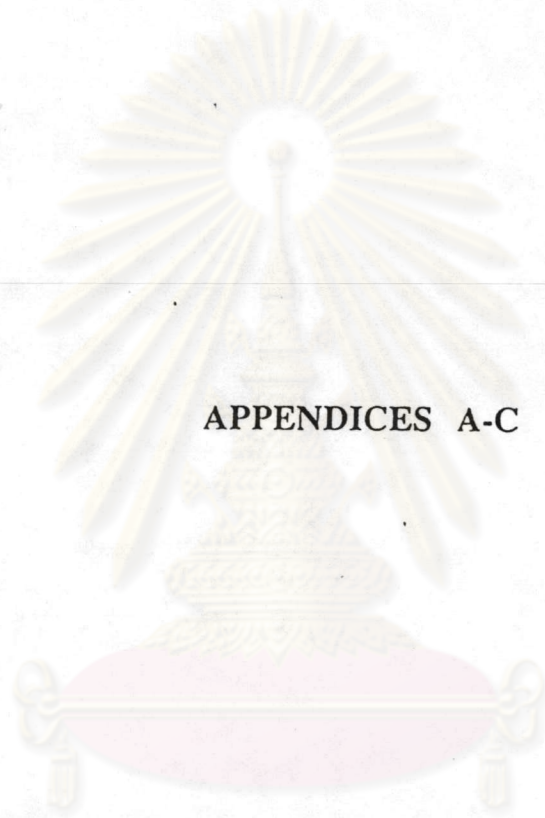
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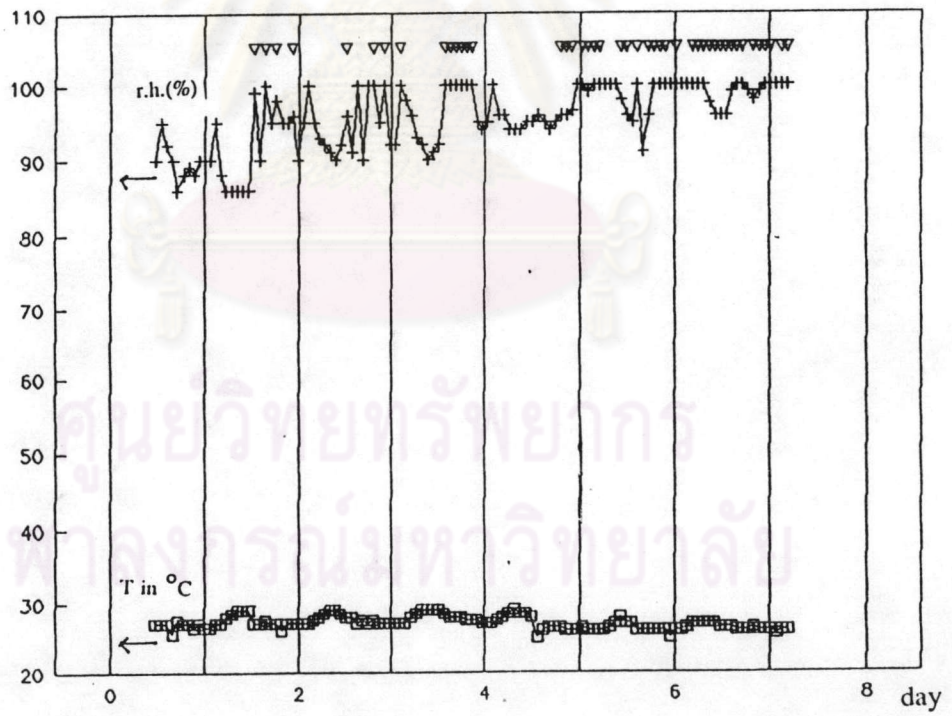
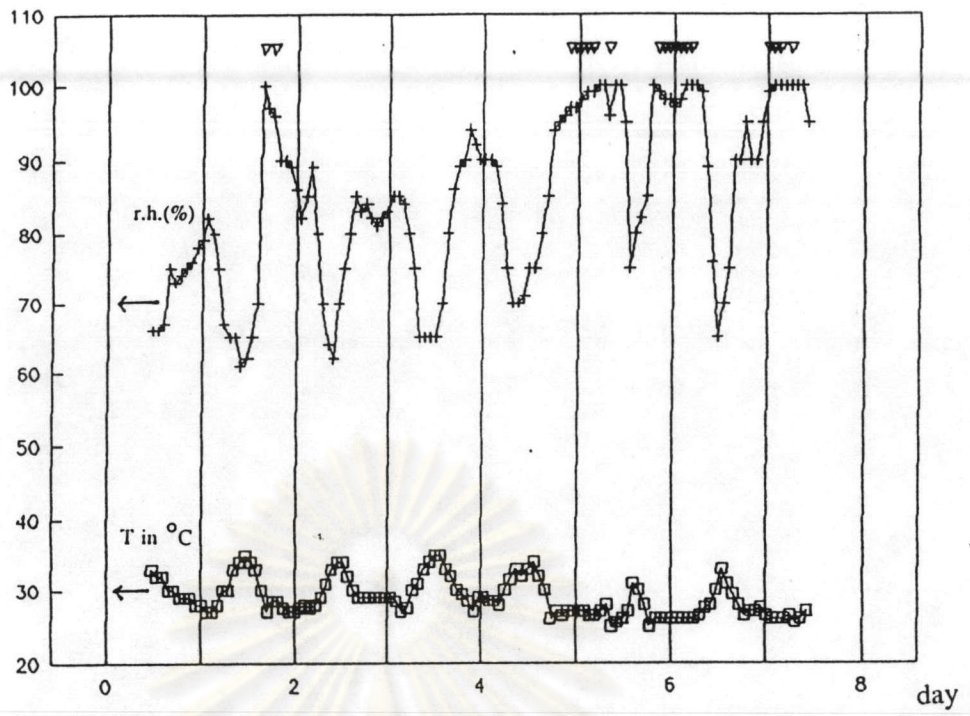
APPENDICES A-C

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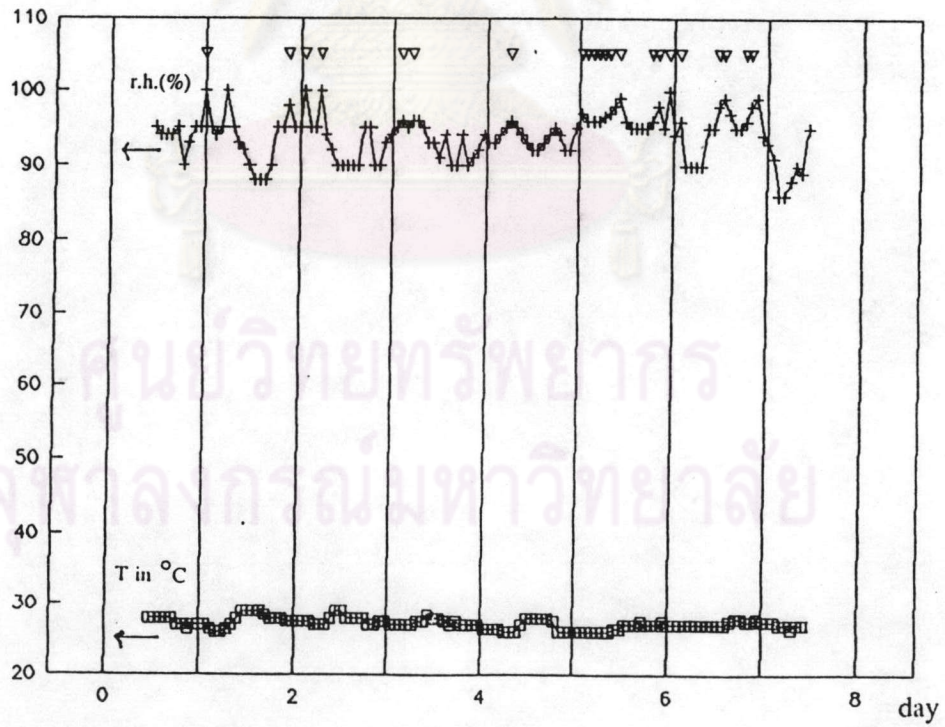
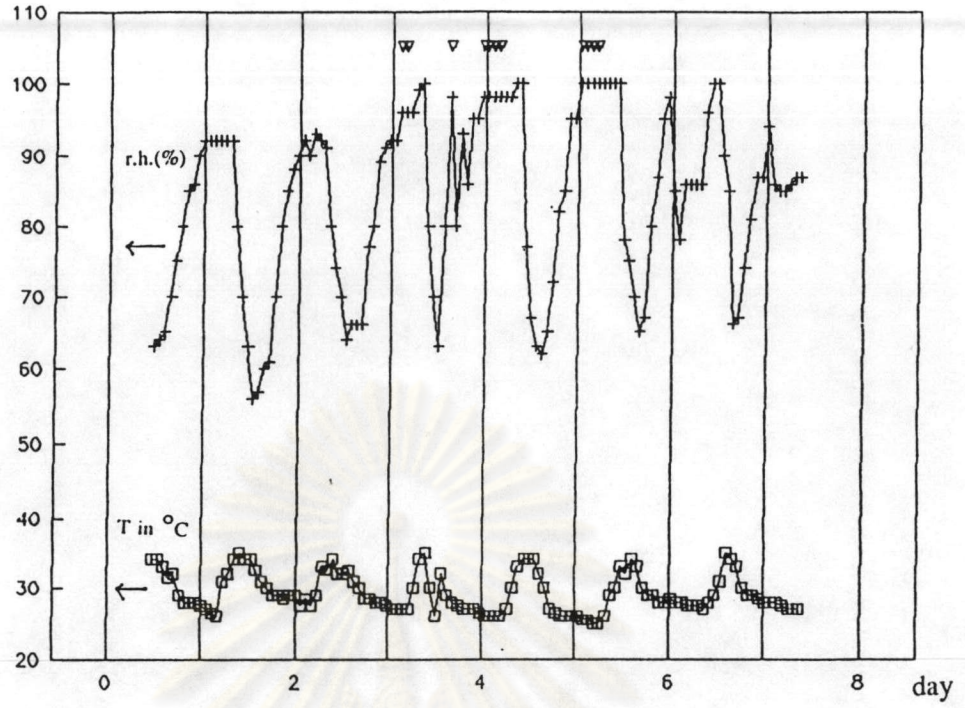
APPENDIX A

=====						
STOICHIOMETRY		M =	59.213 g/mol	V =	23.756 cm ³ /mol	
		M' =	20.537 g/mol	V' =	8.239 cm ³ /mol	
		<N> =	2.8833			
Glass component	wt.	mol	wt. el	mol el	Seger	
j, el:	y(j)	x(j)	y(el)	x(el)	s(j)	
SiO ₂ , Si:	0.724	0.714	0.3385	0.2475	2.6053	
Al ₂ O ₃ , Al:	0.016	0.009	0.0084	0.0064	0.0336	
MgO, Mg:	0.044	0.065	0.0268	0.0227	0.2384	
CaO, Ca:	0.069	0.073	0.0491	0.0252	0.2649	
Na ₂ O, Na:	0.142	0.136	0.1057	0.0944	0.4967	
SO ₃ , S :	0.004	0.003	0.0014	0.0009	0.0095	
oxygen :			0.4696	0.6028		
cations :			0.5304	0.3972		
=====						
sum:	1.000	1.000	1.0000	1.0000		

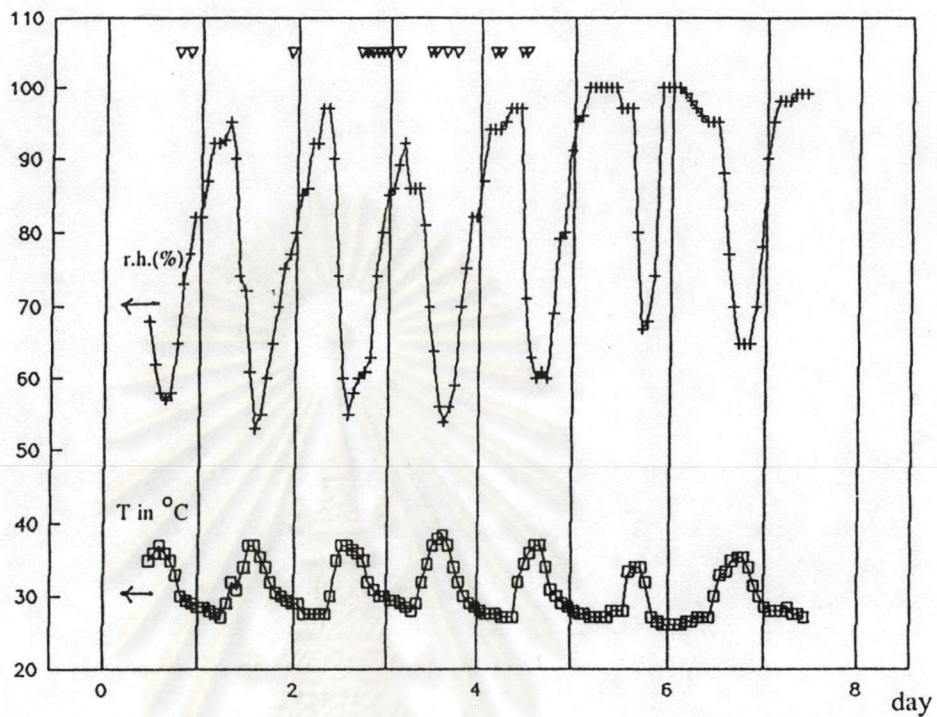
=====						
STOICH		M =	59.2126 g/mol	V =	23.7557 cm ³ /mol	
		M' =	20.5365 g/mol	V' =	8.2391 cm ³ /mol	
		<N> =	2.8833	ro =	2.4926 g/cm ³	
Glass component	a(j)~	ro(j)	c(j)	ro(el)	c(el)	
j, el:						
SiO ₂ , Si:	0.1226	1.8052	0.0300	0.8438	0.0300	
Al ₂ O ₃ , Al:	0.0001	0.0395	0.0004	0.0209	0.0008	
MgO, Mg:	0.0005	0.1108	0.0027	0.0668	0.0027	
CaO, Ca:	0.0006	0.1713	0.0031	0.1224	0.0031	
Na ₂ O, Na:	0.0045	0.3550	0.0057	0.2634	0.0115	
SO ₃ , S :	0.0000	0.0088	0.0001	0.0035	0.0001	
oxygen :				1.1705	0.0732	
cations :				1.3221	0.0482	
=====						
sum:		2.4926	0.0421	2.4926	0.1214	



WH2 & WH8 during 29/06/95 - 06/07/95

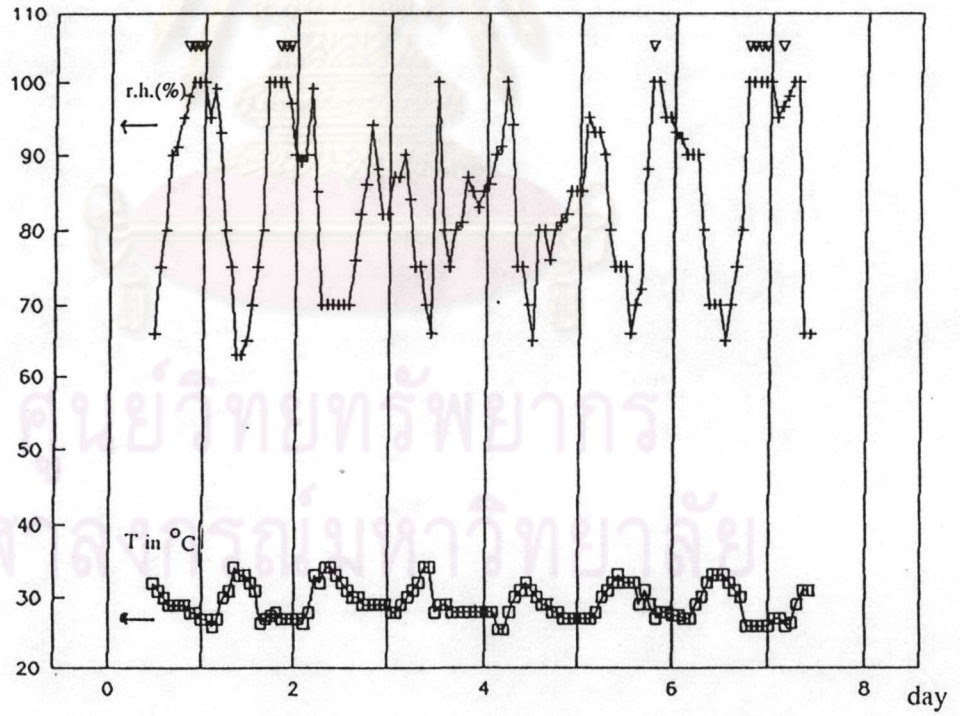
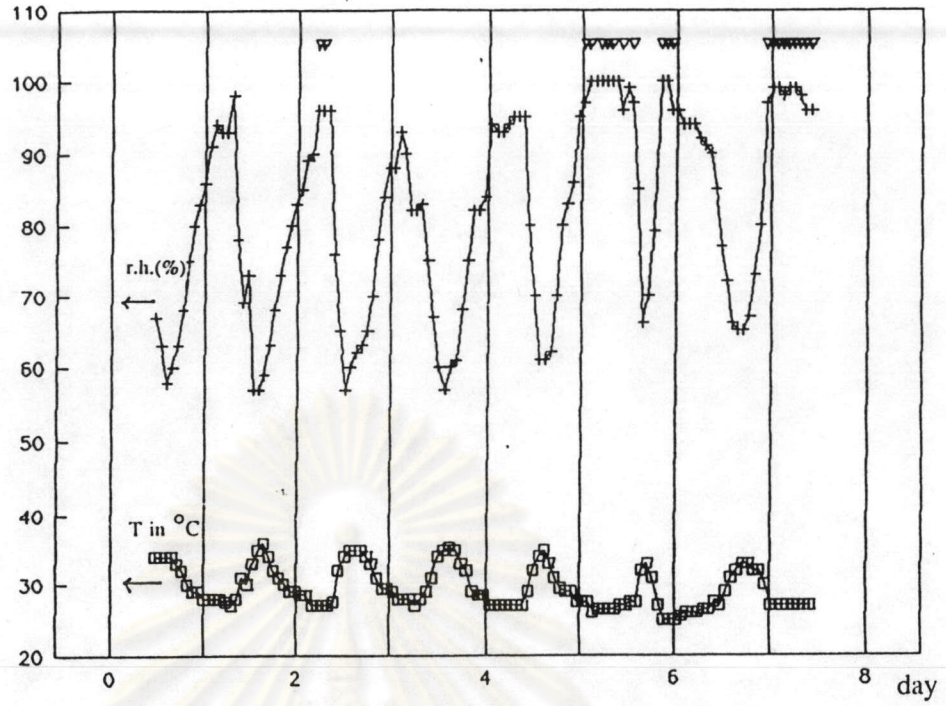


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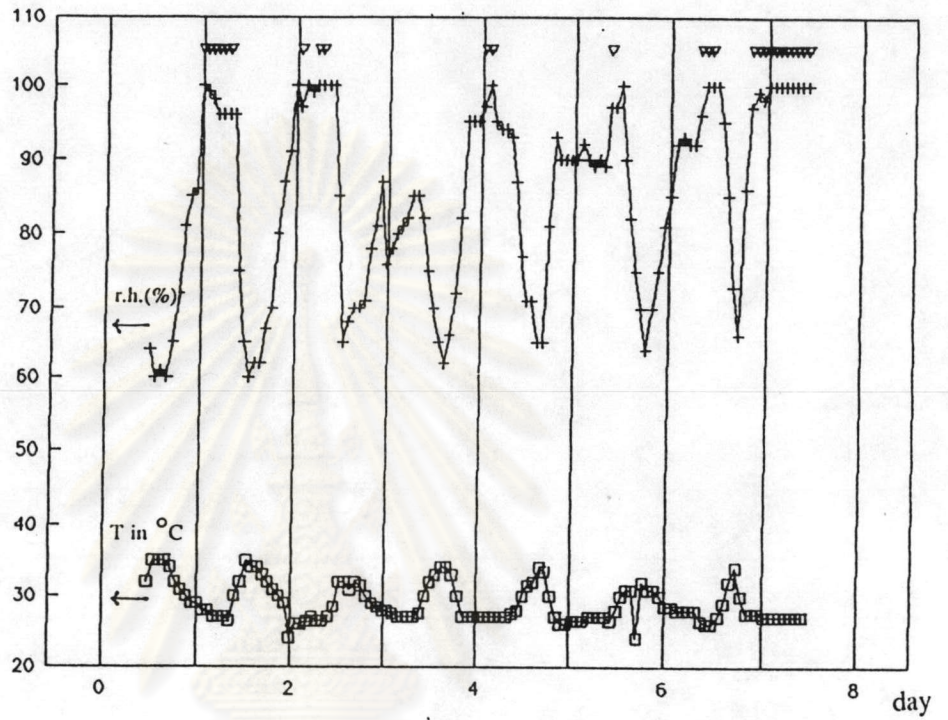


WH2 during 13/07/95 - 20/07/95

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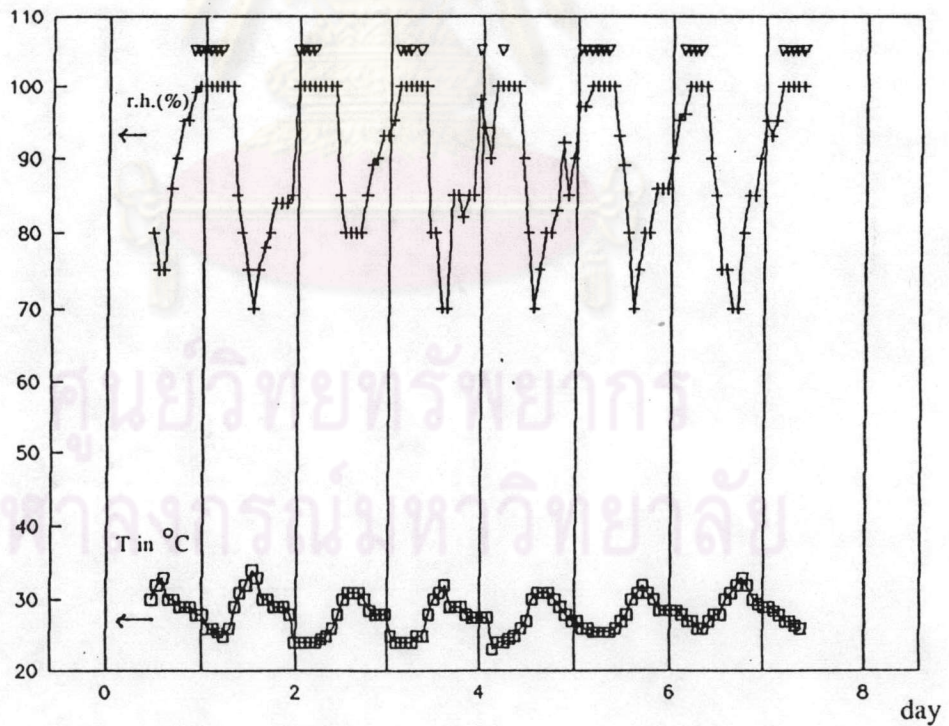
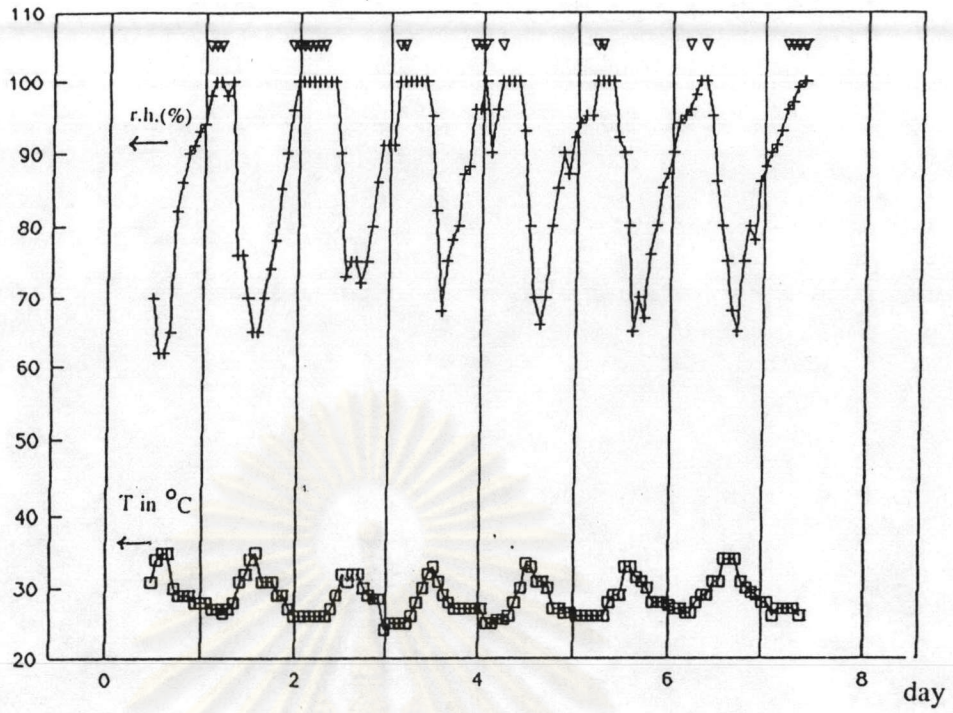


WH2 & WH4 during 20/07/95 - 27/07/95

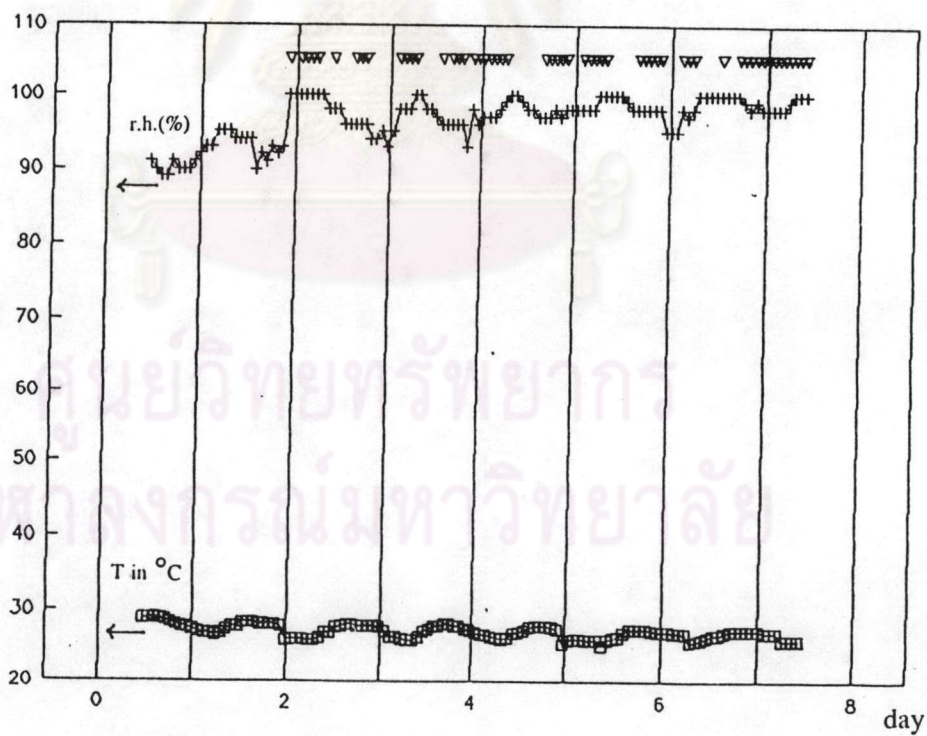
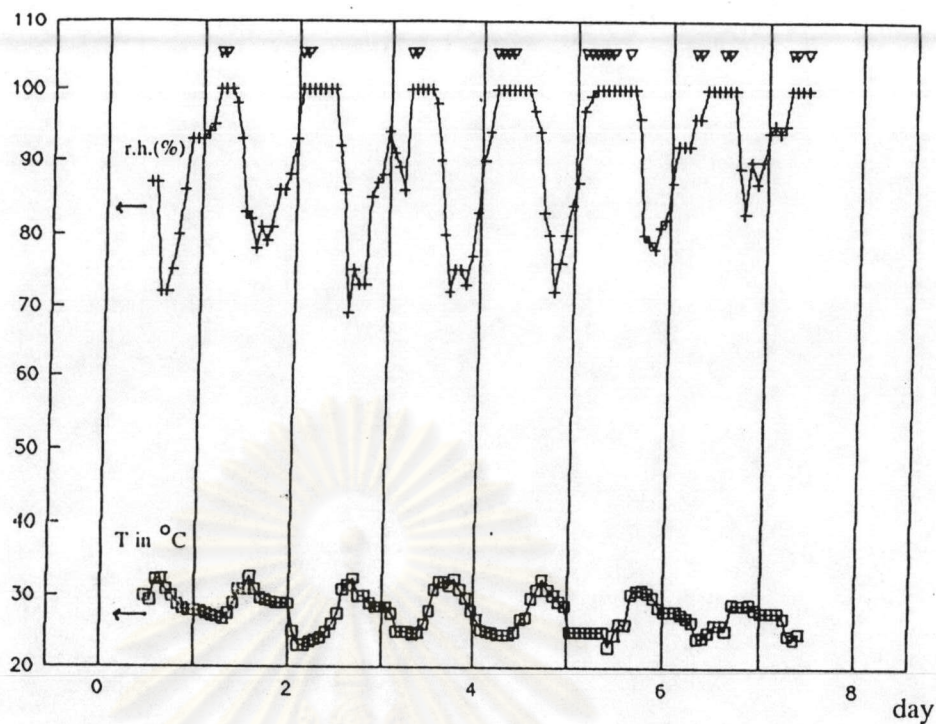


WH2 during 27/07/95 - 03/08/95

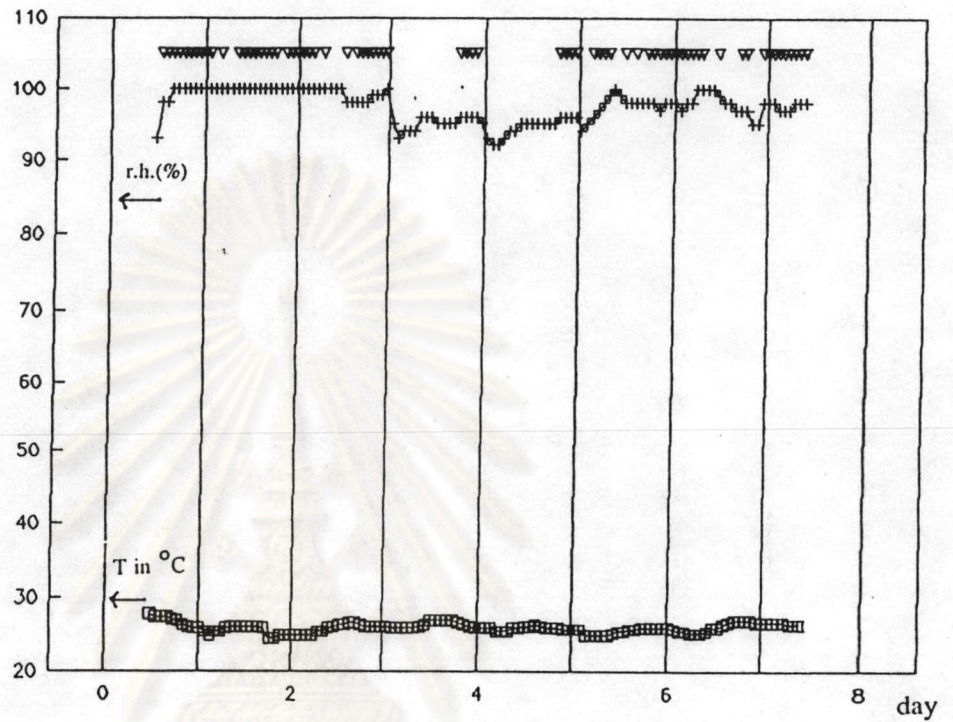
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WH2 & WH1 during 10/08/95 - 17/08/95

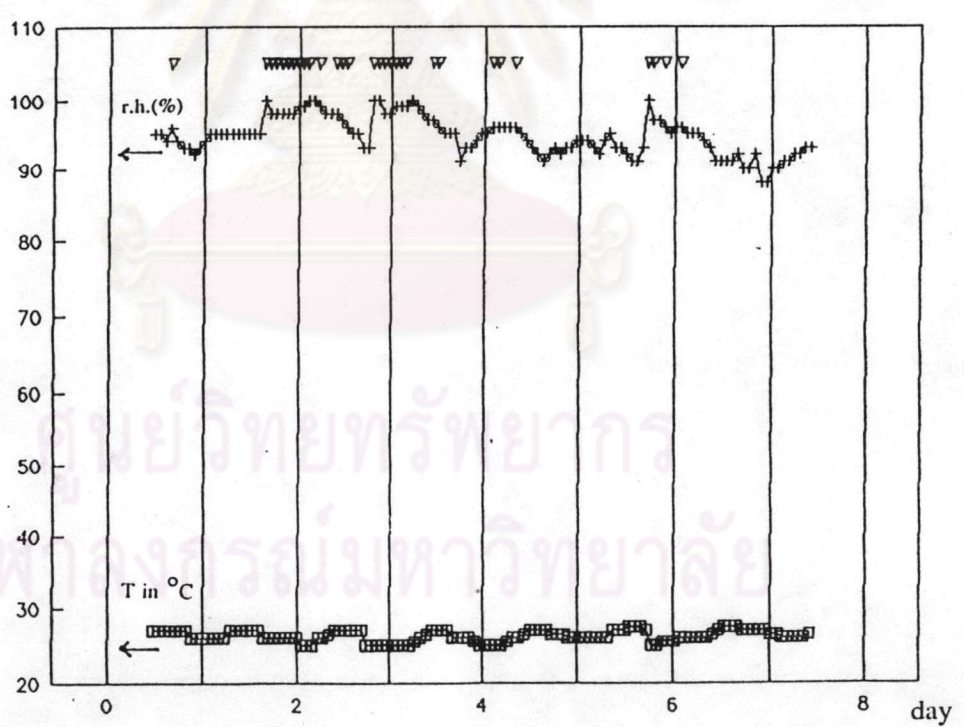
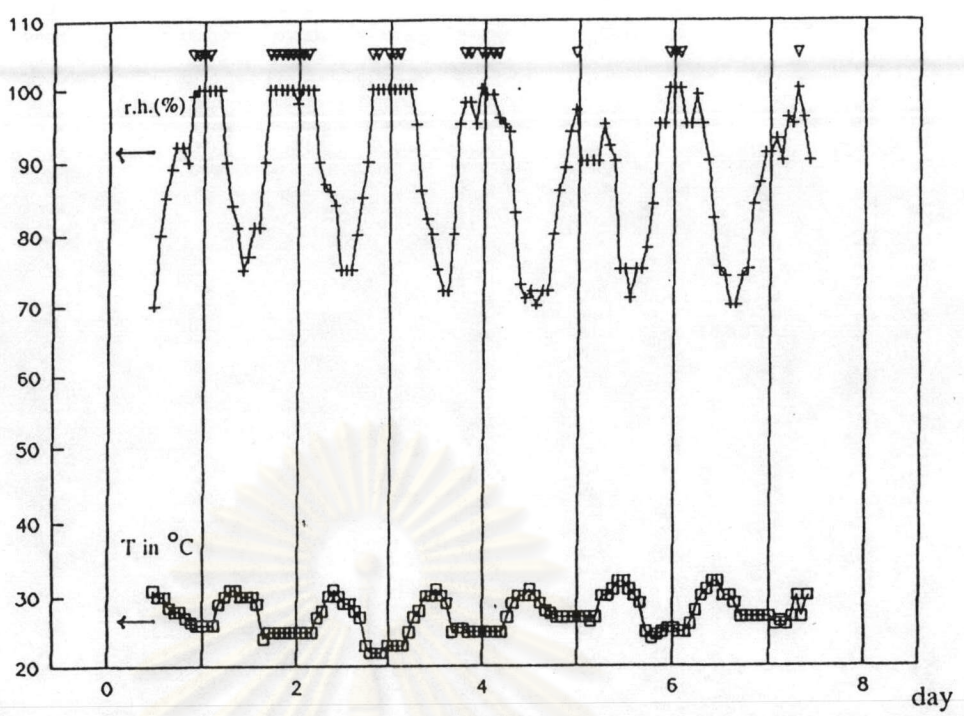


FREE & WH8 during 17/08/95 - 24/08/95

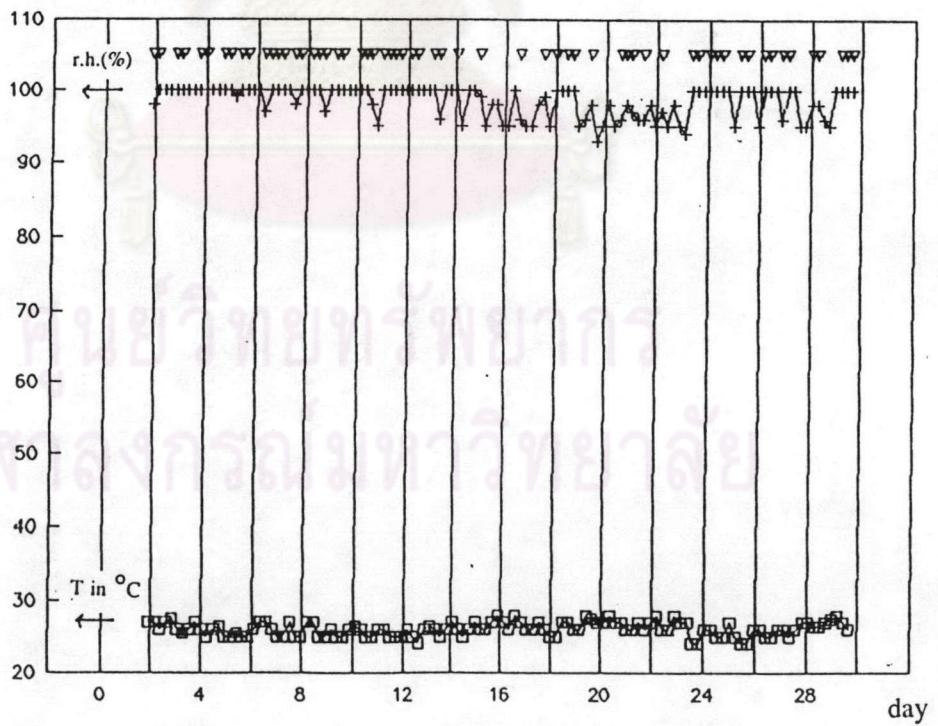
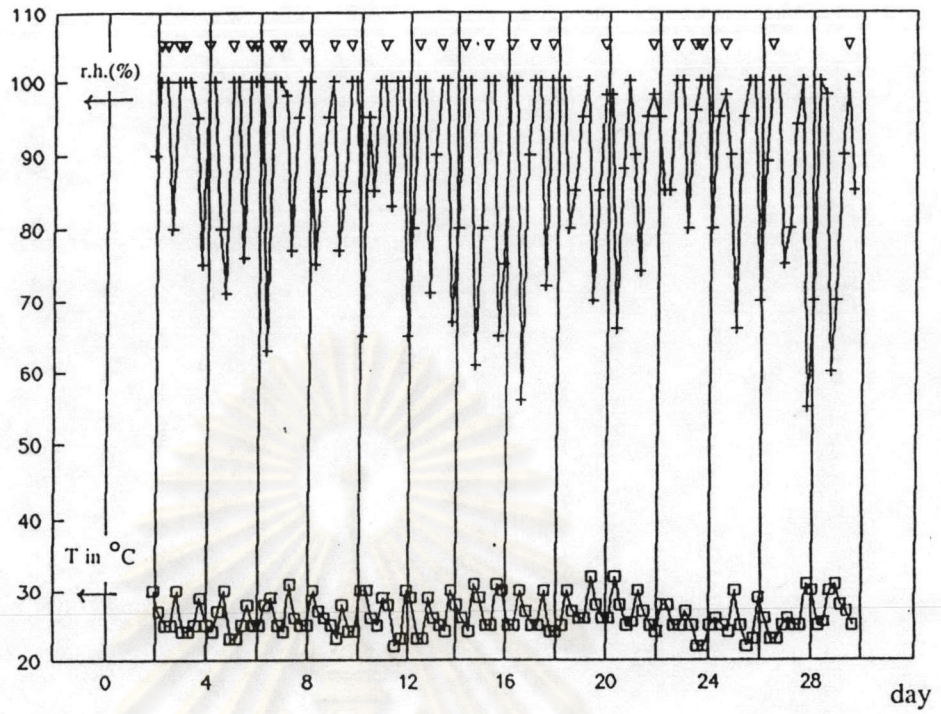


WH8 during 25/08/95 - 01/09/95

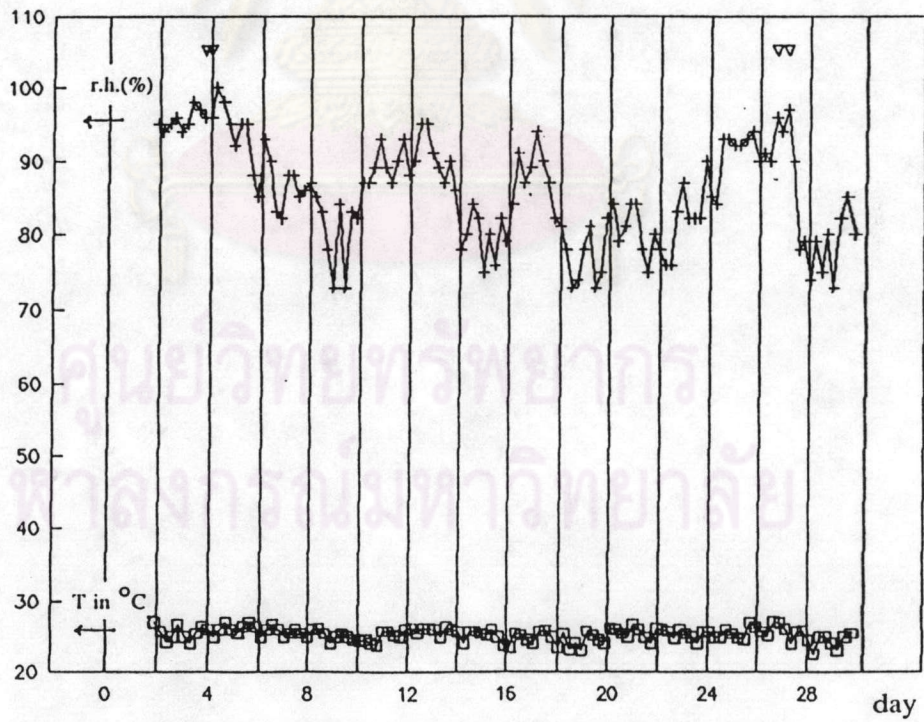
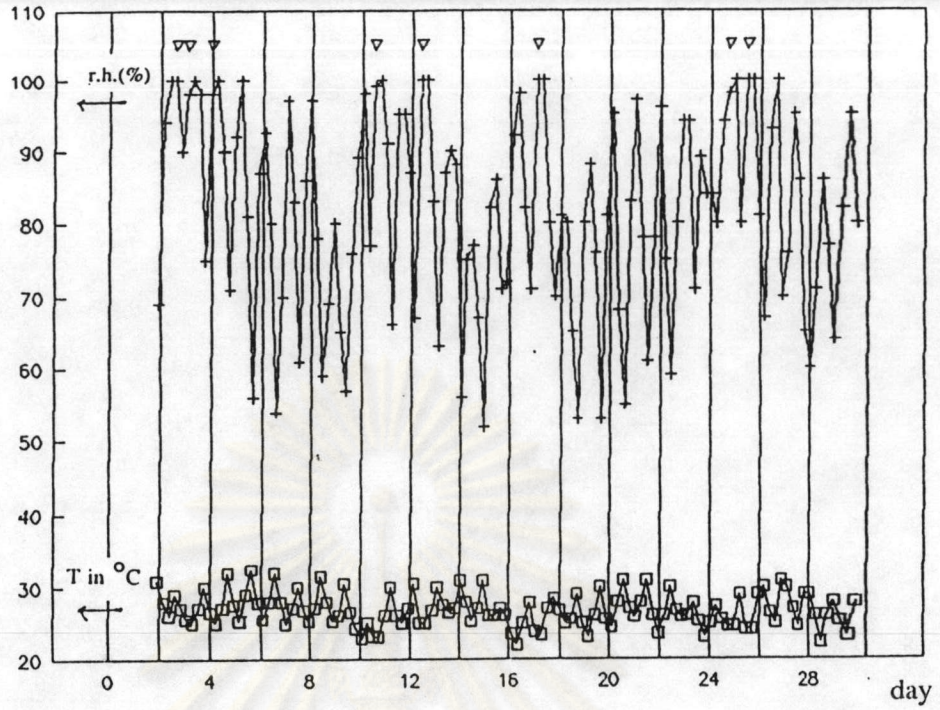
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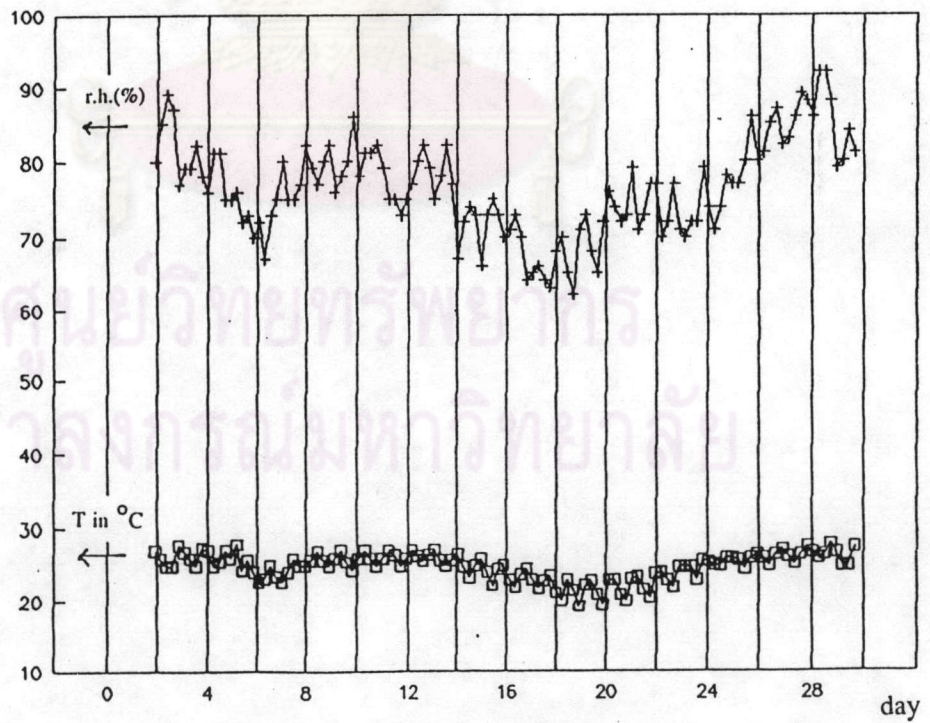
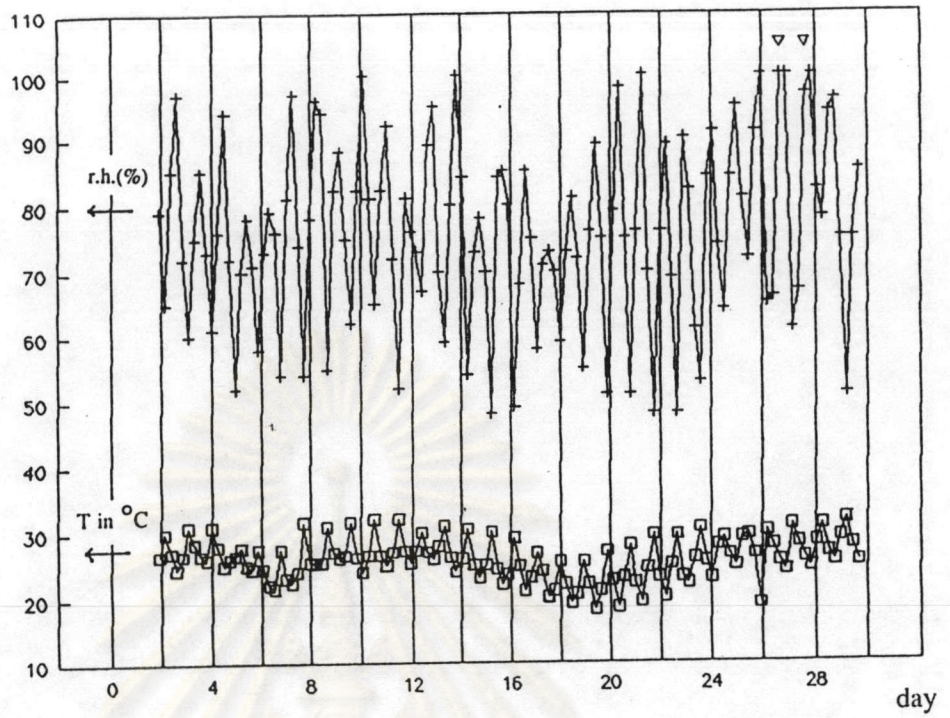
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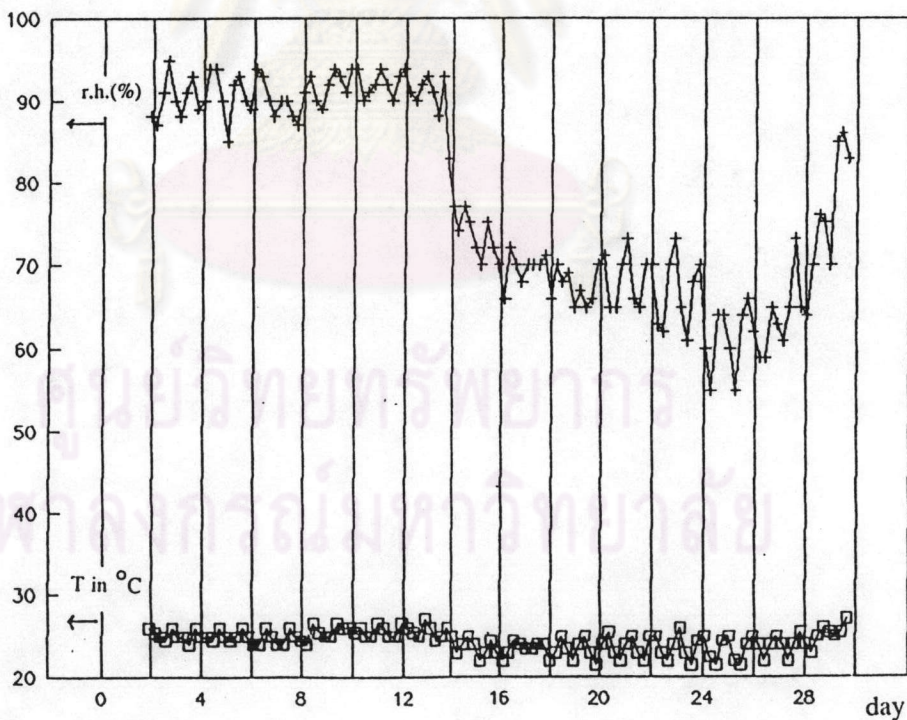
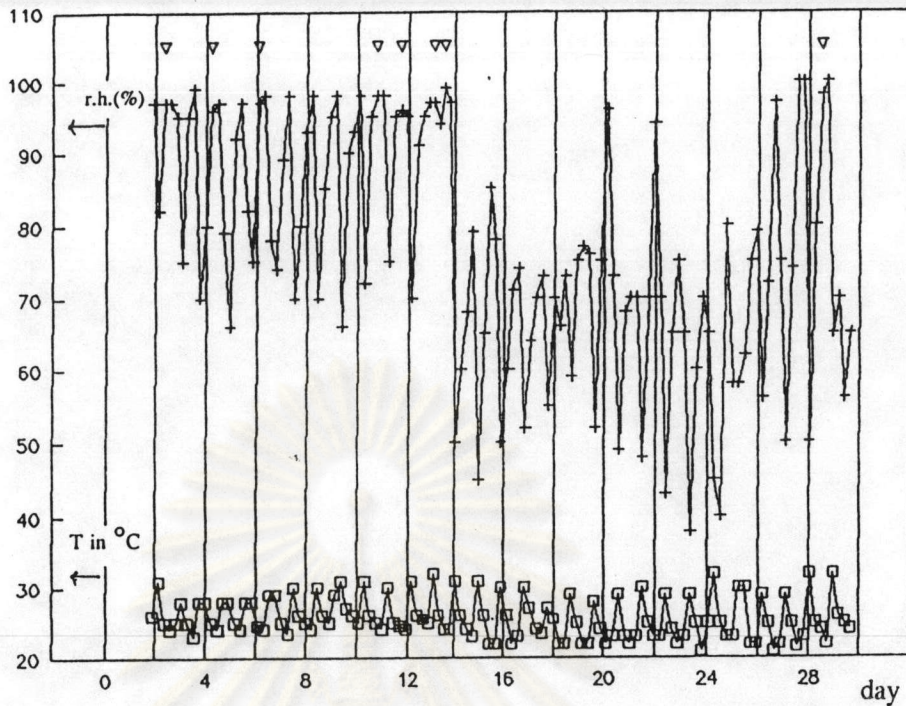
FREE & WH8 during 13/09/95 - 14/10/95



FREE & WH8 during 18/10/95 - 18/11/95



FREE & WH8 during 20/11/95 - 20/12/95



FREE & WH8 during 15/01/96 - 15/02/96

APPENDIX C

T/°C	ABSOLUTE WATER CONTENT IN g/m ³									
	% r.H.									
	5	10	15	20	25	30	35	40	45	50
15.0	5	10	15	19	24	29	34	39	44	49
16.0	5	10	16	21	26	31	36	41	47	52
17.0	5	11	16	22	27	33	38	44	49	55
18.0	6	12	18	23	29	35	41	47	53	58
19.0	6	12	19	25	31	37	43	50	56	62
20.0	7	13	20	26	33	39	46	53	59	66
21.0	7	14	21	28	35	42	49	56	63	70
22.0	7	15	22	29	37	44	52	59	66	74
23.0	8	16	23	31	39	47	55	62	70	78
24.0	8	17	25	33	41	50	58	66	74	83
25.0	9	17	26	35	44	52	61	70	79	87
26.0	9	19	28	37	46	56	65	74	83	93
27.0	10	20	29	39	49	59	68	78	88	98
28.0	10	21	31	41	52	62	72	83	93	103
29.0	11	22	33	44	55	65	76	87	98	109
30.0	12	23	35	46	58	69	81	92	104	115
31.0	12	24	36	49	61	73	85	97	109	122
32.0	13	26	38	51	64	77	90	103	115	128
33.0	14	27	41	54	68	81	95	108	122	135
34.0	14	29	43	57	71	86	100	114	128	143
35.0	15	30	45	60	75	90	105	120	135	150
36.0	16	32	47	63	79	95	111	127	142	158
37.0	17	33	50	67	83	100	117	133	150	167
38.0	18	35	53	70	88	105	123	140	158	175
39.0	18	37	55	74	92	111	129	148	166	184
40.0	19	39	58	78	97	116	136	155	175	194
41.0	20	41	61	82	102	122	143	163	183	204
42.0	21	43	64	86	107	129	150	171	193	214
43.0	23	45	68	90	113	135	158	180	203	225
44.0	24	47	71	95	118	142	165	189	213	236
45.0	25	50	74	99	124	149	174	198	223	248

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 ABSOLUTE WATER CONTENT IN g/m³

T/°C	% r.H.									
	55	60	65	70	75	80	85	90	95	100
15.0	54	58	63	68	73	78	83	88	93	97
16.0	57	62	67	72	78	83	88	93	98	104
17.0	60	66	71	77	82	88	93	99	104	110
18.0	64	70	76	82	88	93	99	105	111	117
19.0	68	74	80	87	93	99	105	111	118	124
20.0	72	79	85	92	98	105	112	118	125	131
21.0	77	84	90	97	104	111	118	125	132	139
22.0	81	88	96	103	111	118	125	133	140	147
23.0	86	94	102	109	117	125	133	141	148	156
24.0	91	99	107	116	124	132	141	149	157	165
25.0	96	105	114	122	131	140	149	157	166	175
26.0	102	111	120	130	139	148	157	167	176	185
27.0	108	117	127	137	147	156	166	176	186	196
28.0	114	124	134	145	155	165	176	186	196	207
29.0	120	131	142	153	164	175	186	196	207	218
30.0	127	138	150	161	173	184	196	207	219	230
31.0	134	146	158	170	182	195	207	219	231	243
32.0	141	154	167	180	192	205	218	231	244	257
33.0	149	162	176	189	203	216	230	244	257	271
34.0	157	171	185	200	214	228	242	257	271	285
35.0	165	180	195	210	225	240	255	270	285	300
36.0	174	190	206	222	237	253	269	285	301	316
37.0	183	200	217	233	250	267	283	300	317	333
38.0	193	210	228	245	263	281	298	316	333	351
39.0	203	221	240	258	277	295	314	332	350	369
40.0	213	233	252	272	291	310	330	349	368	388
41.0	224	245	265	285	306	326	347	367	387	408
42.0	236	257	278	300	321	343	364	386	407	428
43.0	248	270	293	315	338	360	383	405	428	450
44.0	260	284	307	331	354	378	402	425	449	473
45.0	273	298	322	347	372	397	422	446	471	496

ศูนย์วิจัยทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

Vita.

Mrs. Tepiwan Chitwatcharakomol received her Bachelor Degree of Science in Materials Science (Ceramics) from Faculty of Science, Chulalongkorn University in 1981 and started to work at the Department of Science Service in 1983. She used to attend training courses in Japan; 3 months training in Glass Technology course in 1989 and 1 year training in Advanced Industrial Technology course between 1990-1991.

She began her master study in May 1994 and complete the programme in April 1996.



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