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## **APPENDIX A**

**1) PULPIT, WAT YAI SUWANNARAM, PETCHBURI PROVINCE.**

The pulpit (*sangket*) was used by four priests for chanting in the cremation. It was originally received from Wat Yai Suwannaram, Petchburi province and modeled from architecture in late Ayudhya style.



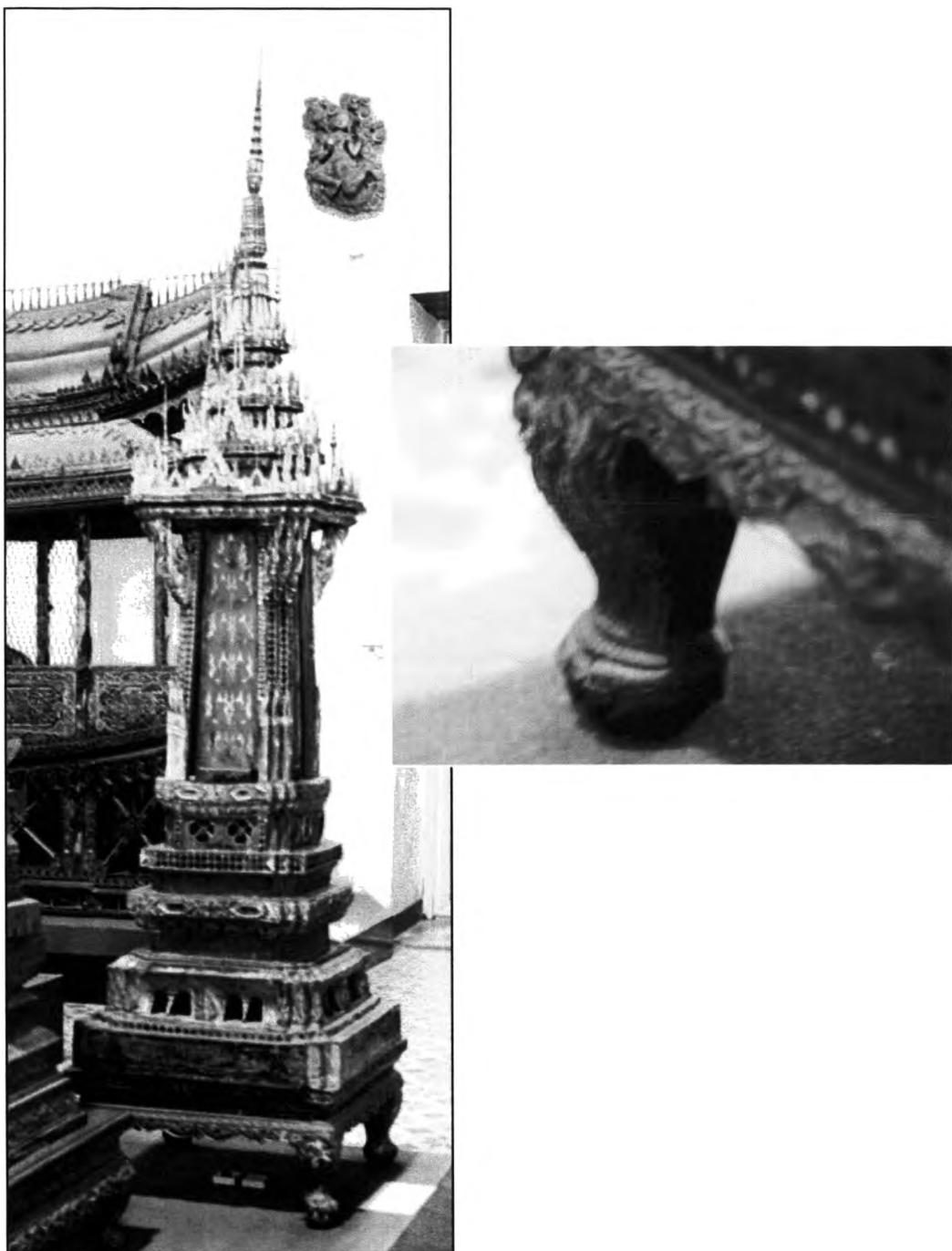
**2) CARVING DOOR-PANELS OF THE ROYAL PANtheon IN THE VICINITY OF THE EMERALD BUDDHA TEMPLE, BANGKOK METROPOLIS.**

The door-panels were the original panels of the Royal Pantheon (*Prasat Phra Thepbidorn*) in the Emerald Buddha Temple (*Wat Phra Srirattana satsadaram*). The ornamentations are the *phuttan* motifs with *sioakang* and *singh* figures. Under the *singh* figures, there is a hunting scene. The decoration was covered with a coat of lacquer and gilded. They were carved in the Ratanakosin period.



**3) BUSABOK OR MONDOF, WAT PA PHAYATHAI.**

The spire of *busabok* (canopy) is the *phrom phak* figure (face of Brahma). The National Museum purchased from H.S.H. Piyabhadinath formerly to get from Wat Pa Phayathai. This *busabok* was used for enshrining object of worship such as Buddha. It was modeled in Ratanakosin style, about 200 cm high. The panels are ornamented with rows of deva figures on gilded red surface.



**4) INCISED DOOR-PANELS OF WAT SUDHAT, BANGKOK METROPOLIS.**

The original teak door-panels were came from the viharn of Wat Sudhat. This door was partly carved by King Rama II (Phra Buddhaloesla Napalai) in the first quarter of the 19th century and was venerated by the Thai both for its intrinsic artistic value as well as for sentimental reason towards the reigning dynasty. This carving is very important, the door having an opening of 5.45 by 2.40 m, but artistically it has a too complicated an ornamentation denoting an art in its last expressive period. The ornamentations are in the *phuttan* motif with tree and animal figures. The decoration of the panels was covered with a coat of lacquer and gilded.





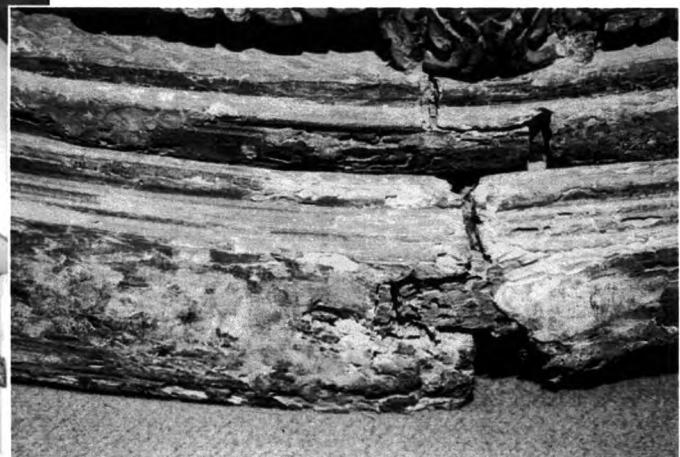
##### 5) THE GABIE OF EKALONGKOT PAVILION.

This is a screen, depicting with a scene of the combat from the Ramayana epic, which came from the Ekalongkot pavilion in the Palace to the Front. It was about 150 cm high by 139 cm in width and carved in the Rattanakosin period.



#### **6) CIRCULAR BASED PULPIT, WAT KHANG KHAO, NONTHABURI PROVINCE.**

King Rama VII (King Prachadhipok) presented a characteristic round pulpit (*tammat*) in wood of the 18th century, which came from Wat Khang Khao, Nonthaburi province. It was about 730 cm high. This pulpit was used by monks or novices for sermons. In its former state of condition, this pulpit must have been one of the finest Thai wooden works, but even from its actual preservation one is able to enjoy the originality of design as well as the beauty of its carvings. The lower part of the basement is formed by a series of superposed moulding enriched with delicate ornaments. The middle parts are divided into six parts wherein mythological figure in high relief, symbolically stepping on small lions, are carved with bold and sure cut. Around the upper part of the basement there is the universal decoration of the *krachang* of which actually very few remain. Six ornamented pillars hold the crown-like top ending as usual in a slender and high finial. The sides of the ladder, from where the Buddhist monk stepped up into the pulpit, are formed by two *nagas* (mythological snakes; king of serpents) ending with figure of praying angel. At the bottom of the ladder to the pulpit, there is a sculped elephant.



**7) PULPIT, WAT RUAG (BANG BAMRU), BANGKOK METROPOLIS.**

This pulpit was a utensil for offerings to a priest after a sermon or drawing a yellow robe on coffin just before lighting the pyre, such as table, cabinet etc. It was presented by the abbot of Wat Ruag (Bang Bamru), Bangkok metropolis in 1982.



## **APPENDIX B**

**t-Test: Paired Two Sample for Means**

	<b>P3T</b>	<b>P4T</b>
Mean	29.31608394	29.10117037
Variance	0.931566076	0.893212922
Observations	365	365
Pearson Correlation	0.991694259	
Hypothesized Mean Difference	0	
df	364	
t Stat	32.92022679	
P(T<=t) one-tail	1.8082E-111	
t Critical one-tail	1.649050319	
P(T<=t) two-tail	3.6164E-111	
t Critical two-tail	1.966500349	

**t-Test: Paired Two Sample for Means**

	<b>P3H</b>	<b>P4H</b>
Mean	71.08945188	71.85990389
Variance	70.398665	70.56461233
Observations	365	365
Pearson Correlation	0.986407077	
Hypothesized Mean Difference	0	
df	364	
t Stat	-10.6333887	
P(T<=t) one-tail	1.76857E-23	
t Critical one-tail	1.649050319	
P(T<=t) two-tail	3.53713E-23	
t Critical two-tail	1.966500349	

	<i>P3T-S</i>	<i>P3T-R</i>
Mean	29.63751218	29.50801131
Variance	0.968156213	0.855172599
Observations	120	122
Hypothesized Mean Difference	0	
df	239	
t Stat	1.054646348	
P(T<=t) one-tail	0.14632604	
t Critical one-tail	1.651253569	
P(T<=t) two-tail	0.29265208	
t Critical two-tail	1.969938239	

	<i>P3T-S</i>	<i>P3T-W</i>
Mean	29.63751218	28.81212843
Variance	0.968156213	0.592403164
Observations	120	123
Hypothesized Mean Difference	0	
df	225	
t Stat	7.271537856	
P(T<=t) one-tail	2.91247E-12	
t Critical one-tail	1.651653747	
P(T<=t) two-tail	5.82495E-12	
t Critical two-tail	1.970565791	

	<i>P3T-R</i>	<i>P3T-W</i>
Mean	29.50801131	28.81212843
Variance	0.855172599	0.592403164
Observations	122	123
Hypothesized Mean Difference	0	
df	235	
t Stat	6.399103015	
P(T<=t) one-tail	4.19213E-10	
t Critical one-tail	1.651364983	
P(T<=t) two-tail	8.38427E-10	
t Critical two-tail	1.970111043	

	<i>P4T-S</i>	<i>P4T-R</i>
Mean	29.44957618	29.25616429
Variance	0.904351209	0.827313023
Observations	120	122
Hypothesized Mean Difference	0	
df	239	
t Stat	1.616401906	
P(T<=t) one-tail	0.053663304	
t Critical one-tail	1.651253569	
P(T<=t) two-tail	0.107326608	
t Critical two-tail	1.969938239	

	<i>P4T-S</i>	<i>P4T-W</i>
Mean	29.44957618	28.60752846
Variance	0.904351209	0.573251584
Observations	120	123
Hypothesized Mean Difference	0	
df	227	
t Stat	7.624528746	
P(T<=t) one-tail	3.32341E-13	
t Critical one-tail	1.65159463	
P(T<=t) two-tail	6.64681E-13	
t Critical two-tail	1.970470294	

	<i>P4T-R</i>	<i>P4T-W</i>
Mean	29.25616429	28.60752846
Variance	0.827313023	0.573251584
Observations	122	123
Hypothesized Mean Difference	0	
df	235	
t Stat	6.063914559	
P(T<=t) one-tail	2.62932E-09	
t Critical one-tail	1.651364983	
P(T<=t) two-tail	5.25864E-09	
t Critical two-tail	1.970111043	

	<i>P3H-S</i>	<i>P3H-R</i>
Mean	68.80009588	72.80387443
Variance	42.45370474	53.40694449
Observations	120	122
Hypothesized Mean Difference	0	
df	238	
t Stat	-4.50021094	
P(T<=t) one-tail	5.31228E-06	
t Critical one-tail	1.651280854	
P(T<=t) two-tail	1.06246E-05	
t Critical two-tail	1.969983714	

	<i>P3H-S</i>	<i>P3H-W</i>
Mean	68.80009588	71.62248577
Variance	42.45370474	107.2820456
Observations	120	123
Hypothesized Mean Difference	0	
df	206	
t Stat	-2.549019038	
P(T<=t) one-tail	0.005765259	
t Critical one-tail	1.652283572	
P(T<=t) two-tail	0.011530518	
t Critical two-tail	1.971548045	

	<i>P3H-R</i>	<i>P3H-W</i>
Mean	72.80387443	71.62248577
Variance	53.40694449	107.2820456
Observations	122	123
Hypothesized Mean Difference	0	
df	219	
t Stat	1.032194468	
P(T<=t) one-tail	0.151559781	
t Critical one-tail	1.651842467	
P(T<=t) two-tail	0.303119561	
t Critical two-tail	1.970856829	

	<b>P4H-S</b>	<b>P4H-R</b>
Mean	69.29833286	73.97699055
Variance	43.11827591	46.61294137
Observations	120	122
Hypothesized Mean Difference	0	
df	240	
t Stat	-5.43371992	
P(T<=t) one-tail	6.76738E-08	
t Critical one-tail	1.651228558	
P(T<=t) two-tail	1.35348E-07	
t Critical two-tail	1.969897312	

	<b>P4H-S</b>	<b>P4H-W</b>
Mean	69.29833286	72.259123
Variance	43.11827591	111.1513652
Observations	120	123
Hypothesized Mean Difference	0	
df	205	
t Stat	-2.634558894	
P(T<=t) one-tail	0.004533955	
t Critical one-tail	1.652319952	
P(T<=t) two-tail	0.00906791	
t Critical two-tail	1.971602615	

	<b>P4H-R</b>	<b>P4H-W</b>
Mean	73.97699055	72.259123
Variance	46.61294137	111.1513652
Observations	122	123
Hypothesized Mean Difference	0	
df	209	
t Stat	1.514999893	
P(T<=t) one-tail	0.065641658	
t Critical one-tail	1.652176707	
P(T<=t) two-tail	0.131283316	
t Critical two-tail	1.971379788	

## **APPENDIX C**

Annual distribution of fungi at sampling point no.1 (P1).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CU.M.)																												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE	
<i>Alternaria</i>																			25		25						50	1.92	
<i>Aspergillus</i>	650	125	550	325	2375	375	500	300	325	1062.5	700	2712.5	2150	1437.5	1600	1362.5	1162.5	75	125	125	50	825	387.5	2262.5	2562.5	250	24375	937.50	
<i>Aureobasidium</i>	25	275																									300	11.54	
<i>Cladosporium</i>								187.5		12.5	225	212.5				50	25		50	112.5		125		175		25	1200	46.15	
<i>Curvularia</i>								12.5																		62.5			
<i>Fusarium</i>	75	100	275	50	37.5	25	12.5	12.5		12.5					25	125	62.5	25	150		37.5	75		100		1200	46.15		
<i>Mucor</i>	50																										50	1.92	
<i>Penicillium</i>	1150	500	1375	400											1125	350	262.5	925		125	100	62.5	425	662.5	125	25	450	8062.5	310.09
<i>Rhizopus</i>																										12.5	12.5	0.48	
<i>Trichoderma</i>	25	25	100	12.5	150	62.5	87.5	225	37.5					325				300		25	37.5	12.5				1425	54.81		
TOTAL	1925	775	2500	875	2425	550	775	400	562.5	1337.5	912.5	2712.5	2475	2587.5	2125	1712.5	2112.5	600	362.5	312.5	412.5	1262.5	1325	2387.5	2600	725	36750	1413.46	

FUNGAL GENERA	QUANTITY OF SURFACE FUNGI (CFU/SQ.DM.)																											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE
<i>Aspergillus</i>		10		30		30	310	20	20	10	40	90	290	330	320		190	100		10	10	10		60	10	1890	72.69	
<i>Cladosporium</i>						10				20		10														40	1.54	
<i>Curvularia</i>		20		20								10									20					70	2.69	
<i>Fusarium</i>	20						20		10		10	220	30					10		20	90			10	440	16.92		
<i>Monilia</i>										10																10	0.38	
<i>Penicillium</i>	10						40												20		20		10		100	3.85		
<i>Rhizopus</i>																					20					20	0.77	
<i>Trichoderma</i>		20	10	100	10															20						160	6.15	
Unidentified						10				20									30		10					70	2.69	
TOTAL	20	20	20	50	50	130	320	80	40	50	50	110	510	360	320	0	190	100	10	40	50	60	130	60	20	10	2800	107.69

Annual distribution of fungi at sampling point no.2 (P2).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CU.M.)																												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE	
<i>Alternaria</i>																											25	0.96	
<i>Aspergillus</i>	450	175	375	175	1050	112.5	337.5	287.5	525	825	600	2450	1550	712.5	1975	1400	1237.5	37.5	87.5	225	37.5	700	1725	1662.5	2000	275	20987.5	807.21	
<i>Aureobasidium</i>		100	550																								662.5	25.48	
<i>Cladosporium</i>			25		25	500			37.5	125	87.5				50	62.5	12.5	25	50	62.5	12.5	50	50	62.5			1237.5	47.60	
<i>Curvularia</i>																											25	50	1.92
<i>Emericella</i>																											12.5	12.5	0.48
<i>Fusarium</i>		175	150	150	200		12.5	25			25	25			37.5	25	87.5	162.5	387.5	125	12.5	62.5						1687.5	64.90
<i>Monilia</i>																											25	0.96	
<i>Mucor</i>			75																								87.5	3.37	
<i>Penicillium</i>	1450	325	775	250											512.5	175	262.5	1162.5	250	237.5	100	175	275	162.5	400	125	162.5	6800	261.54
<i>Trichoderma</i>				325	137.5	25	25	125	25		100	612.5						50	100								1525	50.65	
<b>TOTAL</b>	<b>2150</b>	<b>750</b>	<b>1850</b>	<b>650</b>	<b>1375</b>	<b>287.5</b>	<b>887.5</b>	<b>312.5</b>	<b>687.5</b>	<b>1037.5</b>	<b>712.5</b>	<b>2550</b>	<b>2162.5</b>	<b>1312.5</b>	<b>2237.5</b>	<b>1762.5</b>	<b>2587.5</b>	<b>775</b>	<b>637.5</b>	<b>387.5</b>	<b>325</b>	<b>1050</b>	<b>1975</b>	<b>2062.5</b>	<b>2125</b>	<b>450</b>	<b>33100</b>	<b>1273.08</b>	

FUNGAL GENERA	QUANTITY OF SURFACE FUNGI (CFU/SQ.DM.)																													
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE		
<i>Aspergillus</i>	40		20		140	40	120	20	10	10	20	20	170	290	130	80	10	10								10	10	10	1160	44.62
<i>Cladosporium</i>									10				10	20				60										120	4.62	
<i>Curvularia</i>					10																						40	50	1.92	
<i>Fusarium</i>	30	10	40	10		20		20					290		10		140		10	10	10						20	620	23.85	
<i>Penicillium</i>				20									10														50	1.92		
<i>Trichoderma</i>	20					40							20		20											10	110	4.23		
<i>Unidentified</i>			60																30	20	20						130	5.00		
<b>TOTAL</b>	<b>70</b>	<b>30</b>	<b>120</b>	<b>40</b>	<b>140</b>	<b>40</b>	<b>140</b>	<b>60</b>	<b>40</b>	<b>10</b>	<b>20</b>	<b>40</b>	<b>480</b>	<b>310</b>	<b>140</b>	<b>80</b>	<b>90</b>	<b>150</b>	<b>0</b>	<b>40</b>	<b>50</b>	<b>30</b>	<b>30</b>	<b>10</b>	<b>20</b>	<b>60</b>	<b>2240</b>	<b>86.15</b>		

Annual distribution of fungi at sampling point no.3 (P3).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CD.M.)																													
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE		
<i>Alternaria</i>																												12.5	0.48	
<i>Aspergillus</i>	350	400	250	175	575	162.5	350	250	312.5	512.5	1337.5	3237.5	1087.5	475	1607.5	1362.5	1612.5	75	300	162.5	87.5	625	2437.5	1775	1300	225	21125	812.50		
<i>Aureobasidium</i>		100	350																									450	17.31	
<i>Cladosporium</i>		50		125		62.5	262.5			250			25	112.5	150	12.5		25	162.5		137.5					50	1425	54.81		
<i>Curvularia</i>																					25	12.5						37.5	1.44	
<i>Emaricella</i>																												12.5	12.5	0.48
<i>Fusarium</i>	150	175	50	100	62.5	25					12.5				87.5		87.5	37.5		25	25	62.5						912.5	35.10	
<i>Mucor</i>	25																				12.5							37.5	1.44	
<i>Penicillium</i>	1150	250	750	200			25								250	187.5	125	762.5	1100	412.5	100	162.5	287.5	125	312.5	200	75	6475	249.04	
<i>Trichoderma</i>	100	50		225	75	50	37.5	150	37.5	112.5		825		25			125		62.5								1875	72.12		
Unidentified																				37.5		12.5					25	75	2.88	
TOTAL	1675	1075	1450	600	862.5	325	662.5	325	462.5	800	1462.5	3237.5	1937.5	950	2025	1587.5	2412.5	1325	900	425	462.5	912.5	2575	2100	1550	337.5	32437.5	1247.60		

FUNGAL GENERA	QUANTITY OF SURFACE FUNGI (CFU/SQ.DM.)																												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE	
<i>Aspergillus</i>	10		20		250	10		110	10	110	170	180	200	10	120	10	40				20		60	1330	51.15				
<i>Cladosporium</i>	20			20					20	10		10														80	3.08		
<i>Curvularia</i>	50	10		40																							20	120	4.62
<i>Fusarium</i>	10	20	10	10					100	10		210			10		100	20	30	10	40		110	10	700	26.92			
<i>Penicillium</i>		10							20	10	20		20													80	3.08		
<i>Rhizopus</i>																				30							30	1.15	
<i>Trichoderma</i>	20			10		40		10	10	10		20		10	10								10		150	5.77			
Unidentified	20																			120	10						150	5.77	
TOTAL	40	40	70	40	30	60	290	10	10	240	60	140	380	200	230	30	130	110	60	30	10	150	50	20	120	90	2640	101.54	

Annual distribution of fungi at sampling point no. 4 (P4).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CO.M.)																													
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE		
<i>Aspergillus</i>	325	225	75	50	325	287.5	950	137.5	762.5	1075	887.5	2962.5	1050	400	2637.5	612.5	1575	62.5	362.5	112.5	87.5	637.5	1600	950	962.5	212.5	19325	743.27		
<i>Penicillium</i>	750	1275	125	350										275	112.5	12.5	112.5	425	12.5	550	175	125	225	362.5	312.5	212.5	150	5562.5	213.94	
<i>Fusarium</i>	200		50	150	87.5									12.5	37.5	37.5	50	687.5	62.5	37.5	87.5						12.5	62.5	1575	60.58
<i>Cladosporium</i>					12.5	25	25		12.5	137.5	62.5			137.5		12.5		50	387.5		50	12.5						925	35.58	
<i>Trichoderma</i>					50	112.5	125	50	25	87.5		12.5		700	12.5			187.5	25	12.5	25						12.5	1437.5	55.29	
<i>Curvularia</i>																					25						12.5	37.5	1.44	
<i>Aureobasidium</i>					25																						25	0.96		
<i>Emericella</i>						25														25							50	1.92		
<i>Alternaria</i>					50					12.5									37.5							100	3.85			
<i>Rhizopus</i>																											12.5	0.48		
TOTAL	1275	1500	300	625	537.5	437.5	1050	175	862.5	1212.5	962.5	2962.5	2025	675	2687.5	775	2050	1000	1387.5	400	400	875	1975	1275	1187.5	437.5	29050	1117.31		

FUNGAL GENERA	QUANTITY OF SURFACE FUNGI (CFU/SQ.DM.)																											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE
<i>Aspergillus</i>	10		90			240	140		10	60	30	330	120	160	70	10		70		60		10	80	80	1570	60.38		
<i>Cladosporium</i>					10						40		20						20						20	110	4.23	
<i>Curvularia</i>	20	10																	10						20	60	2.31	
<i>Fusarium</i>	20	20	20		10	30			10	20	30		330	100	30		30	80	60	50	90	50	20	20	1020	39.23		
<i>Helminthosporium</i>												20									20				40	1.54		
<i>Penicillium</i>	10								10			20								10		20		70	2.69			
<i>Trichoderma</i>		80								30						10									120	4.62		
Unidentified					20				20			10						10			20				80	3.08		
TOTAL	30	130	30	90	40	30	240	140	10	50	150	70	670	240	210	70	50	80	150	60	160	0	60	70	120	120	3070	118.08

Annual distribution of fungi at sampling point no.5 (P5).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CU.M.)																													
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE		
<i>Alternaria</i>									25																		75	2.88		
<i>Aspergillus</i>	275	375	75	1325	237.5	262.5	2487.5	225	1012.5	2050	1212.5	2987.5	1462.5	200	2175	225	362.5	75	125	225	137.5	912.5	2787.5	1650	912.5	975	24750	951.92		
<i>Aureobasidium</i>																												12.5	0.48	
<i>Cleadosporium</i>									25	12.5		12.5	12.5	75			12.5	37.5	25	50	50	50	175					37.5	575	22.12
<i>Curvularia</i>									25			12.5																62.5	2.40	
<i>Emericella</i>									25																			137.5	5.29	
<i>Fusarium</i>									200	50	37.5		12.5		25	25		62.5		37.5		587.5	212.5	75	25		12.5	1462.5	56.25	
<i>Mucor</i>																												37.5	37.5	1.44
<i>Penicillium</i>	350	1100	400						25			112.5		87.5	237.5	12.5	187.5	250		187.5	212.5	150	200		200	312.5	325	4350	167.31	
<i>Trichoderma</i>									25	200	87.5	75	37.5		87.5	112.5		237.5		12.5	12.5	150							1125	43.27
Unidentified																					12.5	25						12.5	62.5	2.40
TOTAL	625	1475	550	1725	400	400	2525	300	1112.5	2150	1462.5	2987.5	1800	537.5	2212.5	537.5	675	1012.5	787.5	575	412.5	1125	2787.5	1887.5	1287.5	1300	32650	1255.77		

FUNGAL GENERA	QUANTITY OF SURFACE FUNGI (CFU/SQ.DM.)																														
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE			
<i>Aspergillus</i>									40	20	60	20	20	20	190	40	240	170	120	50	70								1070	41.15	
<i>Cleadosporium</i>									30		20		30	20														100	3.85		
<i>Curvularia</i>									80																			80	3.08		
<i>Fusarium</i>	100	30	20						10	30	20		20		20	30		90	40	20							440	16.92			
<i>Penicillium</i>									30			60				10											40	20	10	170	6.54
<i>Trichoderma</i>									40			60						20	20									140	5.38		
Unidentified									20			10				10													50	1.92	
TOTAL	100	30	20	40	40	100	90	50	70	110	300	70	260	180	150	30	50	180	40	50	10	0	10	40	20	10	2050	78.85			

Annual distribution of fungi at sampling point no.6 (P6).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CU.M.)																												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE	
<i>Alternaria</i>																				75							75	2.88	
<i>Aspergillus</i>	200	75	100	925	150	112.5	1862.5	550	412.5	1800	3000	1937.5	1562.5	375	1000	187.5	275	75	100	87.5	137.5	2525	1500	1887.5	662.5	1800	23300	896.15	
<i>Aureobasidium</i>		100	25																								125	4.81	
<i>Cladosporium</i>		50	25	62.5		62.5		25	37.5					50	12.5		12.5	62.5	100			100					600	23.08	
<i>Curvularia</i>																				12.5							12.5	0.48	
<i>Emericella</i>																			12.5	25							37.5	1.44	
<i>Fusarium</i>	275		50	250	25	37.5						12.5		50				550		100	25						1375	52.88	
<i>Mucor</i>																											50	50	1.92
<i>Penicillium</i>	50	1075	175			62.5						75		162.5	312.5	475		200	125	87.5	100	362.5	350	100	12.5	3725	143.27		
<i>Rhizopus</i>																					12.5							12.5	0.48
<i>Trichoderma</i>		75	175	75								175	212.5					312.5									1025	39.42	
Unidentified			25																								25	0.96	
TOTAL	525	1150	575	1375	275	275	1862.5	612.5	437.5	1837.5	3000	2125	1850	475	1175	500	762.5	1012.5	400	425	350	2625	1875	2237.5	762.5	1862.5	30362.5	1167.79	

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/SQ.DM.)																												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE	
<i>Aspergillus</i>	30		50	10	50	240	360	220	200	90	60	100	540	120	160	60	90	30	10		50	50			10	30	40	2600	100.00
<i>Aureobasidium</i>																											20	0.77	
<i>Cladosporium</i>	40		40	40	10	10	40		120		90	20			20				110								550	21.15	
<i>Curvularia</i>		10	20	10			10	60												20	30		20	20	200	7.69			
<i>Emericella</i>																											20	0.77	
<i>Fusarium</i>	260	70	80	80	20	40	30	10	60	10		20	160	70	10	60	40	170		170		50	30	20		1460	56.15		
<i>Helminthosporium</i>																											10	0.38	
<i>Penicillium</i>	50							20	90			20			10	10					20	40	10	60	20	350	13.46		
<i>Trichoderma</i>		30	20	170	40	60	10		30	30	60	40		60			10	70	20							650	25.00		
Unidentified	60	20	30			10		110			30			30	10										160		460	17.69	
TOTAL	440	130	240	310	120	360	470	380	540	130	230	230	700	250	230	140	130	210	190	190	70	150	50	240	110	80	6320	243.08	

Annual distribution of fungi at sampling point no.7 (P7).

FUNGAL GENERA	CONCENTRATION OF AIRBORNE FUNGI (CFU/CU.M.)																											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE
<i>Alternaria</i>																			37.5								37.5	1.44
<i>Aspergillus</i>	725	325	150	725	87.5	187.5	1800	537.5	225	525	762.5	1387.5	1162.5	237.5	1700	1787.5	187.5	75	1075	100	150	2700	737.5	2900	312.5	987.5	21550	820.85
<i>Aureobasidium</i>		75	75																								150	5.77
<i>Cladosporium</i>	50	100			87.5			37.5		100	125	37.5	12.5	50				100		112.5		37.5					850	32.69
<i>Curvularia</i>					12.5													25	25		12.5						75	2.88
<i>Emmericella</i>			50																								50	1.92
<i>Fusarium</i>		50		50	250	37.5	50			12.5					50	50	25		375		62.5		37.5				1050	40.38
<i>Monilia</i>																				12.5							12.5	0.48
<i>Mucor</i>																		25								50	2.88	
<i>Penicillium</i>	750	525	150	425		50						75	162.5	150	75	187.5		187.5	50	75	187.5	87.5	37.5	62.5	3237.5	124.52		
<i>Rhizopus</i>																			12.5	12.5		87.5		112.5		4.33		
<i>Trichoderma</i>		225		125	50		12.5				112.5	137.5					200									862.5	33.17	
Unidentified					12.5																					12.5	0.48	
<b>TOTAL</b>	<b>1575</b>	<b>1025</b>	<b>700</b>	<b>1400</b>	<b>337.5</b>	<b>362.5</b>	<b>1800</b>	<b>587.5</b>	<b>225</b>	<b>637.5</b>	<b>887.5</b>	<b>1537.5</b>	<b>1387.5</b>	<b>500</b>	<b>1900</b>	<b>1912.5</b>	<b>375</b>	<b>800</b>	<b>1262.5</b>	<b>200</b>	<b>412.5</b>	<b>2712.5</b>	<b>1012.5</b>	<b>3037.5</b>	<b>437.5</b>	<b>1050</b>	<b>28075</b>	<b>1079.81</b>

FUNGAL GENERA	QUANTITY OF SURFACE FUNGI (CFU/SQ.DM.)																											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	TOTAL	AVERAGE
<i>Aspergillus</i>		60	50	40	160	270			230	10	120	330		70	20	20		40									1420	54.62
<i>Aureobasidium</i>							40																			40	1.54	
<i>Cladosporium</i>								10	30			10													10	60	2.31	
<i>Curvularia</i>		10			20																					30	1.15	
<i>Fusarium</i>	20	30								60	10	160			20	20		10	10				20		360	13.85		
<i>Penicillium</i>					30				10			90							30							160	6.15	
<i>Trichoderma</i>	10		20	20				10	50	30															140	5.38		
Unidentified						40																				40	1.54	
<b>TOTAL</b>	<b>0</b>	<b>40</b>	<b>30</b>	<b>80</b>	<b>50</b>	<b>80</b>	<b>160</b>	<b>340</b>	<b>0</b>	<b>250</b>	<b>160</b>	<b>200</b>	<b>490</b>	<b>10</b>	<b>160</b>	<b>40</b>	<b>20</b>	<b>20</b>	<b>40</b>	<b>10</b>	<b>10</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>20</b>	<b>10</b>	<b>2250</b>	<b>86.54</b>

## **APPENDIX D**

**t-Test: Two-Sample Assuming Unequal Variances**

	<b>AIR-S</b>	<b>AIR-R</b>
Mean	923.015873	1630.803571
Variance	148093.4666	275731.3684
Observations	9	8
Hypothesized Mean Difference	0	
df	13	
t Stat	-3.136559131	
P(T<=t) one-tail	0.00393637	
t Critical one-tail	1.770931704	
P(T<=t) two-tail	0.00787274	
t Critical two-tail	2.16036824	

**t-Test: Two-Sample Assuming Unequal Variances**

	<b>AIR-S</b>	<b>AIR-W</b>
Mean	923.015873	1157.936508
Variance	148093.4666	396470.9113
Observations	9	9
Hypothesized Mean Difference	0	
df	13	
t Stat	-0.955031742	
P(T<=t) one-tail	0.178492219	
t Critical one-tail	1.770931704	
P(T<=t) two-tail	0.356984438	
t Critical two-tail	2.16036824	

**t-Test: Two-Sample Assuming Unequal Variances**

	<b>AIR-R</b>	<b>AIR-W</b>
Mean	1630.803571	1157.936508
Variance	275731.3684	396470.9113
Observations	8	9
Hypothesized Mean Difference	0	
df	15	
t Stat	1.687533457	
P(T<=t) one-tail	0.056089212	
t Critical one-tail	1.753051038	
P(T<=t) two-tail	0.112178424	
t Critical two-tail	2.131450856	

**t-Test: Two-Sample Assuming Unequal Variances**

	<i>SUR-S</i>	<i>SUR-R</i>
Mean	111.9047619	182.1428571
Variance	3214.285714	19314.8688
Observations	9	8
Hypothesized Mean Difference	0	
df	9	
t Stat	-1.334182285	
P(T<=t) one-tail	0.107458442	
t Critical one-tail	1.833113856	
P(T<=t) two-tail	0.214916884	
t Critical two-tail	2.262158887	

**t-Test: Two-Sample Assuming Unequal Variances**

	<i>SUR-S</i>	<i>SUR-W</i>
Mean	111.9047619	65.3968254
Variance	3214.285714	477.4376417
Observations	9	9
Hypothesized Mean Difference	0	
df	10	
t Stat	2.296327099	
P(T<=t) one-tail	0.022265883	
t Critical one-tail	1.812461505	
P(T<=t) two-tail	0.044531765	
t Critical two-tail	2.228139238	

**t-Test: Two-Sample Assuming Unequal Variances**

	<i>SUR-R</i>	<i>SUR-W</i>
Mean	182.1428571	65.3968254
Variance	19314.8688	477.4376417
Observations	8	9
Hypothesized Mean Difference	0	
df	7	
t Stat	2.350291399	
P(T<=t) one-tail	0.02553279	
t Critical one-tail	1.894577508	
P(T<=t) two-tail	0.051065581	
t Critical two-tail	2.36462256	

## **APPENDIX E**

**t-Test: Paired Two Sample for Means**

	<b>P3A</b>	<b>P4A</b>
Mean	1247.596154	1117.307692
Variance	610812.7404	525975.9615
Observations	26	26
Pearson Correlation	0.825872111	
Hypothesized Mean Difference	0	
df	25	
t Stat	1.483424407	
P(T<=t) one-tail	0.075230151	
t Critical one-tail	1.708140189	
P(T<=t) two-tail	0.150460302	
t Critical two-tail	2.05953711	

**t-Test: Paired Two Sample for Means**

	<b>P3S</b>	<b>P4S</b>
Mean	101.5384615	118.0769231
Variance	9237.538462	17096.15385
Observations	26	26
Pearson Correlation	0.686175049	
Hypothesized Mean Difference	0	
df	25	
t Stat	-0.88462386	
P(T<=t) one-tail	0.192394367	
t Critical one-tail	1.708140189	
P(T<=t) two-tail	0.384788735	
t Critical two-tail	2.05953711	

## **APPENDIX F**

SUMMARY OUTPUT FOR STATISTICAL ANALYSIS OF CLIMATIC FACTORS EFFECTING ON AIRBORNE FUNGI AT P3

*Regression Statistics*

Multiple R	0.224493707
R Square	0.050397424
Adjusted R Square	-0.032176713
Standard Error	794.0193237
Observations	26

**ANOVA**

	df	SS	MS	F	Significance F
Regression	2	769584.7207	384792.3604	0.610329409	0.551736436
Residual	23	14500733.79	630466.6865		
Total	25	15270318.51			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1297.952095	7368.910374	0.176138944	0.861726473	-13945.77968	16541.68387	-13945.77968	16541.68387
Temperature-P3	-61.89732178	217.2309087	-0.284937913	0.77824169	-511.2730825	387.478439	-511.2730825	387.478439
Humidity-P3	24.83081755	28.15226953	0.882018323	0.386892221	-33.40650977	83.06814488	-33.40650977	83.06814488

SUMMARY OUTPUT FOR STATISTICAL ANALYSIS OF CLIMATIC FACTORS EFFECTING ON SURFACE FUNGI AT P3

<i>Regression Statistics</i>	
Multiple R	0.480825867
R Square	0.231193514
Adjusted R Square	0.164340777
Standard Error	87.86031082
Observations	26

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	53391.47455	26695.73727	3.458250504	0.048629067
Residual	23	177546.987	7719.434217		
Total	25	230938.4615			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-2038.351671	815.3891682	-2.499851299	0.020000681	-3725.110383	-351.5929597	-3725.110383	-351.5929597
Temperature-P3	60.08423113	24.03716709	2.499638618	0.020010065	10.35963019	109.8088321	10.35963019	109.8088321
Humidity-P3	5.287288224	3.11512211	1.697297261	0.103133187	-1.156824063	11.73140051	-1.156824063	11.73140051

SUMMARY OUTPUT FOR STATISTICAL ANALYSIS OF CLIMATIC FACTORS EFFECTING ON AIRBORNE FUNGI AT P4

Regression Statistics	
Multiple R	0.040758191
R Square	0.00166123
Adjusted R Square	-0.085150837
Standard Error	755.4887523
Observations	26

ANOVA

	df	SS	MS	F	Significance F
Regression	2	21844.17795	10922.08898	0.019135936	0.981061596
Residual	23	13127554.86	570763.2548		
Total	25	13149399.04			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-225.3689878	7150.541793	-0.03151775	0.975128548	-15017.37155	14566.63357	-15017.37155	14566.63357
Temperature-P4	35.58680429	210.6824801	0.168912025	0.867342552	-400.2425182	471.4161268	-400.2425182	471.4161268
Humidity-P4	4.274551133	26.68820642	0.160166295	0.874148439	-50.93413502	59.48323729	-50.93413502	59.48323729

SUMMARY OUTPUT FOR STATISTICAL ANALYSIS OF CLIMATIC FACTORS EFFECTING ON SURFACE FUNGI AT P4

<i>Regression Statistics</i>	
Multiple R	0.197935326
R Square	0.039178393
Adjusted R Square	-0.044371312
Standard Error	133.6216024
Observations	26

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	16744.99597	8372.497984	0.468923179	0.631526748
Residual	23	410658.8502	17854.73262		
Total	25	427403.8462			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-993.6032702	1264.700301	-0.785643262	0.440095511	-3609.83161	1622.62507	-3609.83161	1622.62507
TD	35.45368901	37.26293806	0.95144642	0.351270013	-41.63046645	112.5378445	-41.63046645	112.5378445
RD	1.099225028	4.720283254	0.232872683	0.817920166	-8.665411555	10.86386161	-8.665411555	10.86386161



## BIOGRAPHY

Chainamm Prempreechakul was born on 25 November 1969 in Bangkok, Thailand. He received the Diploma of Medical Science Technology from Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok in 1990. After that, he had been employed as a Laboratory Technician at Quality and Research Co., Ltd., Bangkok. Then in 1992, he graduated with the Bachelor Degree of Health Education from Department of Health Science, Faculty of Science, Bansomdejchaophraya's Teacher College, Bangkok. After graduation, he worked as a Chief of Laboratory and Research Division at Quality and Research Co., Ltd. In 1994, he started his study for Master Degree in Environmental Science, Graduate School of Chulalongkorn University.