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APPENDICES

Appendix A

Analysis of amplification products by RAPD

1. Scoring of polymorphic products of RAPD analysis in 6 rice cultivars by random primer

   1.1 primer X6

size (bp)	POK	KDML	KTH	LPT	LDP	IR
1517	0	0	1	1	1	1
1400	0	0	0	0	0	0
1300	0	0	1	0	1	0
1200	0	0	0	0	0	0
1100	0	0	1	0	1	0
1000	0	1	0	1	0	1
900	0	0	0	0	0	1
850	0	0	0	0	0	0
800	0	0	1	0	1	1
750	0	0	0	0	0	0
700	0	1	0	1	1	1
650	1	0	0	0	0	0
600	0	0	0	0	0	1
550	0	0	0	0	1	0
500	0	0	0	0	0	0
450	0	0	0	0	0	0
400	0	0	0	0	0	0
350	0	0	0	0	0	0
300	0	0	0	0	0	0
275	0	0	0	0	0	0
250	0	0	0	0	0	0
200	0	0	0	0	0	0

Pokkali = POK Khao Dawk Mali 105 = KDML

Khao Tah Haeng 17 = KTH Leuang Pratew 123 = LPT

Look Daeng Pattani = LDP IR 28 = IR

1.2 primer X8

size (bp)	POK	KDML	KTH	LPT	LDP	IR
1517	0	0	0	0	0	0
1400	0	0	0	0	0	0
1300	0	1	0	0	0	0
1200	1	0	0	1	1	1
1100	0	0	0	0	0	0
1000	0	0	0	1	0	0
900	0	0	1	0	1	0
850	0	0	0	0	0	0
800	0	1	1	1	1	1
750	0	0	0	0	0	0
700	1	1	0	1	0	1
650	0	0	0	0	0	0
600	1	0	0	1	0	0
550	0	0	0	0	0	0
500	1	0	0	0	0	0
450	0	0	0	0	0	0
400	1	0	0	1	0	1
350	0	0	0	0	0	1
300	1	0	0	0	0	1
275	0	0	0	0	0	0
250	1	0	0	1	0	1
200	0	0	0	0	0	0

Pokkali = POK Khao Dawk Mali 105 = KDML

Khao Tah Haeng 17 = KTH Leuang Pratew 123 = LPT

Look Daeng Pattani = LDP IR 28 = IR

1.3 primer X9

size (bp)	POK	KDML	KTH	LPT	LDP	IR
1517	1	0	0	0	0	0
1400	0	0	0	0	0	0
1300	0	0	0	0	0	0
1200	0	0	0	0	0	1
1100	0	0	0	0	0	0
1000	1	1	0	0	0	0
900	0	0	0	0	0	0
850	0	0	0	0	0	0
800	0	1	1	1	1	1
750	0	0	0	0	0	0
700	1	0	0	0	0	0
650	0	0	1	1	1	1
600	1	1	0	0	0	0
550	0	0	0	0	0	0
500	1	0	0	0	1	0
450	0	1	1	1	0	0
400	0	0	0	0	1	1
350	1	1	1	1	0	0
300	0	0	0	0	0	1
275	1	0	0	0	0	0
250	1	0	0	1	0	0
200	0	0	0	0	0	0

Pokkali = POK Khao Dawk Mali 105 = KDML

Khao Tah Haeng 17 = KTH Leuang Pratew 123 = LPT

Look Daeng Pattani = LDP IR 28 = IR

1.4 primer X10

size (bp)	POK	KDML	KTH	LPT	LDP	IR
1517	0	0	0	0	0	0
1400	0	0	0	0	0	0
1300	0	0	0	0	0	0
1200	0	0	0	0	0	0
1100	0	0	0	0	0	0
1000	0	0	0	0	0	0
900	0	0	0	0	0	0
850	0	0	0	0	0	0
800	0	0	0	1	0	0
750	0	0	0	0	0	0
700	0	0	0	0	0	0
650	0	0	0	0	0	0
600	1	0	0	1	0	0
550	0	0	1	0	0	0
500	1	1	0	1	0	1
450	0	0	0	0	1	0
400	1	0	0	1	0	0
350	0	0	0	0	0	0
300	1	0	0	1	0	0
275	0	0	0	0	0	0
250	1	0	0	1	0	0
200	1	0	0	0	0	0

Pokkali = POK Khao Dawk Mali 105 = KDML

Khao Tah Haeng 17 = KTH Leuang Pratew 123 = LPT

Look Daeng Pattani = LDP IR 28 = IR

1.5 primer C1

size (bp)	POK	KDML	KTH	LPT	LDP	IR
1517	0	0	0	0	0	0
1400	0	0	0	0	0	0
1300	0	0	0	0	0	0
1200	0	0	1	1	0	0
1100	0	0	1	0	0	0
1000	0	0	0	1	1	1
900	1	0	0	1	0	0
850	0	0	0	0	0	0
800	0	0	0	1	0	0
750	0	0	0	0	0	0
700	0	0	1	0	0	1
650	0	0	0	0	0	0
600	0	0	1	1	0	1
550	0	0	0	0	0	1
500	1	0	0	1	0	0
450	0	0	0	1	0	1
400	1	0	0	1	0	0
350	1	0	1	0	0	0
300	0	0	0	0	0	1
275	0	0	0	0	0	0
250	1	0	0	1	0	0
200	0	0	0	0	0	0

Pokkali = POK Khao Dawk Mali 105 = KDML

Khao Tah Haeng 17 = KTH Leuang Pratew 123 = LPT

Look Daeng Pattani = LDP IR 28 = IR

2. Scoring of polymorphic products of RAPD analysis in 12 rice cultivars by random primer X9

size (bp)	POK	KDML	KTH	LPT	LDP	GR	IR	MN	NP	YY	FT	LNP
1517	0	0	1	1	1	1	0	1	0	0	0	0
1000	0	1	1	1	1	1	0	1	1	0	1	0
900	0	0	0	0	0	0	0	1	0	0	0	0
800	0	1	1	1	1	1	0	1	0	0	0	0
700	0	0	0	0	0	0	0	1	0	0	0	0
650	0	0	1	1	1	1	1	1	1	1	1	1
600	1	1	0	0	0	0	0	0	0	0	0	0
550	0	0	1	0	0	0	1	1	0	0	0	0
500	1	1	0	1	1	1	0	0	1	1	1	1
450	0	1	1	1	0	0	0	0	0	0	1	1
400	0	0	0	0	1	1	1	0	0	0	0	0
350	1	1	1	1	1	1	0	1	1	1	0	0
300	0	0	0	0	0	0	1	0	0	0	0	0
275	1	0	0	0	0	0	0	0	0	0	0	0
250	0	1	0	1	0	1	0	1	1	0	1	0
200	0	0	1	0	0	0	0	0	0	0	0	0

Pokkali	=	POK	Khao Dawk Mali 105	=	KDML
Khao Tah Haeng 17	=	KTH	Leuang Pratew 123	=	LPT
Look Daeng Pattani	=	LDP	Gow Ruang 88	=	GR
IR 28	=	IR	Muey Nawng 62 M	=	MN
Nahng Pa-yah 132	=	NP	Yah Yaw	=	YY
Foi Tawng	=	FT	Leb Nok Pattani	=	LNP

APPENDIX B

Analysis of variance for salt tolerance criteria

Completely randomized design

Replication(Rep.) = 7

Treatment: Variance(Var.) =12

Rice cultivars (12)

Pokkali	=	POK	Khao Dawk Mali 105	=	KDML
Khao Tah Haeng 17	=	KTH	Leuang Pratew 123	=	LPT
Look Daeng Pattani	=	LDP	Gow Ruang 88	=	GR
IR 28	=	IR	Muey Nawng 62 M	=	MN
Nahng Pa-yah 132	=	NP	Yah Yaw	=	YY
Foi Tawng	=	FT	Leb Nok Pattani	=	LNP

1. Leaf damage (%) data of Table 3.9

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	20.00	5.26	19.05	27.73	28.57	37.50	15.00
KDML	19.05	8.00	10.53	21.05	18.18	14.29	15.79
KTH	5.88	5.26	16.67	16.67	0.00	13.33	17.39
LPT	9.52	9.52	18.18	13.04	9.09	19.05	16.00
LDP	14.29	14.29	16.67	19.05	16.67	15.00	11.11
GR	22.22	18.18	26.09	12.50	11.11	6.67	14.29
IR	47.37	52.17	45.83	52.94	50.00	50.00	45.45
MN	59.09	60.00	57.14	45.00	38.89	40.91	45.00
NP	64.29	53.33	41.18	68.75	46.15	35.29	28.57
YY	42.86	40.00	40.00	58.38	41.18	40.91	40.00
FT	41.18	31.58	30.00	31.82	44.44	35.00	61.54
LNP	38.10	41.67	45.45	41.18	34.78	50.00	52.38
Rep. totals	383.85	339.26	366.79	408.11	339.06	357.95	362.52
Rep. means	31.99	28.27	30.57	34.01	28.25	29.83	30.21

Analysis of variance for leaf damage (%) – Table 3.9

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	20013.75	1819.43	28.43**
Error	72	4607.55	63.99	
Total	83	24621.30		

cv=26.3%, * *=significant at 1% level

Table of variance means for leaf damage (%) (average over 7 replications)

Var.	Ranks	Means
POK	6	21.87[b]
KDML	3	15.27[ab]
KTH	1	10.74[a]
LPT	2	13.49[ab]
LDP	4	15.30[ab]
GR	5	15.87[ab]
IR	11	49.11[d]
MN	12	49.43[d]
NP	10	48.22[cd]
YY	8	43.33[cd]
FT	7	39.37[c]
LNP	9	43.37[cd]
Mean		30.45

Means followed by a common letter are not significantly different at the 5% level by DMRT.

2. Plant height (cm) data of Table3.9

2.1 Plant height (cm) under 0 dS/m (control)

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	130.67	127.67	127.00	118.00	116.33	129.67	127.00
KDML	107.00	92.67	103.33	99.00	86.67	101.33	103.00
KTH	101.33	108.33	107.33	112.00	103.33	101.00	108.00
LPT	109.00	121.00	117.00	95.67	96.33	105.67	110.00
LDP	108.00	104.33	110.67	102.33	99.67	96.67	104.33
GR	97.67	107.33	102.67	106.33	98.67	112.67	100.33
IR	69.33	69.67	64.00	72.00	69.00	72.00	69.67
MN	112.00	106.33	114.00	114.00	114.33	95.00	111.00
NP	94.33	94.33	98.67	90.33	100.33	94.00	98.33
YY	96.00	99.33	92.00	105.67	108.67	104.00	108.00
FT	107.67	114.00	100.00	101.33	98.00	104.00	108.00
LNP	102.67	89..67	92.00	99.33	105.67	96.67	100.33
Rep. totals	1235.67	1234.66	1228.67	1215.99	1197.00	1213.01	1247.66
Rep. means	102.97	102.89	102.39	101.33	99.75	101.08	103.97

Analysis of variance for plant height (control)

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	12487.98	1135.27	33.02**
Error	72	2475.66	34.38	
Total	83	14963.64		

cv =5.7%, * *=significant at 1% level

Table of variance means for plant height (cm) (average over 7 replications)

Var.	Ranks	Means
POK	12	125.19[g]
KDML	4	99.00[bcd]
KTH	9	105.90[def]
LPT	10	107.81[ef]
LDP	7	103.71[c-f]
GR	6	103.67[c-f]
IR	1	69.38[a]
MN	11	109.52[f]
NP	2	95.76[b]
YY	5	101.95[b-e]
FT	8	104.71[c-f]
LNP	3	98.05[bc]
Mean		102.06

Means followed by a common letter are not significantly different at the 5% level by DMRT.

2.2 Plant height (cm) under 8 dS/m

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	116.67	117.33	125.67	119.00	122.00	117.33	120.00
KDML	92.00	96.00	86.67	96.33	86.67	98.00	100.00
KTH	101.00	108.00	93.67	93.33	110.00	101.00	98.33
LPT	97.67	105.33	83.67	101.67	103.33	102.33	100.00
LDP	104.00	98.67	105.33	94.00	102.33	95.00	88.33
GR	100.33	96.00	107.00	96.33	91.33	92.67	101.67
IR	51.00	55.33	60.00	49.33	57.00	60.00	57.67
MN	90.67	76.00	74.67	86.00	81.00	76.67	86.33
NP	72.33	67.00	65.33	61.67	60.00	69.33	75.00
YY	78.33	85.00	93.67	88.00	82.00	90.67	80.67
FT	86.33	90.67	80.67	87.00	80.33	78.33	72.67
LNP	72.67	70.67	66.67	77.33	71.67	57.00	66.00
Rep. totals	1063.00	1066.00	1043.02	1049.99	1047.66	1038.33	1046.67
Rep. means	88.58	88.83	86.92	87.50	87.31	86.53	87.22

Analysis of variance for plant height

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	24093.94	2190.36	66.35**
Error	72	2377.02	33.01	
Total	83	26470.96		

cv=6.6%, **=significant at 1% level

Table of variance means for plant height (cm) (average over 7 replications)

Var.	Ranks	Means
POK	12	119.71[f]
KDML	7	93.67[d]
KTH	11	100.76[e]
LPT	10	99.14[de]
LDP	9	98.24[de]
GR	8	97.90[de]
IR	1	55.76[a]
MN	4	81.62[c]
NP	2	67.24[b]
YY	6	85.48[c]
FT	5	82.29[c]
LNP	3	82.29[b]
Mean		87.56

Means followed by a common letter are not significantly different at the 5% level by DMRT.

3. Tillering data of Table 3.9

3.1 Tillering under 0 dS/m (control)

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	6.33	7.33	6.00	10.67	8.67	9.67	10.67
KDML	11.33	15.67	13.67	10.33	10.00	10.00	14.67
KTH	15.33	6.67	6.33	11.67	10.33	7.67	10.00
LPT	10.67	9.00	8.00	10.67	7.00	11.33	8.67
LDP	8.67	9.67	12.67	12.33	11.67	10.67	12.33
GR	7.33	9.00	10.00	9.00	7.67	9.67	11.00
IR	17.00	14.00	16.00	13.67	14.33	15.33	16.33
MN	7.00	6.67	7.00	7.33	6.67	9.67	9.67
NP	13.00	10.33	13.67	10.33	13.00	15.33	11.67
YY	14.67	11.33	9.33	6.67	9.00	9.67	10.00
FT	12.00	8.33	9.33	11.33	10.33	11.33	13.33
LNP	11.00	15.33	15 67	14.67	11.67	11.33	12.33
Rep. totals	134.33	123.33	127.67	128.67	120.34	131.67	140.67
Rep. means	11.19	10.28	10.64	10.72	10.03	10.97	11.72

Analysis of variance for tillering(control)

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	362.6835	32.9712	8.63**
Error	72	275.2171	3.8225	
Total	83	637.9006		

cv=18.1%**=significant at 1% level

Table of variance means for tillering (average over 7 replications)

Var.	Ranks	Means
POK	2	8.48^{ab}
KDML	9	12.24^{de}
KTH	5	9.71^{abc}
LPT	4	9.33^{abc}
LDP	8	11.14^{cde}
GR	3	9.10^{abc}
IR	12	15.24^{f}
MN	1	7.72^{a}
NP	10	12.48^{e}
YY	6	10.10^{bcd}
FT	7	10.85^{cde}
LNP	11	13.14^{e}
Mean		10.79

Means followed by a common letter are not significantly different at the 5% level by DMRT.

3.2 Tillering under 8 dS/m

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	7.33	6.67	5.67	5.67	7.67	6.00	8.33
KDML	8.00	7.33	8.67	7.00	8.00	6.67	8.33
KTH	8.33	9.00	8.33	9.33	7.67	7.00	10.00
LPT	9.33	9.67	10.67	9.67	6.67	9.00	6.67
LDP	7.00	6.67	5.33	9.33	5.67	10.67	12.67
GR	8.00	8.00	6.67	9.33	7.00	7.67	7.67
IR	6.33	5.33	5.67	3.67	5.00	6.33	8.33
MN	3.33	2.67	4.00	4.33	2.50	3.67	3.67
NP	3.67	4.00	2.33	2.00	3.00	2.00	4.33
YY	4.33	3.67	5.67	4.00	4.67	5.00	3.67
FT	5.00	5.67	5.33	4.67	4.00	8.33	6.33
LNP	4.67	5.00	4.33	3.67	4.33	3.67	6.00
Rep. totals	75.32	73.68	72.67	72.67	66.18	76.01	86.00
Rep. means	6.28	6.14	6.06	6.06	5.52	6.33	7.17

Analysis of variance for tillering

Source of variation	Degrees of Freedom	Sum of squares	Mean square	F
Var.	11	316.0347	28.7304	17.19**
Error	72	120.3128	1.6710	
Total	83	436.3475		

cv=20.8%. ** =significant at 1% level

Table of variance means for tillering (average over 7 replications)

Var.	Ranks	Means
POK	7	6.76^{cd}
KDML	8	7.71^{de}
KTH	11	8.52^{e}
LPT	12	8.81^{e}
LDP	10	8.19^{de}
GR	9	7.76^{de}
IR	6	5.81^{bc}
MN	2	3.45^{a}
NP	1	3.05^{a}
YY	3	4.43^{ab}
FT	5	5.62^{bc}
LNP	4	4.52^{ab}
Mean		6.22

Means followed by a common letter are not significantly different at the 5% level by DMRT

4. Shoot/ root ratio data of Table 3.10

4.1 Shoot/ root ratio under 0 dS/m (control)

Var.	Rep.1	Rep.2	Rep.3	Rep. 4	Rep. 5	Rep. 6	Rep. 7
POK	6.76	5.98	3.09	4.39	4.25	3.48	6.49
KDML	5.39	7.49	4.83	4.62	4.08	4.51	7.08
KTH	4.77	4.17	4.02	3.20	4.66	4.67	4.01
LPT	3.86	4.05	3.85	3.66	7.99	2.66	4.43
LDP	1.92	2.57	4.78	4.53	1.43	1.10	5.91
GR	3.70	3.77	5.05	1.92	5.43	3.78	7.02
IR	9.18	6.08	5.19	2.86	6.13	4.88	7.76
MN	4.66	4.78	3.78	5.49	4.14	3.99	5.56
NP	2.60	4.97	3.63	3.06	2.00	7.70	4.16
YY	3.77	2.72.	1.58	2.44	3.52	1.77	5.25
FT	6.22	4.58	3.08	1.86	3.53	4.98	8.60
LNP	4.05	4.08	4.16	4.10	3.88	4.09	4.06
Rep. totals	56.88	55.24	47.04	42.13	51.04	47.61	70.33
Rep. means	4.74	4.60	3.92	3.51	4.25	3.97	5.86

Analysis of variance for shoot/root ratio

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	54.5761	4.9615	2.11*
Error	72	168.9248	2.3462	
Total	83	223.5010		

cv=34.7% , * =significant at 5% level

Table of variance means for shoot/root ratio (average over 7 replications)

Var.	Ranks	Means
POK	10	4.92
KDML	11	5.43
KTH	5	4.21
LPT	6	4.36
LDP	2	3.18
GR	7	4.38
IR	12	6.01
MN	8	4.63
NP	3	4.02
YY	1	3.01
FT	9	4.69
LNP	4	4.06
Mean		4.41

Means followed by a common letter are not significantly different at the 5% level by DMRT

4.2 Shoot/ root ratio under 8 dS/m

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	4.46	4.89	3.93	3.67	3.79	4.01	3.85
KDML	5.49	4.92	4.89	3.57	4.51	5.56	4.33
KTH	4.05	4.17	4.00	3.71	3.48	3.32	3.19
LPT	2.10	2.72	3.06	3.84	2.86	3.13	2.97
LDP	3.45	2.02	2.84	3.24	2.25	2.98	4.08
GR	3.75	3.73	3.40	4.52	3.16	3.12	3.69
IR	6.00	5.84	4.31	5.13	4.76	5.49	3.49
MN	3.64	2.38	4.51	5.22	6.30	4.96	5.24
NP	3.71	3.52	3.39	2.62	3.32	5.27	3.42
YY	3.21	3.02	2.82	1.78	3.21	3.26	2.18
FT	2.06	2.89	3.04	3.14	1.55	2.59	3.54
LNP	3.64	3.33	3.14	2.76	5.93	1.96	4.78
Rep. totals	45.56	43.43	43.33	43.20	45.12	45.65	44.76
Rep. means	3.80	3.62	3.61	3.60	3.76	3.80	3.73

Analysis of variance for shoot/root ratio

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	47.15236	4.28658	6.93**
Error	72	44.51380	0.61825	
Total	83	91.66616		

cv =21.2% , ** =significant at 1% level

Table of variance means for shoot/root ratio (average over 7 replications)

Var.	Ranks	Means
POK	9	4.09^{cd}
KDML	11	4.75^{de}
KTH	8	3.70^{bc}
LPT	3	2.95^{ab}
LDP	4	2.98^{ab}
GR	6	3.62^{abc}
IR	12	5.00^{e}
MN	10	4.61^{de}
NP	5	3.61^{abc}
YY	2	2.78^{ab}
FT	1	2.69^{a}
LNP	7	3.65^{abc}
Mean		3.70

Means followed by a common letter are not significantly different at the 5% level by DMRT.

5. Panicles/plant data of table 3.10

5.1 Panicles/plant under 0 dS/m (control)

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	5.33	6.33	4.33	6.33	6.67	10.67	9.33
KDML	10.33	14.00	11.00	11.33	14.33	10.00	10.33
KTH	9.67	5.00	5.33	7.33	7.00	6.33	9.67
LPT	10.33	7.33	7.00	6.67	5.00	9.00	5.67
LDP	6.67	6.00	7.33	8.33	7.33	2.67	8.33
GR	6.67	5.67	9.33	4.67	6.00	8.33	8.33
IR	12.00	10.33	13.00	8.67	10.67	9.00	11.00
MN	6.67	5.00	5.33	6.67	5.00	4.00	7.33
NP	8.00	7.00	8.00	7.33	5.67	8.67	9.67
YY	8.33	9.00	6.67	5.67	6.33	7.67	3.67
FT	8.00	5.67	6.00	8.00	6.33	4.00	8.33
LNP	6.33	7.00	8.33	8.00	8.33	7.00	7.00
Rep. totals	98.33	88.83	91.65	89.00	88.66	87.34	98.66
Rep. means	8.19	7.40	7.64	7.42	7.39	7.28	8.22

Analysis of variance for panicles/plant

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	231.6840	21.0622	7.53**
Error	72	201.4843	2.7984	
Total	83	433.1683		

cv=21.9%, **=significant at 1% level

Table of variance means for panicles / plant (average over 7 replications)

Var.	Ranks	Means
POK	5	7.00[a]
KDML	12	11.62[b]
KTH	7	7.19[a]
LPT	8	7.29[a]
LDP	3	6.67[a]
GR	6	7.00[a]
IR	11	10.74[b]
MN	1	5.71[a]
NP	10	7.76[a]
YY	4	6.76[a]
FT	2	6.62[a]
LNP	9	7.43[a]
Mean		7.65

Means followed by a common letter are not significantly different at the 5% level by DMRT.

5.2 Panicles/plant under 8 dS/m

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	5.00	5.33	5.33	4.33	5.33	6.00	6.00
KDML	5.33	5.33	5.33	4.00	2.33	5.00	7.33
KTH	6.00	4.67	3.67	3.67	5.67	5.33	4.67
LPT	6.33	5.00	3.67	6.33	6.33	5.33	6.67
LDP	4.33	5.67	3.67	5.67	4.33	5.67	4.67
GR	6.00	4.00	6.33	4.33	5.00	5.00	4.00
IR	6.00	8.67	7.00	5.00	6.67	6.67	4.00
MN	4.33	5.67	5.00	5.67	5.00	4.00	4.84
NP	4.33	6.67	4.67	5.00	7.00	5.00	5.67
YY	4.50	5.33	8.00	4.33	6.33	5.00	5.67
FT	3.67	5.33	5.00	4.00	5.00	4.00	7.33
LNP	6.33	6.33	5.33	8.00	7.33	4.33	8.67
Rep. totals	62.15	68.00	63.00	60.33	66.32	61.33	69.525
Rep. means	5.18	5.67	5.25	5.03	5.53	5.11	5.79

Analysis of variance for panicles/plant –Table 3.10

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	27.1780	2.4707	1.94*
Error	72	91.4657	1.2704	
Total	83	118.6437		

cv =21.0% ,* = Significant at 5 % level

Table of variance means for panicles / plant (average over 7 replications)

Var.	Ranks	Means
POK	7	5.33^{abc}
KDML	5	4.95^{ab}
KTH	1	4.81^{a}
LPT	10	5.67^{abc}
LDP	2	4.8^{a}
GR	6	4.95^{ab}
IR	11	6.29^{bc}
MN	4	4.93^{ab}
NP	8	5.48^{abc}
YY	9	5.59^{abc}
FT	3	4.90^{bc}
LNP	12	6.62^{c}
Mean		5.36

Means followed by a common letter are not significantly different at the 5% level by DMRT.

6. Filled grains/panicle data of Table 3.10

6.1 Filled grains/panicle under 0 dS/m (control)

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	65.00	69.84	67.86	38.90	70.37	49.35	53.67
KDML	25.28	27.51	29.73	23.40	17.07	25.13	21.10
KTH	35.00	55.93	75.58	38.15	39.90	56.77	41.81
LPT	56.15	74.11	35.30	49.81	59.89	34.78	44.81
LDP	51.14	39.00	47.85	48.45	26.93	58.39	45.24
GR	55.03	46.08	65.53	84.94	57.27	25.82	48.77
IR	25.37	30.91	36.44	32.11	31.93	22.11	28.14
MN	59.48	56.89	29.21	46.92	55.20	65.14	27.62
NP	62.24	46.83	39.77	38.63	48.90	25.07	36.29
YY	36.65	56.18	54.37	99.93	80.93	73.25	78.35
FT	68.98	64.88	60.79	44.62	52.02	59.41	53.36
LNP	97.99	72.86	47.73	87.42	53.80	37.86	98.86
Rep. totals	638.31	641.02	590.16	633.28	594.21	533.08	577.82
Rep. means	53.19	53.42	49.18	52.77	49.52	44.42	48.15

Analysis of variance for grains

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	14807.45	1346.13	6.44**
Error	72	15054.40	209.09	
Total	83	29861.85		

cv =28.9% ,**= significant at 1% level

Table of variance means for grains (average over 7 replications)

Var.	Ranks	Means
POK	10	59.28cd
KDML	1	24.17a
KTH	6	48.99c
LPT	7	50.69c
LDP	4	45.29bc
GR	8	54.78cd
IR	2	29.57ab
MN	5	48.64c
NP	3	42.53bc
YY	11	68.52d
FT	9	57.72cd
LNP	12	70.93d
Mean		50.09

Means followed by a common letter are not significantly different at the 5% level by DMRT.

6.2 Filled grains/panicle under 8 dS/m

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	67.60	53.94	62.38	50.94	32.04	66.42	35.56
KDML	15.22	14.44	15.75	17.13	18.51	31.68	5.34
KTH	46.59	51.13	28.78	28.95	29.12	63.74	33.91
LPT	22.10	53.82	8.13	34.46	51.64	9.17	22.14
LDP	77.42	21.67	36.67	40.84	16.95	42.47	32.07
GR	8.43	16.34	30.96	7.42	48.72	28.07	47.83
IR	16.62	12.27	7.92	5.93	10.69	7.84	10.92
MN	6.28	6.26	5.26	2.31	10.86	8.99	6.59
NP	7.53	24.17	16.24	36.47	40.82	37.71	24.91
YY	70.98	56.78	41.11	24.96	23.82	35.93	77.00
FT	52.49	55.39	47.99	59.37	31.79	76.13	38.69
LNP	33.77	55.39	47.99	59.37	31.79	76.13	38.69
Rep. totals	425.03	433.88	354.60	357.72	375.14	479.57	386.32
Rep. means	35.42	36.16	29.55	29.81	31.26	39.96	32.19

Analysis of variance for grains

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	21538.56	1958.05	9.47**
Error	72	14883.05	206.71	
Total	83	36421.61		

cv =42.9%, **= significant at 1% level

Table of variance means for grains (average over 7 replications)

Var.	Ranks	Means
POK	11	52.70^{e}
KDML	3	16.87^{abc}
KTH	8	40.32^{de}
LPT	6	28.78^{cd}
LDP	7	38.30^{de}
GR	4	26.82^{bcd}
IR	2	10.31^{ab}
MN	1	6.65^{a}
NP	5	26.84^{bcd}
YY	9	47.23^{e}
FT	10	51.69^{e}
LNP	12	55.25^{e}
Mean		33.48

Means followed by a common letter are not significantly different at the 5% level by DMRT.

7. 100 Grain weight data of Table 3.11

7.1 100 Grain weight under 0 dS/m (control)

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	2.51	2.75	2.70	2.75	2.75	2.70	2.50
KDML	2.05	1.95	2.20	2.05	2.00	2.10	2.05
KTH	2.26	2.15	2.25	2.05	2.25	2.15	2.15
LPT	2.26	2.05	2.05	2.15	2.25	2.20	2.20
LDP	1.74	1.70	1.60	1.55	1.50	1.65	1.55
GR	2.29	2.65	2.30	2.50	2.45	2.20	2.20
IR	1.76	1.50	1.60	1.55	1.50	1.75	1.80
MN	3.10	2.80	3.25	2.95	3.10	3.00	3.05
NP	1.85	1.80	1.75	1.75	1.80	1.60	1.70
YY	1.71	1.80	1.60	1.60	1.75	1.60	1.55
FT	1.72	1.70	1.75	1.60	1.60	1.15	1.50
LNP	1.25	1.30	1.20	1.15	1.20	1.30	1.20
Rep. totals	24.50	24.15	24.25	23.65	24.15	23.40	23.45
Rep. means	2.04	2.01	2.02	1.97	2.01	1.95	1.95

Analysis of variance for 100 grain weight

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	20.66760357	1.87887305	135.67**
Error	72	0.9708571	0.01384841	
Total	83	21.66468929		

cv =5.9% , ** = significant at 1% level

Table of variance means for 100 grain weight (gm) (average over 7 replications)

Var.	Ranks	Means
POK	2	2.67[b]
KDML	6	2.06[d]
KTH	4	2.18[d]
LPT	5	2.17[d]
LDP	10	1.61f
GR	3	2.37[c]
IR	9	1.64[ef]
MN	1	3.04[a]
NP	7	1.75[e]
YY	8	1.70[ef]
FT	11	1.57[f]
LNP	12	1.30[g]
Mean		2.00

Means followed by a common letter are not significantly different at the 5% level by DMRT.

7.2 100 Grain weight under 8 dS/m

Var.	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7
POK	2.65	2.80	2.65	2.35	2.40	2.65	2.45
KDML	1.90	1.75	1.90	1.80	2.15	2.00	1.95
KTH	2.05	2.00	2.20	2.10	2.00	2.00	2.03
LPT	2.20	2.05	2.40	2.15	2.20	2.20	2.20
LDP	1.55	1.65	1.50	1.70	1.55	1.60	1.66
GR	2.10	2.25	2.20	2.30	2.30	2.15	2.24
IR	1.80	1.75	1.60	1.60	1.65	1.65	1.68
MN	2.60	2.55	2.60	2.65	2.65	2.65	2.63
NP	1.60	1.65	1.65	1.80	1.70	1.60	1.70
YY	1.40	1.50	1.50	1.45	1.60	1.65	1.62
FT	1.45	1.60	1.60	1.50	1.50	1.55	1.50
LNP	1.30	1.25	1.30	1.15	1.15	1.15	1.18
Rep. totals	22.60	22.80	23.10	22.55	22.85	22.85	22.84
Rep. means	1.88	1.90	1.93	1.88	1.90	1.90	1.90

Analysis of variance for100 grain weight (gm)

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Var.	11	14.79738452	1.34521677	160.54**
Error	72	0.60331429	0.0837937	
Total	83	15.40069881		

cv =4.8% , ** = significant at 1% level

Table of variance means for100 grain weight (gm)(average over 7 replications)

Var.	Ranks	Means
POK	2	2.56[a]
KDML	6	1.92[d]
KTH	5	2.05[c]
LPT	4	2.20[b]
LDP	9	1.60[ef]
GR	3	2.22[b]
IR	7	1.68[e]
MN	1	2.62[a]
NP	8	1.67[e]
YY	10	1.53[f]
FT	11	1.53[f]
LNP	12	1.21[g]
Mean		1.90

Means followed by a common letter are not significantly different at the 5% level by DMRT.

Biography

Mr. Chukiat Khotanakul was born on January 24,1956 in Chonburi. He graduated with the degree of Bachelor of Science (B.Sc. in Chemistry) from Ramkhamhaeng University in 1978 and Master of Science (M.Sc. in Biochemistry) from Chulalongkorn University in 1983. He has been working in the Department of Pharmaceutical Chemistry, Faculty of Pharmaceutical Sciences, Prince of Songkhla University since 1983.