APPENDEX

Appendix A: Layout and diagram of field experiment

A1: design of experiment follows Split – plot design

Selected glutinous rice and non-glutinous rice varieties (Group I):

Replication 1

F1	F2	F3	F4
A	C	A	F
B	A	F	B
C	D	C	D
D	B	B	A
E	E	E	E
F	F	D	C

Replication 2

F1	F2	F3	F4
A	E	C	E
B	F	F	A
D	A	A	B
C	B	E	F
E	C	D	C
F	D	B	D

Note : F1 = Control
F2 = *S. rostrata*
F3 = (16-20-0) + (46-0-0)
F4 = *S. rostrata* + (46-0-0)

A = RD. 6 variety
B = Dangkornkaen variety
C = RD. 23 variety
D = Neawsanpathong variety
E = Chinat variety
F = Neawubol variety

Selected quality rice varieties (Group II):

Replication 1

F1	F2	F3	F4
A	F	D	B
B	B	B	C
C	D	F	D
D	C	E	E
E	E	C	F
F	A	A	A

Replication 2

F1	F2	F3	F4
F	A	B	A
C	F	F	E
A	E	A	F
B	C	E	D
D	B	D	B
E	D	C	C

Note : F1 = Control
F2 = *S. rostrata*
F3 = (16-20-0) + (46-0-0)
F4 = *S. rostrata* + (46-0-0)

A = Chinat variety
B = Kawdougmali 105 variety
C = Pitsanulukm60-2 variety
D = RD.15 variety
E = Dangmali variety
F = Pitsanulukm60-1 variety

* Application of 16-20-0 at 156 kg ha^{-1}

* Application of urea at 62.5 kg ha^{-1}

HYVs rice (Group III):

Replication 1

F1	F2	F3	F4
A	F	A	A
B	E	C	D
C	D	E	B
D	B	F	C
E	C	B	F
F	A	D	E

Replication 2

F1	F2	F3	F4
C	B	D	A
B	E	C	E
F	D	A	B
E	A	B	F
D	F	E	C
A	C	F	D

Note : F1 = Control
F2 = *S. rostrata*
F3 = (16-20-0) + (46-0-0)
F4 = *S. rostrata* + (46-0-0)

A = Supanburee 90 variety
B = Supanburee 60 variety
C = RD. 7 variety
D = Supanburee 2 variety
E = Chinat variety
F = Supanburee 1 variety

* Application of 16-20-0 at 156 kg ha^{-1}
* Application of urea at 62.5 kg ha^{-1}

Appendix B: Layout and diagram of nitrogen-dynamics experiment treatments

B1: design of experiment follows complete block design

Selected glutinous rice and non-glutinous rice varieties (Group I):

Replication 1

F1	F2	F3	F4
A	C	A	F
B	A	F	B
C	D	C	D
D	B	B	A
E *	E*	E*	E*
F	F	D	C

Replication 2

F1	F2	F3	F4
A	E	C	E
B	F	F	A
D	A	A	B
C	B	E	F
E	C	D	C
F	D	B	D

Note : F1 = Control
F2 = *S. rostrata*
F3 = (16-20-0) + (46-0-0)
F4 = *S. rostrata* + (46-0-0)

E* = Inserting the metal frames

A = RD. 6 variety
B = Dangkornkaen variety
C = RD. 23 variety
D = Neawsanpathong variety
E = Chinat variety
F = Neawubol variety

Selected quality rice varieties (Group II):

Replication 1

F1	F2	F3	F4
A*	F	D	B
B	B	B	C
C	D	F	D
D	C	E	E
E	E	C	F
F	A*	A*	A*

Replication 2

F1	F2	F3	F4
F	A	B	A
C	F	F	E
A	E	A	F
B	C	E	D
D	B	D	B
E	D	C	C

Note : F1 = Control
F2 = *S. rostrata*
F3 = (16-20-0) + (46-0-0)
F4 = *S. rostrata* + (46-0-0)

A* = Inserting the metal frames

A = Chinat variety
B = Kawdougmali 105 variety
C = Pitsanulukm60-2 variety
D = RD.15 variety
E = Dangmali variety
F = Pitsanulukm60-1 variety

HYVs rice (Group III):

Replication 1

F1	F2	F3	F4
A	F	A	A
B	E*	C	D
C	D	E*	B
D	B	F	C
E*	C	B	F
F	A	D	E*

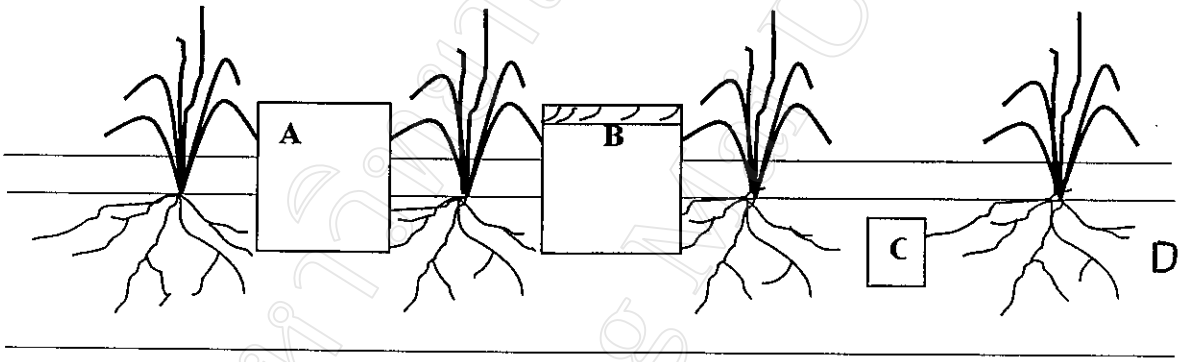
Replication 2

F1	F2	F3	F4
C	B	D	A
B	E	C	E
F	D	A	B
E	A	B	F
D	F	E	C
A	C	F	D

Note : F1 = Control
F2 = *S. rostrata*
F3 = (16-20-0) + (46-0-0)
F4 = *S. rostrata* + (46-0-0)

E* = Inserting the metal frames

A = Supanburee 90 variety
B = Supanburee 60 variety
C = RD. 7 variety
D = Supanburee 2 variety
E = Chinat variety
F = Supanburee 1 variety



Note : A = A metal frame which no invasion of rice roots
B = A metal frame which no invasion of algae and rice roots
C = Plastic bottle which no invasion of algae, rice roots,run off, and leaching
D = A metal frame which having all invasion

Appendix C: Analysis of variance (Chinat variety)

C1: Analysis of variance for total straw yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	5.82417	1.94139	7.98	0.0021
Replication (B)	5	3.45927	0.69185	2.84	0.0531
A x B	15	3.64865	0.24324		
Total	23	12.9321			

C2: Analysis of variance for total seed yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	25.6106	8.53688	10.26	0.0006
Replication (B)	5	8.07375	1.61475	1.94	0.1469
A x B	15	12.4819	0.83213		
Total	23	46.1663			

C3: Analysis of variance for total biomass yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	54.3819	18.1273	14.50	0.0001
Replication (B)	5	10.4952	2.09904	1.68	0.2002
A x B	15	10.7488	1.24992		
Total	23	83.6258			

C4: Analysis of variance for total good seed yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	5.94112	1.98037	8.05	0.0020
Replication (B)	5	3.62523	0.72505	2.95	0.0476
A x B	15	3.68966	0.24598		
Total	23	13.2560			

C5: Analysis of variance for % good seed

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.19925	0.06642	4.25	0.0232
Replication (B)	5	0.27855	0.05571	3.57	0.0253
A x B	15	0.23433	0.01562		
Total	23	0.71213			

C6: Analysis of variance for harvest index

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.01599	0.00533	3.98	0.0285
Replication (B)	5	0.02179	0.00436	3.26	0.0344
A x B	15	0.02006	0.00134		
Total	23	0.05784			

C7: Analysis of variance for height

Source	DF	SS	MS	F	P
Nutrient management (A)	3	333.353	111.118	13.71	0.0001
Replication (B)	5	302.920	60.5840	7.48	0.0011
A x B	15	121.567	8.10444		
Total	23	757.840			

C8: Analysis of variance for panicle/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	8691.52	2897.17	5.78	0.0078
Replication (B)	5	5757.12	1151.42	2.30	0.0974
A x B	15	7522.88	501.525		
Total	23	21917.5			

C9: Analysis of variance for tiller/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	11114.10	3704.71	5.00	0.0134
Replication (B)	5	9752.85	1950.57	2.63	0.0668
A x B	15	11109.90	740.658		
Total	23	31976.90			

C10: Analysis of variance for % productive tillers

Source	DF	SS	MS	F	P
Nutrient management (A)	3	6.717E-04	2.239E-04	0.52	0.6742
Replication (B)	5	0.00323	6.454E-04	1.50	0.2476
A x B	15	0.00645	4.297E-04		
Total	23	0.01034			

C11: Analysis of variance for 1000 grains weight

Source	DF	SS	MS	F	P
Nutrient management (A)	3	2.70765	0.90255	0.68	0.5804
Replication (B)	5	4.54019	0.90804	0.68	0.6457
A x B	15	20.0409	1.33606		
Total	23	27.2888			

Appendix D: Analysis of variance (Selected glutinous rice and non-glutinous rice varieties)

D1: Analysis of variance for total straw yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	24.3398	8.11328	34.24	0.0080
Replication (B)	1	0.29689	0.29689	1.25	0.3445
A x B	3	0.71077	0.23692		
Variety (C)	5	9.97991	1.99598	12.26	0.0078
B x C	5	0.81428	0.16286		
A x C	15	8.27587	0.55172	1.48	0.2286
A x B x C	15	5.59400	0.37293		
Total	47	50.0115			

D2: Analysis of variance for total grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	3.77594	1.25865	4.21	0.1343
Replication (B)	1	0.04083	0.04083	0.14	0.7363
A x B	3	0.89719	0.29906		
Variety (C)	5	5.51417	1.10283	4.51	0.0620
B x C	5	1.22323	0.24465		
A x C	15	1.89219	0.12615	0.60	0.8338
A x B x C	15	3.15625	0.21042		
Total	47	16.4998			

D3: Analysis of variance for total biomass yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	46.1617	15.3872	31.12	0.0092
Replication (B)	1	0.55793	0.55793	1.13	0.3661
A x B	3	1.48358	0.49453		
Variety (C)	5	12.4084	2.48168	4.31	0.0674
B x C	5	2.88059	0.57612		
A x C	15	14.7273	0.98182	1.39	0.2665
A x B x C	15	10.6082	0.70721		
Total	47	88.8277			

D4: Analysis of variance for total filled grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	3.36316	1.12105	3.19	0.1829
Replication (B)	1	0.00158	0.00158	0.00	0.9508
A x B	3	1.05316	0.35105		
Variety (C)	5	5.72866	1.14573	4.32	0.0670
B x C	5	1.32553	0.26511		
A x C	15	2.24816	0.14988	0.70	0.7482
A x B x C	15	3.19691	0.21313		
Total	47	16.9172			

D5: Analysis of variance for % filled grain

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.00159	5.307E-04	0.62	0.6490
Replication (B)	1	0.00175	0.00175	2.04	0.2487
A x B	3	0.00258	8.590E-04		
Variety (C)	5	0.00577	0.00115	5.29	0.0457
B x C	5	0.00109	2.182E-04		
A x C	15	0.00926	6.175E-04	0.84	0.6310
A x B x C	15	0.01104	7.361E-04		
Total	47	0.03308			

D6: Analysis of variance for harvest index

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.01686	0.00562	3.37	0.1723
Replication (B)	1	2.506E-04	2.506E-04	0.15	0.7241
A x B	3	0.00500	0.00167		
Variety (C)	5	0.05523	0.01105	19.96	0.0026
B x C	5	0.00277	5.535E-04		
A x C	15	0.01403	9.351E-04	0.65	0.7907
A x B x C	15	0.02148	0.00143		
Total	47	0.11562			

D7: Analysis of variance for height

Source	DF	SS	MS	F	P
Nutrient management (A)	3	1951.48	650.493	45.86	0.0053
Replication (B)	1	98.9640	98.9640	6.98	0.0776
A x B	3	42.5522	14.1841		
Variety (C)	5	32191.6	6438.33	564.80	0.0000
B x C	5	56.9970	11.3994		
A x C	15	758.243	50.5495	2.74	0.0298
A x B x C	15	276.433	18.4289		
Total	47	35376.3			

D8: Analysis of variance for panicles/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	5380.27	1793.42	2.91	0.2018
Replication (B)	1	1004.26	1004.26	1.63	0.2916
A x B	3	1848.65	616.218		
Variety (C)	5	31651.30	6330.26	14.51	0.0053
B x C	5	2181.35	436.270		
A x C	15	3316.28	221.085	1.05	0.4638
A x B x C	15	3161.92	210.795		
Total	47	48544.00			

D9: Analysis of variance for tillers/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	7814.15	2604.72	4.07	0.1395
Replication (B)	1	500.664	500.664	0.78	0.4415
A x B	3	1919.13	639.710		
Variety (C)	5	31077.0	6215.41	16.66	0.0039
B x C	5	1865.03	373.006		
A x C	15	3426.29	228.419	0.79	0.6702
A x B x C	15	4318.93	287.928		
Total	47	50921.2			

D10: Analysis of variance for % productive tillers

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.00192	6.385E-04	0.15	0.9227
Replication (B)	1	0.00351	0.00351	0.83	0.4295
A x B	3	0.01270	0.00423		
Variety (C)	5	0.03112	0.00622	2.42	0.1768
B x C	5	0.01284	0.00257		
A x C	15	0.02372	0.00158	3.17	0.0161
A x B x C	15	0.00748	4.989 E-04		
Total	47	0.09330			

D11: Analysis of variance for 1000 grains weight

Source	DF	SS	MS	F	P
Nutrient management (A)	3	2.06431	0.68810	1.81	0.3189
Replication (B)	1	1.02667	1.02667	2.70	0.1988
A x B	3	1.13988	0.37996		
Variety (C)	5	58.8878	11.7776	30.76	0.0009
B x C	5	1.91438	0.38288		
A x C	15	4.40954	0.29397	0.96	0.5279
A x B x C	15	4.57437	0.30496		
Total	47	74.0170			

Appendix E: Analysis of variance (Quality rice varieties)

E1: Analysis of variance for total straw yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	65.7351	21.9117	12.80	0.0324
Replication (B)	1	1.80188	1.80188	1.05	0.3803
A x B	3	5.13365	1.71122		
Variety (C)	5	11.7739	2.35477	2.61	0.1575
B x C	5	4.50281	0.90056		
A x C	15	14.3677	0.95785	1.18	0.3751
A x B x C	15	12.1554	0.81036		
Total	47	115.470			

E2: Analysis of variance for total grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	7.77889	2.59296	8.54	0.0558
Replication (B)	1	0.43605	0.43605	1.44	0.3168
A x B	3	0.91108	0.30369		
Variety (C)	5	6.14428	1.22886	12.21	0.0079
B x C	5	0.50324	0.10065		
A x C	15	3.52493	0.23500	1.32	0.3011
A x B x C	15	2.67993	0.17866		
Total	47	21.9784			

E3: Analysis of variance for total biomass yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	115.962	38.6540	17.35	0.0212
Replication (B)	1	0.46512	0.46512	0.21	0.6788
A x B	3	6.68452	2.22817		
Variety (C)	5	19.8003	3.96005	5.38	0.0442
B x C	5	3.67777	0.73555		
A x C	15	24.5204	1.63469	1.34	0.2905
A x B x C	15	18.3423	1.22282		
Total	47	189.452			

Appendix E: Analysis of variance (Quality rice varieties)

E1: Analysis of variance for total straw yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	65.7351	21.9117	12.80	0.0324
Replication (B)	1	1.80188	1.80188	1.05	0.3803
A x B	3	5.13365	1.71122		
Variety (C)	5	11.7739	2.35477	2.61	0.1575
B x C	5	4.50281	0.90056		
A x C	15	14.3677	0.95785	1.18	0.3751
A x B x C	15	12.1554	0.81036		
Total	47	115.470			

E2: Analysis of variance for total grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	7.77889	2.59296	8.54	0.0558
Replication (B)	1	0.43605	0.43605	1.44	0.3168
A x B	3	0.91108	0.30369		
Variety (C)	5	6.14428	1.22886	12.21	0.0079
B x C	5	0.50324	0.10065		
A x C	15	3.52493	0.23500	1.32	0.3011
A x B x C	15	2.67993	0.17866		
Total	47	21.9784			

E3: Analysis of variance for total biomass yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	115.962	38.6540	17.35	0.0212
Replication (B)	1	0.46512	0.46512	0.21	0.6788
A x B	3	6.68452	2.22817		
Variety (C)	5	19.8003	3.96005	5.38	0.0442
B x C	5	3.67777	0.73555		
A x C	15	24.5204	1.63469	1.34	0.2905
A x B x C	15	18.3423	1.22282		
Total	47	189.452			

E4: Analysis of variance for total filled grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	6.93240	2.31080	7.16	0.0701
Replication (B)	1	0.72521	0.72521	2.25	0.2307
A x B	3	0.96781	0.32260		
Variety (C)	5	4.95422	0.99084	20.12	0.0025
B x C	5	0.24620	0.04924		
A x C	15	3.72526	0.24835	1.73	0.1495
A x B x C	15	2.15203	0.14347		
Total	47	19.7031			

E5: Analysis of variance for % filled grain

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.00116	3.876E-04	0.83	0.5598
Replication (B)	1	0.00331	0.00331	7.07	0.0764
A x B	3	0.00140	4.681E-04		
Variety (C)	5	0.00873	0.00181	0.96	0.5164
B x C	5	0.00907	5.447E-04		
A x C	15	0.00817	4.641E-04	1.17	0.3802
A x B x C	15	0.00696			
Total	47	0.03880			

E6: Analysis of variance for harvest index

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.02582	0.00861	2.85	0.2064
Replication (B)	1	0.00533	0.00533	1.76	0.2761
A x B	3	0.00906	0.00302		
Variety (C)	5	0.03942	0.00788	3.95	0.0791
B x C	5	0.00999	0.00200		
A x C	15	0.01641	0.00109	1.14	0.4030
A x B x C	15	0.01442	9.615E-04		
Total	47	0.12044			

E7: Analysis of variance for height

Source	DF	SS	MS	F	P
Nutrient management (A)	3	2043.20	681.006	54.31	0.0041
Replication (B)	1	501.167	501.167	39.96	0.0080
A x B	3	37.6223	12.5408		
Variety (C)	5	12645.7	2529.13	69.13	0.0001
B x C	5	182.929	36.5859		
A x C	15	425.671	28.3781	1.54	0.2056
A x B x C	15	276.036	18.4024		
Total	47	16112.3			

E8: Analysis of variance for panicles/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	8513.07	2837.69	4.05	0.1404
Replication (B)	1	7.68000	7.68000	0.01	0.9232
A x B	3	2102.19	700.729		
Variety (C)	5	18520.7	3704.15	15.37	0.0047
B x C	5	1205.12	241.024		
A x C	15	2761.81	184.121	0.32	0.9828
A x B x C	15	8627.41	575.161		
Total	47	41738.0			

E9: Analysis of variance for tillers/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	8857.33	2952.44	2.58	0.2286
Replication (B)	1	887.520	887.520	0.77	0.4435
A x B	3	3435.68	1145.23		
Variety (C)	5	12502.7	2500.53	4.85	0.0540
B x C	5	2578.40	515.680		
A x C	15	3548.75	236.583	0.25	0.9945
A x B x C	15	14178.7	945.248		
Total	47	45989.1			

E10: Analysis of variance for % productive tillers

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.00329	0.00110	1.59	0.3568
Replication (B)	1	0.01030	0.01030	14.89	0.0307
A x B	3	0.00207	6.916E-04		
Variety (C)	5	0.03953	0.00791	5.27	0.0461
B x C	5	0.00750	0.00150		
A x C	15	0.01210	8.066E-04	0.88	0.5928
A x B x C	15	0.01369	9.125E-04		
Total	47	0.08848			

E11: Analysis of variance for 1000 grains weight

Source	DF	SS	MS	F	P
Nutrient management (A)	3	13.2324	4.41080	4.06	0.1398
Replication (B)	1	2.74085	2.74085	2.53	0.2103
A x B	3	3.25632	1.08544		
Variety (C)	5	28.2349	5.64698	1.25	0.4068
B x C	5	22.6166	4.52332		
A x C	15	52.8207	3.52138	1.05	0.4610
A x B x C	15	50.1720	3.34480		
Total	47	173.074			

Appendix F: Analysis of variance (HVY rice)

F1: Analysis of variance for total straw yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	18.1514	6.05046	15.63	0.0246
Replication (B)	1	0.56876	0.56876	1.47	0.3122
A x B	3	1.16129	0.38710		
Variety (C)	5	9.29975	1.85995	2.38	0.1819
B x C	5	3.91225	0.78245		
A x C	15	14.9588	0.99726	2.53	0.0409
A x B x C	15	5.90426	0.39362		
Total	47	53.9565			

F2: Analysis of variance for total grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	20.3696	6.78987	756.84	0.0001
Replication (B)	1	0.78158	0.78158	87.12	0.0026
A x B	3	0.02691	0.00897		
Variety (C)	5	6.35991	1.27198	2.88	0.1352
B x C	5	2.20835	0.44167		
A x C	15	5.23483	0.34899	2.16	0.0741
A x B x C	15	2.42785	0.16186		
Total	47	37.4090			

F3: Analysis of variance for total biomass yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	75.7520	25.2507	58.69	0.0037
Replication (B)	1	2.68380	2.68380	6.24	0.0879
A x B	3	1.29068	0.43023		
Variety (C)	5	19.8323	3.96646	2.00	0.2326
B x C	5	9.91776	1.98355		
A x C	15	28.4499	1.89666	2.47	0.0452
A x B x C	15	11.5240	0.76827		
Total	47	149.450			

F4: Analysis of variance for total filled grain yield

Source	DF	SS	MS	F	P
Nutrient management (A)	3	18.6064	6.20213	1663.53	0.0000
Replication (B)	1	0.60189	0.60189	161.44	0.0011
A x B	3	0.01118	0.00373		
Variety (C)	5	8.09663	1.61933	4.53	0.0615
B x C	5	1.78850	0.35770		
A x C	15	5.53603	0.36907	2.23	0.0660
A x B x C	15	2.48436	0.16562		
Total	47	37.1250			

F5: Analysis of variance for % filled grain

Source	DF	SS	MS	F	P
Nutrient management (A)	3	9.468E-04	3.156E-04	1.24	0.4324
Replication (B)	1	1.411E-04	1.411E-04	0.55	0.5108
A x B	3	7.647E-04	2.549E-04		
Variety (C)	5	0.00905	0.00181	9.37	0.0141
B x C	5	9.661E-04	1.932E-04		
A x C	15	0.00322	2.150E-04	1.29	0.3153
A x B x C	15	0.00250	1.669E-04		
Total	47	0.01760			

F6: Analysis of variance for harvest index

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.00219	7.285E-04	0.52	0.6961
Replication (B)	1	5.689E-04	5.689E-04	0.41	0.5682
A x B	3	0.00418	0.00139		
Variety (C)	5	0.03338	0.00668	6.72	0.0284
B x C	5	0.00497	9.932E-04		
A x C	15	0.02790	0.00186	2.61	0.0364
A x B x C	15	0.01069	7.128E-04		
Total	47	0.08387			

F7: Analysis of variance for height

Source	DF	SS	MS	F	P
Nutrient management (A)	3	758.794	252.931	22.50	0.0147
Replication (B)	1	150.875	150.875	13.42	0.0351
A x B	3	33.7173	11.2391		
Variety (C)	5	1478.99	295.798	46.23	0.0003
B x C	5	31.9935	6.39871		
A x C	15	197.747	13.1832	1.19	0.3703
A x B x C	15	166.169	11.0779		
Total	47	2818.28			

F8: Analysis of variance for panicles/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	33622.3	11207.4	30.63	0.0095
Replication (B)	1	1216.05	1216.05	3.32	0.1658
A x B	3	1097.55	365.849		
Variety (C)	5	13625.2	2725.05	4.33	0.0668
B x C	5	3145.87	629.173		
A x C	15	7235.57	482.372	1.09	0.4362
A x B x C	15	6650.61	443.374		
Total	47	66593.2			

F9: Analysis of variance for tillers/m^2

Source	DF	SS	MS	F	P
Nutrient management (A)	3	41256.2	13752.1	17.20	0.0215
Replication (B)	1	2123.86	2123.86	2.66	0.2016
A x B	3	2398.42	799.473		
Variety (C)	5	21421.5	4284.30	4.94	0.0522
B x C	5	4338.21	867.642		
A x C	15	7258.73	483.915	1.02	0.4886
A x B x C	15	7150.85	476.724		
Total	47	85947.7			

F10: Analysis of variance for % productive tillers

Source	DF	SS	MS	F	P
Nutrient management (A)	3	0.00257	8.557E-04	1.34	0.4077
Replication (B)	1	4.417E-4	4.417E-04	0.69	0.4665
A x B	3	0.00191	6.383e-04		
Variety (C)	5	0.00894	0.00179	6.32	0.0321
B x C	5	0.00141	2.827E-04		
A x C	15	0.01125	7.501E-04	1.46	0.2374
A x B x C	15	0.00772	5.148E-04		
Total	47	0.03425			

F11: Analysis of variance for 1000 grains weight

Source	DF	SS	MS	F	P
Nutrient management (A)	3	2.87724	0.95908	0.47	0.7221
Replication (B)	1	0.91025	0.91025	0.45	0.5503
A x B	3	6.06716	2.02239		
Variety (C)	5	154.194	30.8388	44.35	0.0004
B x C	5	3.47686	0.69537		
A x C	15	7.95440	0.53029	0.81	0.6563
A x B x C	15	9.82708	0.65514		
Total	47	185.307			

Appendix G: Analysis of variance of % N-mineralization

G1: 1 day of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	66.8679	22.2893	81.02	0.0023
Replication (B)	1	0.00125	0.00125	0.00	0.9505
A x B	3	0.82535	0.27512		
Total	7	67.6945			

G2: 2 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	6.74068	2.24689	3.59	0.1606
Replication (B)	1	1.53213	1.53213	2.45	0.2154
A x B	3	1.87528	0.62509		
Total	7	10.1481			

G3: 3 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	76.2171	25.4057	99.55	0.0017
Replication (B)	1	1.12650	1.12650	4.41	0.1264
A x B	3	0.76560	0.25520		
Total	7	78.1092			

G4: 4 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	126.529	42.1762	1.59	0.35
Replication (B)	1	24.5245	24.5245	0.93	0.4070
A x B	3	79.5120	26.5040		
Total	7	230.565			

G5: 5 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	351.880	117.293	6.69	0.0765
Replication (B)	1	28.5277	28.5277	1.63	0.2920
A x B	3	526130	17.5377		
Total	7	433.021			

G6: 7 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	282.155	94.0516	39.10	0.1169
Replication (B)	1	2.20500	2.20500	0.92	0.5139
A x B	3	2.40560	2.40560		
Total	7	286.765			

G7: 14 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	221.110	73.7034	14.78	0.0266
Replication (B)	1	1.44670	1.44670	0.29	0.6275
A x B	3	14.9570	4.98567		
Total	7	237.514			

G8: 28 days of incubation

Source	DF	SS	MS	F	P
Treatment (A)	3	773.480	773.480	105.98	0.0616
Replication (B)	1	30.2775	30.2775	4.15	0.2905
A x B	3	7.29810	7.29810		
Total	7	811.055			

CURRICULUM VITAE

Name: Naruemon Pujaroen (Miss)

Date of Birth: July 14, 1975

Education background:

1994 - 1998 B.Sc. Agriculture (Entomology)
Faculty of Agriculture, Chiang Mai University
Chiang Mai, Thailand

1998 - 2002 M.S. Agriculture (Agricultural systems)
Faculty of Agriculture, Chiang Mai University
Chiang Mai, Thailand

Work Experiences:

1999-November 2001 Research Assistance
Multiple Cropping Center
Faculty of Agriculture, Chiang Mai University
Chiang Mai, Thailand

December 2001-July 2002 Research Assistant: IPM/DANIDA Project
Office of Agricultural Research and Development
Region 1 Department of Agriculture, Ministry of Agriculture

Home address: 51 moo 3, Chomsawan Subdistrict, Mae Chan District,
Chiang Rai 57110, Thailand
Tel (053) 653110 Tel (09-8503351)