APPENDIX

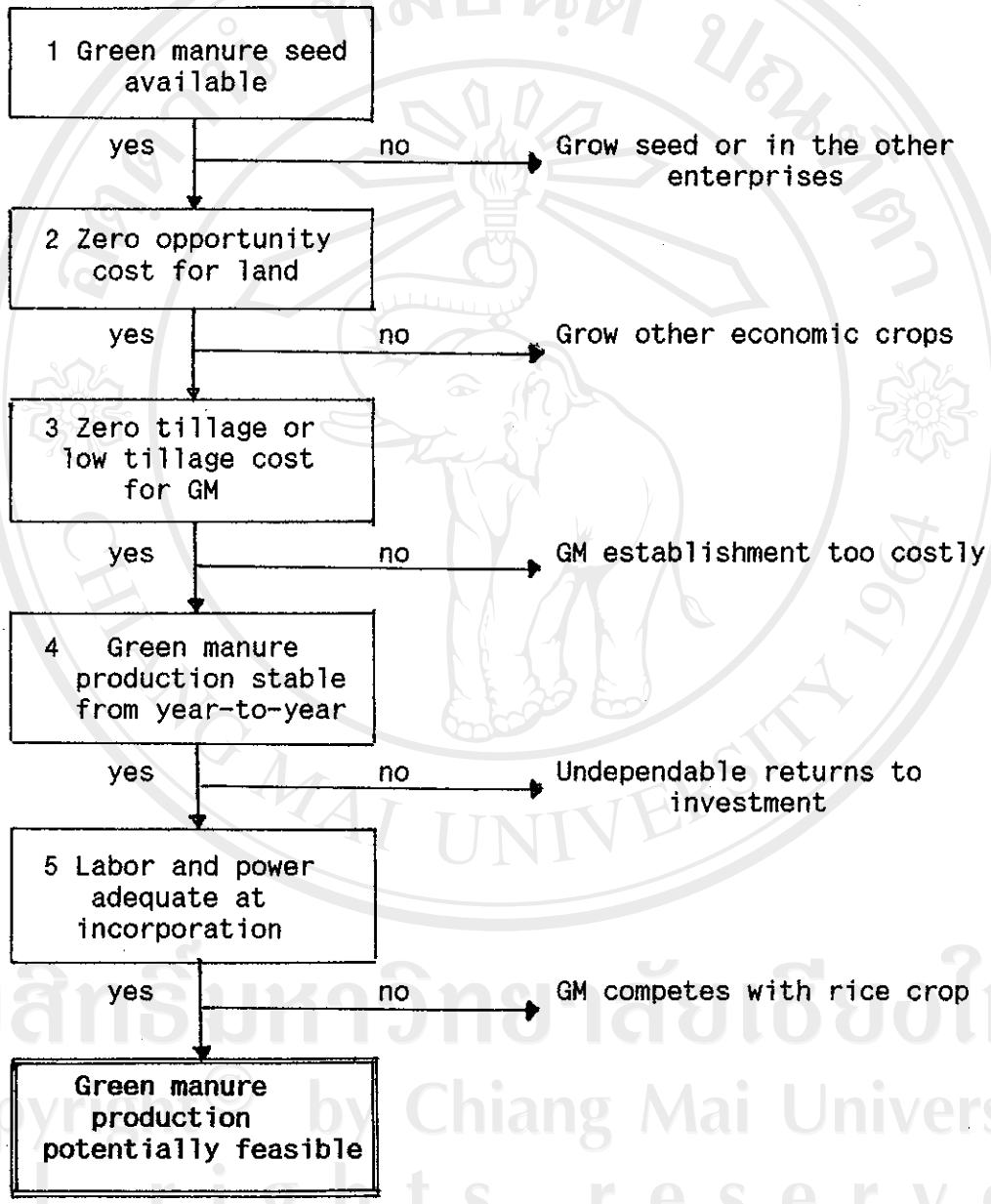
Appendix Figure 1. The layout of field experiment (Factorial in Randomized Complete Block Design)

Replication 1		Replication 2	
V2F3	V1F0	V1F3	V1F1
V1F1	V2F4	V1F4	V2F0
V2F0	V2F2	V2F1	V2F3
V1F4	V2F1	V1F0	V2F4
V1F3	V1F2	V2F2	V1F2

Replication 3	
V1F2	V2F2
V2F0	V1F4
V1F3	V2F3
V2F1	V1F0
V2F4	V1F1

Experimental plot size : 7m x 8.5m
Replication size : 20m x 40m
Total area : 2400 m^2
No. of treatment : 10
No.of replication : 3
Total treatment plots : 30

Appendix Figure 2. Decision tree: minimum necessary criteria for green manure production (Garrity and Flinn, 1988)



Appendix Table 1 ANOVA of shoot dry matter (kg/ha) of rice at different stages

Source of Variation	df	PI MS	PI P	FS MS	FS P	HS MS	HS P
Replication (A)	2	16305	0.91	872340	0.14	178810	0.89
Varieties (B)	1	494850	0.11	78030	0.66	1495900	0.06
N sources (C)	4	526760	0.04	452230	0.37	613500	0.23
B * C	4	187730	0.40	205740	0.73	641360	0.20
A * B * C	18	177000		404120		389600	

Appendix Table 2 ANOVA of N-uptake (kg/ha) in rice straw at different stages

Source of Variation	df	PI MS	PI P	FS MS	FS P	HS MS	HS P
Replication (A)	2	75.66	0.18	36.56	0.63	80.51	0.68
Varieties (B)	1	0.32	0.93	0.89	0.91	0.09	0.95
N sources (C)	4	187.77	0.01	187.17	0.10	29.66	0.26
B * C	4	20.54	0.73	10.40	0.96	23.25	0.37
A * B* C	18	40.23		79.28		20.65	

Note: PI = Panicle initiation stage
FS = Flowering stage
HS = Harvesting stage

Appendix Table 3 ANOVA of N-uptake (kg/ha) in grain of two rice varieties in various N sources

Source of Variation	df	MS	P
Replication (A)	2	17.90	0.42
Varieties (B)	1	304.71	0.00
N sources (C)	4	80.21	0.02
B * C	4	63.42	0.04
A * B * C	18	19.97	

Appendix Table 4 ANOVA of grain yield (kg/ha) of two rice varieties in different N sources

Source of Variation	df	MS	P
Replication (A)	2	223370	0.07
Varieties (B)	1	172440	0.14
N sources (C)	4	368260	0.01
B * C	4	48306	0.62
A * B * C	18	71687	

Appendix Table 5 ANOVA of N concentration (%) in grain of two rice varieties in various N sources

Source of Variation	df	MS	P
Replication (A)	2	0.001	0.83
Varieties (B)	1	0.065	0.00
N sources (C)	4	0.004	0.42
B * C	4	0.008	0.18
A * B * C	18	0.004	

Appendix Table 6 ANOVA of yield and yield components of two rice varieties in different N sources

Source of		Yield Components							
Variation	df	Panicles /m^2		Spikelets /panicle		%Filled grain		1000 grain weight	
		MS	P	MS	P	MS	P	MS	P
Replication(A)	2	560	0.15	31.2	0.86	5.4	0.85	0.6	0.24
Varieties (B)	1	3434	0.00	83.7	0.53	104.7	0.00	16.1	0.00
N sources (C)	4	978	0.03	153.2	0.56	17.5	0.73	0.2	0.79
B * C	4	96	0.84	156.3	0.55	27.8	0.53	0.7	0.64
A * B *C	18	279		199.5		34.0		0.4	

CURRICULUM VITAE

Name:	Wawta Wassananukul (Miss)
Date:	February 18, 1955
Place of Birth:	Ranong Province, THAILAND

Educational Background:

1974-1978	B.Sc.(Agriculture:Soil Science) Kasetsart University Bangkok, THAILAND
1988-1990	M.Sc. (Agricultural Systems) Chiang Mai University Chiang Mai, THAILAND

Employment Experience:

1978-1979	Researcher Land Development Station Department of Land Development Karasin Province, THAILAND
1979-1981	Researcher Section of Soil Improvement Division of Soil and Water Conservation Department of Land Development Bangkok, THAILAND
1981- to date	Researcher Organic Recycling for Soil Improvement Project Department of Land Development Bangkok, THAILAND

Office Address: Organic Recycling for Soil Improvement Project
Department of land Development
Phaholyothin Rd, Bangkok 10900
THAILAND Tel. 5795215