APPENDICES

APPENDIX A

FIELD EXPERIMENT RESULTS

Table a.1 Productions, prices and seasons of each species of each stage in 1996.

	Production (kg ha^{-1})❶			Price (baht kg^{-1})	Season
	Mature stage	Middle stage	Early stage		
Rhetsa	886.66	766.75	30.92	160.00	October
Miang huapi	745.31	1,331.26	1,105.75	6.00 ❷	May
Miang klang	745.31	1,331.26	1,105.75	6.50 ❷	July
Miang soi	621.09	1,109.38	921.46	7.00 ❷	September
Miang moei	372.66	665.63	552.87	7.00 ❷	November
Mango	717.50	632.50	281.25	8.00	July
Pomelo	93.00	33.00	12.00	20.00 ❸	September
Peach	80.00	0	0	20.00	August

Remark: ❶ production of *miang* is *kam* and of pomelo is fruit
❷ price of *miang* is baht *kam*$^{-1}$
❸ price of pomelo is baht fruit^{-1}

Table a.2 Present value of income based on opportunity cost of capital 12% per year

	Present value of income (baht ha^{-1})		
	Mature stage	Middle stage	Early stage
Rhetsa	128,429.08	111,060.60	4,478.64
Miang huapi	4,254.84	7,599.87	6,312.48
Miang klang	4,518.58	8,070.97	6,703.78
Miang soi	3,975.24	7,100.46	5,897.67
Miang moei	2,338.14	4,176.33	3,468.88
Mango	5,353.80	4,719.55	2,098.62
Pomelo	1,700.67	603.46	219.44
Peach	1,477.57	0	0
Total	152,047.92	143,331.26	29,179.50

Table a.3 Present value of cost based on opportunity cost of capital 12% per year.

	Present value of cost (baht ha^{-1})		
	Mature stage	Middle stage	Early stage
Weeding 1	485.30	485.30	485.30
Weeding 2	1,200.53	1,200.53	1,200.53
Picking *miang huapi*	2,127.41	3,799.94	3,156.25
Picking *miang klang*	2,259.28	4,035.49	3,351.90
Picking *miang soi*	1,987.61	3,550.23	2,948.85
Picking *miang moei*	1,169.08	2,088.17	1,734.43
Steaming and packaging *miang huapi*	390.03	696.66	578.65
Steaming and packaging *miang klang*	382.34	682.93	567.24
Steaming and packaging *miang soi*	312.34	557.89	463.39
Steaming and packaging *miang moei*	183.71	328.14	272.55
Harvesting rhetsa	3,389.18	2,745.98	206.15
Fuel wood for dry rhetsa	364.85	315.51	12.72
Harvesting mango, peach and pomelo	1,187.98	1,012.56	452.52
Manure for fruit trees	626.17	425.65	404.06
Total	16,065.80	21,924.98	15,834.53

Table a.4 Fresh yield of rhetsa and tree dimension.

Tree number	Yield (kg $tree^{-1}$)	BD (cm)	Height (cm)	Crown depth (cm)	Crown width (cm)
1	28	23.10	870.00	440.00	858.50
2	32	29.70	930.00	520.00	1,065.00
3	28	30.80	1,250.00	600.00	760.00
4	27	17.60	1,050.00	380.00	645.00
5	20	15.10	970.00	200.00	571.00
6	16	11.00	900.00	200.00	470.00
7	30	15.95	900.00	200.00	950.00
8	8	9.35	760.00	200.00	410.00
9	22	17.60	1,300.00	800.00	820.00
10	20	11.00	700.00	200.00	670.00

Table a.5 Average height, basal diameter (BD), crown edge height (CEH), crown depth (CD) and crown width (CW) of the species in each stage

	Height (cm)		BD (cm)		CEH (cm)		CD (cm)		CW (cm)	
	Mean	CV.	Mean	CV.	Mean	CV.	Mean	CV.	Mean	CV.
Mature stage										
Rhetsa	991.59	25.24	13.17	34.81	668.86	29.48	322.73	52.72	609.97	33.70
Mango	434.11	37.71	14.26	46.19	200.94	37.86	233.17	48.37	415.10	41.37
Pomelo	434.00	17.62	8.93	41.70	111.50	36.84	322.50	30.69	251.10	28.69
Peach	298.00	36.79	6.96	39.05	69.60	65.22	228.40	33.01	331.40	47.47
Jack fruit	730.00	48.76	13.02	41.69	176.67	29.92	553.33	56.64	380.00	26.28
Litchi	175.00	4.00	4.40	35.40	25.00	28.30	150.00	9.40	111.50	27.30
Miang	160.75	11.00	5.49	33.60	-	-	-	-	165.92	24.40
Middle stage										
Rhetsa	991.61	19.25	21.25	28.68	622.58	24.24	369.03	31.48	728.66	26.40
Mango	370.21	14.58	15.01	23.25	185.00	18.25	179.49	19.31	433.33	15.74
Pomelo	377.50	41.29	8.80	38.50	70.25	80.78	307.25	42.16	244.13	56.06
Miang	143.58	11.60	3.49	30.30	-	-	-	-	115.88	37.90
Early stage										
Rhetsa	428.75	43.32	5.25	48.94	271.25	36.63	157.50	58.86	254.30	41.01
Mango	292.38	46.16	8.55	58.10	132.62	39.85	159.77	57.53	269.73	50.40
Pomelo	600.00	-	12.90	-	-	-	-	-	315.00	-
Guava	350.00	-	6.60	-	-	-	-	-	379.00	-
Santol	390.00	-	7.70	-	-	-	-	-	307.00	-
Litchi	147.53	27.90	3.72	37.20	-	-	-	-	128.77	41.60
Miang	151.50	25.40	2.77	18.60	-	-	-	-	101.17	32.30

Table a.6 Average height, crown depth, crown edge height and crown depth of different age of mango

Age (year)	Sample size	Height (cm)		Crown depth (cm)		Crown edge height (cm)		Crown width (cm)	
		Mean	CV.	Mean	CV.	Mean	CV.	Mean	CV.
2	10	119.80	16.93	51.50	45.19	68.30	27.13	94.15	22.30
4	10	255.70	13.86	123.70	42.76	132.00	26.24	248.40	32.89
8	44	399.17	10.68	224.58	18.47	174.58	13.72	365.17	18.33
10	71	374.68	11.92	181.60	17.47	187.23	16.20	226.72	18.75

Table a.7 Mean and coefficient variation of α, q, L_1 and β of each species.

	α		q		L_1		β	
	Mean	CV.	Mean	CV.	Mean	CV.	Mean	CV.
Rhetsa	1.08	37.29	0.81	40.13	31.47	68.65	66.33	18.18
Mango	1.24	17.68	0.71	33.01	16.34	37.92	57.99	18.87
Pomelo	1.35	28.73	0.77	23.16	13.00	18.62	63.52	22.40
Miang	1.15	19.34	0.82	49.05	15.28	32.62	62.51	14.03

Table a.8 Specific root density of rhetsa, mango, pomelo and *miang*

	Number of samples	δ	CV.
Rhetsa	4	0.53	11.63
Mango	5	0.44	5.91
Pomelo	4	0.43	9.43
Miang	4	0.44	13.18

Table a.9 Proximal root diameter ($D_{prox.}$), number of branching point per branch event of root (N_k), root altitude (N_p) and length of the main axis.

	D_{prox} (cm)		N_k		N_p		N_{max} (cm)	
	Mean	CV.	Mean	CV.	Mean	CV.	Mean	CV.
Rhetsa	8.94	42.27	2.04	5.00	9.95	24.09	307.19	49.44
Mango 1 (10 years, seedling, spacing 4*4 m)	5.23	31.93	2.02	2.97	7.18	15.78	172.35	10.79
Mango 2 (10 years, marcotting, spacing 4*4 m)	3.72	23.80	2.10	9.41	6.36	12.37	83.36	11.27
Mango 3 (10 years, marcotting, spacing 8*4 m)	4.27	44.76	2.00	0	5.91	22.61	85.93	21.64
Mango 4 (8 years, marcotting, spacing 8*4 m)	3.44	17.73	2.00	0	6.18	6.54	97.44	8.14
Mango 5 (4 years, marcotting, spacing 8*4 m)	2.64	44.38	2.00	0	5.83	22.60	92.01	24.07
Pomelo	3.62	16.97	2.00	0	6.02	11.55	76.42	17.04
Miang 1 (randomly-and-wide-planted)	3.01	13.31	2.00	0	6.94	12.88	114.32	30.28
Miang 2 (row-planted)	2.07	21.81	2.00	0	5.19	19.89	74.93	29.28

Table a.10 Total root length (L_t), total root dry weight (W_t), specific root length (L_{rw}) and shallow rootedness (SR).

	L_t (m)		W_t (kg)		L_{rw} (cm/g)		SR	
	Mean	CV.	Mean	CV.	Mean	CV.	Mean	CV.
Rhetsa	13,735.52	91.19	81.81	79.46	14.97	81.38	0.44	9.54
Mango 1 (10 years, seedling, spacing 4*4 m)	1,214.19	32.64	28.69	20.27	6.80	60.51	0.36	5.79
Mango 2 (10 years, marcotting, spacing 4*4 m)	304.33	6.72	5.95	29.00	7.37	39.89	0.71	12.53
Mango 3 (10 years, marcotting, spacing 8*4 m)	305.08	43.65	10.02	18.46	6.93	35.19	0.38	33.31
Mango 4 (8 years, marcotting, spacing 8*4 m)	316.46	15.78	6.72	24.05	6.25	25.99	0.52	10.53
Mango 5 (4 years, marcotting, spacing 8*4 m)	218.78	15.68	2.81	31.58	10.56	40.99	0.41	14.04
Pomelo	266.13	35.26	6.38	15.90	5.76	74.87	1.03	8.79
Miang 1 (randomly-and-wide-planted)	356.43	20.37	2.95	13.82	12.11	46.45	0.77	37.52
Miang 2 (row-planted)	65.69	49.22	1.10	62.26	11.13	50.52	0.51	13.61

Table a.11 The proximal root angled less and more than 45° and proximal root diameter classified by species and direction.

	Proximal root < 45°				Proximal root > 45°				D_{prox}			
	E	W	N	S	E	W	N	S	E	W	N	S
Rhetsa	4.0	0.5	2.0	0.0	0.0	2.0	2.0	2.0	6.87	10.61	12.83	5.85
Mango 1	5.0	4.5	4.0	3.5	2.0	2.5	2.0	2.0	4.44	5.36	4.16	6.93
Mango 2	4.5	5.5	3.0	4.0	0.5	0.5	0.5	1.0	4.10	3.70	3.52	3.55
Mango 3	3.0	7.0	4.5	1.5	1.5	1.5	1.0	2.0	3.92	3.38	5.90	3.88
Mango 4	4.0	5.5	4.0	4.0	2.5	1.0	1.0	0.5	3.71	3.10	3.10	3.82
Mango 5	2.0	3.0	5.5	3.0	2.0	2.0	2.0	2.0	4.25	2.19	1.32	2.80
Pomelo	5.5	6.0	6.5	6.0	0.0	0.0	0.0	0.5	3.62	4.13	3.97	2.72
Miang 1	2.5	3.0	3.0	1.5	2.0	0.0	0.0	1.5	3.12	3.07	3.30	3.01
Miang 2	1.5	1.5	3.5	2.5	1.5	1.0	1.0	0.5	1.60	2.01	2.12	2.55

Table a.12 Total root length (L_t) and total root dry weight (W_t) classified by species and direction.

	L_t (cm)				W_t (g)			
	E	W	N	S	E	W	N	S
Rhetsa	494,924	232928 4	210,422	160,658	56851	69673	20072	13414
Mango 1	55,500	52,040	76,510	58,790	14,180	19,010	7,748	14,62 0
Mango 2	16,080	15,360	12,520	16,910	3,548	3,827	1,642	2,883
Mango 3	12,210	11,380	27,240	10,180	4,485	4,841	8,211	2,494
Mango 4	24,063	11,783	16,604	10,840	4,711	2,645	2692	3,400
Mango 5	10,710	11,710	2,890	18,447	2,351	1,031	286	1,943
Pomelo	16,504	7,806	20,811	7206	3,133	3,807	3,313	25,07
Miang 1	19,000	2,935	18,995	8,401	1,598	576	1,455	516
Miang 2	3,817	2,216	2,737.8	10,880	275	243	749	1,033

Table a.13 Specific root length (L_{rw}) and length of the main axis (N_{max}) classified by species and direction.

	L_{rw} (cm g^{-1})				N_{max} (cm)			
	E	W	N	S	E	W	N	S
Rhetsa	16.73	5.46	33.02	12.03	235.75	261.97	327.41	520.32
Mango 1	6.47	4.86	10.64	5.14	183.88	184.75	173.04	147.71
Mango 2	6.51	6.32	9.05	7.65	80.88	77.05	86.37	89.13
Mango 3	7.61	9.39	5.13	5.61	80.90	64.29	106.84	91.70
Mango 4	3.37	5.95	7.83	4.84	104.38	89.84	101.43	94.11
Mango 5	5.39	14.04	11.47	11.35	97.45	98.87	63.02	106.17
Pomelo	6.24	2.95	2.76	11.07	92.11	64.93	77.32	71.82
Miang 1	14.78	5.37	12.70	15.58	126.60	74.40	157.30	103.97
Miang 2	14.94	8.87	5.82	14.61	89.92	52.94	75.40	81.47

APPENDIX B

STATISTICAL ANALYSIS

Table b.1 Regression analysis relationship between yield of *miang*, and density of forest tree and *miang*

Multiple R	0.99111
R^2	0.98230
Adjust R^2	0.97790
Standard error	701.710
F value	221.940
Significant F	0.00000
Cases	11

Variable	B	SE B	β	T ratio	Prop.
Tree	7.0237	5.8003	0.05733	1.21	0.2605
Miang	3.9927	0.1898	0.99591	21.04	0.0000
Constant	-972.044	457.59		-2.12	

Table b.2 Regression analysis relationship between yield of rhetsa and crown width.

Multiple R	0.91088
R^2	0.82969
Adjust R^2	0.80841
Standard error	3.22612
F value	38.9742
Significant F	0.00020
Cases	10

Variable	B	SE B	β	T ratio	Prop.
Crown width	22.0158	3.5265	0.9109	6.243	0.0002
Constant	-120.923	23.092		-5.237	0.0008

Table b.3 One way analysis of variance for height, crown depth, crown edge height and crown width across fruit tree species in mature stage

Source	DF	Height		Crown depth		Crown edge height		Crown width	
		MS	Prop.	MS	Prop.	MS	Prop	MS	Prop
Between	4	$2.91*10^5$	0.00	$6.58*10^5$	0.00	$7.10*10^4$	0.00	$1.98*10^5$	0.00
Within	108	$1.03*10^4$		$8.31*10^3$		$2.70*10^3$		$1.34*10^5$	
Total	112								

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.4 Regression analysis relationship between height and age of mango.

Multiple R	0.88390
R^2	0.78128
Adjust R^2	0.77931
Standard error	0.17511
F value	396.505
Significant F	0.00000
Cases	113

Variable	B	SE B	β	T ratio	Prop.
Age	0.6686	0.0336	0.8839	19.912	0.00
Constant	85.026	5.9668		14.250	

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.5 Regression analysis relationship between crown depth and age of mango.

Multiple R	0.78196
R^2	0.61146
Adjust R^2	0.60796
Standard error	0.32346
F value	174.682
Significant F	0.00000
Cases	113

Variable	B	SE B	β	T ratio	Prop.
Age	0.8196	0.0620	0.7819	13.217	0.00
Constant	30.934	4.0098		7.715	0.00

Table b.6 Regression analysis relationship between crown edge and age of mango.

Multiple R	0.83057
R^2	0.68984
Adjust R^2	0.68705
Standard error	0.19262
F value	246.880
Significant F	0.00000
Cases	113

Variable	B	SE B	β	T ratio	Prop.
Age	0.5803	0.0369	0.8306	15.712	0.00
Constant	48.868	3.7722		12.955	

Table b.7 Regression analysis relationship between crown width and age of mango.

Multiple R	0.92253
R^2	0.85107
Adjust R^2	0.84973
Standard error	0.18854
F value	634.301
Significant F	0.00000
Cases	113

Variable	B	SE B	β	T ratio	Prop.
Age	0.9104	0.0362	0.9225	25.185	0.00
Constant	54.712	4.1338		13.235	

Table b.8 One way analysis of variance for proximal root diameter (D_{prox}), specific root length (L_{rw}) and length of the main axis (N_{max}) for 4, 8 and 10 year old mango

Source	DF	D_{prox}		L_{rw}		N_{max}	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	2	5.33	0.07	42.94	0.02	265.18	0.43
Within	21	1.80		9.12		299.45	
Total	23						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.9 One way analysis of variance for proximal root diameter (D_{prox}), specific root length (L_{rw}) and length of the main axis (N_{max}) for 10 year old of seedling mango, marcotting mango and pomelo, planted spacing 4*4 m

Source	DF	D_{prox}		L_{rw}		N_{max}	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	2	6.47	0.02	5.36	0.70	$2.30*10^4$	0.00
Within	21	1.31		14.74		201.31	
Total	23						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.10 One way analysis of variance for proximal root diameter (D_{prox}), specific root length (L_{rw}) and length of the main axis (N_{max}) for 10 year old of marcotting mango planted spacing 4*4 and 4*8 m

Source	DF	D_{prox}		L_{rw}		N_{max}	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	1	1.23	0.47	0.77	0.75	26.47	0.73
Within	14	2.22		7.31		216.95	
Total	15						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.11 One way analysis of variance for proximal root diameter (D_{prox}), specific root length (L_{rw}) and length of the main axis (N_{max}) for *miang* which row-planted and randomly planted

Source	DF	D_{prox}		L_{rw}		N_{max}	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	1	3.56	0.00	3.86	0.73	$6.20*10^3$	0.02
Within	14	0.18		31.63		934.44	
Total	15						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.12 One way analysis of variance for total root length (L_t), total root dry weight (W_t) and shallow rootedness (SR) for 4, 8, 10 year old mango.

Source	DF	L_t		W_t		SR	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	2	$1.14*10^8$	0.25	$5.21*10^7$	0.00	0.023	0.08
Within	9	$7.14*10^7$		$2.27*10^6$		0.006	
Total	10						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.13 One way analysis of variance for total root length (L_t), total root dry weight (W_t) and shallow rootedness (SR) for 10 year old of seedling mango, marcotting mango and pomelo, planted spacing 4*4 m

Source	DF	L_t		W_t		SR	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	2	$1.15*10^{10}$	0.00	$6.77*10^8$	0.00	0.439	0.00
Within	9	$5..54*10^8$		$1.26*10^7$		0.005	
Total	10						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.14 One way analysis of variance for total root length (L_t), total root dry weight (W_t) and shallow rootedness (SR) for 10 year old of marcotting mango planted spacing 4*4 and 4*8 m

Source	DF	L_t		W_t		SR	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	2	$1.13*10^3$	0.992	$3.31*10^7$	0.018	0.221	0.005
Within	9	$9.08*10^7$		$3.20*10^6$		0.011	
Total	10						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.15 One way analysis of variance for total root length (L_t), total root dry weight (W_t) and shallow rootedness (SR) for *miang* which row-planted and randomly-planted

Source	DF	L_t		W_t		SR	
		MS	Prop.	MS	Prop.	MS	Prop.
Between	2	$1.36*10^9$	0.001	$6.84*10^6$	0.003	0.138	0.126
Within	9	$3.75*10^7$		$3.19*10^5$		0.044	
Total	10						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

Table b.16 Regression analysis between root volume and tree volume across the species

Multiple R	0.71424
R^2	0.51014
Adjust R^2	0.49529
Standard error	0.49529
F value	34.3660
Significant F	0.00000
Cases	35

Variable	B	SE B	β	T ratio	Prop.
Root	0.80317	0.13701	0.71424	5.862	0.0000
Constant	0.65945	0.22539		2.926	0.0062

Table b.17 Linear regression analysis between root volume and tree volume of mango

Multiple R	0.83629
R^2	0.69938
Adjust R^2	0.68268
Standard error	69429.3
F value	41.8759
Significant F	0.00000
Cases	20

Variable	B	SE B	β	T ratio	Prop.
Mango's root	1.08541	0.16773	0.83628	6.471	0.0000
Constant	-10758.68	23758.03		-0.453	0.6561

Table b.18 Linear regression analysis between root volume and tree volume of *miang*.

Multiple R	0.89422
R^2	0.79964
Adjust R^2	0.76624
Standard error	2705.66
F value	23.9455
Significant F	0.00000
Cases	8

Variable	B	SE B	β	T ratio	Prop.
Mango's root	0.14214	0.02905	0.89422	4.893	0.0027
Constant	334.15	1795.77		0.186	0.8585

Table b.19 One way analysis of variance of 4 directions of proximal root lesser and more than 45° across species, i.e., rhetsa, mango 1, mango 2, mango 3, mango 5, *miang* 1 and *miang* 2.

Sources	DF	Proximal root < 45		Proximal root > 45		L_t		W_t	
		MS	Prop.	MS	Prop.	MS	Prop.	MS	Prop.
Direction	3	1.632	0.642	0.891	0.312	$6.44*10^{10}$	0.597	$1.11*10^{8}$	0.763
Within	59	2.872		0.734		$1.01*10^{11}$		$2.85*10^{8}$	
Total	62								

Table b.20 One way analysis of variance of 4 directions of L_{rw}, M_{max} and D_{max} across species, i.e., rhetsa, mango 1, mango 2, mango 3, mango 5, *miang* 1 and *miang* 2.

Sources	DF	L_{rw}		N_{max}		D_{prox}	
		MS	Prop.	MS	Prop.	MS	Prop.
Direction	3	43.093	0.306	565.054	0.966	1.100	0.895
Within	59	34.958		7133.69		5.526	
Total	62						

Remark: Standard errors and critical values of differences vary between comparisons because of unequal sample sizes.

APPENDIX C

IMAGES IN SPATIAL ANALYSIS

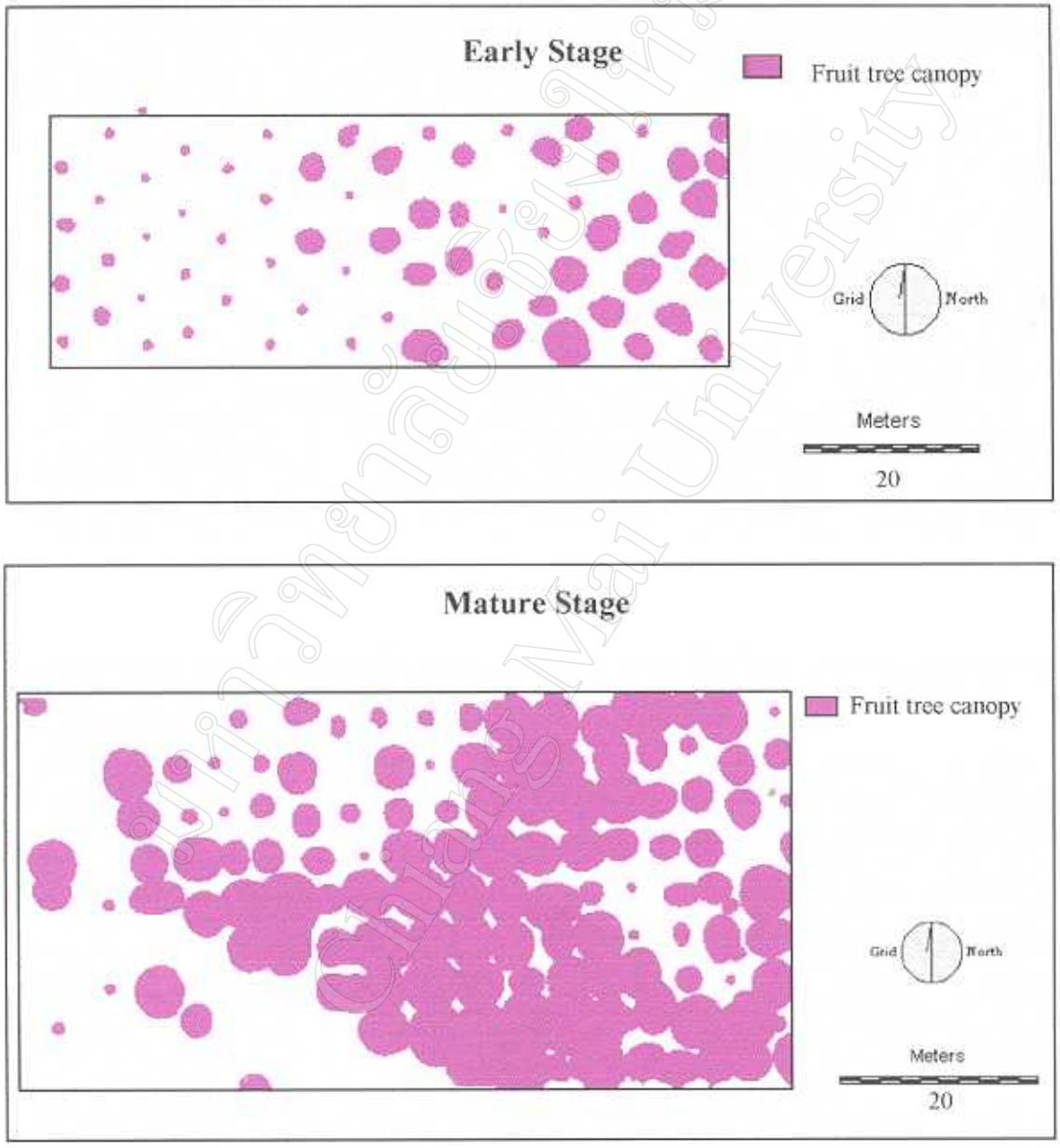

Figure c.1 Canopy cover of fruit trees in mature stage, middle stage and early stage

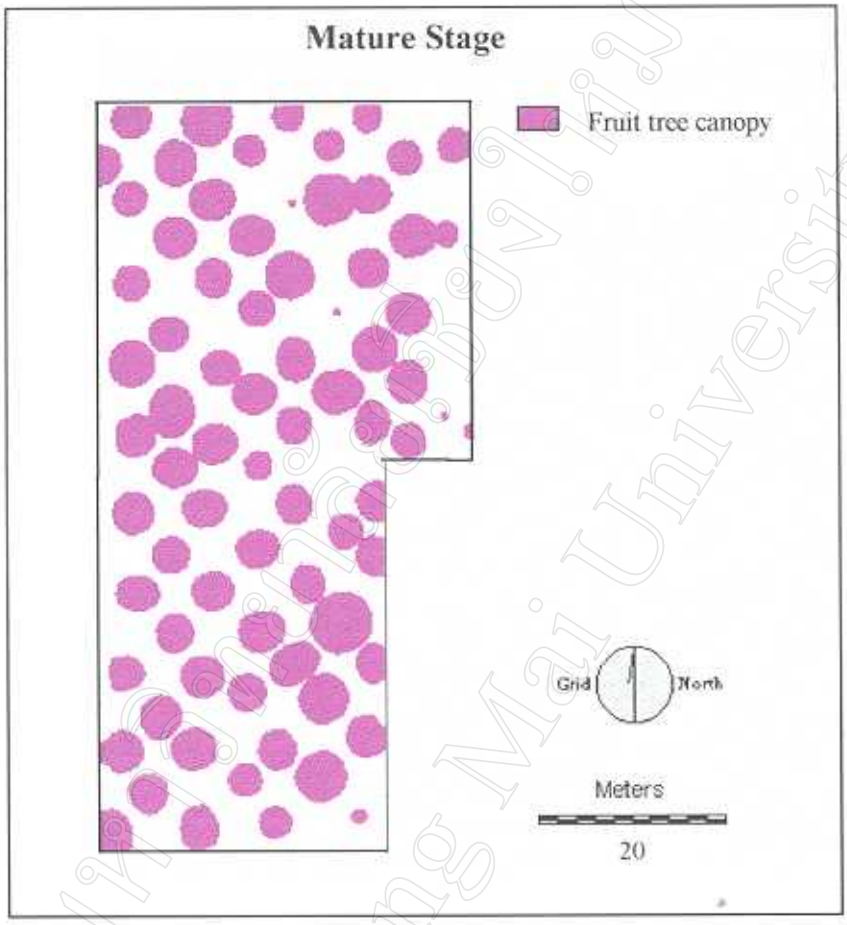

Figure c.1 (continued)

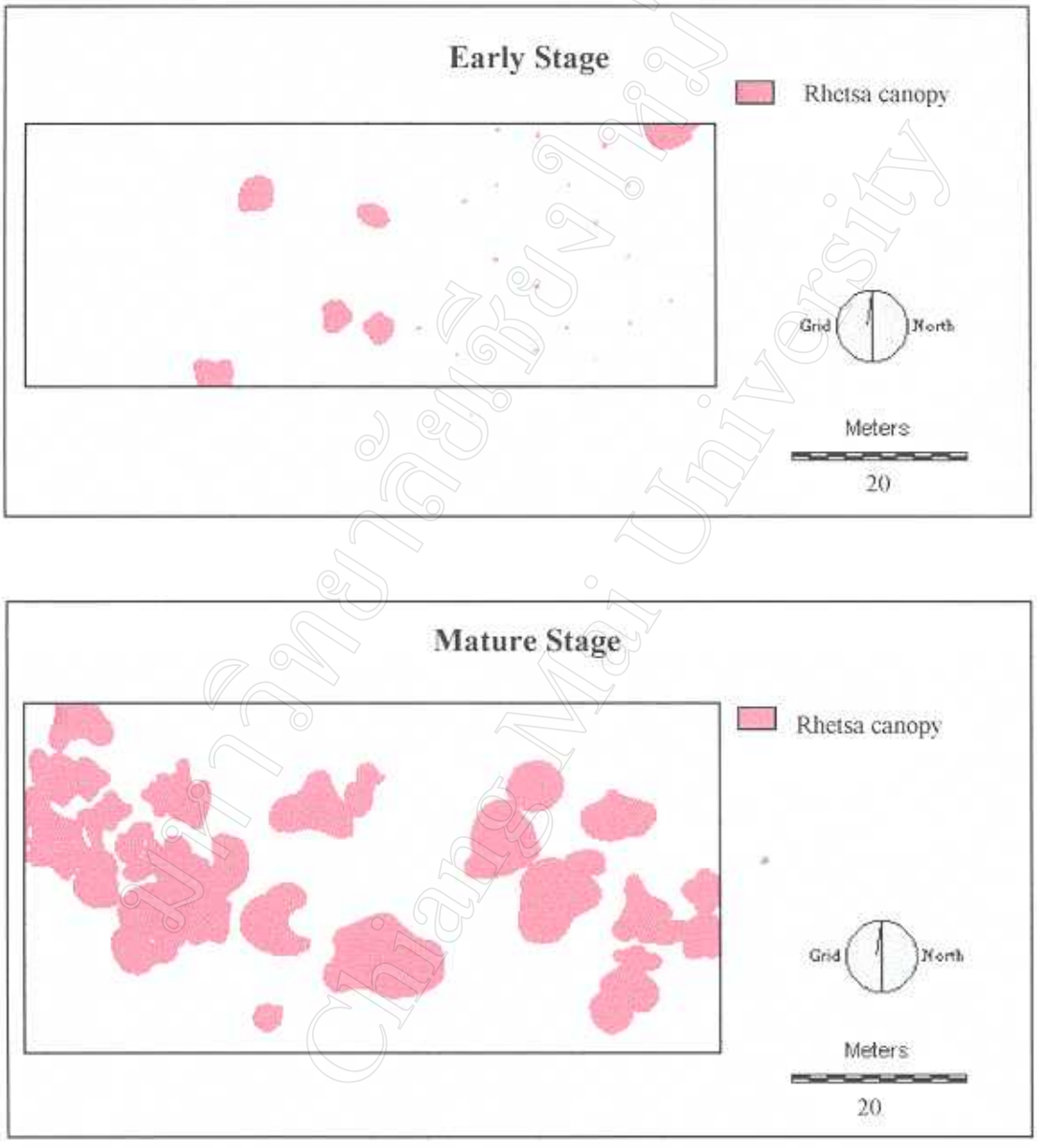

Figure c.2 Canopy cover of rhetsa in mature stage, middle stage and early stage

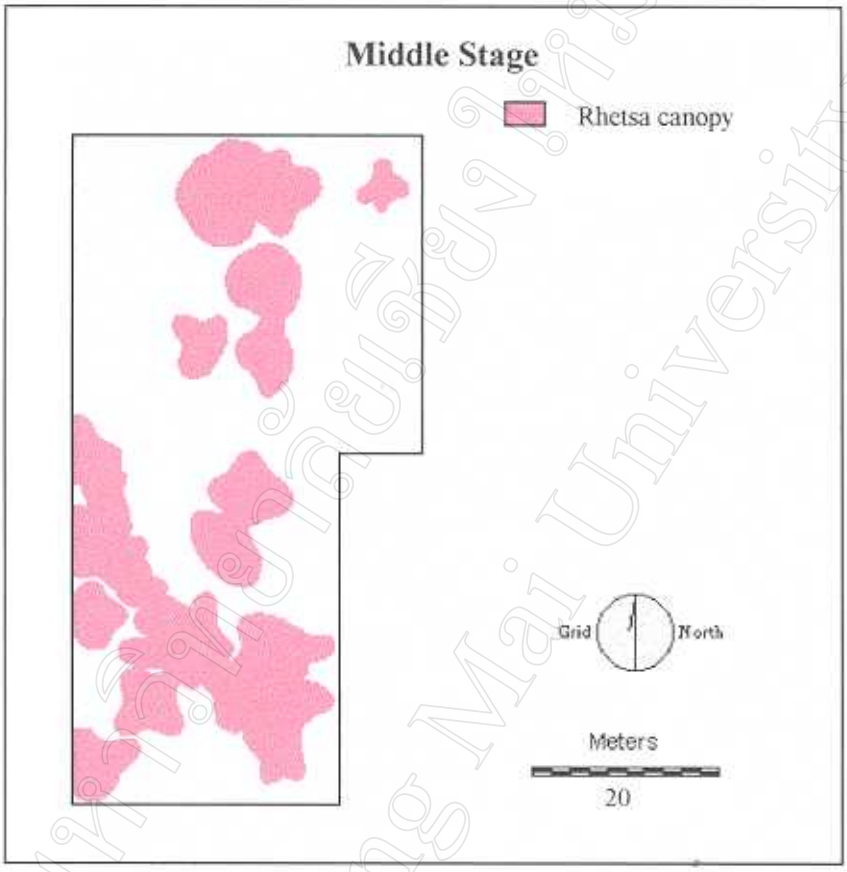

Figure c.2 (continued)

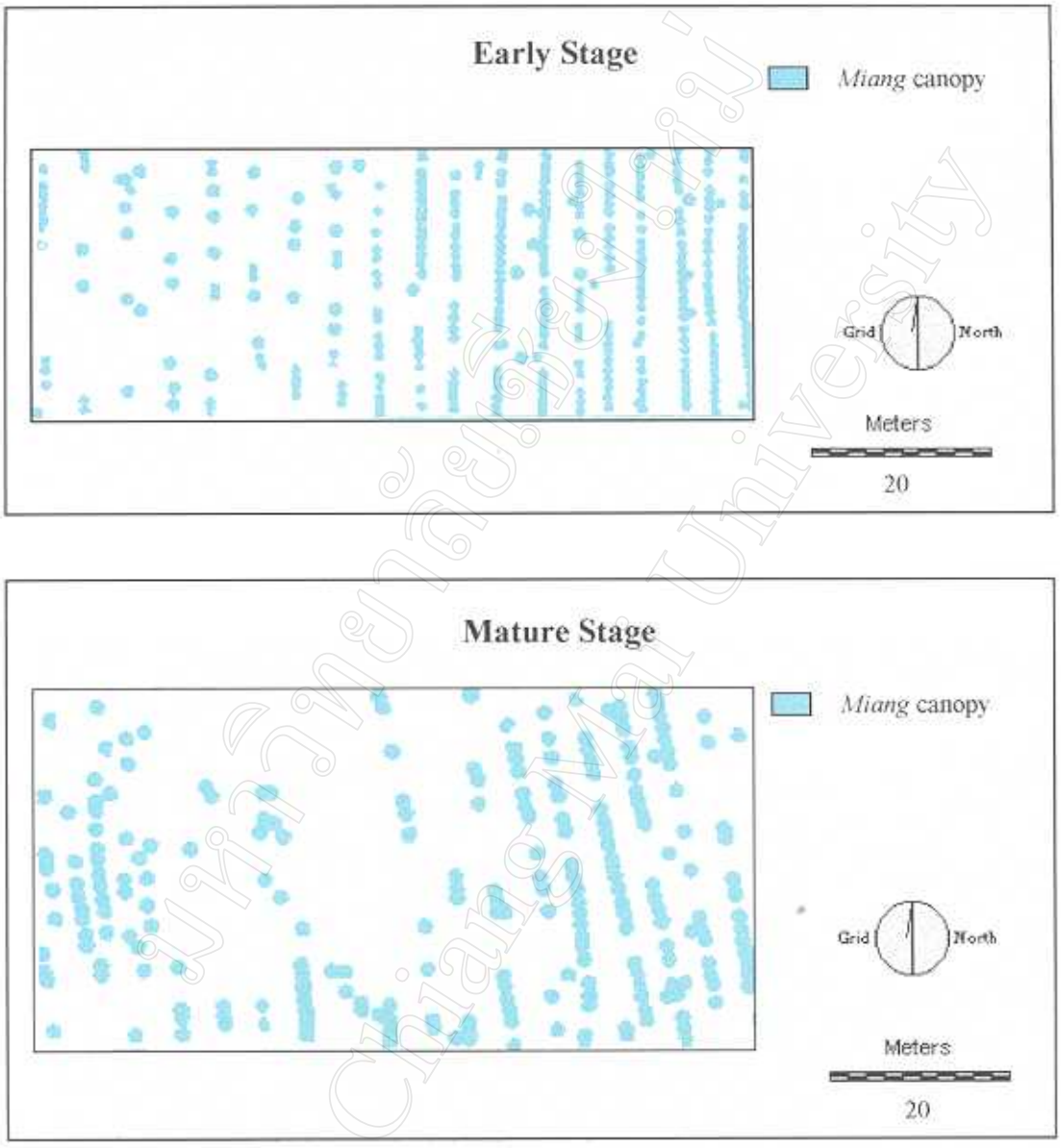

Figure c.3 Canopy cover of *miang* in mature stage, middle stage and early stage

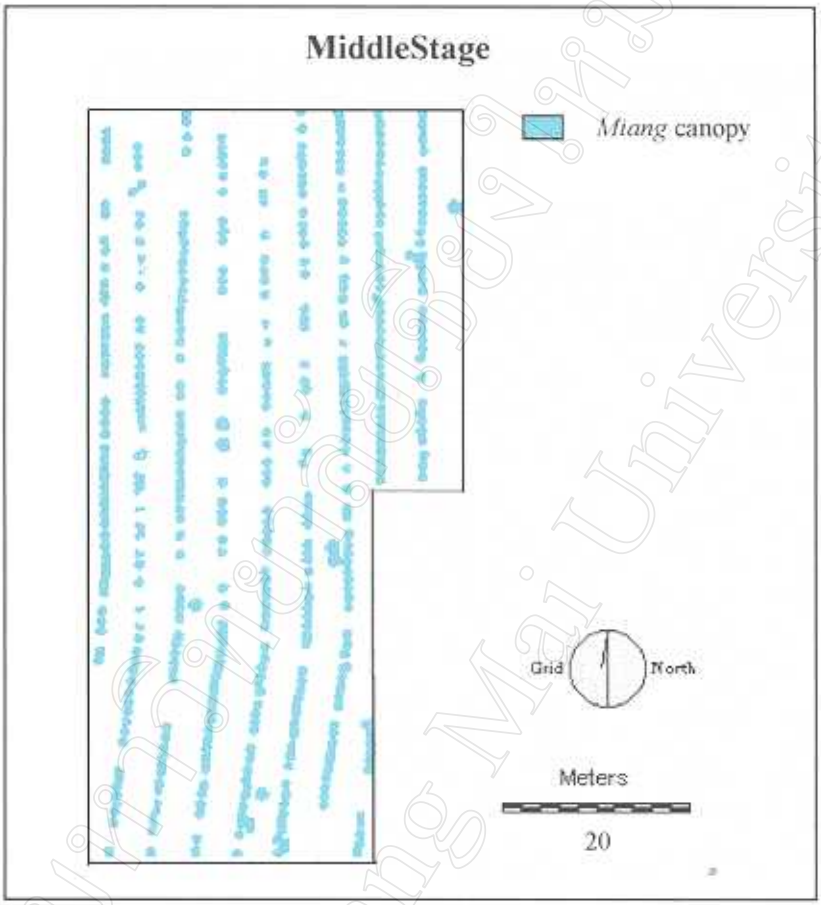

Figure c.3 (continued)

GLOSSARY

Baht	Thai currency (1US$ = 31.93 baht at August 5, 1997)
Ban	Village, the forth sub-division of Thailand
Huapi	Beginning of the year
Kaeo	A variety of mango
Kam	Handfuls of processed *miang* leaves, weight about 500 g
Kieo Sawui	A variety of mango
Klang	Middle
Miang	A kind of tea product which it is produced from fermented tea leaves without drying. Consumers use the product by chewing tea leaves. It is traditional production in northern Thailand.
Miang huapi	*Miang huapi* is the first harvest of *miang*
Miang klang	*Miang klang* is the 2th harvest of *miang*
Miang moei	*Miang moei* is the last (4th) havesting season of maing
Miang Soi	*Miang soi* is the 3th harvest season of maing
Moei	Dew
Nang Klangwan	A variety of mango
Pimsen	A variety of mango
So Kho 1	The right of possession of the land issue by Department of Land, Ministry of Interior. The farmer can not sell this land but it can be inherited.
Z. rhetsa	A tree classified as family RUTACEAE, the common name is rhetsa, people in northern Thailand use the dry fruit as spicy and condiment for food.

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