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SUMMARY TABLES

OF

THE KASETSART-CORNELL AGRICULTURAL ECONOMICS RESEARCH PROJECT

AMPHOE MANOROM

SOCIAL, TRACTOR, WATERPUMP,
INSECTICIDE AND OTHER CHEMICALS, FERTILIZER

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Kasetsart University, March 1969

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INTRODUCTION

This is the third set of summary tables to be presented by the Kasetsart-Cornell Agricultural Economics Research Project. Previous summary tables were: (1) 1967 crop production plus family data, and (2) double cropping of rice and vegetables in Tambon Kungsamphaow and Tambon Thachanuan, dry season 1967.

Data for this summary was collected from the same 139 farmers as in the 1967 production sample. Dates collected were August 20 to November 17, 1968.

No attempt has been made to analyze the data. It is presented in the form of averages, number reporting, and percentages.

Dates for seedbed preparation and transplanting are given under the section: "Tractor Use".

Lay out: Social questionnaire P.3

Tractor use P. 18

Water pump use P.25

Other chemicals (Insecticide, Herbicide, Crab killer) P.31

Fertilizer use P.34

SOCIAL QUESTIONNAIRE

A. Averages determined using whole sample unless No. reporting is specified in brackets.

B. Tambon Kungsamphaow = 1

Tambon Thachanuan = 2

Tambon Hangnamsakhon = 3

I. Farming experience

Tambon	1	2	3
No. farmers sampled	17	58	63
Average years farming	35	29	35
Average years growing rice	34	29	34
Average years growing corn home use	4 (5)	13 (16)	17 (21)
Average years growing corn for sale	2 (3)	3 (11)	9 (38)
Average years growing vegetable home use	24 (10)	21 (54)	19 (55)
Average years growing vegetable for sale	3 (5)	0	3 (2)
Average years using fertilizer	2 (13)	2 (42)	2 (37)
Average years using tractor	5 (17)	4 (44)	4 (53)
Average years using water pump			
Rented	8 (8)	3 (13)	2 (7)
own	3 (9)	5 (18)	4 (8)
Average years used insecticide	4 (5)	4 (26)	4 (31)
Average years used herbicide	7 (17)	5 (41)	6 (31)
Average years used crab killer	7 (17)	6 (43)	5 (25)
Average times double crop rice	1 (4)	1 (2)	0

2. Other experience

Tambon	1	2	3
Average years used mechanical equipment	1.35	1.62	0.46
No. doing extra work:			
Weaving	-	6	-
Carpentry	2	4	5
Barber	-	2	-
Soldier	-	2	4
Road work	-	-	-
Sell general goods	3	1	4
Sell livestock	-	1	2
Saw wood	-	1	-
Dig. canal	-	2	-
Harvest labor	-	-	2
Carrier	2	-	1
Asst. Phujalbahn	-	-	2
Teacher	1	-	1
Tractor driver	-	1	-
Location of other work:			
At on near home	8	19	14
Far from home	-	2	8
% Farmers doing extra work	47	31	30

3. Exposure within community

Tambon			2	3
Does your neighbour use tractor, etc.?				
Tractor:				
% Reporting	Yes	100	83	95
	No	-	17	5
	DK	-	-	-
Water pump				
% Reporting	Yes	70	55	27
	No	24	45	73
	DK	6	-	-
Fertilizer				
% Reporting	Yes	100	86	65
	No	-	14	33
	DK	-	-	2
Insecticide, Herbicide				
% Reporting	Yes	100	100	70
	No	-	-	25
	DK	-	-	5
Rice Double crop				
% Reporting	Yes	6	2	-
	No	94	98	100
	DK	-	-	-
Average				
No. Yrs. Lived				
	In Village	44	36	35

3. Exposure within community (con't)

Tambon	1	2	3
% Identifying			
Kamnan correctly	100	100	100
% Farmers member			
of a group	71	57	51
% In each group and			
av. yrs. of membership			
brackets			
Land coop.	71 (3.5)	40 (4)	27 (4.4)
Private Irrig.			
Society	30 (3)	9 (2)	8 (1.8)
Credit coop.	6 (4)	0	21 (10)
Farmer group	30 (3.4)	14 (3)	3 (2)
R. I. D. Water group	-	2 (1)	-
Bank for Agric. and			
Ag. Coop.	-	-	5 (1)
Funeral Insurance	-	-	-
Wat Activities: %			
Families contributing			
Labour	82	79	89
Money	100	96	100
Food	100	93	100
Gov't Activities: %			
Families contributing			
Labour	12	7	2
Money	-	5	2
Food	-	5	13

3. Exposure within community (con't)

Tambon	1	2	3
% No. Families reporting			
Activity by gov't Agencies:	30%	36%	21%
Activities: (No. reporting)			
Improve Roads	2	13	4
Build new road	-	1	-
Supply water	3	-	1
Improve canals	-	3	4
Dig wells	-	2	-
Make dikes	-	-	3
Supply electricity	-	-	2
Vet. visit	-	-	-
Promote Veg. Production	-	-	-
Spray for Malaria	-	-	-
Pest Control Office Visit	-	-	-
Promote Rice Double Crop	-	1	-

4. Exposure outside community

Tambon	1	2.	3
% Farmers own radio	94	90	84
% Listen to radio			
Every day	35	45	49
Sometimes	35	19	27
Seldom	24	26	8
% Farmers who saw movie			
Last year	77	62	71
Av. No. of Movies Seen (whole sample)	9	6	3
% Farmers ever saw T.V.	71	50	63
Av. No. time/month read a newspaper	6	2	1
Reading newspaper ability			
% Easily	35	30	25
% Some difficulty	24	30	19
% Much difficulty	24	24	25
% Unable	17	16	30
% Read about farming 1968	47	19	16
% Heard new farming ideas	41	29	27
% Correctly locating Rice Station in Chalnai	47	16	37

4. Exposure outside community (con't)

Tambon	1	2	3
<u>% No. Heard About:</u>			
Fertilizer use	24	16	25
Other chem. use	24	5	3
Irrigation	-	2	-
Farm medicines	-	-	-
General farming	6	7	3
Livestock production	-	2	2
Fruit gardens	-	2	-
Rice double crop	6	2	-
Veg. production	6	-	-
<u>% No. Farmers who heard from:</u>			
Radio	6	19	5
Land coop.	6	2	3
Private Irrig. Society	-	2	-
R.I.D.	6	-	-
Agric. Officer	12	2	5
Neighbour	-	2	6
Phujabahn or Khamnan	-	-	6
Pamphlet	12	2	2

* General Farming includes: Seed selection, Spacing, Varieties, Transplanting, Increase yield.

5. Government Agencies

Tambon	1	2	3
% Member of Land Coop.	71	43	27
Reason for Joining:			
Water	2	8	2
Credit	4	9	10
Help & Advice	7	6	6
Fertilizer	1	8	1
Chemicals	-	1	-
Av. No. Meetings per Year	3	2	2
Is land coop. officer from Manorom usually present At Meetings:			
Yes	11	19	15
Sometimes	-	4	-
No	-	-	-
DK	1	2	2
No. Seeking Advice on Fertilizer Use From: (in Brackets on Other Chem.)			
Land Coop.	3 (3)	12 (5)	7 (1)
Neighbour	7 (7)	23 (23)	12 (12)
Shop	3 (4)	9 (18)	2 (6)
Farmer Group	1 (1)	3 (1)	0 (0)
Amphoe Office	0 (0)	2 (2)	4 (4)
Only Sees others	3 (3)	9 (9)	8 (16)
Pest Control Office	0 (0)	0 (1)	0 (0)

5. Government Agencies (con't)

Tambon	1	2	3
% Farmers Attended Speech by Gov't Officer	82	76	53
*Av. No. of Times/year Hear Speech on Agric. Problems by:			
Land Coop. Officer	3 (9)	4 (34)	2 (18)
Agric. Officer	2 (5)	2 (5)	1 (10)
R.I.D. Officer	4 (4)	5 (9)	4 (8)
Pest Control	0	2 (3)	0
Rice Officer	0	2 (2)	0
Credit Coop.	0	3 (2)	1 (3)
Bank Officer	0	0	0
Merchant	0	0	0
Amphoe Officer	3 (5)	3 (12)	2 (9)
Farmer Group	2 (1)	1 (3)	1 (1)
Prte. Irrig. Society	0	2 (1)	0
No. Farmers Reporting who Understood the Speech:			
Yes	1	11	6
No	-	1	-
Some	13	33	31

* Title used represents farmer opinion as to who was speaking No. Reporting
in brackets.

Tambon	1	2	3
% Owning chime clock	77	16	18
% Owning motorcycle	6	5	2
Av. No. Times Visit/year (No. Reporting in brackets)			
Thanamoy	9 (3)	35 (48)	10 (9)
Manorom	166 (17)	16 (51)	17 (51)
Chainat	9 (14)	6 (44)	9 (52)
Takli	4 (4)	11 (10)	16 (56)
Paknampo	3 (4)	6 (41)	5 (11)
Lop Buri	0	5 (4)	1 (5)
Bangkok	1 (2)	1 (6)	1 (2)
What Causes Malaria %?			
Mosquito	71	53	56
Don't Know	29	47	44
Mosquitoes breed: (No. reporting)			
Any Place with Water	6	20	17
Dirty Water	5	4	12
Other	1	7	6
% Farmers Having Relatives in a Town:	30	36	35
Av. No. Times Per Year Farmer Visits Relatives in Town: (No. Reporting in Brackets)	11 (5)	4 (14)	9 (13)
Av. No. Times Per Year Relatives Visit Farmer: (No. Reporting Brackets)	28 (5)	3 (14)	4 (11)

6. Urban Influence (cont)

Tambon	1	2	3
What Would You Like the Gov't To Do In Your Area?			
% Replying:			
Irrigation (canals)	53%	28%	48%
Roads (bridges)	6	24	35
Fertilizer	0	2	2
Electricity	6	0	2
Mechanical Equipment	0	10	2
Level Land	12	5	6
Provide Chemicals	6	7	0
More Credit	6	12	5
Double Crop Project	0	2	0
Fish	0	2	0
Higher Price for Rice	6	0	0
Don't Know	12	22	8
Community Development	12	9	21
Livestock	0	0	0

7. Economic Indicators

(1967 Season unless specified otherwise)

Tambon	1	2	3
No. Farmers Sampled	17	58	64
Av. No. rai farmed 1968 (Rice)	39	37	50
Av. Tang (Non-glutinous rice) Produced	1,450	42	714
Av. Yield/Rai	40	20.2	18.1
Av. Tang Sold (As of June 1968)	560	92	328
% Farmers Sold Rice by June, 1968	82%	98%	60%
Av. Value of Household (Baht)	22,411	16,080	14,285
Av. Present Debt (All Sample) Baht	2,747	5,897	9,983
% of Total Debt Owed:			
Merchant	0	18%	26%
Gov't Agency	41%	8%	13%
Relation	46%	46%	31%
Landlord	0	1%	0
Neighbour	13%	27%	30%
% No. with debt			
2,000 Baht or less	35	12	16
% With No. Debt.	24	21	16
% Farmers Renting-in Land	53%	52%	33%
% Farmers Renting out	6%	19%	19%

7. Economic Indicators (cont)

Tambon	1	2	3
% Farmers Using Fertilizer	94%	78%	38%
% Farmers Using Insecticide	18%	47%	36%
% Farmers Using Herbicide	100%	71%	44%
% Farmers Using Crab Killer	94%	55%	36%
% Farmers Using Water Pumps	65%	60%	17%
% Farmers Using Tractor to Plow	94%	76%	84%

8. Age and Family Data

Tambon	1	2	3
Av. Farmer Age (Man)	50	46	48
Av. Wife's Age	46	43	47
Av. No. Children Over 15 Yrs. Living at Home	2.1	1.32	2.1
Av. No. of People Living at Home	6.4	5.65	6.1
% Farmers Reached			
Pratom 4	50%	65%	57%
% Farmers < Pratom 4	44%	33%	40%
% Farmers > Pratom 4	6%	2%	3%
% Farmers Wives Reached			
Pratom 4	41%	46%	30%
% Farmers Wives < Pratom 4	59%	54%	70%
% Farmers Wives > Pratom 4	-	-	-
% Children > Pratom 4	18%	5%	5%
% Children at Pratom 4	28%	42%	49%
% Children P 1 - P 3	26%	14%	13%
% Children Not in School	28%	39%	33%

TRACTOR USE

Tractor use, 1968

(No. Reporting in Brackets)

Tambon	2	3	
Av. No. Years Used Tractor	5.9 (16)	4.26 (42)	5.38 (54)
Reasons for Starting to Use Tractor (No. Reporting):			
Persuaded by Friend	6	-	4
Saw Others	6	26	43
Thought of it himself	-	13	8
Lack of Buffaloes	3	3	-
Save Labour	-	1	-
Soil Hard	-	1	-
To Try it	2	1	-
Av. Rai Ist. Plow by Tractor	35 (14)	22 (37)	27 (49)
Av. Rai Ist. Plow by Buffalo	17 (6)	20 (31)	23 (35)
Av. Rai 2nd. Plow by Tractor	35 (11)	22 (7)	35 (22)
Av. Rai 2nd. Plow by Buffalo	25 (8)	33 (40)	35 (42)
Av. Hours for Ist. Plow by Tractor	14 (14)	6 (37)	11 (49)
Av. Hours for 2nd. Plow by Tractor	12 (11)	6 (7)	9 (22)
Av. Rai Buffalo Ist. Plow/day	0.7 (15)	0.98 (0.76 (54)
Av. Rai Buffalo 2nd. Plow/day	1.5 (15)	1 (42)	0.98 (54)

Tractor Use, 1968 (con't)

Tambon	1	2	3
Reasons for 1st. plowing by tractor (for 2nd. plow in brackets): No. Reporting			
No. Buffalo:	6 (7)	2 (1)	4 (2)
Faster	(3)	4 (1)	30 (9)
Finish Before others			
Plant Fields	(1)	1 (1)	
Hard Soil	3	16 (1)	5 (1)
Finish Before Rains			
Come	(1)	5 (1)	14 (1)
Plows Deeper		3	1
Not enough Labour	2 (1)	8 (2)	4 (2)
Not enough Buffalo	1 (1)	5 (1)	3
Many Weeds	1 (1)	3 (1)	1 (2)
Has Large Farm		1	
Kills grass better		1	
Don't Need to Keep Buffalo			2
Not enough Cows			4 (1)
Rice grows better			1 (1)
Do like others			

Tambon	1	2	3
* Finished 1st. Plow Tractor			
(No. reporting) in:			
February	-	2	-
March	1	-	1
April	5	9	10
May	3	16	16
June	2	7	13
July	1	2	6
Finished 2nd. Plow Tractor			
(No. reporting) in:			
April	2	-	-
May	4	1	2
June	3	2	13
July	3	3	4
Finished 1st. Plow Buffalo			
(No. reporting) in:			
May	-	4	2
June	3	10	11
July	3	8	7
August	-	5	12
September	-	2	-
% Farmers Using Tractor			
to Plow when Transplanting	82	50	48
% Farmers Reporting Need for			
Harrowing After 2 Tractor			
Plowing	94	66	84

* Some Farmers 1st. Plow with Tractor only on part of their land.

Tractor Use, 1968 (con't)

Tambon	1	2	3
Better to use Tractor			
on: (% Reporting)			
Dry Land	88%	81%	96%
Flooded Land	6	2	2
Moist Land	6	-	-
No. Difference	-	12	2
Don't Know	-	5	-
Reasons for Using Tractor			
on Dry Land: (Wet Land in			
Buckets) (No. Reporting):			
Kills grass & weeds			
better	8	12	19
Tractor owner prefers	-	1	-
Less compaction	3	9	6
Works better	2	12	16
Can't work on wet Land	-	3	7
Quicker	-	3	2
No One Else Used on Wet Land	-	1	-
Soil easy to break	2 (1)	2	1 (1)
Levels Land	-	0 (1)	2
Plow Deeper	0 (1)	-	2
Buffalo can't plow			
Dry Land	-	-	4
Cheaper	-	-	1

Tambon	1	2	3
Kills Grass Better: (% Reporting)			
Tractor	75%	98%	98%
Buffalo	-	-	2
Same	25	2	-
Reasons Tractor Kills Grass Better (Buffalo in Brackets): (No. Reporting)			
Plows Deeper	5	15	10
Turns Grass under better	5	12	23 (1)
Can use on Dry Land	1	9	10
Smaller Lumps of Soil	1	1	9
Cuts grass better	2	5	2
Depends on Rain			
After Plowing	- (2)	-	-
Buffalow Plows Better	-	-	1
Mixes Soil better (% Reporting)			
Tractor	88%	90%	100%
Buffalo	6	2	-
Same	6	8	-
Reason for Mixing Soil Better (Buffalo in Brackets): (No. Reporting)			
Plow Deeper	10	22 (1)	15
Turns soil under better	2	14	39
More Power	-	1	-
Makes Smaller Lumps of Soil	1 (1)	1	3
Can work on Dry land	1	-	-
Less Conspicuous			2

Tractor Use, 1968 (con't)

Tambon	1	2	3
Easier to harrow after plowing with: (% Reporting)			
Tractor	69%	54%	65%
Buffalo	19	29	24
Same	12	17	11
*Reasons why easier to harrow after tractor (Buffalo in Bracket):			
Makes soil lighter	-	1	-
Smaller lumps of soil	2 (2)	8 (5)	18 (5)
Buffalo plows too deeply (Tractor plows too deeply)	1 3 (1)	4 (8)	3 (7)
Soil easy to break	3	10	6
Less compaction	2	3 (1)	8
Cuts grass well	-	1	1
Don't know	-	- (1)	3
Av. No. Days Need to wait for hired tractor	3.2	3.8	3.6
Source of Tractor (No. Reporting):			
Kungsamphaow	10	-	-
Thachanuan	3	25	1
Hangnamsakhon	-	1	30
Takli	-	7	16
Thanamoy	-	4	-
Siladan	1	1	-
Rajpatana	-	2	2
Wat Khok	3	-	-
Chalnat	-	-	1
Payuhakere	-	-	2
Scuahok	-	-	1

* Some farmers gave several answers.

Tractor Use, 1968 (con't)
(Seedbed and Transplanting dates, 1968)

Tambon	1	2	3
Finished First Seedbed			
(No. Reporting)			
April	-	-	5
May	6	20	32
June	7	26	9
July	1	7	2
August	-	-	-
Date Began to Transplant			
May	-	-	1
June	5	12	21
July	8	35	23
August	1	6	3
September	-	-	-
Date Finished Transplanting			
June	1	1	2
July	6	7	7
August	6	40	33
September	1	5	5
October	-	-	1
% Farmers Broadcasted Only:	18%	2%	19%
% Farmers who hired labour for Transplanting:	.71%	81%	53%

WATER PUMP USE

Water Pump Use

Tambon	1	2	3
% Farmers with land next to canal (0-20 meters)	9	56.9	37
% Farmers with land near a canal (21-200 meters)	4	18.9	14
% Farmers with land far from canal (201 meters and over)	12	53.4	34
Reasons for using water pump (No. Reporting):			
Not enough water	10	12	5
Some years are dry	2	1	1
Some places water can't reach		10	5
Only on seedbed		2	
Supply water when he wants		1	
Water in canal lower than fields			
Pump from pond			
Pump water out at harvest			
Saw others using	4	13	4
Others Persuaded him	-	1	1
Thought of it himself	5	11	6
Prte. Irrig. Society Suggested	1	1	
Av. No. Years Used Water Pump	8.5	4.8	4.2
Av. No. Years Owned Water Pump	2.5		

Water Pump Use (con't)

26.

Tambon	1	2	3
Av. No. Year Rented Water Pump	6.1	2.9	2
No. Farmers own water pump (1967 Season)	9	20	8
No. Farmers Rent water pump	1	14	8
Water Pump Operation			
Period 1: Before Transplanting			
No. Farmers	7	19	9
Av. No. of Days Pumped	3.8	5.3	5.6
Av. No. Hours Pumped	37.4	57.6	33.3
Period 2: On Seedbed			
No. Farmers	1	3	
Av. No. Days Pumped	2	1	
Av. No. Hours Pumped	20	1.6	
Period 3: After Transplanting			
No. Farmers	8	17	9
Av. No. Days Pumped	4.2	6.6	6.1
Av. No. Hours Pumped	64	62.7	77.1
Av. Gasolene Cost Rice			
Season (Baht)	275	172	332
Av. Oil Cost Rice Season			
	78	49	63
Av. Cost/litre			
Gasolene	2	2	2
Oil	8	8	7.
Diesel	-	0.85	0.
Kerosene	1.7	1.8	-
Mix (Gas & Oil)	2.5	-	-

Water Pump Use (con't)

Tambon	1	2	3
Source of Water (No. Reporting)			
Canal System	3	14	5
Low place in field	-	9	1
Pond	5		2
Artesian well	-	1	-
River	2	2	3
Drainage canal	-	1	4
No. Farmers Paid Water			
Charges to Land Coop. (1967)	8 (47%)	20 (34%)	-
Land Coop. Water Charge/rail	25	23	-
Source of Water if had no Water Pump			
Own Labour	2	10	1
Gravity Flow	1	6	2
Rain	7	12	8
Wait for Gov't Water			
To come		-	-
Block Canal	2	-	-
If use water pump, can you make seedbed carrier:			
(No. Reporting)			
Yes	2	13	9
No	-	2	-
Same	8	11	1
Av. No. Days Earlier	15	22	9

Tambon	1	2	3
Major Problems with using water pump: (No. Reporting)			
Not enough water	-		-
Lack of Mechanical Knowledge	-		-
Pump breaks down	2		6
Lack of Money	1		4
None	7		4
Does Water Pump Ensure Enough Water for Rice: (No. Reporting)			
Yes	4		3
No	5		7
Same	-		-
Reasons: (No. Reporting)			
Put water on at will	4		3
Depends on supply of water by gov't	4		6
Depends on rain	3		1
Sometimes no water in canal	-		-
Can't reach some parts of field	-		-
Source of water pump (No. Reporting)			
Paknampo	1		3
Chainat	1		
Manorom	2		4
Prte. Irrig. Society	3		
Land Coop.	1		1
Neighbour	1		

Water Pump Use (con't)

Tambon	1	2	3
Bangkok		1	1
Payuhakere		2	
Uthaithani		2	1
Farmer Group			
Amphoe Office			
Singhburi			
% Using Water Pump Every Year Since Bought:			
Yes	89	94.7	100
No	11	5.3	
Reasons for not using every year: (No. Reporting)			
Some Yrs. Wet	1	1	
Pump didn't work		1	
Can get water by Gravity			
% Farmers Renting Water Pump out			
	33	65	12.5
% Farmers Renting out free			
	33	55	12.5
% Farmers using water pump for dry season crops			
	44	2.9	12.5
Source of water in dry season: (No. Reporting)			
Arterisian well	-	1	-
Land Coop. Canal	1		
Pte. Irrig. Society			
Royal Irrig. Dept.			
Pond	5		
River			

USE OF OTHER CHEMICALS

Water Pump Use (con't)

Tambon	1	2	3
Main Problem About Obtaining Water in Dry Season:			
Not enough water	2	2	
No water provided			
In canals	6	23	7
No problem	2	1	1
Must use river	-	-	2
Pond goes dry	-	-	-
Is Present Royal Irrig. System satisfactory:			
(Land Coop. System in Brackets)			
Yes	2 (2)	12 (2)	1
No	3 (5)	5 (10)	9
Reasons for answering No:			
Not enough canals	6	7	3
Not enough water supplied in canals	2	7	7
Difficult to irrigate higher land	-	1	-
Expensive	-	1	-
Poor canal construction	1	1	1
Av. time in minutes required to pump for adequate transplanting with dry fields: (farmer opinion)			
	167	116	176
Av. time in minutes req'd to pump for adequate transplanting with wet fields: (farmer opinion)			
	87	68	84

Use of Other Chemicals

Tambon	1	2	3
No. and % of Farmers using Insecticide	3 (18%)	23 (40%)	23 (36%)
% Farmers who know name of Insecticide used	80%	39	26
No. and % Farmers using herbicide	17 (100%)	40 (69%)	31 (48%)
% Farmers know name of herbicide	53%	62	61
No. and % Farmers using crab killer	16 (94%)	40 (69%)	22 (34%)
% Farmers know name of crab killer	30%	45	14

Reasons for using insecticide, herbicide, & crab killer:

(No. Reporting)	I	H	CK	I	H	CK	I	H	CK
Many Insects, Weeds, Crabs	3	14	17	26	39	25	17	25	12
Make rice grow better	1	2	0	2	4	15	7	11	11
Do like others	12	12	12	48	49	48	24	25	24
Thought of it himself	2	2	2	2	2	2	5	5	5
Friend suggested it	1	1	1	1	1	1	11	11	11
Amphoe Officer suggested it	1	1	1	1	1	1	1	1	1
Land Coop. suggested it	1	1	1	-	-	-	1	1	1
Shop suggested it	1	1	1	-	-	-	1	1	1
Radio suggested it	-	-	-	-	-	-	2	2	2

Use of Other Chemicals (con't)

32.

Tambon	1	2	3
Av. Value Insecticide used			
1967 (Baht)	17	31	75
Av. Rai on which insecticide used, 1967	3.4	10.7	16.5
Av. Value Herbicide used, 1967	137	54	96
Av. Rai on which herbicide used, 1967	29.1	16	17.9
Av. Value crab killer used, 1967	26	17	59
Av. Rai on which CK used, 1967	10.9	8.5	19.4
Av. Yield increase, Tang/rai from using: (No. Reporting)			
Insecticide	-	10	5
Herbicide	-	11	9
Crab killer	-	5	5
All together			
(Not specific)	10	8	7
Don't know			
(% reporting)	30%	28%	27%
% Method of Application insecticide and herbicide:			
Bicycle-pump sprayer	100	98	97
Other sprayer	-	1	-
Pour on field	-	1	3
% Method of Application crab killer:			
Mix with rice	100	100	99
Mix with water	-	-	1

Use of Other Chemicals (cont)

Tambon	1	2	3
Av. Hours Needed to Apply Insecticide: (No. Reporting) 20		9	36
Av. Hours Need To Apply Herbicide: (No. Reporting) 32		19	29
Av. Hours Needed to Apply Crab killer: (No. Reporting) 4		5	8

Source of I, H, C.K.,

(No. Reporting)	I	H	CK.	I	H	CK	I	H	CK
Hangnamsakhon				-	-	-	9	10	12
Takli				-	-	-	1	3	1
Thanamoy				10	12	16	-	-	-
Thachanuan				11	23	23	-	-	-
Manorom	2	17	16	-	2	1	8	13	5
Chainat				1	-	-	4	5	4
Uthaithani				1	-	-	-	-	-
Paknampo				-	-	1	-	-	-
Village Market				1	3	1	-	-	-
Land Coop.	2			1	-	-	-	-	-
Neighbour				-	1	-	-	-	-
Supphaya				-	-	-	-	2	-

% Farmers knowing name of chem. other than what they use:

24	31	14
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Is it profitable to use these chemicals:

Reporting Yes	82	100	100
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No	-	-	-
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FERTILIZER USE

Fertilizer Use

34.

Tambon	1	2	3
No. and % Farmers used fertilizer, 1967	12 (71%)	45 (78%)	20 (31%)
No. and % Farmers used fertilizer, 1968	14 (82%)	43 (74%)	32 (50%)
% Farmers know name of Fertilizer used	30	10	3
Av. Kg. Fert. Used, 1967	216	169	147
Av. Kg. Fert. Used, 1968	268	302	202
Av. No. Years Used Fertilizer 2,1		2,5	2
Reasons for using fertilizer (No. Reporting):			
Make rice grow well	5	11	12
Less insect damage	-	7	3
Poor soil	-	10	4
Does like other farmers	2	7	5
Increase yield	6	8	6
Try it	4	11	14
Only on seedbed	-	1	-
Av. No. Rai on which used, 1967	14	21	13
Av. No. Rai on which used, 1968	16	26	17
Av. Rai Transplanted and broadcast farmed, 1967	36,6	33	41
Av. Rai Transplanted and broadcast farmed, 1968	38,7	32	40

Fertilizer Use (con't)

35.

Tambon	1	2	3
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Fertilizer Increased Yield:

% Reporting: Yes	71	88	58
No	-	-	6
Same	-	-	-
Don't know	29	22	36

Av. Increase in yield,

Tang/rai, (No. reporting):

Transplanted	9	10	8
Broadcast	8	-	8
Don't know (% reporting)	42%	31%	60%

Time Used Fertilizer:

(No. Reporting in Brackets)

Period 1: Before Transplanting:

Av.No. Days before	-
Av.No. Time Applied	-
Av. Kg./rai	-

Period 2: After Transplanting

Av. No. Days	17 (15)	21	33
Av. No. Time Applied	1	1	1
Av. Kg./rai	16	7	8

Period 3: On Seedbed

Av. No. Days	-
Av. No. Times	-
Av. Kg./rai	-

Period 4: At Rice Bearing

Av. No. Times	1 (2)
Av. Kg./rai	7.7

Tambon 1 2 3

More Weeds After Use
Fertilizer. % Reporting:

Yes	79	88	86
No	-	4	12
Same	21	8	2
DK	-	-	-

More Insects After Use
Fertilizer, % Reporting:

Yes	7	4	2
No	29	66	81
Same	50	28	17
DK	14	2	-

Better to Use Fertilizer

when Fields: (No. Reporting)

Are still not flooded	2	5	8
Are flooded	12	39	27
No Difference	-	1	-

How Quickly can Obtain

Fertilizer (Av.No.days) 75 44 35

Source of Fertilizer 1967 1968 1967 1968 1967 1968

(% Reporting):

Land Coop.	75%	93%	42	42	26	14
Shop	42	7	11	17	20	20
Pte. Irrig. Society	17	-	11	7	5	8
Neighbour-Relative	8	7	7	7	-	-
Amphoe Office	-	-	-	-	-	5
Farmer Group	-	-	15	20	-	3
Kamnan	-	-	-	-	-	38
At home from Sales man	-	-	-	-	-	2
Post	-	-	-	-	2	-

Fertilizer Use (con't)

Tambon	1	2	3
Fertilizer Payment:			
% Reporting:			
Cash	-	2.5	14
After Harvest	100	95	86
Other	-	2.5	-
% No. Farmers who knew			
cost of fertilizer from			
an other source:	79	84	73
Av. Time req'd to put			
fertilizer on: Min./rai	21	23	18