TRAINING ACTIVITIES OF 1981

C O N T E N T

APPENDIX TABLE CONTENT

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Training Center for Agriculture Development in Suphan Buri Irrigated Area

History of the Project

Experiment Station and Training Center Project for agriculture development in Suphan Buri irrigated area under Technical Division of Department of Agriculture is situated in Suphan Buri Rice Experiment Station, Tambol Rua-yai, Amphur Muang, Changwat Suphan Buri. This project is established by cooperation between Thai and Japanese governments to support Agriculture Development Project in Thailand irrigated area. The purpose of this Center is to support techniques and to train the officials who work in Irrigated Agriculture Development Project area especial in irrigated area of Chao Phya and Mae Klong river.

There are 3 sub-projects in Irrigated Agriculture Development Project which were the cooperation between Thai and Japanese governments, those were signed on 8 th April, 1977 as follows

1. Chao Phya Pilot Project of Agricultural Land Reform Office starts to do in area 3,000 rai, donated value 38,831,000 baht.
2. Mae Klong Pilot Project of Royal Irrigation Department starts to do in area 2,400 rai for No. 1 and 3,000 rai for No. 2, donated value 21,599,000 baht.
3. Experiment Station and Training Center for Agriculture Development in Suphan Buri irrigated area was established for training and technical supporting to officials and technicians who concerned with irrigated agriculture development, donated value 2,500,000 baht and 8,000,000 baht for building construction so the total was 10,500,000 baht.

Policy and aim

1. To train technicians and officials who concerned with Irrigated Agriculture Development Project about modern agriculture for practicing in their works.
2. To develop cropping system in project area to the aims those are high efficiency of resources resorting, agriculture yield increasing, farmer income increasing, resources distributing and consistent income of farmer.
3. To develop productive system to be cooperative form by uniting in production, sale and consumer goods buying. So, we can eradicate the problems about middlemen and bargain power.

4. To disseminate modern technology to farmer in irrigated area expeditiously and efficiently by direct and indirect ways. The direct way is distributing trial farms or technical demonstration in project area so the farmer can dicide by themselves about varieties, nourishment or cropping system. The indirect way is by training technicians and officials who work in these projects.
5. To solve the problems in projects. If the problem is complicated, we can solve by multidiscipline method

Process result

The main building of Suphan Buri Training Center, granted by Japanese government, was construcoted since December 1977 and finished in June 1978. Until December 1981, there were 1,378 officials by 33 from Long term training (4 months course), 296 (8 classes) from 2 weeks course, 180 (11 classes) from short course, 480 (7 classes) from special course and 389 from 9 seminars.

Training in fiscal year 1981

In fiscal year 1981, there were 18 classes (723 officers) of training and 3 times (136 officers) of seminars.

A. Long term training (4 months course)

	Name	Duration	Trainees
1.	Crop cultivation techniques and integrated farming	3 Aug.-27 Nov. 81	33
		Total	33

B. 2 weeks course

	Name	Duration	Trainees
1.	Integrated farming	15-26 Dec. 80	45
2.	Rice cultivation technique	9-20 Mar. 81	31
3.	Rice cultivation technique	8-19 June 81	36
		Total	112

C. Short course

	Name	Duration	Trainees
1.	Cropping system data analysis	6-10 Oct. 80	10
2.	Cropping system data analysis	20-24 Oct. 80	10
3.	Experimental designs and computer analysis	19-20 Nov. 80	29
4.	Introduction of computer programing and utilizing	21-22 Jan. 81	12
5.	Introduction of computer programing and utilizing	27-28 Jan. 81	15
6.	Advance of computer programing and utilizing	22-23 Apr. 81	11
7.	Advance of computer programing and utilizing	28-29 Apr. 81	11
		Total	98

D. Special course This course followed to the policy of Agriculture and Cooperative Ministry

	Name	Duration	Trainees
1.	Modern germinated broadcasting rice cultivation	3 Dec. 80	97
2.	Modern germinated broadcasting rice cultivation	8-9 Dec. 80	66
3.	Modern germinated broadcasting rice cultivation	5-6 Jan. 81	68
4.	Modern germinated broadcasting rice cultivation	7-8 Jan. 81	60
5.	Modern germinated broadcasting rice cultivation	12-13 Jan. 81	74
6.	Modern germinated broadcasting rice cultivation	14-15 Jan. 81	67
7.	Modern germinated broadcasting rice cultivation	12-13 Feb. 81	48
		Total	480

E. Meeting and seminar

	Agency	Item	Duration	Trainees
1.	Department of Agricultural Extension	Officers and house wife	28-29 Oct. 80	71
2.	Agricultural Land Reform Office	Lawyer seminar	2-6 Mar. 81	40
3.	Technical Division	Irrigation for agriculture	23-27 Mar. 81	25
			Total	136
			Grand total	859

Conclusion of training in fiscal 1981

In this year, there is long term training (4 months) because the dormitory and furniture are already finished. The aim of long term training that is different from other trainings are practicum emphasizing of modern cultivation and animals raising and trainees researching.

The result of training work in 1981 exceeds from the planning because Modern Germinated Broadcasted Rice Cultivation Acceleration Project trains all agriculture officers before dry season 1981.

The lecturers come from government offices, university and private business as Royal Irrigation Department, Department of Agricultural Cooperative Promotion, Department of Fisheries, Office of Agricultural Economics, Center Office of Land Consolidation, Agricultural Land Reform Office, Kasetsart University, Agriculture Inspection and Coordination Division, experts of Suphan Buri Training Center, etc..

From the eveluation, trainees receive the new knowledge and experience especial long term trainees and they suggest many opinions for improving in the next time.

Other activities in fiscal year 1981

1. Construction

The budget that continued from 1980 are

1. The wages of electric system setting service of dormitory and 2 expert houses

Value	40,000	baht

2. The wages of supply water system improving service of dormitory and 2 expert houses

Value	30,000	baht
Total	70,000	baht

2. Durable articles purchase

Suphan Buri Training Center received the budget in fiscal year 1981 and already purchased on June 1981 before long term training that started on August 1981. The items are

Durable articles			243,600 baht
Office articles		Amount	Price (baht)
1.	Iron cabinet (2 doors)	2	2,600
2.	Iron cabinet (4 drawers)	2	2,600
3.	Electric fan (16 inches)	10	15,000
4.	Sofa set	2 sets	11,000
5.	Wall fan (16 inches)	4	9,600
6.	Dining table (4 seats)	15 sets	15,000
7.	Water cooler, filter type (5gal.)	2	14,000
8.	Table (1.2 × 0.8 × 2.5 m.)	2	5,000
9.	Cabinet for dining room	2	7,800
Scientific articles			
1.	Gas stove with tank (50 Kg.)	1 set	5,000
Household articles			
1.	Expert house articles	2 sets	30,000
	- Wood bed,size 6 × 6 ft. with mattress, bed cloths and pillow		
	- Wardrobe,size 4 × 2 × 6 ft.		
	- Sofa furniture		
	- Dining table (6 seats)		
2.	Bed,size 3 × 6 ft.	42	63,000
3.	Wardrobe,size 3 × $1\frac{1}{2}$ × 6 ft.	42	63,000

Remark These durable articles are purchased in 216,730 baht that was less than the budget (26,870 baht).

3. Research

Dry season 1981

3.1 Research in "Influence of seedling and sitrogen split application to yield and yield components" 1 trial

3.2 Research in "Influence of nursery bed and transplanting space to yield of rice" 1 trial

3.3 Research in "Influence of transplanting space to yield of rice"

Wet season 1981

3.4 Research in "Study in co-factors between seedling densities in transplanting and nitrogen rate" 1 trial

3.5 Research in "Study in costs of different nitrogen application rates those effect growth and yield of transplanted rice" 1 trial

3.6 Research in "Comparison of rates and nitrogen split application periods those effect rice yield"

3.7 Research in "Comparing yields of 5 rice varieties those are cultivated by broadcasting method" 2 trials

3.8 Research in "Influence of potassium fertilizer and period of application those effect the yield of broadcasted rice" 1 trial

Remark The research results of fiscal year 1981 will be separately printed.

4. Coordination with other offices

4.1 Support technology to Mae Klong and Chao Phya Pilot Project

4.2 Support seeds of rice and crop to research work of Mae Klong and Chao Phya Pilot Project

4.3 Support and analyze statistical research results of Mae Klong and Chao Phya Pilot Project

5. Visitors

In fiscal year 1981, there are 54 groups of Foreign expert officers, students and farmers (or 840 persons) those visit Suphan Buri Experiment Station and Training Center. This isn't include the farmer who comes for seed and technology service.

The details are

	Date	Group	Amount
	October 1980		
1.	3	Officers group of Ministry of Agriculture and Cooperative, the Leader is the Undersecretary of the Ministry	60
2.	10	Training group of "Second Regional Seed Technology Workshop"	35
3.	13	Experts from Chao Phya Pilot Project	5
4.	17	Evaluation Mission from Japan	7
5.	22	Students those are trained at U-thong Crops Experiment Station	35

	Date	Group	Amount
6.	22	Plant Diseases expert group from Taiwan - Japan - Korea - IRRI, Department of Agricultural Extension and Department of Agriculture	9
7.	30	Officer group from Plant Disease Division comes for rice disease diagnosis	4
	November 1980		
8.	10 - 11	Meeting of experts and officers of Mae Klong, Chao Phya and Suphan Buri Project about agriculture research	15
9.	22	Agriculture administration group from Nepal	25
10.	23	Officer group of Ministry of Agriculture, Forestry and Fisheries from Japan	10
	December 1980		
11.	11	Rice research group from People Republic of China and technicians from Department of Agriculture	12
12.	17	Young agriculturist officers and leaders in West extension area	30
	January 1981		
13.	14	Prof. Insee Jantharasathit and Prof. Boon Inthrampan	2
14.	16	Experts of Chao Phya Pilot Project	2
15.	19	Farmer group from Amphur Lad-yaow, Nakorn-savan province	40
16.	20	Experts from Irrigated Agriculture Development Project	3
	February 1981		
17.	9 - 10	Expert of Tropical Agriculture Research Center and group	3
18.	12	Japanese expert in Pollution, Chemistry officer and Industrial factories officer	4

	Date	Group	Amount
19.	12	Students from Nong-pan-donge local government school	60
20.	23	Japanese experts from International Weeds Research Institution	6
21.	25	2 Germany experts in Plant Protection Forecasting Program and 2 Thai officers	4
	March 1981		
22.	4	Expert of Tropical Agriculture Research Center from Chemistry Division and group	4
23.	12	Manager of Kubota Company and group	4
24.	16	Entomologist from Kasetsart University (Gampaengsaen)	3
25.	19	Agriculture expert from JICA and group	7
26.	20	Director of Plant Disease Division and group	5
27.	23	Ganjanaburi Security Command	45
28.	30 - 31	Experts of IADP	7
	April 1981		
29.	6 - 7	Planning Division chief of TARC and group	7
30.	9	Dr. Y. Melamed from UNDP and group	8
31.	20	Irrigated Agriculture Development seminar group from many divisions of Department of Agriculture	40
	May 1981		
32.	22	Prof. Insee Jantharasathit and Master Porn Resanon	2
	June 1981		
33.	1	House work officers in West extension area	25
34.	9	Agriculture officers from Malasia	9
35.	20	4 Directors of Egypt National Agriculture Training Center, officers of Royal Irrigation Department, DTEC and Department of Agriculture	12

	Date	Group	Amount
36.	24	Director of Tropical Agriculture Research Center and group	10
37.	24	Agriculture officers of Amphur Muang, Saraburi and farmer	4
38.	25	Evaluation officers of DTEC	3
	July 1981		
39.	2	Bactereologist of TARC and Plant Disease technicians	7
40.	7	Agriculture officers and farmer from Amphur Muang, Sriprajan and Bangplama; Suphan Buri province	45
41.	11	Ganjanaburi Hill Tribe Development and Welfare Center and Hill tribe leaders	30
42.	18	Trainees of Applied Plant Protection Workshop	22
43.	23	Plant Protection expert of Japan Dupont Company and officers in Thailand	3
44.	27 - 28	Experts from Malasian TARC	2
	August 1981		
45.	11	The members of Japanese Agricultural machineries Association	40
46.	18	Asahi Shimbun newspaperman and TARC officers	3
47.	21	Chief of Rice Research Center, under Department of Agriculture and Rice Division officers	10
48.	25	Technicians of Department of Agricultural Extension in West extension area	16
	September 1981		
49.	2	Prof. Thamnong Sighkallavanich, Prof. Rapee Sakrik, Director-general of Department of Agricultural Extension, Lecturers group from Sukhothaithammathiraj University, Japanese charge d'affaires and Japanese agriculture attache	25

	Date	Group	Amount
50.	15	Officers from Huei see thon Pilot Project, Gallasin	4
51.	19	Survey team of JICA Crop Seed Production Project and Crop Division officers	7
52.	22	AFS students from Australia, Newzealand, USA and Denmark	13
53.	22 - 23	TARC movie staff from Japan	2
54	26	Farmer group from many amphurs of Chonburi	45
		Total	840

Curricula schedule of training in fiscal year 1981

1. Curriculum "Crop cultivation techniques and integrated farming in irrigated area"

(4 months)

No.	Subject name	Hour
	Lecture	252
1.	Registration, open ceremony and orientation	3
2.	Agricultural research improvement project	3
3.	Rice cultivation techniques	6
4.	Physiology of rice	3
5.	Germinated broadcasting rice cultivation	3
6.	Cultivation of upland rice, wheat and cold climate cereal	3
7.	Experimental designs as CRD, RCB, LT	6
8.	Statistical techniques in experiment works	3
9.	Split plot design	3
10.	Irrigation for agriculture - Irrigation and drainage in paddy field - Water management in paddy field - Water quantity calculation (that plant needs)	12
11.	Principles and techniques in weeds control	6
12.	Rice diseases and its control	3
13.	Diseases of corn and sorghum and its control	3
14.	Diseases of bean and oilplant and its control	3
15.	Orchard diseases and its control	3
16.	Principle in plant enemies control	2
17.	Techniques in chemical sprayer application	4
18.	Pests and its control	6
19.	Problem and danger of agricultural poison material	3
20.	Rice insect and it controls	3
21.	Principles in breed improvement	9
22.	Rice induce reproduction	6
23.	Cultivation techniques of oilplant, mungbean and soybean	3
24.	Corn and sorghum cultivation techniques	3
25.	Multi-cropping and cropping system	3
26.	Integrated farming	6
27.	Mushroom cultivation	6

No.	Subject name	Hour
28.	Orchard cultivation and maintenance	3
29.	Vegetable cultivation and manitenance	3
30.	Flower and ornament plant cultivation and maintenance	3
31.	Orchard induce reproduction	6
32.	Flower and ornament plant induce reproduction	6
33.	Chemistry, paddy soil fertility and main element in soil	6
34.	Principle in soil sampling	3
35.	Principle in plant sampling	3
36.	Principle in fertilizer sampling	3
37.	Chemistry and fertility in upland soil	3
38.	Soil analysis interpretation	3
39.	Roles of organic substances in soil and organic fertilizer	3
40.	Fish and prawn raising - Thai fishery - Principle in place preparation for fish raising - The kind of fish in economical view - Influence of environment to fish growth - Fish raising (Nai fish) - Fish raising (Nyl fish) - Nursery and well preparation - Prawn raising - Goby raising - Fish raising (Savai fish) - Catfish, snakeheads raising - Artificial reproduction of fishes - Nursery and caring - Transportation	18
41.	Cow raising and caring	3
42.	Pig raising and caring	3
43.	Chicken raising and caring	3
44.	Duck and goose raising	3
45.	Water buffalo raising and caring	3
46.	Media production for extension work	3
47.	Media with extension and dissemination	3
48.	Land consolidation for agriculture	3
49.	Land reform for agriculture	3

No.	Subject name	Hour
50.	Agricultural machineries	3
51.	Benzene motor	3
52.	Diesel motor	3
53.	Water pump	3
54.	Sunlight oven and wind wheel	3
55.	Data analysis and conclusion of RCB design	3
56.	Data analysis and conclusion of Factorial design	3
57.	Data analysis and conclusion of Split plot design	3
58.	Yield and yield components sampling in experimental paddy field	3
59.	Yield components analysis	3
60.	Threshing, winnowing, weighing, moisture testing and calculating rice yield of experimental field	3
61.	Agricultural ecology	3
62.	Agricultural meteorology	3
63.	Cooperative in Thailand	3
64.	Principle in report writing	3
	Practice	240
1.	Experimental plot preparation - Soil preparation - Patchs making - Soil smoothening - Bar, irrigate and drainage canals making - etc.,	15
2.	Nursery bed preparation and transplanting - Nursery - Uprooting - Transplanting by hand - Transplanting by machine	12
3.	The quantity of sodium chloride in solution for seed preparation - The quantity that makes specific gravity = 1.08 - The quantity that makes specific gravity = 1.10 - The quantity that makes specific gravity = 1.12	3

No.	Subject name	Hour
4.	Seed preparation and germination testing - Seed separation by salt solution - Germination testing	6
5.	Fertilizer and chemical application in experimental plot - Fertilizer and chemical calculation - Basal fertilizer application - Chemical application for stem borer protection - Top dressing fertilizer application	18
6.	Plant height and number of tiller measuring - Measure plant height and number of tiller in different period of growth - Record and analyze data of plant height and number of tiller	18
7.	Rice sampling for yield and yield components calculation - Harvest, threshing, winnowing and moisture testing - Calculation the yield at 14% of moisture - Yield components analysis	36
8.	Result analysis - Yield analysis - Plant hieght and number of tiller analysis - Experimental conclusion table making - Report writing	32
9.	Mushroom cultivation - Straw mushroom cultivation by low stack type - Jew's ear cultivation in wood - Germ production	9
10.	Induced reproduction of orchard, flower and ornament plant - Cutting - Marcotting - Layering - Top grafting - Budding - Crown separating - Asexual propagation - etc.,	12

No.	Subject name	Hour
11.	Artificial reproduction of fish - Artificial reproduction - Culturing - Caring - etc.,	12
12.	Rice leaves age and the depth of transplanting - Check leaves age every 4 days - Check the number of tiller and plant height every 4 days - Conclude the research practice	36
13.	Diagnosis of diseases, insects and weeds in paddy field - Rice diseases diagnosis in experimental plots - Rice insects diagnosis in experimental plots - Weeds diagnosis in paddy field	9
14.	Agricultural machineries and equipment production - Machines maintenance - Machineries application - Audio-visual equipments application - Cement jar molding - Brick making from laterite - Economic stove - Bio-gas - etc.,	18
15.	Sprayer application - Injector choosing - Sprayer choosing - Chemical calculation - etc.,	4
	Observation	72
1.	Suphan Buri Fisheries Station	
2.	Fish & Prawn raising at Tambol Ma-kharm-lom	
3.	Gasetpatthara Farm at Tambol Bangyai	
4.	U-thong Crops Experiment Station	
5.	National Pig Center and Kasetsart University (Campaengsaen)	
6.	Land Consolidation for agriculture at Amphur Donjedi	

No.	Subject name	Hour
7.	Thai-Denmark Milchoow Farm, Saraburi	
8.	Nakornrajsema Silk Worm Research Center	
9.	Pimai Rice Experiment Station	
10.	Electric Water Pump Practising Center, Amphur Thatpanom	
11.	Nakornpanom Land Development Center	
12.	Nam-un Rural Integrated Development Project, Sagolnakorn	
13.	Norhteasthern Agricultural Research Center, Khorngaen	
14.	Pissanuloke Rice Experiment Station	
15.	Tha-chai Crops Experiment Station, Sukhothai	
16.	Prae Rice Experiment Station	
17.	Pa-yaow Fisherics Station	
18.	Chiengrai Hill Tribe Development Center	
19.	Northern Agricultural Research Center	
20.	International Food Industrial Factory, Lampang	
	Conclusion Lecture 252 hours = 45% Practice 240 hours = 42% Observation 72 hours = 13% Total 564 hours	
	2. Curriculum "Integrated farming" (2 weeks)	
1.	Open ceremony and orientation	2
2.	Special lecture "Principle and process of cooperative"	1½
3.	Integrated farming	3
4.	Rice cultivation techniques	3
5.	Crop cultivation techniques	3
6.	Vegetable cultivation techniques	1½
7.	Orchard cultivation techniques	1½
8.	Observation	3
9.	Diseases and its control	3
10.	Insects and its control	3
11.	Pests and its control	3
12.	Fish and prawn raising in integrated farming	3
13.	Observation	6
14.	Food science	3
15.	Poultry raising in integrated farming	3

No.	Subject name	Hour
16.	Mushroom cultivation and demonstration	6
17.	Pig raising in integrated farming	3
18.	Observation	3
19.	Economic stove for agriculture	1½
20.	Equipments in agriculture	1½
21.	Bio-gas	1½
22.	Technique in mold fertilizer producing	1½
23.	Introduction to farm account management	3
24.	Evaluation	1½
25.	Certificate distribution and close ceremony	1½
	Total	66½

3. Curriculum "Rice cultivation techniques in irrigated area"
(2 weeks)

1.	Open ceremony and orientation	2
2.	Land consolidation for agriculture	1½
3.	Agro-climatology and ecology	3
4.	Rice cultivation techniques in irrigated area	3
5.	Modern germinated broadcasting rice cultivation	3
6.	Irrigation for agriculture and water management in paddy field	3
7.	Observation	3
8.	Chemistry and paddy soil fertility	3
9.	Weeds in paddy field and its control	3
10.	Rice diseases and its control	3
11.	Rice diseases and weeds diagnosis practising in paddy field	3
12.	Observation	6
13.	Rice pests and its control	3
14.	Rice insects and its control	3
15.	Cropping system in paddy field	1½
16.	Mushroom cultivation and demonstration	4½
17.	Integrated farming	3
18.	Observation	3
19.	Agricultural machineries and wind wheel utilization	3
20.	Demonstration of machineries in rice cultivation	3
21.	Sampling for rice yield evaluation	3

No.	Subject name	Hour
22.	Training evaluation	1½
23.	Certificate distribution and close ceremony	1½
	Total	66½
	4. Curriculum "Cropping system data analysis" (5 days)	
1.	Principle and process in cropping system	3
2.	Graph	2
3.	Means, Mode, Median	3
4.	Standard Deviation	2
5.	Coefficient of Variation	2
6.	Linear Regression 2 Variables	3
7.	Correlation Coefficient	3
8.	Chi-Square Test	3
9.	Activity Budgets	6
10.	Partial Budgets	3
11.	Parametric Budgets	3
12.	Preparing and Presenting Table	6
	Total	39
	5. Curriculum "Experimental designs and computer analysis" (2 days)	
1.	Experimental designs	6
2.	Computer analysis practicing	6
	Total	12
	6. Curriculum "Introduction to computer programing and utilizing" (2 days)	
1.	Computer knowledge	3
2.	Computer working	3
3.	Introduction to computer programing	3
4.	Practice in computer programing and utilizing	3
	Total	12

7. Curriculum "Advance of computer programing and utilizing"
(2 days)

No.	Subject name	Hour
1.	Principle of computer programs in agricumture	6
2.	Practice in computer programing, data in-putting and result analyzing	6
	Total	12

8. Special curriculum "Modern Germinated Broadcasting Rice Cultivation Extension Project"
(2 days)

1.	Open ceremony	½
2.	General principle in Modern germinated broadcasting rice cultivation and soil preparation	1
3.	Seed preparation, broadcast and water management	2
4.	Consideration in fertilizer application	2
5.	Demonstration in paddy field	2
6.	Protection and control of diseases, insects and pests	1½
7.	Weeds and its control	2½
8.	Discussion and problem answer	3
9.	Close ceremony	½
	Total	15

Training in Fiscal year 1981

Agency and the number of trainees

No.	Agency	Long term course (4 months)	2weeks course			short course							Special course							Total
			1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
1.	Royal Irrigation Department	3	5	5	6			2		2		2								25
2.	Agricultural Land Reform Office	3	5	5				2		2										17
3.	Department of Agriculture	8	5	3	6	9	8	25	12	11	11	9	22	66						195
4.	Department of Agricultural Extension	3	5	3	6								75		68	60	74	67	48	409
5.	Department of Agricultural Cooperative Promotion		4	3	3															10
6.	Department of Community Development		5	5	3															13
7.	Department of Public Welfare	4	2	1	1															8
8.	Land Development Department	3	5		3															11
9.	National Security Command	2	1																	3
10.	Office of Accelerated Rural Development	3	2		2															7
11.	Office of Agricultural Economics		2	2	2															6
12.	Kasetsart University					1														1
13.	Chieng-mai University						2													2
14.	Office of Undersecretary of MOAC	4	4	4	4															16
	Total	33	45	31	36	10	10	29	12	15	11	11	97	66	68	60	74	67	48	723

Suphan Buri Training Center

Price of Japanese government donation to Suphan Buri Experiment Station and Training Center Project

Unit : Yen

List	Japanese fiscal year				Total
	1978	1979	1980	1981	
1. Agricultural machineries	1,699,600	173,350	1,992,100	7,391,200	11,256,250
2. Laboratory equipments	1,501,500	2,184,000	6,046,005	2,709,500	12,441,005
3. Stationeries	1,594,350	930,900	3,196,090	2,679,750	8,401,090
4. Publicity equipments	380,350	1,015,000	989,300	772,700	3,157,350
5. Vehicle	6,765,000	1,771,000	1,102,500	1,438,000	11,076,500
Total	11,940,800	6,074,250	13,325,995	14,991,150	46,332,195
Ins.	1,285,540	643,354	727,503	749,557	3,405,954
c.i.f	13,226,340	6,717,604	14,053,498	15,740,707	49,738,149

List of durable articles and construction donated from Japanese Government

Suphan Buri Experiment Station and Training Center Project

1981

Durable articles and equipment that bought in Thailand

		Number	Price(฿)
Agricultural Machinery			739,120
1.	Rice combine	1	288,500
2.	Farm tractor 15 HP & attachment	1	157,735
3.	Drive harrow	1 set	51,500
4.	Power tiller & attachment	2	134,680
5.	Managing tiller & attachment	2	72,505
6.	Cutter	2	9,000
7.	Sprayer	1	5,500
8.	Verticle pump 8"	1	12,000
9.	Water pump	2	7,700
Stationery			267,975
1.	Micro computer with printer	11	91,465
2.	Computer	1	64,910
3.	Air condition	3	70,000
4.	Experiment table with chair	5 sets	32,000
5.	Water tank (400 gallon)	2 sets	3,600
6.	Fire extinguisher	3	3,600
7.	Paper label	1 box	1,600
Audio visual aids			
1.	Microphone system	1 set	28,480
		Total 17 items	1,035,575

List of durable articles and construction donated from Japanese Government

Suphan Buri Experiment Station and Training Center Project

1981

Durable articles and equipment from Japan

		Number	Price(Y)
Laboratory equipment			2,709,500
1.	Sheet for ridge	40 rolls	103,200
2.	Coffee mill type crusher	1 set	180,000
3.	Microscope with camera and copy stand	1 set	1,118,500
4.	Water current meter	1 set	155,000
5.	Resin for auto still and orgasol	1 set	55,900
6.	Insect box	10	90,000
7.	Insect collector	1	294,000
8.	Weily's laboratory mills	1	198,000
9.	Large rotary microtome	1	310,000
10.	Bottle shaker	1	198,000
Audio visual aids			487,900
1.	Video tape recorder	1 set	297,900
2.	Video light with transformer	1 set	18,000
3.	Video cassette tape (blank) L-250S	10	26,500
	Video cassette tape (blank) L-125S	20	47,000
4.	Video cassette tape	3	52,400
5.	Video tape rack and copy stand	1 set	50,000
Vehicle			1,438,000
1.	Micro bus 12 seats with air condition	1	1,438,000
		Total 16 items FOB	4,635,400 ¥

List of durable articles bought in Thailand

Suphan Buri Experiment Station and Training Center Project

Technical Division : Department of Agriculture

1978 - 1981

		Number	Price (Baht)
1.	Bicycle	1	1,105
2.	Electric fan (16 inches)	1	1,400
3.	Air condition (split type)	1	27,000
4.	Hover electric polisher	1	5,500
5.	Sofa set	1 set	3,100
6.	Tank (400 gallon) with stand	2	3,700
7.	Electric type-writer (both English and Thai languages)	1	30,200
8.	Megaphone - apex	1 set	1,600
9.	Electric water pump (2 inches)	1	3,000
10.	Color television set	1	16,200
		Total	82,805

List of trainees

At Suphan Buri Training Center

Fiscal year 1981

10 th class

Curriculum "Cropping system data analysis"

Duration : 6-10 October 1980

1. Department of Agriculture

1. Mr. Suppachai Banglieng
2. Mr. Nichai Thaipanich
3. Mr. Vichien Vor-thong
4. Mr. Chalerm Sookpong
5. Mr. Pairoj Suvannajinda
6. Mr. Chanchai On-sa-ard
7. Mrs. Prissana Hanviriyapan
8. Mr. Suvan Hanviriyapan
9. Mr. Anuchit Thongklam

2. Kasetsart University

10. Miss Salaya Sukanivat

11 th class

Curriculum "Cropping system data analysis"

Duration : 20-24 October 1980

1. Department of Agriculture

1. Mr. Vissanu Boonying
2. Mr. Viset Thanyanivat
3. Mr. Thavee U-prasert
4. Mr. Sereevatt Jattupornpongs
5. Mr. Hassachai Boonjongs
6. Miss Vena Sudjaritpanich
7. Miss Suchavadee Nakhathat
8. Miss Vijittra Jittathai

2. Chieng-mai University

9. Mr. Somchai Ongprasert
10. Mr. Pichit Thanee

12 th class

Curriculum "Experimental designs and computer analysis"

Duration : 19-20 November 1980

1. Royal Irrigation Department

1. Mr. Siroj Prakoonhangsit
2. Mr. Piya Sunipasa

2. Agricultural Land Reform Office

3. Mr. Jamari Rammana
4. Miss alisa Hommali

Department of Agriculture

3. Entomology and Zoology Division

5. Mr. Veeravuth
6. Mr. Chalermvongs Thiravatt
7. Mr. Pinij Pylpanich
8. Mr. Narong Jantharaprapa
9. Mr. Suvatt Ruay-aree

4. Technical Division

10. Mr. Vissan Boonying
11. Mr. Visut Thongvanuvatt
12. Miss Pattharanee Juthanon
13. Mr. U-thai Aromratt

5. Planning Division

14. Miss Vijittra Jittathai
15. Miss Lavan Aiemsuphan

6. Rice Division

16. Mr. Monthien Jinda

7. Agricultural Engineering Division

17. Mr. Jareon Khomkhampan

8. Horticulture Division

18. Mr. Vivatt Panu-umpai

9. Field Crops Division

19. Mr. Gittinan Theeravanvilai
20. Mr. Veerapol Chatchavanvongs
21. Mr. Prasop Veeragompanich
22. Mrs. Vatcharee Lertmongkol
23. Mrs. Permpoon Sarathoy
24. Mr. Suppachai Gaewmeechai
25. Mrs. Nida Sorra-chart
26. Mr. Supoj Keunevanichgoon
27. Miss Ganyaratt Ittharatt
28. Mr. Surapong Jaremratt

10. Chemistry Division

29. Miss Sasithorn Sovan

13 th class

Curriculum "Integrated farming in irrigated area"

Duration : 15-26 December 1980

1. Department of Community Development

1. Mr. Thongchart Jullapo
2. Mr. Pirun Khomenetch
3. Mr. Prapone Sugrikhan
4. Mr. Theera Boonpiem
5. Mr. Sakda Noksagna

2. Office of Accelarated Rural Development

6. Mr. Montree Chowwalit
7. Mr. Prevatt Thongmaen

3. Royal Irrigation Department

8. Mr. Thanoo-chai Voraritthanon
9. Mr. Anan Lila
10. Miss prapa Theerapolvijittra
11. Mr. Pongesag Sornsomsook
12. Mrs. Jintana Khamnimnuan

4. Land Development Department

13. Mr. Vitthaya Arunratt
14. Mrs. Anonge Sutthavars
15. Mr. U-dom Savangsri
16. Mr. Thavee Rattanaratt
17. Mr. Yongyuth Jeerapan

5. Office of Agricultural Economics

18. Mr. Paisarn Hae-maratt
19. Mr. Suvit Khuanchom

6. Department of Public Welfare

20. Mr. Jumpol Suvansaen
21. Mr. Kuang Chowmarn

7. Department of Agricultural Coopertive Promotion

22. Mr. Govit Mee-choo-sin
23. Mr. Surapol Petchmil
24. Mr. Vanchai Immachai
25. Mr. Pichai Iscaranonthagul

8. Department of Agriculture

26. Mr. Somsak Somrod
27. Mr. Banleue Promsri
28. Mr. Veerasag Sri-on
29. Mr. Veera Muanggaew
30. Mr. Aneg Suvannahonge

9. Department of Agricultural Extension

31. Mr. Sae-nee Khoch-ampol
32. Mr. Somsag Viratchgul
33. Mr. Prayuth Suksomjit
34. Mr. U-thai Samrertram
35. Mr. Aneg Imjit

10. Office of Development Military

36. Chief warrant officer Ml. Sumolprom Gommalars

11. Office of Undersecretary of Ministry of Agriculture and Cooperative

37. Mr. Samrarn Po-gnern
38. Mr. Gietisag Moonlakhampa
39. Mr. Prapan Aadjanagul
40. Mr. Vinai Glansorn

12. Agricultural Land Reform Office

41. Mr. Seubesin Givitanggoon
42. Lt. Preecha Chuankhang R.N.
43. Mr. Pramukh Thongsiriponge
44. Mr. U-thai Sankkhow
45. Mr. Grisadavuth Vongepaiboon-vattana

14 th class

Curriculum "Introduction to computer programing and Utilizing"

Duration : 21-22 January 1981

Department of Agriculture

1. Entomology and Zoology Division

1. Mr. Chalermvonge Thiravatt
2. Mr. Pinij Nilpanich
3. Mr. Narong Jantharaprapa
4. Mr. Suvatt Ruay-aree

2. Technical Division

5. Mrs. Pattharanee Juthanon

3. Agricultural Engineering Division

6. Mr. Jaroon Khomkhampan

4. Horticulture Division

7. Mr. Vivatt Panu-ampai

5. Field Crops Division

8. Mrs. Vatcharee Lertmongkol
9. Mr. Permpoon Sarathoy
10. Mr. Suppachai Gaewmee-chai
11. Mrs. Nida Sorra-chart
12. Mr. Suraponge Jaremratt

15 th class

Curriculum "Introduction to computer programing and utilizing"

Duration : 27-28 January 1981

1. Royal Irrigation Department

1. Mr. Siroj Prakoonhangsit
2. Mr. Piya Sunipasa

2. Agricultural Land Reform Office

3. Mr. Jaggri Rammana
4. Miss alisa Hommali

Department of Agriculture

3. Technical Division

5. Mr. Vissanu Boonying
6. Mr. Viset Thanyanuvatt
7. Mr. U-thai Aromratt

4. Planning Division

8. Miss Vijittra Jittathai
9. Miss Lavan Aiemsuphan

5. Horticulture Division

10. Mr. Gittinan Theeravanvilai
11. Mr. Prasop Veeragornpanich
12. Mr. Veerapol Chatchavanvonge
13. Mr. Supoj Meunevanichgul
14. Miss Ganyaratt Ittharatt

6. Chemistry Division

15. Miss Sasithorn Sovan

16 th class

Curriculum "Rice cultivation techniques in irrigated area"

Duration : 9-20 March 1981

1. Royal Irrigation Department

1. Miss Chaveevan Vikhampapraharn
2. Mr. Sampas Ungtragoon
3. Mrs. Benjanee Khrua-gaew
4. Miss Sujin Jaroonsag
5. Mr. Pailin Nuchthavorn

2. Office of Agricultural Economics

6. Mrs. Jiemjai Gittipagorn
7. Mr. Nivatt Darnpanichgarn

3. Department of Agricultural Cooperative Promotion

8. Mr. Veerachart Hiranyasamrit
9. Mr. Somchai Mee-saeng
10. Mr. U-dom Kamsuk

4. Office of Undersecretary of State

11. Mr. Theerasag Vanvijit
12. Mr. Samnak Gayapard
13. Mr. Kemchai Uttamavathin
14. Miss Monthana On-vimol

5. Department of Community Development

15. Mr. Surachai Somgasettrin
16. Mr. Pimol Butthanoo
17. Mr. Nivetsh Puangponge
18. Mr. Yutthapoom Sukpinich
19. Mr. Somkid Jamsillapa

6. Department of Agriculture

20. Mr. Poj Vatjanapoom
21. Miss Vassana Voramits
22. Mr. Pratheep Pintanon

7. Department of Agricultural Extension

23. Mr. Chai Chiewsil
24. Mr. Chanchai Chimpalee
25. Mrs. Ratchanee Plodpai

8. Agricultural Land Reform Office

26. Mr. Thammasag Phoovannachaigul
27. Mr. Prasert Gonggietgnarm
28. Miss Benjaras Thanyasirigul
29. Miss Vanatcharavalai Anukhrohhanon
30. Mr. Panya Sammanurag

9. Department of Public Welfare

31. Mr. Nipone Vitthayagij

17 th class

Curriculum "Advance of computer programing and utilizing"

Duration : 22-23 April 1981

1. Entomology and Zoology Division

1. Mr. Chalermvonge Thiravatt
2. Mr. Pinij Nilpanich
3. Mr. Naronge Jantharaprapa
4. Mr. Suvatt Ruay-aree

2. Technical Division

5. Mrs. Pattharanee Juthanon

3. Hortioulture Division

6. Mr. Nivatt Panu-ampai

4. Field Crops Division

7. Mr. Permpoon Sarathoy
8. Mr. Suppachai Gaewmee-chai
9. Mrs. Nida Sorrachart
10. Miss Ganyaratt Ittharatt
11. Mr. Supoj Meunevanichgul

18 th class

Curriculum "Advance of computer programing and utilizing"

Duration : 28-29 April 1981

1. Technical Division

1. Mr. Vissanu Boonying
2. Mr. Viset Thanyanuvatt
3. Mr. U-thai Aromratt

2. Planning Division

4. Miss Vijittra Jittathai
5. Miss Lavan Aiemsuphan

3. Field Crops Division

6. Mr. Gittinan Theeravanvilai
7. Mr. Veerapol Chatchavanvonge
8. Mr. Prasop Theeragornpanich

4. Chemistry Division

9. Miss Sasithorn Sovan

5. Royal Irrigation Department

10. Mr. Siroj Prakoonhangsit
11. Mr. Piya Sunipasa

19 th class

Curriculum "Rice cultivation techniques in irrigated area"

Duration : 8-19 June 1981

1. Royal Irrigation Department

1. Mr. Yongeyuth Vessanusit
2. Mr. Boonvetch Chuleesang
3. Mr. Pradit Suksamram
4. Mrs. Ranchana Jannak
5. Mr. Thananchai Chernghom
6. Mrs. Ladavan Pathoomvit

2. Office of Undersecretary of State

7. Mrs. Sirivan Faengyo-tha
8. Mr. Choke Gaewjanthurk
9. Mr. Sukone Gaewvichit
10. Mr. Preecha Khattiya

3. Department of Agricultural Extension

11. Mr. Preecha Nokkunthong
12. Mr. Sahassachai Trisakorn
13. Mr. Jamlong Thipvonge
14. Mr. Sa-ner Komkai
15. Mr. Chow Jamnongesut
16. Mr. Chartchai Chumsai na ayutthaya

4. Office of Accelerated Rural Development

17. Mr. Kanit Gnernvatthana
18. Mr. Panu Thammasarn

5. Department of Agricultural Cooperative Promotion

19. Mr. Sangkom Nanthasaen
20. Mr. Narong Kongeman
21. Mr. Chow Kotchnil

6. Office of Agricultural Economics

22. Mrs. Somporn Kwanthong
23. Mr. Yongeyuth Peungchimplee

7. Department of Public Welfare

24. Mr. Somchai Thangthong

8. Land Development Department

25. Mr. Vicha Nakachart
24. Mr. Viratch U-samrarn
27. Mr. Suvatt Ammararonge

9. Department of Community Development

28. Mr. Nikom Vongeboon-gnarm
29. Mr. Paivuth Ati-chart
30. Mr. Sitthisag Siripatt

10. Department of Agriculture

31. Mr. Surapol Jattuporn
32. Mr. Assavin No-thaya
33. Mr. Chin Pimsen
34. Mr. Vatchara Natepichit
35. Mr. Jaran Taisap
36. Mr. Suratt Thongkumdee

20 th class

Curriculum "Crop cultivation techniques and integrated farming in irrigated area"

Duration : 3 August - 27 November 1981

1. Royal Irrigation Department

1. Mr. Sudjai Khanthichote
2. Mr. Anan Jaggaew
3. mr. Panchai Boonpen

2. Land Development Department

4. Mr. Padej Satharn
5. Mr. Pa-yoong Siridamronge
6. Mr. Somchai Gengkhunthode

3. Office of Undersecretary of State

7. Mr. Wichien Boontham
8. Miss Suva-kone Sumana
9. Mr. Pitthaya Narmdaeng
10. Mr. Chalong Maneechote

4. Department of Public Welfare

11. Mr. Gamjad Janejit
12. Mr. Maitree Gatepan
13. Mr. Savad Gaewgul
14. Mr. Savang Saeng-im

5. Office of Development Military

15. Major Vorathep Po-thipan
16. Sergt. Banjerd Vongeya-ra

6. Department of Agriculture

17. Miss Orasa Saengthamronge
18. Miss Janya Hongekhajorn
19. Miss Pensri Hanthasomsararn
20. Miss Sarinna Jaropassaratt
21. Mr. Chatchavan Ararmchoke
22. Mr. Voravuth Panichvatthana
23. Mr. Samaporn Suppasil
24. Mr. Vatthanasag Chompoonich

7. Office of Agricultural Economics

25. Mr. Nakorn Vongeviratt
26. Mr. Suppachart Srisurag
27. Mrs. Suvan Petchararit

8. Department of Agricultural Extension

28. Miss Somporn Gateponge
29. Miss Tuanejai Boonpuang
30. Mr. Cherdsuk Pavanavichien

9. Agricultural Land Reform Office

31. Mr. Surapol Jaruponge
32. Mr. Thammasag Poovannachaigul
33. Mr. Somsag Tantivaravit

Epilogue

The training work of Suphan Buri Training Center is over than the aim because Modern Germinated Broadcasting Rice Cultivation Project is the acceleration project by the government policy. So, Center trains this curriculum to 480 officials in 7 classes before Dry season of 1981. Including to the common training those are 243 trainees in 11 classes and 3 seminars (136 members), there are all 859 participants.

This Center is under control of Technical Division Director, Chief of Suphan Buri Training Center and Chief of Agronomic Management Branch. The works are carried on by working group and sub-committee of Project. The staffs of administration officers, that Project Manager Assistant is the leader, are as follows

1.	Mr. Vichien Sasiprapa	Agricultural technician 7	Agronomic Management Branch, Technical Division
2.	Mrs. Achana Siripatt	Economist 5	" "
3.	Miss Jammonge Nardsomboon	Agricultural technician 5	" "
4.	Mr. Pairatt Duangpiboon	Agricultural technician 4	" "
5.	Miss Sasithorn Sovan	Scientist 5	Suphan Buri analysis laboratorial work
6.	Suphan Buri Rice Experiment Station officers		
7.	Dr. T. Sugahara	Japanese expert (JICA) of Suphan Buri Training Center	
8.	Mr. Y. Takashima	Japanese expert (JICA) of Suphan Buri Training Center	

This book is the continual report from 1980 for spreading the coordination of Thai and Japanese government in agricultural development technology relaying to the persons who are interested.

Vichien Sasiprapa
Making report of 1981
April, 1982

Practical Report

by

Trainees and conducting group

Crops cultivation techniques and integrated farming in irrigated area

3 rd August 1981 - 27 th November 1981.

Suphan Buri Training Center

Technical Division

Department of Agriculture

Introduction

These works are the part of training practicing in curriculum "Crops cultivation techniques and integrated farming in irrigated area" from August 3 to November 27, 1981 at Suphan Buri Training Center.

There are 33 trainees from 9 agencies as

1.	Royal Irrigation Department	3	participants
2.	Land Development Department	3	"
3.	Office of Undersecretary of State	4	"
4.	Department of Public Welfare	4	"
5.	Office of Development Military	2	"
6.	Department of Agriculture	8	"
7.	Office of Agricultural Economics	3	"
8.	Department of Agricultural Extension	3	"
9.	Agricultural Land Reform Office	3	"

This is the first 4 months long term training so the practice is nearly to the lecture part. The practicum are planned and controlled by working staffs of Suphan Buri Training Center

Vichien Sasiprapa

In the name of Working staff

Report making

December 25, 1981

C O N T E N T

Staffs and groups

1. Working staff
   1. Mr. Vichien Sasiprapa
   2. Mr. Pairatt Duangpiboon
   3. Miss Jamnonge Nardsomboon
   4. Mrs. Achana Siripatt

2. Experts
   1. Dr. T. Sugahara
   2. Mr. Y. Takashima

2. Groups

1 st group

Mr. Sudjai Khanthichote
Mr. Vichien Boontham
Mr. Savad Gaewgul
Miss Pensri Nanthasonsararn
Mr. Nakorn Vongeviratt
Mr. Surapol Jaruponge

2 nd group

Mr. Anan Jaggaew
Miss Suvakon Sumana
Mr. Savaeng Saeng-im
Miss Sarinna Jaropassaratt
Mr. Suppachart Srisuratt
Mr. Thammasag Poovannachaigul

3 rd group

Mr. Panchai Boonpen
Mr. Pitthaya Narmdaeng
Major Vorathep Po-thipan
Mr. Chatchavan Ararmchoke
Mrs. Suvan Petchrit
Mr. Somsag Tantivoravit

4 th group

Mr. Phadej Satharn
Mr. Chalong Maneechote
Sergt. Banjerd Vongeyara
Mr. Voravuth Panichvatthana
Miss Somporn Gateponge

5 th group

Mr. Payoong Siridamronge
Mr. Gamjad Janejit
Miss Orasa Saengthamronge
Miss Samaporn Suppasil
Miss Tuanejai Boonpuane

6 th group

Mr. Somchai Gengkhunthode
Mr. Maitree Gatepan
Miss Janya Hongekhajorn
Mr. Vatthanasag Chompoo-nich
Mr. Cherdsuk Pavanavichien

Report of Practicum 1

"Salt quantities finding in different Specific gravity of solution"

Introduction

Modern germinated broadcasting rice cultivation project was begin in fiscal year 1981. The aim is to extend germinated broadcasting method in area 10 million rai in 1966. The suggestions from Department of Agriculture about seed preparation are separation with salt solution soaking in warm water before seed soaking. But now, there is some experiments show that warm water soaking isn't necessary. However, seed separation by salt solution can be used. In general, the specific gravity of solution is 1.10 or floating part of fresh egg in the solution is equal to 1 baht coin.

Objective

To find the quantity of salt for making the solution that is good for seed separation.

Apparatus

1. 1 fresh egg
2. Salt
3. Beaker
4. Balance
5. Hydrometer
6. Stirring wood
7. Container

Method

1. Pour 800 cc of water into container then record.
2. Drop fresh egg into the water. The egg will sink down and lay horizontally on the ground of container then take the egg up.
3. Weigh the salt then mix it with water little by little, stirring until the salt dissolves. Test by floating the fresh egg in the solution. If the egg float until it is near water surface, it means the specific gravity of the solution is near 1.08. Dissolve the salt until the specific gravity is 1.08. Weigh the rest of salt so we can calculate the quantity of salt that used. If we float the egg in this solution, the part of egg that float over the water surface is equal

to the quarter coin. Record the quantity of water and salt.

4. Adding more salt until the floating part is equal to 1 baht coin. Measure with hydrometer. The specific gravity should be 1.10. Record the quantity of water and salt.
5. Adding more salt again until the specific gravity is 1.12. Record the weight of salt that used.
6. If the solution is too concentrate, pouring the water that is measure so we can calculate the weight of salt that dissolve in 800 cc of water

Place and period of Experiment: At the big laboratory room of Suphan Buri Irrigated Agriculture Development Training Center on August 5, 1981.

Result: From this table,

Weight of salt in gram per 800 cc of water.

Specific gravity	Group						Total	Mean	Salt: water Kg./- 20 l.
	1	2	3	4	5	6			
1.08	130.8	179.1	166.0	160.3	139.8	165.4	941.4	156.9	3.922
1.12	183.2	185.7	172.0	196.8	206.3	172.0	1,116.0	186.0	4.650

It shows that 20 litres of solution needs slat 3.9-4.6 Kg. so it will dense enough for fresh egg to float equal to 1 baht coin.

Conclusion

1. The specific gravity of pure water is 1.00.
2. The specific gravity of salt solution for Thai rice varieties is 1.10 - 1.12 and Japanese rice varieties is 1.14.
3. If wanting 20 litres of salt solution that dense enough for fresh egg to float equal to 1 baht coin, should take salt about 3.9 - 4.6 Kg. (or 4 - 5 Kg., this maybe concern with NaCl % in salt.)
4. In commonly, farmers always use jar for seed separation so they must prepare salt solution at least 50 litres. (For separating 1 grabung (bamboo basket) of rice (about 12 - 15 Kg.))
5. By this reason, farmers will buy salt at least 10 - 12.5 Kg. in each season. In some area, salt is expensive and difficult to available so there must be some studies about the necessary of seed separation by salt solution when compared with seed separation by water.

Report of Practicum 2

"Germination test of rice seed that separated by different densities salt solution"

Introduction

Seed for rice cultivation should be good variety, appropriated for field condition and pure so rice plant will equally grow and grow well. Most of rice varieties will have incubation period after harvest from 1 day - 3 months but Thai rice varieties are about 1 - 8 weeks. Should test the germination percent before nursery or sowing so there won't be the problem about non-germinated seed or less germinated seed. If choose the good variety, it will save the money and labor and reduce the diseases, insects and pests problems. The seed should have germination percent higher than 80%. If using the lower than 80% seed, should take more seed than normal follow to the germination percent of that seed.

Objective

To find the different of germination percent between rice seed that separated by different specific gravities salt solution (1.08 and 1.12).

Apparatus

1. Rice seed (R.D. 25)
2. Water (Specific gravity = 1.00)
3. Salt solution (Specific gravit es = 1.08 and 1.12)
4. 6 germination plates
5. Blotting paper or old newspaper
6. Stir wood

Experimental design

Completely Randomized Design, 6 replications and the treatments are

Treatment 1. Sink seed in salt solution that specific gravity is 1.08
Treatment 2. Float seed in salt solution that specific gravity is 1.08
Treatment 3. Sink seed in salt solution that specific gravity is 1.12
Treatment 4. Float seed in salt solution that specific gravity is 1.12
Treatment 5. Sink seed in water that specific gravity is 1.00
Treatment 6. Float seed in water that specific gravity is 1.00

Method

Salt solution at specific gravities 1.08 and 1.12 are prepared by the method in Practicum 1.

1. Prepare salt solution at specific gravities 1.08 and 1.12 in each container 800 cc.
2. Put seed into container. Stir with wood or rub the seed to get rid of the air then out the float seed from the sink seed. Wash in clean water 2-3 times then germinate in germination plates those laid the blotting paper or newspaper inside. Write the name of each treatment. Soaking seed with water 8-12 hours then pouring the water out. Keep plates in room temperature. Should check the moisture of germinated plates. After 72 hours, counting the number of germinated and non-germinated seed. The treatments those seed separation by water are doing the same method too.

Place and period of Experiment At laboratory room of Suphan Buri Irrigated Agriculture Development Training Center on August 6-10, 1981.

Result From Table 1.

The highest germination percent is the seed that separated by salt solution at specific gravities 1.08 and 1.12. Both treatments have germination percent = 94.8 and 94.4. The germination percent of seed separation by water is 90.5. The float seed is the same tendency too. It means the more density solution can separate more imperfect seed. And the half seed can germinate although it isn't strong as the full seed

Conclusion

1. From the experiment, it isn't necessary to separate seed by salt solution because it is rather difficult and sometimes salt is expensive and rare. And if farmers don't wash in clean water 2-3 times after separation to clean the salt out, seed won't germinate.
2. In practical, should suggest farmer to prepare seed by winnower or winnowing basket then separate by water.
3. Should emphasize farmer to test germination percent after winnowing or separating before soaking for nursery or sowing because if the seed quanlity isn't appropriate, it will lose a lot of money and labor. Low germination percent maybe come from many causes as

1. Seed was kept too long.
2. Seed was kept in inappropriate container.
3. Seed wasn't dried. Seed germination will lose if the moisture is too high.
4. Seed was destroyed by weevil.
5. Seed had just been harvested so it was in incubation period.

Table 1 Germination percent of R.D. 25 that was separated in different Specific gravities solution

Treatment	Group						Total	Mean
	1	2	3	4	5	6		
1	92.8	98.3	95.5	100.0	82.1	98.2	566.9	94.4
2	64.8	54.1	68.4	46.6	53.1	52.2	339.2	56.5
3	96.6	96.3	94.4	100.0	85.0	96.8	569.1	94.8
4	76.3	87.4	73.0	65.8	45.9	57.5	405.9	67.6
5	97.5	98.8	92.8	86.4	88.4	79.1	543.0	90.5
6	12.8	22.8	36.7	18.8	23.5	25.5	140.1	23.3

Treatment 1. Sink seed in salt solution at specific gravity 1.08
Treatment 2. Float seed in salt solution at specific gravity 1.08
Treatment 3. Sink seed in salt solution at specific gravity 1.12
Treatment 4. Float seed in salt solution at specific gravity 1.12
Treatment 5. Sink seed in water at specific gravity 1.00
Treatment 6. Float seed in water at specific gravity 1.00

Arcsin transformer

Treatment	Specific gravity	Group 1	2	3	4	5	6	Mean
Sink	1.08	74.4	82.5	77.8	90.0	65.0	82.3	78.7
Sink	1.12	79.4	78.9	76.3	90.0	67.2	79.7	78.6
Sink	1.00	80.9	83.7	74.4	68.4	70.1	62.8	73.4
Float	1.12	60.9	69.2	58.7	54.2	42.3	49.3	55.8
Float	1.08	53.6	47.4	55.8	43.1	46.8	46.3	48.8
Float	1.00	21.0	28.5	37.3	37.3	29.0	30.3	30.6

Analysis of variance

Source of variance	d.f	S.S	M.S	F	Table 1 %
Treatment	5	11,257.37	2,251.47	40.0**	3.70
Error	30	1,687.57	56.25	-	
Total	35	12,944.94	-		

$$LSD_{.01} = 2.75\sqrt{\frac{2 \times 56.25}{6}} = 11.9$$

Sink	1.08	a	78.7	-				
Sink	1.12	a	78.6	0.1	-			
Sink	1.00	a	73.4	5.3	5.2	-		
Float	1.12	b	55.8	22.9**	22.8**	17.6**	-	
Float	1.08	b	48.8	29.9**	29.8**	24.6**	7.0	-
Float	1.00	c	30.6	48.1**	48.0**	42.8**	25.2**	18.2**

Report of practicum 3

"Yield calculation from yield components"

Introduction

Yield components are the index of yield quantity. The important yield components are

1. The number of panicles per unit area
2. The number of spikelets per panicle
3. Percentage of good grain and chaff per panicle
4. Weight of good grain (1,000 grains)

In yield evaluation, if measuring from the total field, we can get the truely value but we can't find the cause that effects yield such as high tillering but less panicles, small panicles and a lot of chaff, etc.. So, we must know the yield components for truely improving.

Objective

To know how to calculate yield components so we can know the way to solve and improve problems in research and extension

Apparatus

1. R.D. 7 one hill per each group
2. Measurement tape (cm. unit)
3. Fine balance (200 gm. with 2 decimals)
4. Kett moisture tester

Method

1. Counting and recording the number of panicles
2. Counting and recording the number of good grain, chaff and total in each panicle
3. Summing the number of good grain, chaff and total of all panicles in 1 hill then divide with the number of panicles on the hill
4. Calculating the percentage of good grain and chaff of each panicle then find the mean of the hill
5. Counting and weighing 1,000 good grains with fine balance then recording
6. Testing the moisture % of good grain then calculate the weight of 1,000 good grains at the standard moisture 14%
7. Calculating the yield from yield components

Place and period of experiment At the big laboratory room of Suphan Buri Irrigated Agriculture Development Training Center on August 7, 1981

Result

From the tables, the highest yield comes from the hill that have mean of panicles = 19 and the calculated yield is 1,819 Kg./rai. The lowest one is the hill that has the mean of panicles = 11 and the calculated yield is 856 Kg./rai. From the correlation coefficient calculation, the number of pnaicles per sq.m. is the most correlated with yield. The next is the number of spikelets per sq.m.. The percentage of good grain and 1,000 grains weight are the least correlated with yield.

Conclusion

1. If wanting yield to be higher than 1,000 Kg./rai, the number of panicles per sq.m. should be higher than 300. And if wanting more than 1,500 Kg./rai, the mean value of panicles per sq.m. should be over than 450.
2. The panicles should be big. The number of spikelets per panicle should be between 75 - 100.
3. The percentage of good grain is the important factor although it doesn't have high correlation with yield in this experiment because the percentages of good grain are high. If the inflorescence period is in hot or cold weather, the percentage of good grain will be low. In this case, yield will be affected too.
4. 1,000 grains weight in the same variety isn't so different. But in different varieties, the value should be different.

Formulae

1. The number of panicles/sq.m. = The number of panicles/hill × The number of hill/sq.m.

2. The number of spikelets/panicle = $\frac{\text{The number of total spikelets}}{\text{The number of panicles/hill}}$

3. The number of good grain/panicle = $\frac{\text{The number of total good grain}}{\text{The number of panicles/hill}}$

4. The number of chaff/panicle = $\frac{\text{The number of total chaff}}{\text{The number of panicles/hill}}$

5. Percentage of good grain = $\frac{\text{The number of total good grain}}{\text{The number of total grain}} \times 100$

   or = $\frac{\text{The number of good grain/panicle}}{\text{The number of total grain/panicle}} \times 100$

6. Yield at moisture 14% = Weight of yield $\times \frac{(100 - \text{moisture}\%)}{100 - 14}$

7. Yield = The number of panicles/sq.m. × The number of spikelets per-panicle $\times \frac{\text{Good grain }\%}{100} \times \frac{1{,}000 \text{ grain weight}}{1{,}000}$

   = gm./sq.m.

   = $\frac{\text{gm.}}{1 \text{ sq.m.}} \times \frac{1{,}600 \text{ sq.m.}}{1{,}000 \text{ gm.}}$ = Kg./rai

Table 1. Yield and yield components

Group	No. of panicles/sq.m.	No. of total grain/panicle	No. of grain		Percent		1,000 grain weight	Yield (gm.) Kg./rai
			Good grain	Chaff	Good grain	Chaff		
1	19 × 24 = 456	86.7	79.3	7.4	91.44	9.36	31.45	1,819
2	11 × 24 = 264	72.4	63.8	8.6	88.08	11.92	31.77	856
3	19 × 24 = 456	82.5	72.3	10.2	87.64	12.36	31.14	1,642
4	9 × 24 = 216	94.5	84.1	10.4	88.99	11.01	31.74	922
5	11 × 24 = 264	96.7	85.8	10.9	88.72	11.28	30.10	1,091
6	20 × 24 = 480	86.5	74.3	12.2	85.89	14.11	30.64	1,748
Total	2,136	519.3	459.6	59.7	530.76	69.14	186.84	8,078
Mean	356	86.0	76.0	10.0	88.37	11.63	31.14	1,346

Yield components

Group	1 No. of panicles -/sq.m.	2 No. of spikelets -/paniole	3 % ripened	4 1,000 grains weight	1 × 2 No. of spikelets -/sq.m.	Yield Kg./rai
1	456	86.7	91.44	31.45	39,535	1,819
2	264	72.4	88.08	31.77	19,114	856
3	456	82.5	87.64	31.14	37,620	1,642
4	216	94.5	88.99	31.74	20,412	922
5	264	96.7	88.72	30.10	25,529	1,091
6	480	86.5	81.89	30.64	41,520	1,748
Mean	356	86.0	88.37	31.14	30,622	1,346

Correlation coefficient r	Regression
1. No. of panicles/m^2 and yield	
$r = 0.970$	$\hat{Y} = 85.56 + 3.54X_1$
	$X_1 = 250$ $\hat{Y}_1 = 970.9$
	$X_2 = 400$ $\hat{Y}_2 = 1,502.2$
2. No. of spikelets/paniole and yield	
$r = -0.009$	$\hat{Y} = 1,385.56 - 0.4532X_1$
	$X_1 = 75$ $\hat{Y}_1 = 1,351.6$
	$X_2 = 90$ $\hat{Y}_2 = 1,344.8$
3. Ripened %	
$r = 0.007$	$\hat{Y} = 1,193.03 + 1.733X_1$
	$X_1 = 85$ $\hat{Y}_1 = 1,340.4$
	$X_2 = 90$ $\hat{Y}_2 = 1,349.0$
4. 1,000 grains weight	
$r = 0.509$	$\hat{Y} = 697.98 + 17.94X_1$
	$X_1 = 30.1$ $\hat{Y}_1 = 1,238.0$
	$X_2 = 30.7$ $\hat{Y}_2 = 1,248.7$
5. No. of spikelets/m^2 and yield	
$r = 0.993$	$\hat{Y} = 29.601 + 0.043X_1$
	$X_1 = 19,000$ $\hat{Y}_1 = 846.6$
	$X_2 = 40,000$ $\hat{Y}_2 = 1,749.6$

Multiple correlation coefficient		Regression
1. No. of panicles/m^2, No. of spikelets/paniole and yield		
$r^2 = 0.984$		$\hat{Y} = -892.20 + 3.71X_1 + 10.60X_2$
$r = 0.992$	$X_1 = 250$	$X_2 = 95$ $\hat{Y}_1 = 830.6$
	$X_1 = 450$	$X_2 = 85$ $\hat{Y}_2 = 1,678.6$

Report of Practicum 4

"Study on the number of leaves of 5 rice varieties"

Introduction

The new rice varieties from Rice Division, Department of Agriculture, has never been studied about physiology and growth of each leaf and total number of leaves. These factors are index of rice growth. If we know these data, we will know the period of rice growth too. So, we can apply fertilizer in the appropriate period for the maximum yield.

Objective

To study about growth of each leaf, leaf age and the total number of leaves in each variety.

Apparatus

1. 5 rice varieties such as R.D 7, 9, 21, 23 and 25. The seedling age is 17 days
2. Pots size 1/20 sq.m.
3. Chemical fertilizer in rate N-P-K = 1 gm./pot
4. Paddy soil
5. Ruler and 2 color pens

Method

1. Containing paddy soil into pots. Making patch by soil surface should be lower than edge of pot about 1½ inch. Mixing fertilizer with soil 15 cm. deep from the surface.
2. Selecting the same growth seedling like only 1 tiller seedling and should have the same growth age like 5.0 - 5.5 or 6.0 - 6.5. Recording the number of tillers, the height of seedlings, seedling age then marking at the tip of rice leaves by color pen. (Marking at the full growth leaf like seedling age is 5.0 - 5.5 so mark at the 5 th leaf) Don't mark on the other place of leaf because leaf maybe die.
3. Transplanting 6 seedlings, those are data recorded, per 1 pot.
4. Recording the height, tillers and leafage every 4 days.
5. Leaf age is counted by dividing the foreleaf into 10 parts for example the 5 th leaf length is equal to the half of the 4 th leaf so the leaf age is 4.5

6. Marking by using at least 2 colors for example marking the 4 th leaf with red color, when the leaf age is over than 5 (fro example 5.4) should mark with black color and then marking the even with red color and odd with black color.
7. Should set the small wood to mark which plant that is checked so it will be easily found when there are a lot of tillers. We check only the plant that growing from seed.

Place and period of experiment At Suphan Buri Training Center between August 7 to November 20, 1981.

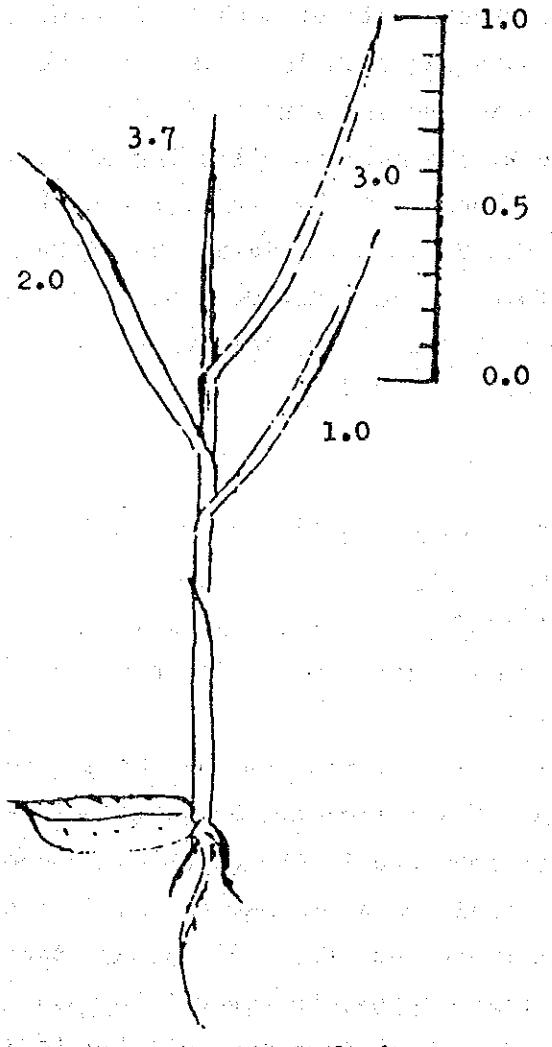
Result

1. From Table 1, R.D. 7, 21 and 23 have 17 leaves. And R.D. 9, 25 have 15 leaves. The growth rate of each leaf in the first 10 days is very high, about 3 days per each leaf. In the weeks after that, each leaf needs more days in growing like 4, 5, 6 and 7 days.
2. From the Table 2, the maximum tillering of rice varieties are different from 3 - 5 weeks and then the tillers will die and quickly reduce except R.D 25 that maintains the tillers in very high rate although in booting stage. However, percentage of panicle of these varieties are very different, the highest one is R.D 7 (51%) and the lowest one is R.D. 21 (24%).

Conclusion

1. R.D. 7, 21 and 23 each has 17 leaves and R.D. 9 and R.D. 23 each has 15 leaves.
2. Growth rate of leaf is about 3 days per 1 leaf in the first 10 days. After that each leaf needs more time as 4, 5, 6 and 7 days in each week that pass by.
3. There is a lot of tillering. The maximum tillering of all varieties is in period 3 - 5 weeks except R.D. 25 that has new tillers until reproduction period. And in the other experiments, R.D. 25 also has a lot of small panicles after harvestes. Rate of panicle percent follows to the varieties. From this study, the lowest panicle percent is 24 and the highest panicle percent is only 51.
4. The height of rice plant increases similar to the first period of tillering rate and the increment becomes slowly when rice plant is nearly to maximum tillering and booting stage and then it is very quickly again in flowering stage. These are the same characters in all varieties.

5. This study is in wet season. We can't conclude about the number of leaves of these 5 varieties should be the same in dry season because the day is long in dry season. So, there should be some studies for these factors again.



Leaf age counting of rice

Table 1. Leaf age and total number of leaf of 5 rice varieties

Variety	When transplanting	Days after transplanting											Harvest
		6	10	14	18	22	26	30	34	38	42	46	
R.D													
7	6.1	8.2	9.5	10.2	11.2	12.5	12.5	13.5	14.0	14.6	15.1		17.0
9	5.8	7.4	8.3	9.4	10.4	10.7	11.5	12.1	13.0	13.5	14.5	15.0	15.0
21	5.3	6.7	8.2	9.1	10.1	11.1	12.1	12.7	13.5				17.0
23	4.7	6.7	8.4	9.3	10.2	10.9	11.7	12.3	13.1	13.9	14.7	15.3	17.0
25	5.6	7.2	9.8	10.5	11.4	11.8	12.5	13.2	13.8	14.6	15.0		15.0
Mean Day/leaf		3.4	3.0	4.7	4.2	5.4	4.9	5.7	5.7	6.0	6.0	7.2	

Table 2. The height (cm.) and tillering of 5 rice varieties

	When transplanting	Days after transplanting											Harvest	
		6	10	14	18	22	26	30	34	38	42	46		
Height (cm.)														
R.D. 7	28	34	40	43	45	48	50	54	57	60	62		95	
9	26	31	37	43	49	54	58	60	65	68	71		94	
21	24	31	36	41	49	*	59	*	64	65	69	73	95	
23	27	34	39	45	49	51	56	61	62	69	71	74	81	
25	28	35	46	47	55	58	62	64	66	69	73		95	
Tillering (Plant/pot)													No. of panicles per pot	Panicle %
R.D. 7	12	17	21	73	97	103	108	109	109	112	110		57	51
9	18	25	46	73	95	111	123	122	119	119	86		55	45
21	12	21	53	73	182	*	116	*	113	110	98	81	44	24
23	6	18	31	58	76	100	111	119	118	116	113	94	50	42
25	6	18	31	62	88	91	94	102	105	106	107		46	43

* Didn't collect the data

Report of Practicum 5

"Study of rice growth and yield in different transplanting depths"

Introduction

Rice cultivation for high yield need many appropriate factors like good seed, appropriate season, fertilizer in appropriate rate and time, diseases, insect and pests control, good irrigation including to good cultivation, etc.. About transplanting, the important factor is the depth because if transplanting is deep, rice plant needs long time to grow before tillering so the time for tillering period will reduce and this will effect to rice yield also.

Objective

1. Comparing the growth, tillering and soil level that rice plant can tiller between 3 and 10 cm. transplanting
2. Comparing yield, the number of rice plant that can produce panicle and other components between shallow and deep transplanting

Apparatus

1. R.D. 23 seedlings, seedling age is 30 days and selecting only non tiller ones
2. Pots size 1/20 sq.m. with paddy soil
3. Ruler
4. Chemical fertilizer N-P-K in rate 1 gm. of each element/pot
5. Furadan

Experimental design Randomize Completed Block Design, 6 replications and 2 treatments (3 cm. and 10 cm. transplanting)

Method

1. Patch making in the pots until soft. The soil surface is lower than pot edge 1½ inch. Mixing all fertilizer with soil in level 6 inch deep from soil surface then smoothening the soil surface.
2. Selecting 30 days seedlings of R.D. 23 those don't have the tiller, 6 plants for 1 pot. Marking on 3 seedlings 3 cm. from the bole and 10 cm. from the bole of the other 3 seedlings.
3. Marking on the 2 bamboo sticks (1 inch wide x 1 foot long) at 10 cm. and 3 cm. long.
4. Dividing the area in the pot by marking on the pot. One side is for

10 cm. transplanting and the other side is for 3 cm. transplanting.

5. Transplanting by piercing both bamboo sticks into soil together in the wanted level then widing the bamboo sticks and inserting seedling between bamboo sticks in the wanted level (10 cm. and 3 cm.). After this, putting the sticks off and pressing soil to fix the seedling. After finishing the transplanting, watering until water cover soil soil surface.
6. Checking the tillering and height every 4 days.
7. Uprooting 1 rice plant from each treatment 20 days after transplanting. The rest of rice plants are for height, tillering and yield study.

Place and period of experiment At Suphan Buri Training Center on August 7 to November 25, 1981

Result

1. From the uprooting rice plants (Table 1.), shallow transplanting plants have higher tillering than deep transplanting ones by mean about 73%. The height of shallow transplanting ones are a little higher than the deep ones. About the tillering point, the most of shallow transplanting plant tillers from the transplanting point (3 cm. deep from soil surface) but in case of deep transplanting, every plant treads 1 - 2 internodes. The tillering point (by mean) is between 5.7 - 9 cm. from soil surface.
2. The tillering mean of shallow transplanting is higher than deep transplanting by statistic significant.
3. The height is not so significant. However, the shallow ones are a little higher than the deep ones.
4. There are the clearly different in yield and yield components in these factors as yield, number of panicles per unit area, number of spikelets per unit area. About the number of spikelets per panicle, good grain percent and 1,000 grains weight are not so different.

Conclusion

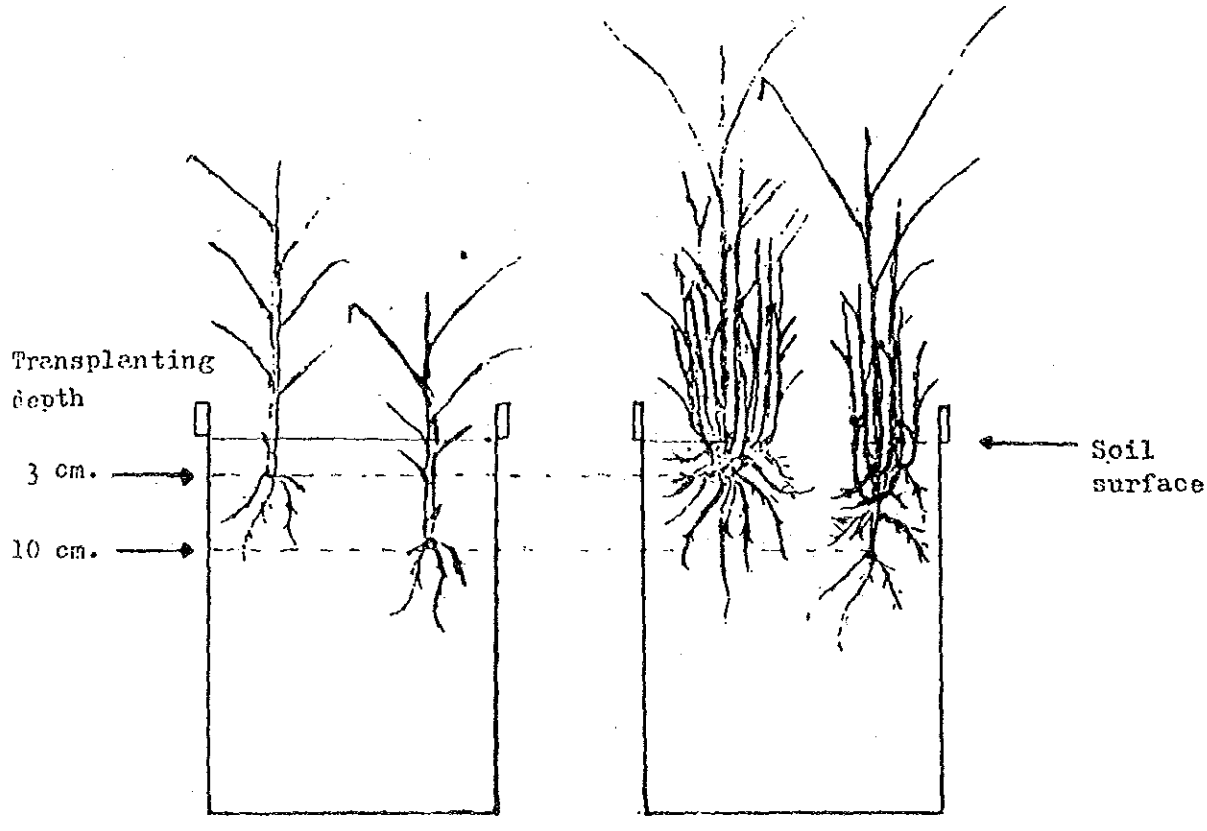
1. Transplanting that deeper than 7.2 cm. (by mean) makes rice plant waste time in treading 1 - 2 internodes about 5 - 10 days that follows to the depth of transplanting and the yield of deep transplanting will lower than shallow one about 40% (in the experiment pot). So, if doing in paddy field, there should be more different than this

because the soil level that lacks oxygen in paddy field is shallow than in the pot.

2. Shallow transplanting make rice plants quickly set up and tiller. The tillers those budding from low nodes are growing well, strong and produce big panicles. From the studies, the tillers in first period, 3 - 4 weeks after transplanting, have high percentage in panicle producing.

3. From this study, rice cultivation for high yield by transplanting method can be done by shallow transplanting (1 - 2 inches deep). This technique is easy and doesn't pay any cost. So, should have some studies in real paddy field in this factor.

Characters of growth, tillering point and tillering of different depths transplanting



When transplanting 20 DAT

Table 1. Show the growth, height, number of tillers and thebeginning of tillering after transplanting 20 days (different depths)

	Transplanting depth	Group 1	2	3	4	5	6	Total	Mean (cm.)
Height (cm.)	3 cm.	45.5	51.0	47.6	51.9	51.5	55.5	303.0	50.5
	10 cm.	40.0	47.0	36.9	49.1	44.8	46.5	264.3	44.0
Tiller	3 cm.	8	16	7	8	10	10	59	9.83
	10 cm.	6	8	3	6	5	6	34	5.67
Depth of tiller point from soil surface (cm.)	3 cm.	3	3	3	2.5	2	1	14.5	2.42
	10 cm.	6.5	7	8.1	5.7	7	9	43.3	7.2
Length from tillering to transplanting (cm.)	3 cm.	0	0	0	0	0	1	1	0.16
	10 cm.	3.5	3	2	3	2	2	15.5	2.58

Table 2. Show tillering and height of R.D. 23 at different depth of transplanting

	Days after transplanting 10	14	18	22	26	30	34	38	42	Harvest	
	Number of plants/hill										
Transplanting depth											panicle %
3 cm.	2.7	4.5	7.6	11.7	19.5	22.1	22.5	22.7	22.9	11.1	48
10 cm.	2.3	3.4	4.8	7.3	11.2	12.8	13.9	14.3	14.5	8.2	57
	Height (cm.)										
3 cm.	36	47	47	51	58	60	62	68	72	104	
10 cm.	34	37	44	48	57	61	65	69	73	99	

Table 3. Yield and yield components of different depths transplanted rice

	3 cm. transplanting						Total	Mean	10 cm. transplanting						Total	Mean
	I	II	III	IV	V	VI			I	II	III	IV	V	VI		
1. Number of panicle per pot	25	21	24	19	20	24	133.0	22.17	13	15	19	17	15	20	99.0	16.5
2. Number of spikelets/panicle	112	96	118	103	106	165	700	116	137	117	117	107	104	152	934	122
3. Number of spikelets/pot	2,802	2,020	1,849	2,056	2,117	3,949	15,793	2,632	1,777	1,752	2,223	1,815	1,563	3,043	12,173	2,028
- Number of good grain	1,529	1,692	1,805	1,543	1,609	3,134	11,312	1,885	1,012	1,324	1,216	1,219	1,103	2,213	8,087	1,347
- Number of chaff	1,273	328	1,044	513	508	815	4,481	748	765	428	1,007	596	460	830	4,086	681
4. Good grain percent	54.57	83.76	63.36	75.05	76.00	79.36	532.1	72.01	56.95	75.57	55.70	67.16	70.57	72.72	398.67	66.44
5. 1,000 grain weight (gm., at 14% moisture)	24.77	22.66	23.17	28.81	28.52	24.60	157.53	26.26	26.12	25.61	24.22	27.57	29.37	25.47	158.36	26.39
6. Yield																
- gm./pot	37.87	46.80	41.82	44.45	45.88	77.09	293.91	48.98	26.43	33.90	29.45	33.60	32.39	56.36	212.13	35.35
- Kg./rai	2,423	2,995	2,676	2,845	2,936	4,934	-	3,135	1,691	2,170	1,885	2,150	2,073	3,607	-	2,262

Table 4. Result analysis of number of panicles/pot in 3, 10 cm. transplant

SOV	d.f	SS	MS	F
Block	4	20.6	5.15	0.763
Treatment	1	90.0	90.0	13.333*
Error	4	27.0	6.75	
Total	9	137.6	-	

Table 5. Result analysis of number of spikelets/panicle in 3, 10 cm. transplanting

SOV	d.f	SS	MS	F
Block	4	628.6	157.15	1.9485
Treatment	1	220.9	220.9	2.739^{ns}
Error	4	322.6	80.65	
Total	9	1,172.1	-	

Table 6. Result analysis of number of spikelets/pot in 3, 10 cm. transplanting

SOV	d.f	SS	MS	F
Block	4	732,857.4	183,214.35	3.6087
Treatment	1	736,579.6	736,579.6	14.5081*
Error	4	203,081.4	50,770.35	
Total	9	1,672,518.4	-	

Table 7. Result analysis of good grain percent in 3, 10 cm. transplanting

SOV	d.f	SS	MS	F
Block	4	790.234	197.559	19.852
Treatment	1	71.770	71.770	7.212^{ns}
Error	4	39.806	9.951	
Total	9	901.811	-	

Table 8. Result analysis of 1,000 grain weight at 14% moisture in 3, 10 cm. transplanting

SOV	d.f	SS	MS	F
Block	4	35.599	8.899	7.585
Treatment	1	0.0002	0.0002	0.0002^{ns}
Error	4	4.694	1.173	
Total	9	40.293	-	

Table 9. Result analysis of yield (gm./pot size 1/20 sq.m.) in 3, 10 cm. transplanting

SOV	d.f	SS	MS	F
Block	4	89.863	22.466	39.221
Treatment	1	372.710	372.710	650.681**
Error	4	2.291	0.573	
Total	9	464.865	-	

History of Suphan Buri Training Center

Experiment Station and Training Center Project for agriculture development in Suphan Buri irrigated area under Technical Division of Department of Agriculture is situated in Suphan Buri Rice Experiment Station, Tambol Rua-yai, Amphur Muang, Changvat Suphan Buri. This project is established by cooperation between Thai and Japanese governments to support Agriculture Development Project in Thailand irrigated area. The purpose of this Center is to support techniques and to train the officials who work in Irrigated Agriculture Development Project area especial in irrigated area of Chao Phya and Mae Klong river.

There are 3 sub-projects in Irrigated Agriculture Development Project which were the cooperation between Thai and Japanese governments, those were signed on 8 th April, 1977 as follows

1. Chao Phya Pilot project of Agricultural Land Reform Office starts to do in area 3,000 rai, donated value 38,831,000 bhat.
2. Mae Klong Pilot Project of Royal Irrigation Department starts to do in area 2,400 rai for No. 1 and 3,000 rai for No. 2, donated value 21,599,000 baht.
3. Experiment Station and Training Center for Agriculture Development in Suphan Buri irrigated area was established for training and technical supporting to officials and technicians who concerned with irrigated agriculture development, donated value 2,500,000 baht and 8,000,000 baht for building construction so the total was 10,500,000 baht.

Policy and aim

1. To train technicians and officials who concerned with Irrigated Agriculture Development Project about modern agriculture for practicing in their works.
2. To develop cropping system in project area to the aims those are high efficiency of resources resorting, agriculture yield increasing, farmer income increasing, resource distributing and consistent income of farmer.
3. To develop productive system to be cooperative form by uniting in production, sale and consumer goods buying. So, we can eradicate the problems about middlemen and bargain power.

4. To disseminate modern technology to farmer in irrigated area expeditiously and efficiently by direct and indirect ways. The direct way is distributing trial farms or technical demonstration in Project area so the farmer can dicide by themselves about varieties, nourishment or cropping system. The indirect way is by training technicians and officials who work in these projects.
5. To solve the problems in projects. If the problem is complicated, we can solve by multidiscipline method.

Conclusion of training result

The first training of Suphan Buri Training Center was on July 1979 and continuing until this December 1981. There are 1,378 officers from many agencies are trained from this Center. In this amount, there are 33 officers in a class of Long term training course (4 months), 296 officers in 8 classes of 2 weeks course, 180 officers in 11 classes of Short course, 480 officers in 7 classes of Special course and 389 officers in 9 seminars. The details are as follows

A. 4 months course

	Curriculum	Duration	participants
1.	Crops cultivation techniques and integrated farming	3 Aug.-27 Nov. 1981	33
		Total	33

B. 2 weeks course

	Curriculum	Duration	participants
1.	Rice cultivation techniques	16-27 July 1979	40
2.	Cropping system	17-28 Dec. 1979	39
3.	Integrated farming	14-25 Jan. 1980	32
4.	Rice cultivation techniques	14-25 Apr. 1980	40
5.	Rice cultivation techniques	12-23 May 1980	33
6.	Integrated farming	15-26 Dec. 1980	45
7.	Rice cultivation techniques	8-20 Mar. 1981	31
8.	Rice cultivation techniques	8-19 Apr. 1981	36
		Total	296

C. Short course

	Curriculum	Duration	participants
1.	Experimental result analysis by computer	5-6 Feb. 1980	15
2.	Modern agriculture	18-20 Mar. 1980	46
3.	Introduction to computer programming and utilizing	16-17 June 1980	12
4.	Advance of computer programing amd utilizing	23-24 July 1980	9
5.	Cropping system data analysis	6-10 Oct. 1980	10

	Curriculum	Duration	participants
6.	Cropping system data analysis	20-24 Oct. 1980	10
7.	Experimental designs and computer analysis	19-20 Nov. 1980	29
8.	Introduction to computer programming and utilizing	21-22 Jan. 1981	12
9.	" ——————————— "	27-28 Jan. 1981	15
10.	Advance of computer programing and utilizing	22-23 Apr. 1981	11
11.	" ——————————— "	28-29 Apr. 1981	11
		Total	180

D. Special course This course followed to the policy of Agriculture and Cooperative Ministry

	Curriculum	Duration	participants
1.	Modern germinated broadcasting rice cultivation	3 Dec. 1980	97
2.	" ——————————— "	8-9 Dec. 1980	66
3.	" ——————————— "	5-6 Jan. 1981	68
4.	" ——————————— "	7-8 Jan. 1981	60
5.	" ——————————— "	12-13 Jan. 1981	74
6.	" ——————————— "	14-15 Jan. 1981	67
7.	" ——————————— "	12-13 Feb. 1981	48
		Total	480

E. Meeting and seminar

	Agency	Item	Duration	participants
1.	Ministry of Agriculture and Cooperative	Water management	25-26 Oct. 1979	45
2.	Rice Division	New rice varieties selection	26-27 May 1980	35
3.	Department of Agriculture and Department of Agricultural Extension	Meeting of officers in Modern germinated broadcasting rice cultivation project in Western region	4 June 1980	45
4.	Department of Agricultural Extension	Special lecture to house wife	4-6 June 1980	18

	Agency	Item	Duration	participants
5.	Department of Agricultural Extension	Modern germinated broadcasting rice cultivation	9 June 1980	50
6.	Department of Agricultural Extension	Home economy	28-29 Oct. 1980	71
7.	Agricultural Land Reform Office	Laws revision	2-6 Mar. 1981	40
8.	Technical Division	Water management	23-27 Mar. 1981	25
9.	Rice Division	Azolla as fertilizer for rice	8 Dec. 1981	60
			Total	389
			Grand total	1,378

Table 1 The number of trainees classified by agencies.
Long term course : Crop cultivation techniques and integrated farming in irrigated area
(3 August 1981 - 27 November 1981)

Agency	participants
1. Royal Irrigation Department	3
2. Land Development Department	3
3. Office of Undersecretary of State	4
4. Department of Public Welfare	4
5. Office of Development Military	2
6. Department Of Agriculture	8
7. Office of Agricultural Economics	3
8. Department of Agricultural Extension	3
9. Agricultural Land Reform Office	3
Total	33

Table 2 The number of trainees classified by agencies
2 weeks courses (December 1979 - December 1981)

Agency	TIME								Total
	* 1	*** 2	** 3	* 4	* 5	** 6	* 7	* 8	
Royal Irrigation Department	10	10	4	5	4	5	5	6	49
Agricultural Land Reform Office	6	6	4		3	5	5		29
Department of Agriculture	9	4	11	6	9	5	3	6	53
Department of Agricultural Extension	15	15		11	5	5	3	6	60
Department of Agricultural Cooperative Promotion			3	4	4	4	3	3	21
Department of Community Development			2	2		5	5	3	17
Department of Public Welfare			2	2	2	2	1	1	10
Office of Development Military			2	1	2	1			6
Office of Accelerated Rural Development			2	2	1	2		2	9
Office of Agricultural Economics		2	1	2	2	2	2	2	13
Office of Undersecretary of State				2	1	4	4	4	15
Thai-IRRI Joint Research Project				3					3
Land Development Department						5		3	8
Department of Fisheries			1						1
Chieng-mai University		2							2
Total	40	39	32	40	33	45	31	36	296

* Rice cultivation Techniques

** Integrated farming

*** Cropping system

Table 3 The number of trainees classified by agencies
Short course (February 1980 - December 1981)

Agency	TIME											Total
	* 1	*** 2	* 3	* 4	** 5	** 6	* 7	* 8	* 9	* 10	* 11	
Royal Irrigation Department	2		1				2		2		2	9
Agricultural Land Reform Office	5		2				2		2			11
Department of Agriculture	8		9	9	9	8	25	12	11	11	9	111
Kasetsart University					1							1
Chieng-mai University						2						2
Farmer Institution		46										46
Total	15	46	12	9	10	10	29	12	15	11	11	180

* Computer programing and utilizing

** Cropping system data analysis

*** Modern agriculture

Suphan Buri Training Center Process

Process of Center consists from proceeding staff, working staff, coordination sub-committee and Irrigated Agriculture Development Project Administration staff as follows

Proceeding staff

1.	Dr. Vinit Jaengsri	Technical Division Director and Project Manager as President
2.	Mr. Boonlert Glaiprayong	Chief of Suphan Buri Rice Experiment Station as Vice-president
3.	Mr. Vichien Sasiprapa	Project-Manager Assistant as Training Director
4.	Mrs. Achana Siripatt	Coordinator
5.	Miss Jamnonge Nardsomboon	Food and Beverage Service
6.	Miss Sasithorn Sovan	Documents preparation and Evaluation
7.	Mr. Pairatt Duangpiboon	Register, Dormitory and Training Control
8.	Mr. Gamol Sirivonge	Art and ceremony
9.	Mr. Noppadol Jongeprasert	Vehicle managing
10.	Dr. T. Sugahara	Expert as Conferer
11.	Mr. Y. Takashima	Expert as Conferer
12.	Working staffs	as Conferers

The last note

This report is the works of practicum in training curriculum "Crops cultivation techniques and integrated farming in irrigated area" of 33 officers from 9 agencies, proceeding officers and Japanese experts at Suphan Buri Training Center between August 3 to November 27, 1981 (4 months).

In this period, proceeding staffs plan easy experiments to train the trainees about creation in problems analysis and solution. And, the results of these experiments can be extended to farmer too. These studies are the cooperation from many persons.

Suphan Buri Training Center considers these experiments will be useful to technicians, officials and other person in researching or extending to farmers.

Vichien Sasiprapa

In the name of
Procedding staffs

TRAINING ACTIVITIES OF 1982

CONTENT

APPENDIX TABLE CONTENT

List of trainees which have been trained by Suphan Buri Experiment Station and Training Center in 1982

20th time	Crops cultivation techniques and Integrated farming in irrigated area	117
21st time	Integrated farming in irrigated area	115
22nd time	Integrated farming in irrigated area	119
23rd time	Cropping system in irrigated area	120
24th time	Introduction to computer programing and utilizing	120
25th time	Student training course	121
26th time	Cropping system in irrigated area	121
27th time	Introduction to computer programing and utilizing	122
28th time	Rice cultivation techniques in irrigated area	122

Training Center for Agriculture Development in Suphan Buri Irrigated Area

History of the project

Experiment Station and Training Center Project for agriculutre development in Suphan Buri irrigated area under Technical Division of Department of Agriculture is situated in Suphan Buri Rice Experiment Station, Tambol Rua-yai, Amphur Muang, Changwat Suphan Buri. This project is established by cooperation between Thai and Japanese governments to support Agriculture Development Project in Thailand irrigated area. The purpose of this Center is to support techniques and to train the officials who work in Irrigated Agriculture Development Project area especial in irrigated area of Chao Phya and Mae Klong river.

There are 3 sub-projects in Irrigated Agriculture Development Project which were the cooperation between Thai and Japanese governments, those were signed on 8th April, 1977 as follows

1. Chao Phya Pilot Project of Agriculture Land Reform Office starts to do in area 3,000 rai, donated value 38,831,000 baht.
2. Mae Klong Pilot Project of Royal Irrigation Department starts to do in area 2,400 rai for No. 1 and 3,000 rai for No. 2, donated value 21,599,000 baht.
3. Experiment Station and Training Center for Agriculture Development in Suphan Buri irrigated area was established for training and technical supporting to officials and technicians who concerned with irrigated agriculture development, donated value 2,500,000 baht and 8,000,000 baht for building construction so the total was 10,500,000 baht.

Policy and objective

1. To train technicians and officals who concerned with Irrigated Agriculture Development Project about modern agriculture for practicing in their works.

2. To develop cropping system in project area to the objectives those are high efficiency of resources resorting, agriculture yield increasing, farmer income increasing, resources distributing and consistent income of farmer.

3. To develop productive system to be cooperative form by uniting in production, sale and consumer goods buying. So, we can eradicate the problems about middlemen and bargain power.

4. To disseminate modern technology to farmer in irrigated ared expeditiously and efficiently by direct and indirect ways. The direct way is distributing trial farms or technical demonstration in project area so the farmer can decide by themselves about varieties, management or cropping system. The indirect way is by training technicians and officials who work in these projects.

5. To solve the problems in projects. If the problem is complicated, we can solve by multidiscipline method.

Activities of Suphan Buri Training Center in 1982.

The Center was started of training activities since the completion of the main building in June of 1978. The officially opening ceremony of the Center was held on March 10th,1979, presided by Minister of Agriculture and Cooperative Ministry.

The first batch of training was done for 2 weeks course on "Rice Cultivation Techniques in Irrigated Area" in July 1979, since then, the Center trained Thai government officers and leader farmers in various course in each year, up to the end of 1982 Thai budget year, 1870 government officers has been trained by the Center in Long term course (4 months) 2 times 52 in number and 1-3 weeks courses 17 times 458 in number, Special courses 19 times 824 in number and provided for Technical meeting and seminar 12 times 588 in number of participants.

Training activities in fiscal year 1982

In fiscal year of 1982. Suphan Buri Experiment Station and Training Center trained Thai government officers from variouses agencies in different courses for 12 times 378 in number and arranging for seminar for 5 times 277 in number of participants. Total 655 trainees has been trained by the Center in this fiscal year.

A. Long term training course (4 months)

Name	Duration	Trainees
1. Crop cultivation techniques and integrated farming	Aug 3rd-Nov 27th, 81.	33
2. Rice cultivation techniques in irrigated area	Jul 27th-29th, 82. Aug 17th-19th, 82. Sep 14th-16th, 82. Nov 23rd-25th, 82.	19
		52

B. Short course (1-3 weeks)

Name	Duration	Trainees
1. Integrated farming in irrigated area	Jan 11st-12nd, 82.	19
2. Integrated farming in irrigated area	Feb 9th-19th, 82.	27
3. Cropping system in irrigated area	Feb 22nd-Mar 12nd, 82.	35
4. Introduction to computer programing and utilizing	Mar 22nd-26th, 82.	7
5. Student training course	Mar 15th-Apr 9th, 82.	14
6. Cropping system in irrigated area	May 10th-28th, 82.	31
7. Introduction to computer programing and utilizing	Jun 12nd-16th, 82.	9
		142

C. Special course (1-3 days)

Name	Duration	Trainees
1. Modern germinated broadcasting rice cultivation technique	Mar 16th-17th, 82.	60
2. Modern germinated broadcasting rice cultivation technique	Mar 19th, 82.	120
3. Modern Agriculture	Jun 2nd-4th, 82.	4
		184

D. Meeting and seminar

Name	Duration	Trainees
1. Azolla utilization for green manure in paddy field	Dec 8th, 81.	60
2. Meeting on lowland rice varieties selection for Northern and Northeast region	Apr 2nd-3rd, 82.	42
3. Meeting on lowland rice varieties selection for Central region	May 3rd-4th, 82.	30
4. Annual meeting for Suphan Buri Extension officers	Sep 9th, 82.	110
5. Reinforced teaching for students from Sukhothai-thammathiratt University	Sep 18th, 82.	35
		277
	Total	655

Each agencies and the numbers of trainees

Training activities in fiscal year 1982

Suphan Buri Training Center

No.	Agency	Long term course	Short course (1-3 weeks)							Special course			Total
			1	2	3	4	5	6	7	1	2	3	
1.	Royal Irrigation Department	3	2	1					2				8
2.	Agricultural Land Reform Office	3		3					1				7
3.	Department of Agriculture	8	6	10		7			6	6			43
4.	Department of Agriculture Extension	3	2	1	35			31		54	120		246
5.	Department of Agriculture Cooperative Promotion		3	3									6
6.	Department of Community Development		1	1									2
7.	Department of Public Welfare	4		1									5
8.	Land Development Department	3	2	4									9
9.	National Security Command, Supreme Command Head Quarter	2		1									3
10.	Office of Accelerated Rural Development		1	1									2
11.	Office of Agricultural Economics	3											3
12.	Office of Undersecretary of State	4	2	1									7
13.	Agricultural institute						19						19
14.	Agricultural students						14						14
15.	A.I.T. Institute											4	4
	Total	52	19	27	35	7	14	31	9	60	120	4	378

Curricula schedule of training in fiscal year 1982

No.	Subject name	Hour
	1. Curriculum "Crop cultivation techniques and integrated farming in irrigated area" (4 months)	
	Lecture	252
1.	Registration, open ceremony and orientation	3
2.	Agricultural research improvment project	3
3.	Rice cultivation techniques	6
4.	Physiology of rice	3
5.	Germinated broadcasting rice cultivation	3
6.	Cultivation of upland rice, wheat and cold climate cereal	3
7.	Experimental designs as CRD, RCB, LT	6
8.	Statistical techniques in experiment works	3
9.	Split plot design	3
10.	Irrigation for agriculture - Irrigation and drainage in paddy field - Water management in paddy field - Water quantity calculation (that plant needs)	12
11.	Principle and techniques in weeds control	6
12.	Rice diseases and its control	3
13.	Diseases of corn and sorghum and its control	3
14.	Diseases of bean and oil crop and its control	3
15.	Orchard diseases and its control	3
16.	Principle in crop enemies control	2
17.	Techniques in chemical sprayer application	4
18.	Pests and its control	6
19.	Problem and danger of agricultural poison material	3
20.	Rice insect and its control	3
21.	Principles in breeding improvement	9
22.	Rice seed multiplication	6
23.	Cultivation techniques of oilcrops mungbean and soybean	3
24.	Corn and sorghum cultivation techniques	3
25.	Multiple-cropping and cropping system	3

No.	Subject name	Hour
26.	Integrated farming	6
27.	Mushroom cultivation	6
28.	Orchard cultivation and maintenance	3
29.	Vegetable cultivation and maintenance	3
30.	Flower and ornamental crop cultivation and maintenance	3
31.	Orchard propagation technique	6
32.	Flower and ornamental crop cultivation and propagation technique	6
33.	Chemistry, paddy soil fertility and main element in soil	6
34.	Principle in soil sampling	3
35.	Principle in plant sampling	3
36.	Principle in fertilizer sampling	3
37.	Chemistry and fertility in upland soil	3
38.	Soil analysis interpretation	3
39.	Roles of organic substances in soil and organic fertilizer	3
40.	Fish and prawn raising - Thai fishery - Principle in pond preparation for fish raising - The kind of fish suitable for raising - Influence of environment to fish growth - Fish raising (Nai fish) - Fish raising (Nyl fish) - Nursery pond preparation - Prawn raising - Goby raising - Fish raising (Savai fish) - Catfish, snakeheads raising - Artificial reproduction of fishes - Nursery and caring - Transportation	18
41.	Cow raising and caring	3
42.	Pig raising and caring	3
43.	Chicken raising and caring	3
44.	Duck and goose raising	3
45.	Water buffalo raising and caring	3
46.	Media production for extension work	3
47.	Media with extension and dissemination	3
48.	Land consolidation for agriculture	3
49.	Land reform for agriculture	3

No.	Subject name	Hour
50.	Agricultural machineries	3
51.	Benzene motor	3
52.	Diesel motor	3
53.	Water pump	3
54.	Sunlight oven and wind wheel	3
55.	Data analysis and conclusion of RCB design	3
56.	Data analysis and conclusion of Factorial design	3
57.	Data analysis and conclusion of Spilt plot design	3
58.	Yield and yield components sampling in experimental paddy field	3
59.	Yield components analysis	3
60.	Threshing, winnowing, weighing, moisture testing and calculating rice yield of experimental field	3
61.	Agricultural ecology	3
62.	Agricultural meteorology	3
63.	Cooperative in Thailand	3
64.	Principle in report writing	3
	Practice	240
1.	Experimental plot preparation - Soil preparation - Patchs making - Soil smoothening - Bar, irrigate and drainage canals making - etc.,	15
2.	Nursery bed preparation and transplanting - Nursery - Uprooting - Transplanting by hand - Transplanting by machine	12
3.	The quantity of sodium chloride in solution for seed preparation - The quantity that makes specific gravity = 1.08 - The quantity that makes specific gravity = 1.10 - The quantity that makes specific gravity = 1.12	3

No.	Subject name	Hour
4.	Seed preparation and germination testing - Seed separation by salt solution - Germination testing	6
5.	Fertilizer and chemical application in experimental plot - Fertilizer and chemical calculation - Basal fertilizer application - Chemical application for stem borer protection - Top dressing fertilizer application	18
6.	Plant height and number of tiller measuring - Measure plant height and number of tiller in different period of growth - Record and analyze data of plant height and number of tiller	18
7.	Rice sampling for yield and yield components calculation - Harvest, threshing, winnowing and moisture testing - Calculation the yield at 14% of moisture - Yield components analysis	36
8.	Result analysis - Yield analysis - Plant height and number of tiller analysis - Experimental conclusion table making - Report writing	32
9.	Mushroom cultivation - Straw mushroom cultivation by low stack type - Jew's ear cultivation in wood - Germ production	9
10.	Propagation technique of orchard, flower and ornamental crop - Cutting - Marcotting - Layering - Top grafting - Budding - Crown separating - Asexual propagation - etc.,	12
11.	Artificial reproduction of fish - Artificial reproduction - Culturing - Caring - etc.,	12

No.	Subject name	Hour
12.	Rice leaves age and the depth of transplanting	36
	- Check leaves age every 4 days - Check the number of tiller and plant height every 4 days - Conclude the research practice	
13.	Diagnosis of diseases, insects and weeds in paddy field	9
	- Rice diseases diagnosis in experimental plots - Rice insects diagnosis in experimental plots - Weeds diagnosis in paddy field	
14.	Agricultural machineries and equipment production	18
	- Machines maintenance - Machineries application - Audio-visual equipments application - Cement jar molding - Brick making from laterite - Economic stove - Bio-gas - etc.,	
15.	Sprayer application	4
	- Injector choosing - Sprayer choosing - Chemical calculation - etc.,	
	Observation	72
1.	Suphan Buri Fisheries Station	
2.	Fishery & Prawn raising at Tambol Ma-kharm-lom	
3.	Gasetpatthara Farm at Tambol Bangyai	
4.	U-thong Crops Experiment Station	
5.	National Pig Center and Kasetsart University (Gampaengsaen)	
6.	Land Consolidation for gariculture at Amphur Donjedi	
7.	Thai-Denmark Milchcow Farm, Saraburi	
8.	Nakornrajsema Silk Worm Research Center	
9.	Pimai Rice Experiment Station	
10.	Electric Water Pump Practising Center, Amphur Thatpanom	
11.	Nakornpanom Land Development Center	
12.	Nam-un Rural Intergrated Development Project, Sagolnakorn	
13.	Northeasthern Agricultural research Center, Khorngaen	

No.	Subject name	Hour

14. Pissanuloke Rice Experiment Station
15. Tha-chai Crops Experiment Station, Sukhothai
16. Phare Rice Experiment Station
17. Pa-yaow Fisheries Station
18. Chiengrai Hill Tribe Development Center
19. Northern Agricultural Research Center
20. International Food Industrial Factory, Lampang

Conclusion	Lecture	252 hours	= 45%
	Practice	240 hours	= 42%
	Observation	72 hours	= 13%
	Total	564 hours	

· 2. Curriculum "Rice Cultivation Techniques in Irrigated Area"

1.	Soil preparation, plowing, raking and nursery bed preparation	3
2.	Seed preparation, nursery box preparation	3
3.	Smoothening in paddy field	3
4.	Basal fertilizer	3
5.	Sowing in paddy field	3
6.	Sowing in nursery bed	3
7.	Transplant plot preparation and Basal fertilizer	6
8.	Transplanting by hand	3
9.	Transplanting by machine	3
10.	Basal dressing of fertilizer	6
11.	Top dressing of fertilizer	3
12.	Growth investigation	3
13.	Diseases of insect consideration	3
14.	Chemical sprayer application	3
15.	Weed consideration	3
16.	Top dressing fertilizer in transplanting plot	3
17.	Sampling for rice yield evaluation	3
18.	Threshing, weighing and cleaning	3
19.	Harvesting by harvest machine and combine	6
20.	Conclusion and Training evaluation	6

No.	Subject name	Hour

3. Curriculum "Integrated farming in irrigated area"

1.	Open ceremony and orientation	1½
2.	Irrigation for Agriculture	1½
3.	Integrated farming	3
4.	Cultivation techniques of field crops, corn, sorghum and oil crops	3
5.	Rice cultivation techniques and modern germinated broadcasting rice cultivation technique	3
6.	Vegetable cultivation techniques	1½
7.	Orchard cultivation techniques	1½
8.	Principle of propagation technique of orchard, flower and ornamental crop	3
9.	Diseases of rice and some crops	3
10.	Insects and its control	3
11.	Pests and its control	3
12.	Fish and prawn raising in integrated farming	3
13.	Study tour at U-thong Crops Experiment Station	3
14.	Poultry raising in integrated farming	3
15.	Post harvesting technique	3
16.	Mushroom cultivation and demonstration	6
17.	Pig raising in integrated farming	3
18.	Observation	3
19.	Economic stove	1½
20.	Agricultural machineries	1½
21.	Bio-gas	1½
22.	Mold fertilizer producing	1½
23.	Special lecture "Agro eco-system"	3
24.	Certificate distribution and close ceremony	3
	Total	63

No.	Subject name	Hour
	4. Curriculum "Cropping System in Irrigated Area"	
1.	Open ceremony and orientation	3
2.	Principle in cropping system	3
3.	Process in cropping system	1½
4.	Agro climatology	1½
5.	Soil in Agro eco-system	1½
6.	Water management	1½
7.	Soil, water and fertilizer relationship in paddy soil	1½
8.	Soil, water and fertilizer relationship in upland soil	1½
9.	Cropping system in Rain-fed area of Ubolratchatani, Korat and Phrae	3
10.	Leguminous crops in cropping system	1½
11.	Cropping system in upland field	1½
12.	Cropping system in orchard	1½
13.	Cropping system in irrigated area	1½
14.	Cropping system in Chiang Mai and Lamphun	3
15.	Cropping system in Ratchaburi	1½
16.	Special lecture on "Asian Cropping System Net Work"	1½
17.	Site selection technique	1½
18.	Rain-fed agriculture	1½
19.	Cropping system of Technical Division	1½
20.	Rice in cropping system	1½
21.	Economic data collection in cropping system	6
22.	Statistic data collection in cropping system	6
23.	Study tour	6
24.	Weed in cropping system	1½
25.	Diseases in cropping system	1½
26.	Pest management in cropping system, Ratchaburi Pimai and Phrae cases	3
27.	Cropping system in Konkhan area	3

NO.	Subject name	Hour
28.	Anthropologist in cropping system	1½
29.	Socio-analysis on cropping system in Ubolratchatani	1½
30.	Study tour	6
31.	Post harvest technology, small farm machines	6
32.	Agro-philosophy in Rain-fed Agriculture	1½
33.	Relationship between research and extension people	1½
34.	Yield gap between Experiment Station and farmer field	1½
35.	Integrated farming system	1½
36.	Marketing	1½
37.	Group meeting	3
38.	Evaluation	1½
39.	Closing ceremony, Certificating	3
	Total	93

5. Curriculum "Introduction to Computer programing and utilizing

1.	Computer knowledge	1½
2.	Computer working system	1½
3.	Language and symbol in computer programing	3
4.	Introduction to computer programing	12
5.	Practice in computer programing and data in putting for result analyzing	12
	Total	30

6. Curriculum "Modern Germinated Broadcasting Rice Cultivation

1.	General principle in Modern germinated broadcasting rice cultivation	1½
2.	Seed preparation, broadcast and water management	1½
3.	Weeds and its control	1½
4.	Observation Germinated direct seeding field	1½

No.	Subject name	Hour
5.	Protection and control of diseases, insects and pests	1½
6.	Consideration in fertilizer application	1½
7.	Discussion and problem answer	1½
	Total	12

7. Curriculum "Modern Agriculture" (3 days)

1.	Modern germinated broadcasting rice cultivation	3
2.	Rice diseases and its control	1½
3.	Rice pests and its control	1½
4.	Rice cultivation techniques and fertilizer application	3
5.	Weeds in paddy field	1½
6.	Rice insects	3
7.	Mushroom cultivation	3
8.	Induced reproduction of orchard and marcotting, budding, layering demonstration	3
	Total	18

Durable articles donated from Japanese Government

Suphan Buri Experiment Station & Training Center Project

1982

Durable articles and equipment that bought in Thailand

		Number	Price (฿)
Laboratory equipment			321,115
1.	Nursery box preparation equipments	1	122,265
2.	Soil physics analysis	1	17,950
3.	Magnifying glass (with base)	2	11,000
4.	Amylose content analyzer	1	10,000
5.	Grain seperating machine	1	15,000
6.	Sample rice mill	1	55,000
7.	Grain micrometer	6	27,000
8.	Grinding machine	1	39,800
9.	Moisture meter	2	9,000
10.	Automatic time setting watch	2	7,800
11.	Water filter	2	6,300
Audio visual aids			70,153
1.	Slide projector	1	23,003
2.	Recorder	5	17,500
3.	Inter telephone	1	29,650
Stationery			27,800
1.	Air condition		27,800
		Total	419,068 ฿

Remarks : Durable articles and equipment that sent from Japan will be received in the middle of fiscal year 1983.

List of durable articles and construction donated from Japanese Government

Suphan Buri Experiment Station and Training Center Project

1982

Agricultural Machinery		Number	Price (฿)
1.	Row seeder	1	75,000
2.	Mini cultivator	2	29,000
Experimental Material			
1.	Calper	500 kg	48,000
2.	Biological microscope	5	32,000
3.	Microscope	5	31,200
4.	Overhead projector	1	30,000
5.	pH meter	1	20,400
6.	Electrical Conductivity	1	36,000
7.	Freezer	1	25,000
8.	Camera body only	1	6,750
		Total	333,370
		CIF	28,238
		Grand total	361,608 ฿

List of durable articles bought in Thailand

Suphan Buri Experiment Station and Training Center Project

Technical Division : Department of Agriculture

1978 - 1982

		Number	Price (Bath)
1.	Bicycle	1	1,105
2.	Electric fan (16 inches)	1	1,400
3.	Air condition (split type)	1	27,000
4.	Hover electric polisher	1	5,500
5.	Sofa set	1 set	3,100
6.	Tank (400 gallon) with stand	2	3,700
7.	Electric type-writer (both English and Thai languages)	1	30,200
8.	Megaphone-apex	1 set	1,600
9.	Electric water pump (2 inches)	1	3,000
10.	Color television set	1	16,200
		Total	82,805

List of Trainees

AT Suphan Buri Training Center

Fiscal year 1982

20th time

Curriculum "Crop cultivation techniques and integrated farming in irrigated area"

Duration : August 3rd-November 27th, 1981.

1. Royal Irrigation Department
   1. Mr. Sudjai Khanthichote
   2. Mr. Anan Jaggaew
   3. Mr. Panchai Boonpen
2. Land Development Department
   4. Mr. Padej Satharn
   5. Mr. Pa-yoong Siridamronge
   6. Mr. Somchai Gengkhunthode
3. Office of Undersecretary of State
   7. Mr. Vichien Boontham
   8. Miss Suva-kone Sumana
   9. Mr. Pitthaya Narmdaeng
   10. Mr. Chalong Maneechote
4. Department of Public Welfare
   11. Mr. Gamjad Janejit
   12. Mr. Maitree Gatepan
   13. Mr. Savad Gaewgul
   14. Mr. Savang Saeng-im
5. Office of Development Military
   15. Major Vorathep Po-thipan
   16. Sergt. Banjerd Vongeya-ra
6. Department of Agriculture
   17. Miss Orasa Saengthamronge
   18. Miss Janya Hongekhajorn
   19. Miss Pensri Nanthasomsararn
   20. Miss Sarinna Jaropassaratt
   21. Mr. Chatchavan Ararmchoke
   22. Mr. Voravuth Panichvatthana
   23. Mr. Samaporn Suppasil
   24. Mr. Vatthanasag Chompoonich
7. Office of Agricultural Economics
   25. Mr. Nakorn Vongeviratt
   26. Mr. Suppachart Srisurag
   27. Mrs. Suvan Petchararit

8. Department of Agricultural Extension

28. Miss	Somporn	Gateponge	30. Mr.	Cherdsuk	Pavanavichien
29. Miss	Tuanejai	Boonpuane			

9. Agricultural Land Reform Office

31. Mr.	Surapol	Jaruponge	33. Mr.	Somsag	Tantivaravit
32. Mr.	Thammasag	Poovannachaigul			

21st time

Curriculum "Integrated farming in irrigated area"

Duration : January 11st-12nd, 1982.

1. Royal Irrigation Department

1. Mr.	Yongeyud	Supasag	2. Mr.	Prasit	Pichairueg

2. Department of Agricultural Cooperative Promotion

3. Mr.	Giettigul	Roonnapai	5. Mr.	U-dom	Khamsuk
4. Mr.	Sieng	Suvannasane			

3. Department of Agricultural Extension

6. Mr.	Sa-ngiem	Klaewplodtug	7. Mr.	Chaicharatt	Rojjananon

4. Office of Undersecretary of State

8. Mr.	Pranut	Grajayvonge	9. Mr.	Apichatt	Sutika

5. Land Development Department

10. Mr.	Prayad	Soratee	11. Mr.	Chaivatt	Supasavatsan

6. Office of Accelerated Rural Development

12. Mr.	Pagula	Are-vatchanagorn

7. Department of Community Development

13. Mrs.	Nongekran	Sugprasert

8. Department of Agriculture

14. Mr.	Jaroon	Are-ree	17. Mr.	Sujit	Jaijit
15. Mr.	Chaiyan	Satien	18. Miss	Yaovalag	Kunavoot
16. Mr.	Jaturonge	Pipatpiriyanon	19. Miss	Podjanee	Nakeerag

22nd time

Curriculum "Integrated farming in irrigated area"

Duration : February 9th-19th, 1982.

1. Department of Agricultural Cooperative Promotion

1. Mr.	Vinit	Chaichit	3. Mr.	Pravit	Khiengphol
2. Mr.	Malud	Ritajan			

2. Land Development Department

4. Mr.	Vanchai	A-mornsange	6. Mr.	Grajang	Gaewmanee
5. Mr.	Vinai	Rattanamongkol	7. Mr.	Thammasag	Singhaponge

3. Royal Irrigation Department

8. Mrs.	Jintana	Khamnim-nuan

4. Department of Public Welfare

9. Mr.	Surasag	Itsara

5. Office of Accelerated Rural Department

10. Mr.	Samarn	Pongejaroen

6. Office of Undersecretary of State

11. Mr.	Choke	Gaewjantug

7. Agricultural Land Reform Office

12. Mr.	Sutin	Pongesuvan	14. Mr.	Vittaya	Chaisuvan
13. Miss	Srima	Ganlapravit			

8. Office of Development Military

15. Mr.	Nigorn	Tharaporn

9. Department of Community Development

16. Mr.	Intarapol	Yongejaiyuth

10. Department of Agricultural Extension

17. Mr.	Ackkaneevuth	Glabnuam

11. Department of Agriculture

18. Mr.	Boonserb	Srisavatt	21. Mr.	Suttiponge	Nanvaree
19. Miss	Boonsri	Julapool	22. Mr.	Pranom	Boon-in
20. Mr.	Boonlert	Kao-on	23. Mr.	Jaran	Pratumvonge

24.	Mr. Singchai	Pumkhacha	26.	Mr. Jaran	Taisarb
25.	Mr. Jitti	Suvannasange	27.	Mr. Jaroen	Thuam-cham

23rd time

Curriculum "Cropping system in irrigated area"

Duration : February 22nd-March 12nd, 1982.

Department of Agricultural Extension

1.	Miss Junlamanee	Susana	19.	Mr. Prapatt	Meng-chuay
2.	Mr. Vinai	Dajjaroen	20.	Mr. Songsag	Surattigul
3.	Miss Gate-on	Thongkrue	21.	Mr. Surain	Petch-chuen
4.	Mr. Rattagorn	Rayothee	22.	Mr. Jaran	Chusag
5.	Miss Nutsara	Buranakhong-khatree	23.	Mr. Pairatt	Hvong-dee
			24.	Mr. Suvinai	Run-da-va
6.	Mrs. Suganya	Jongejaipag	25.	Mr. Griengsag	Gingrungpetch
7.	Mr. Veeraporn	Sungkhamarn	26.	Mrs. Piyanon	Sirivan
8.	Miss Jeeravan	U-naprom	27.	Mr. Pravait	Hor-thong
9.	Mr. Jaran	Thong-ngam	28.	Mr. Suponge	Sinthuratt
10.	Mr. Vard	Vanich	29.	Mrs. Dutsanee	Dusitsin
11.	Mr. Narunart	Jantharamongekol	30.	Mr. Nipoon	Simala
12.	Mr. Voravit	Jitsangium	31.	Mr. Sagsarn	Srisuttayavonge
13.	Mr. Thavatt	Vattgaew	32.	Mr. Jane	Chuea-boonmee
14.	Mr. Boonchuen	Viyaporn	33.	Mr. Prasert	Doilom
15.	Mr. Damronge	A-nisonge	34.	Mr. Phusit	Benjakharanee
16.	Mr. Songsil	Vuttisanti	35.	Mr. Panya	Poolpagdee
17.	Mrs. Rueng-jit	Promsatit			
18.	Mrs. Suvattana	Pangpinij			

24th time

Curriculum "Introduction to computer programing and utilizing"

Duration : March 22nd-26th, 1982.

Technical Division

1.	Mr. Suppachai	Banglieng	2.	Mr. Ratsamee	Kheereetaveep

3. Mr.	Boonrod	Thongdonphum	6. Mr.	Pairatt	Duangpiboon
4. Mr.	Niran	Thongpan	7. Mr.	Vichien	Sasiprapa
5. Mr.	Nichai	Thaipanich			

25th time

Student training coure

Duration : March 15th-April 9th, 1982.

1. Suphan Buri Agricultural College

1. Miss	Vanida	Grajangyood	3. Mr.	Santi	Pratumtatvipatt
2. Miss	Sumalee	Mesri			

2. Technological Institute for Agriculture from Ayutthaya

4. Mr.	Sumate	Boonpornpimolgij	10. Miss	Suphannee	Sitrakoon
5. Miss	U-rai	Reunpaksarb	11. Mr.	Samrarn	Phongsri
6. Mr.	Amporn	To-sape	12. Mr.	A-rom	Gatemarg
7. Miss	Orasa	Jandad	13. Mr.	Am-naj	riddej
8. Mr.	U-thai	Glongthong	14. Mr.	Anusorn	Roopvichien
9. Mr.	Sittisag	Tana-noo			

26th time

Curriculum "Cropping system in irrigated area"

Duration : May 10th-28th, 1982.

Department of Agricultural Extension

1. Miss	Yupin	Penpinan	8. Mr.	Sujarit	Niyomdaj
2. Mr.	Vinit	Vongekhom	9. Miss	Achara	Chaigulvattana
3. Mr.	Annop	Gasivatt	10. Mr.	Suvit	Panjan
4. Mr.	Somchai	Channarongegul	11. Mrs.	Prathum	Vannithigul
5. Mr.	Permsag	U-thaivonge	12. Mr.	Pravatt	Panyaganjana
6. Mr.	Jaras	Panthong	13. Miss	Veeravan	Phusanaponge
7. Mr.	Somchai	Chuenchomsaeng	14. Mr.	Giettisag	Amboontham

15. Miss Vilailag Sagulgaruna
16. Mr. Jamnonge Jampangam
17. Mr. Vichan Musigoo
18. Mr. Banyad Gulsantati
19. Mr. Vakin Rojjanaratt
20. Mr. Chairit Damrongegiet
21. Mr. Yongeyuth Suvannarueg
22. Mr. Naronge Voottivan
23. Mr. Vichien Boonprasit
24. Mrs. Gobgaew Srivaranart
25. Mrs. Ratchanee Plodpai
26. Mrs. Somboon Manotham
27. Mr. Somyod Sugsomvatt
28. Mr. Thanoo Vongegaseam
29. Miss Vilai Saroengijpan
30. Mr. Cherdsug Pavanavichien

27th time

Curriculum "Introduction to computer programing and utilizing"

Duration : June 12nd-16th, 1982.

1. Royal Irrigation Department
   1. Mr. Siroj Prakunhangsit
   2. Mr. Piya Sunipasa
2. Agricultural Land Reform Office
   3. Mr. Jaggri Rammana
3. Department of Agriculture
   4. Mr. Gittinan Theeravanvilai
   5. Mr. Surapol Chatchavanvonge
   6. Mrs. Permpoon Sarnthoi
   7. Mr. Supoj Muenvanichgul
   8. Miss Ganyaratt Ittaratt
4. Technical Division
   9. Mr. Visate Chanyanuvatt

28th time

Curriculum "Rice cultivation techniques in irrigated area"

Duration : July 27th-29th,

August 17th-19th, September 23rd-25th, 1982.

Farmers from Chao Phya Pilot Project

1. Mr. Somponge Vongepanta
2. Mr. Jamnonge Sarbperm
3. Mr. La-or Ruengkwan
4. Mr. Sanae Srithong

5.	Mr. Chaleow	Singthokam
6.	Mr. Chob	Poonsarb
7.	Mr. Jamnonge	Srithong
8.	Mr. Chob	Jitpimai
9.	Mr. Somsag	Vongesonge
10.	Mr. U-dom	Srigahlong
11.	Mr. Chalerm	Reungmit
12.	Mr. Thongyoo	Sarbserb
13.	Mr. Sa-ard	Pleinrattsamee
14.	Mr. Saengaroon	Sarbnut
15.	Mr. Anan	Panthong
16.	Mr. Prasert	Vongesonge
17.	Mr. Sompong	Vongesonge
18.	Mr. Paitoon	Srithong
19.	Mr. Sutat	Singthokam
20.	Mr. Jaroensag	Gietsaguldacha *

* N.B. One course period training only.

Epilogue

The activities on training and transfering of technologies of Suphan Buri Training Center in 1982 fiscal year are achieved the targets. The training course "Crops Cultivation Technique and Integrated Farming in Irrigated Area" which is a long term course (4 months) continuated from the end of 1981 fiscal year. There are 33 participants in this course and the Center has also opened a course named "Rice Cultivation Techniques in Irrigated Area" for the 19 leader farmers of Chao Phya Pilot Project which is another 4-month-curriculum. The curriculum emphasize on practising of each important step in rice cultivation techniques such as soil and seed preparation, sowing, transplanting and fertilizing, maintaining, harvesting and evaluating, the trainees have to come to train at the Center for 3 days/month from the begining till the end of rice crop season. During this training, the farmer will obtain some knowledge in each process before every real take on their own paddy fields. As the result of the training, farmer will not waste so much time on their farms and they can abrupthly use the knowledge and technique after each coure period finished. The Center believes that this method is very much effective. Besides, Center has arranged short term training courses for 7 times and 3 times for the special ones; 378 participants in total. The Center has arranged 5 seminars on various topics, with 277 participants, along the whole fiscal year of 1982. There are 47 groups (560 visitors) which have visited the Center. Another interesting job is the collecting and publishing a text book on "Rice diseases and its control" of 6,000 copies and distributed them to researchers and extension officers to use it as the manual of diagnosis rice diseases and the correct way to protection and elimination its for involving government agencies.

The administration of this Center has been transfered to Farming System Research Institute sine April 30th, 1982 as the new structure of Department of Agriculture. However, the management is still going on because the Center has working committee and project

and project coordinate sub-committee who cooperate and choose the curriculum and select trainees and trainers. On the other hand, the project manager (the director of Farming System Research Institute), the head of Suphan Buri Rice Experiment Station and project manager assistant and by the aids from the training staffs, are in closed cooperation in administrative are as follows:

1. Mr. Vichien Sasiprapa	Agricultural technician 7	Farming System Research Institute	
2. Mrs. Achana Siripatt	Economist 5	"	"
3. Miss Jamnonge Nardsomboon	Agricultural technician 5	"	"
4. Mr. Pairatt Duangpiboon	Agricultural technician 4	"	"
5. Miss Sasithorn Sovan	Scientist 5	Suphan Buri analysis laboratorial work	
6. Suphan Buri Rice Experiment Station officers			
7. Dr. T. Sugahara	Japanese Expert (JICA) of Suphan Buri Training Center		
8. Mr. Y. Takashima	Japanese Expert (JICA) of Suphan Buri Training Center		

This book is the continual report from 1981 for showing the progressiveness of the close cooperation between Thai and Japanese counterparts in Suphan Buri Experiment Station and Training Center, Department of Agriculture, under Agriculture Development Project, Ministry of Agriculture and Cooperative.

Vichien Sasiprapa
Making report of 1982.
May, 1983.

TRAINING ACTIVITIES OF 1983

CONTENT

APPENDIX TABLE CONTENT

List of trainees who have been trained by Suphan Buri Experiment and Training Center in 1983

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Training Center for Agriculture Development in Suphan Buri

Back ground of the Project

Experiment Station and Training Center Project for Agriculture Development in Suphan Buri irrigated area used to be under Technical Division . At present it is under Farming system Researcy Institute, Department of Agriculture, situated in Suphan Buri Rice Experiment Station, Tambol Rua-Yai, Amphur Muang, Changwat Suphan Buri. This project is established by cooperation between Thai and Japanese government to support Agriculture Development Project in Thailand irrigated area. The purpose of this Center is to support techniques and to train the officials who work in Irrigated Agriculture Development Project are especially in irrigated area of Chao Phya and MaeKlong river.

There are 3 sub-projects in Irrigated Agriculture Development Project which were the cooperation between Thai and Japanese governments, those were signed on 8th April, 1977. It is a 5 year project (1977-1982) and it is extended for 3 years until 1985 as follows;

1. Chao Phya Pilot Project of Agriculture Land Reform Office starts to do in area 3,000 rai.
2. MaeKlong Pilot Project of Royal Irrigated Department starts to do in area 2,400 rai for No.1 and 3,000 rai for No.2
3. Experiment Station and Training Center for Agriculture Development in Suphan Buri irrigated area was established for training and technical supporting to officials and technicians who concerned with irrigated agriculture development project, donated value of 8,000,000 ฿ for building construction.

Project Objective

1. To train technicians and extension officers in charge of the project area on new technologies of crops production and management for acheivement of the project goal.

2. To develop cropping system which adaptable to farmer's resources and increasing on yield and income of the farmers in the project area.

3. To promote the production system into group of cooperative form for saling of their products and buying of goods.

4. To transfer technologies to the farmers in the project area by mean of direct and indirect contract passed through extension officers.

5. To solve the problems in crop production techniques and crop managements in the project area. If it so complicated one, the problem should be taken to solve in the station by means of multidisplinary research.

Center activities from establishment

The Center was started of training activities since the completion of the main building in June of 1978. The officially opening ceremony of the Center was held on March 10th, 1979 presided by Minister of Agriculture and Cooperative Ministry.

The first batch of training was done for 2 weeks course in July 1979, sine then, the Center trained Thai government officers and leader farmers in various courses in each year, up to the end of 1983 Thai budget year the total of 2,356 government officers have been trained by the Center in long term course (4 months) 3 times 71 in numbers, and 1-4 weeks courses 21 times 538 in numbers, special courses 23 times 961 in numbers and provided for technical meeting and seminar 17 times 768 in numbers for participants.

Training activities in fiscal year 1983

In fiscal year of 1982, Training Center trained Thai government officers in different courses for 11 times 295 in number and arranged seminar for 5 times 198 in number. Total 493 trainees has been trained by the Center in this fiscal year.

A. Long term training course (4months)

	Name	Duration	Trainees
1.	Rice cultivation techniques in irrigated area.	Jul.27th-29th,83 Aug.17th-19th,83	19
2.	Rice cultivation techniques in irrigated area.	Sept.5th-9th, 83 Oct.10th-14th, 83 Nov.7th-11th, 83 Dec.19th-23rd, 83	19
			38

B. Short term training course (1-4 weeks)

	Name	Duration	Trainees
1.	Student Training Course	Oct.4th-29th,82	32
2.	Introduction to computer programing and utilizing	Dec.20th-24th,82	9
3.	"————————"	Jan.17th-21st,83	11
4.	"————————"	Jan24th-28th,83	8
5.	Preparation for training in Japan	Feb.14th-Mar.15th,83	10
6.	Administration and activities of provincial livestock officers	Jul.18th-27th,83	28
7.	Activities of young farmers for district extension officers	Aug.1st-6th,83	42
			140

C. Special course (1-3days)

	Name	Duration	Trainees
1.	Modern agriculture in irrigated area.	Nov.9th-11th,82	51
2.	"————————"	Nov.16th-18th,82	66
			117

D. Meeting and Seminar

	Name	Duration	Trainees
1.	Cropping System in irrigated area for district extension officer in the Central	Jan.6th-8th,83	61
2.	Key-site selection	Mar.8th-11st,83	30
3.	Data Analysis and Research Planning for Suphan Buri key-site	Mar.2nd-25th,83	50
4.	Seminar for Agriculture-extension in Western Region	Apr.14th-15th,83	30
5.	Meeting of working group and farmers of Suphan Buri Dey-site.	Jun.10th,83	27
			198
		Grand total	493

Suphanburi Training Center

Training activities in fiscal year 1983

Each agencies and the number of trainees

No.	Agency	Long term course	Short course (1-4 weeks)							Special course			Total
			1	2	3	4	5	6	7	1	2	3	
1.	Royal Irrigation Department	5											5
2.	Agricultural Land Reform Office	1											1
3.	Department of Agriculture	11		9	11	7							38
4.	Department of Agriculture Extension					1			42				43
5.	Office of Agricultural Economics	2											2
6.	Department of Livestock							28					28
7.	Agricultural students		32										32
8.	Farmer Institute	19					10			51	66		146
	Total	38	32	9	11	8	10	28	42	51	66		295

Curricula schedule of training in fiscal year 1983

No.	Subject name	Hour
	1. Curriculum "Rice Cultivation technique in irrigated area" for farmers in the Chao Phya Pilot Project	
	1st time (July 27-29, 1982)	
1.	Orientation	3
2.	Soil preparation, plowing, raking and nursery bed preparation	3
3.	Seed preparation, nursey box preparation	3
4.	Plot leveling and drainage ditch making for germinated broadcasting rice field	3
5.	Basal fertilizer	3
6.	Sowing pre-germinated seed in paddy field	3
7.	Sowing seed in nursery bed and nursery box	3
	2nd time (August 17-19, 1982)	
8.	Field preparation for transplanting method and basal fertilizer application	6
9.	Transplanting by hand	3
10.	Transplanting by machine	3
11.	Basal dressing of fertilizer in experimental plots	6
	3rd time (September 14-16, 1982)	
12.	Top dressing of fertilizer at P.I.S.	3
13.	Growth Investigation	3
14.	Diseases and insect investigation in the rice field	3
15.	Propered application of chemical sprayer	3
16.	Weed investigation	3
17.	Top dressing fertilizer in transplanting plot	3
	4th time (November 9-11, 1982)	
18.	Sampling technique and rice yield evaluation	3
19.	Threshing , Cleaning and weighting of sampled rice	3
20.	Harvesting by harvesting machine and combine harvestor	6
21.	Conclusion and training evaluation	3
	Total	75

No.	Subject name	Hour
	2. Curriculum "Rice cultivation technique in irrigated area" for technicians and agricultural official.	
	1st time (September 5-9,1983)	
1.	Orientation	3
2.	Land preparation technique	6
3.	Seed preparing, Coated Seed with Calper dust	6
4.	Seedbed preparing, basal dressing	6
5.	Transplanting different types of machines	6
6.	Germinated direct seeding and row seeder machine	6
	2nd time (October 10-14,1983)	
7.	Knowledge of fertilizer and application technique for rice cultivation	6
8.	Fertilizer application, and pot experiment	6
9.	Agricultural machineries	6
10.	Machines maintenance	6
11.	Types of sprayer and utilization technique	6
	3rd time (November 7-11,1983)	
12.	Rice diseases and its control	6
13.	Weed control technique	6
14.	Insects and its control	6
15.	Pests and its control	6
16.	Method of collecting sample for yield component analysis	6
	4th time (December 19-23,1983)	
17.	Harvesting, threshing, cleaning	6
18.	Data analysis of yield component	6
19.	Rice yield evaluation	6
20.	Conclusion of experimental result	6
21.	Evaluation, certificate distribution and closing ceremony	6
	Total	123

5th time (January 8-15,1983)

Trainees went for study tour at Southern Thailand as follows:

- Hubkrapong Project, Petchburi
- Marine Fisheries Research Center, Phuket
- Kor-Hong Rubber Reasearch Center, Songkhla
- King's Project at Dinpru Pikulthong, Narathiwat
- Chumporn Horticulture Research Center, Chumporn

3. Curriculum "Administration & works for Provincial Livestock officer" for technician & livestock assistant of the Province

Duration: July 18-27,1983

No.	Subject	Hour
A.	ADMINISTRATION	32.5
1.	Duty and responsibility of leader	5
2.	Team working	3
3.	Solution, decision and order	3
4.	Planning and coordination	3
5.	Project planning	3
6.	Follow-up and evaluation	3
7.	Administrative work at provine level	3
8.	Regulation of Finance & Accounting	2
9.	Financial work	1
10.	Regulation for requisition of durable articles	3
11.	Correspondence & general office work	2
12.	Duties and Responsibilities of Provincial Livestock officer	1.5
B.	LIVESTOCK	
13.	Livestock Extension Division	20
14.	Animal Husbandry Improvement	2
15.	Grassland for cattle	1.5
16.	Act of Animal Feed Quality Control	1.5
17.	Opening ceremony for Artificial Insemination in each Province	1.5
18.	Anti-Anthrox Project	1.5
19.	Act of Animal Disease Control	1.5
20.	Collecting and sending of sample for disease identification	1.5
21.	The new interesting diseases	1.5
22.	Vaccine distribution.	1.5
23.	Vaccine Utilizing and its problems.	3
C.	MISCELLANY	16.5
24.	Opening-Closing Ceremony	1
25.	Study Tour about Livestock	9
26.	Debate on Guidance of Provincial Livestock officer practising	1.5
27.	Recreation	4
28.	Evaluation of the training	1
	Total	69

4. Curriculum "Preparation for Agriculture training course of Young Thai who farmers"

Duration (February 14 - March 15, 1983)

No.	Subject	Hour
1.	Orientation	3
2.	Japanese language study	100
3.	Topography & climate of Japan	3
4.	The way of living of Japanese farmers	3
5.	Training experience in Japan	3
6.	Japanese Culture	3
7.	Money	3
8.	Japanese food	3
9.	Japan agriculture	3
10.	Agricultural Machine	3
11.	Practising of Japanese rice cultivation technique	42
12.	Evaluation on Japanese language	10
13.	Study Tour	18
14.	Closing Ceremony	3
	Total	200

5. Curriculum "Introduction to Computer Programing and Utilizing

(5 days)

No.	Subject	
1.	Introduction of computer	1.5
2.	Computer Working System	1.5
3.	Language & Symbol	3
4.	Introduction to Computer Programing	12
5.	Practice in Computer Programing and data - input for result analyzing	12
	Total	30

6. Curriculum "Modern Agriculture" (3 days)

No.	Subject	Hour
1.	Modern germinated broadcasting rice cultivation	3
2.	Rice diseases and its control	1.5
3.	Rice pests and its control	1.5
4.	Rice cultivation techniques and fertilizer application	3
5.	Weeds in paddy field	1.5
6.	Rice insects	3
7.	Mushroom cultivation	3
8.	Propagation of orchard and demonstration of marcotting budding, layering techniques	3
	Total	18

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(Copy)

Department of Agriculture Order

At 845/1983

Item Appointment of Suphan Buri Training Center Project working group

Department of Agriculture Order at 543/1979, dated March 30th,1979, appointing of Suphab Buri Training Center Project Working Group.

According to the new arrangement of the official divisions and the new appointment of the officials, The Department of Agriculture Order at 543/1979 dated March 30th,1979 has to be cancelled and the new order is as follows :

1.	Mr. Damkoeng Chandrapanya	The Director of Farming System Research Institute as a chairman
2.	Mr. Boonlert Klaiprayong	Chief of Rangsit Rice Experiment Station, Institute of Rice Research
3.	Mr. Montien Sompee	Chief of Roi-Ed Fields Crops Experiment Station, Field Crop Research Institute
4.	Mrs. Natthaya Kunprayoon	Technician 5, Orchard Research Institut
5.	Mr. Somchat Rattanachata	Technician 7, Sericulture Research Institute,
6.	Mr. Chamnong Kongsilp	Technician 6, Rubber Research Institute
7.	Mr. Rapeephan Pasabutr	Agricultural Engineer7, Agricultural Engineering Division as committee membe
8.	Mr. Damri Thavornmas	Technician 6, Soil Science Division
9.	Miss Sagha Duangratt	Statistician 7, Planning & Technique Division
10.	Mr. Bornchai Supawita	Technician 6, Agricultural Regulator Division
11.	Mr. Somkit Disathaporn	Plant pathologist 7, Plant Pathology and Microblology Division
12.	Mr. Paitoon kittipong	Technician 6, Botany and Weed Science Division
13.	Mrs. Arom Saengvanich	Sciencetist 6, Agriculture Toxicology
14.	Mrs. Sasithorn Sowan	Sciencetist 5, Agricultural Chemistry Division
15.	Mr. Anan Chanbanyong	Lecturer official 4, Entomology and Zoology Division

16.	Mr. Panya Punyathavorn	Entomologist 7, Entomology and Zoology Division,
17.	Mrs. Prayoon Kamolratt	Administration official 4, Financial Division
18.	Mr. Vichien Sasiprapa	Technician 7, Farming System Research as a secretary
19.	Mrs. Achana Siripatt	Economist 5, Farming System Research Institute as an assistant secretary

Suphan Buri Training Center Project Working group has duties as follows :

1) Arranging curricula in training
2) Procuring Lecturers
3) Planning Research and training direction follow to the policy and direction those are set by the Ministry of Agriculture and Cooperative.

These persons are in duty since now.

This order is on April 8th, 1983.

(sign) Yukti Sarikaputhi

(Mr. Yukti Sarikaputhi)

Director General of Department of Agriculture

Truely Copy

(sign) Vichien Sasiprapa

(Vichien Sasiprapa)

Agricultural Technician 7

Farming System Research Institute

Department of Agriculture

(Copy)

Ministry of Agriculture and Cooperative order

At 393/1982

Item Appointed of Irrigated Agriculture Development Project's direction staff

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Ministry of Agriculture and Cooperative order at 133/1982 dated April 14th, 1982, appointing of Irrigated Agriculture Development project's direction staff.

According to the previous Director of IADP's retirement, the MOAC order at 133/1982 dated April 14th,1982 has to be cancelled. And the new appointment of IADP staffs are as follows:

1.	Mr. Samroeng Srichangham	Inspector General of MOAC as Director of Project.
2.	Mr. Roongrueng Chulachata	Civil Engineer 8,RID as Mae Klong P/P Manager
3.	Mr. Chalermthep Rattanaprayoon	Agriculture Technician 6, RID as Mae Klong P/P Assistant Manager
4.	Dr. Damkoeng Chandrapanya	Director of Farming System Research Institute, Department of Agriculture as Manager of Suphan Buri Training Center
5.	Mr. Vichien sasiprapa	Agriculture Technician 7, Farming System Research Institute, Department of Agriculture as Assistant Manager of Suphan Buri Training Center
6.	Mr. Suthin Moolapruk	Civil Engineer 7, Land Reform Operation Division, ALRO as manager of Chao Phya P/P
7.	Mr. Surapol Petchlom	Land Reform official 7, Ayuthdhaya Land Reform office as Assistant Manager of Chao Phya P/P
8.	Deputy of Dept. of Agriculture Extension as Agriculture Extension officer	
9.	Deputy of office of Agriculture Economics as Agriculture Economic Officer	
10.	Mr. Paitoon Palayasoot	Chief of Land Consolidation Office as Project Co-ordinator
11.	Mr. Chaiyuth Pruengwet	Civil Engineer 5, Land Consolidation Office as Project's Assistant Co-ordinator

These officers have responsibilities on thes project and set working staffs as fitting These persons are in duty since now.

This order is on October 20th, 1982.

(sign) Thalerng Thamrongnawasawadi

(Mr. Thalerng Thamrongnawasawadi)
The permanent undersecretary of MOAC

Truely Copy
(Sign) Vichien Sasiprapa
Agriculture Technician 7
Farming System Research Institute, Department of Agriculture

(Copy)

Ministry of Agriculture and Cooperative order

At 392/1982

Item Appointed of Co-ordinate committee of IADP, aiding from Japanese Government

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Ministry of Agriculture and cooperative order at 132/1982 dated April 14th, 1982, appointing of coordinate committee of IADP, aiding from Japanese Government.

According to the retirement of ML.Pilan Malakul, the director and one of the co-ordinate committee of IADP, the MOAC order at 132/1982 dated April 14th, 1982 has to be cancelled. And the new settlement of the coordinate committee of IADP are as follows

1. Deputy Permanent Secretary (Mr. Chulanop Sanidwongse Na Ayuthdhaya)as a chairman.
2. Mr. Samreng Srichanghan — Director of the Project as committee member
3. Mr. Roongrueng Chulachata — Manager of Mae Klong P/P as committee member
4. Dr. Damkhoeng Chandrapanya — Manager of Suphan Buri Experiment Station and Training Center as committee member
5. Mr. Suthin Moolaprug — Manager of Chao Phya P/P as committee member
6. Mr. Paitoon Palayasoot — Chief of Land Consolidation Office as committee member
7. Deputy of Department of Agriculture Extension as committee member
8. Deputy of Cooperatives Promotion Department as committee member
9. Deputy of Land Development Department as committee member
10. Deputy of DTEC as committee member
11. Deputy of Budget Bureau
12. Deputy of National Socio economic Development Board
13. Director of Foreign Agricultural Relations, Office of the Under-Secretary of State MOAC as committee member and secretary
14. Mr. Chaiyuth Pruengweth — Central Land Consolidation Office as committee member and assistant secretary.

These officers have duties to co-ordinate with Japanese Officers for the efficiency a and accomplishment of works.

These persons are in duty since now

This order is on October 20th, 1982

(sign) Thalerng Thamrongnawasawadi

(Mr. Thalerng Thamrongnawasawadi)
The permanent undersecretary of MOAC

Truely copy

(sign) Vichien Sasiprapa

Agricultural Technician, Department of Agriculture.

List of durable articles and construction donated from Japanese government

Suphan Buri Experiment Station & Training Center Project

1983

Bought in Thailand		Number	Price (฿)
Agricultural Machinery			
1.	Managing tiller's attachment - Sowing machine - Ridger - Rotary hoe - Cultivation wheel - Tire set	2 sets	71,400
2.	Rice combine (HD 400) with spare parts	1	130,000
3.	Auto powder sprayer	1	8,000
4.	Power sprayer	2	2,000
5.	Pump with boat	2 sets	19,600
6.	High pressure pump with 2 nozzle	1 set	7,500
7.	2 inches pump	2 sets	16,000
8.	Electric pump 1"	1	24,000
9.	Electric welder	1 set	4,500
Stationery			
10.	Copy machine	1	80,000
11.	Electric type writer 2 languages, Olympia	1	39,000
12.	Phamphets "Rice insects and its control"	5,000 volumes	80,000
		Total	460,400

List of durable articles and construction donated from Japanese Government

Suphan Buri Experiment Station & Training Center Project

1983

Sent from Japan	Number	Price (1,000 ¥)
Agricultural Machinery		
1. Interculture attachments	2 sets	147.6
Stationery		
2. Micro computer NEC 8001 mark2	1 set	672.2
Audio visual aids		
3. Video (Sony) with attachments	1 set	463
Agricultural Equipment		
4. Black nylon net	1,000 metre	300
5. Ultra drip	1 set	334
6. Spare part of threshing equipment	1 set	219.27
Vehicle		
7. Air condition van 3 ton	1	1,790
	Total	3,926.070
	CIF	861.143
	Grand Total	4,787.213

List of durable articles bought in Thailand

Suphan Buri Experiment Station & Training Center Project

1978 - 1983

List		Number	Price (¥)
1.	Bicycle	1	1,105
2.	Electric Fan 16"	1	1,400
3.	Air condition (split type)	1	27,000
4.	Hover Electric polisher	1	5,500
5.	Sofa set	1 set	3,100
6.	Tank 400 gallon with stand	2 sets	3,700
7.	Electric type writer IBM 2 languages	1	30,200
8.	Megaphone apex	1 set	1,600
9.	Electric water pump 2"	1 set	3,000
10.	Color television set	1	16,200
11.	Rotary ceiling fan	10	16,500
12.	Electric type writer 2 languages, Olympia	1	44,000
		Total	153,305¥

List of Trainees

At Suphan Buri Training Center

Fiscal year 1983

28th group

Curriculum "Rice cultivation on techniques in irrigated area"

Duration ; July 27th-29th, August 17th-9th,1982

September 14th-16th, November 23rd-25th,1982

Farmers from Chao Phya P/P

1. Mr. Sompong Wongsepantha
2. Mr. Chamnong Subperp
3. Mr. la-or Rerngkwan
4. Mr. Sanae Srithong
5. Mr. Chaleay Singthokham
6. Mr. Chop Poolsub
7. Mr. Chamnorng Srithong
8. Mr. Chop Chitpimai
9. Mr. Somsak Wongsesong
10. Mr. Udom Srikalong
11. Mr. Chalerm Rerngmitra
12. Mr. Thongyu Subsueb
13. Mr. Sa-ard Plienrasamee
14. Mr. Saeng-arun Subnuth
15. Mr. anan Phanthong
16. Mr. Prasert wongsong
17. Mr. Somporng wongsong
18. Mr. Paitoon Srithong
19. Mr. Sughat Singthokham
20. Mr. Charoensak Kiatsakuldecha *

remark : * Trained only the first duration

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29th group

Student training course

October 4th-29th,1982

1. Pitsanulok Campus

1. Mr. Sanan Homsud
2. Mr. Suthep Kornket
3. Mr. Sanae Phromcham
4. Miss Supranee Inro
5. Miss Sombat Muagiem
6. Miss Bangorn Hapa
7. Mr. Charad Theppakdee
8. Mr. Dogruk kwaepreecha
9. Mr. Prathueng Opasri
10. Mr. Prasert Thanasamban
11. Mr. Cherdchai Wongsekwae
12. Mr. Chachrit Thirasaroj
13. Mr. Chamnong Boonchan
14. Miss Suchitra Srikrue-ma
15. Miss Chuthamas Chooruengsuk

2. Kasetsart University

16. Miss Churaluk Chungcharoen
17. Miss Chantarika wakulchai
18. Miss Panyachat Klomchoom
19. Miss Pasara Saksomboon
20. Miss Waraporn Pokathitiyuk
21. Mr. Kriengsak Wanakamol
22. Mr. Kumuth Langkasila
23. Mr. Treesom Kaphan
24. Mr. Peerawat Triyacharoen
25. Mr. yutthachai Anuraktiphan
26. Mr. Rum booncharoen
27. Mr. Walit Aramwongse
28. Mr. Somsak Liengsa-ard
29. Mr. Sakares Kijrojsakul
30. Mr, surasak Sripongphankul
31. Mr. Methee Urairatt
32. Mr. Somchat sae-Tang

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30th group

Curriculum "Modern Agriculture in irrigated area"

Duration : November 9th-11th,1982

1. Farmers in Amphur Bangplama

1. Mr. Prasert Plaichan
2. Mr. Chan wongsriprueg
3. Mr. Prasit Klinkhamhom
4. Mr. Amnuay Wongwichan
5. Mr. Samur Klingaesorn
6. Mr. Chue Poopong
7. Mr. Foei Intasakul
8. Mr. Chan Adsathit
9. Mr. Kai Kaewsawang
10. Mr. Tieng Chansuebsee
11. Mr. Pim Kanthakuan
12. Mr. Boon Sudtoo
13. Mr. Luen Chuenchit
14. Mr. Beoy Pungubol
15. Mr. Winai Mingmora
16. Mr. Sangwien Poopkhem
17. Mr. Narong Moyadee
18. Mr. Swat Boonchuay
19. Mr. Wichit Shimwai
20. Mr. Prasong Arpornratt
21. Mr. Liem Saengkrachang
22. Mr. Jiem Choosri-iem
23. Mr. Samran Pikulthong
24. Mr. Merl Iem-jaidee
25. Mr. Mr. Sagiem Suksamran
26. Mr. La-orng Pethakwong
27. Mr. Mai Chimwai
28. Mr. Proey Orn-lamai
29. Mr. La-orng Srimuedee
30. Mr. Ham Poopaichit
31. Mr. Chan Yamsakul
32. Mr. Chuae Sakorndee
33. Mr. Boonchuay Samranmak
34. Mr. Suay rooropdee
35. Mr. Pratueng Saengkrachang
36. Mr. Fuen Champanil
37. Mr. Pramote Srimueng
38. Mr. Payong Kongchatree
39. Mr. Panuwat Chai-aroon
40. Mr. Boonlai Chualua
41. Mr. Wong Nakniyom
42. Mr. Phad Namchote
43. Mr. Udom Pohpaichitr
44. Mr. Chamlong Rammawet
45. Mr. Boonploog Tuamchaihan
46. Mr. Ploy Malai
47. Mr. Orn Malai
48. Mr. Prawit Hongtong
49. Mr. Samnau Hongtong
50. Mr. Kamol Pohpaichitr
51. Mr. Pramote Kamtaptim

31st group

Curriculum "Integrated farming in irrigated area"

Duration : November 16th-18th, 1982

1. Farmers in Amphur Bangplama

1. Mr. wongse Thaveesingha
2. Mr. Prong Kankomol
3. Mr. Suwan Kultha
4. Mr. Narong Wongwichan
5. Mr. Sin Pohthong
6. Mr. Sanan Hongtho
7. Mr. Charoon Chimwai
8. Mr. Samran Ubasee
9. Mr. Phan Chanseubsee
10. Mr. Sam-ang Am-ien
11. Mr. Tiemchan Kanthakith
12. Mr. Chantho Harachantha
13. Mr. Boonmee Kopatta
14. Mr. Samran Srimala
15. Mr. Boonsong Pohpaichitr
16. Mr. Khao Rakwongwan
17. Mr. Kham Thepnarong
18. Mr. Sanith Iem-seesai
19. Mr. Rien Iem-susai
20. Mr. Boonrueng Klinkhamhom
21. Mr. Thawat Netra-thongkham
22. Mr. Somchit taptimkhao
23. Mr. Aroon Saihomchan
24. Mr. Thongchai Suparatt
25. Mr. Thongbai Puang-ubol
26. Mr. Im Niyomthong
27. Mr. Sudchai Pohthikul
28. Mr. Banchong Sarobol
29. Mr. Sawai Sutthiwong
30. Mr. Samoe Khunmaigham
31. Mr. Pleng Ruenwisai
32. Mr. Wan Pengmanee
33. Mr. Sawaeng Waenthongkham
34. Mr. Prasert Chimwai
35. Mr. Prau Kalawongse
36. Mr. Samorn Kaewloyma
37. Mr. Prakong Khunsedthi
38. Mr. Pleeg Pukpayon
39. Mr. Roon Ajkonghan
40. Mr. Lerd Saengkrachang
41. Mr. Chamroen Klaisuban
42. Mr. Saghob Srisang
43. Mr. Prateep Pohpaichitr
44. Mr. Kham Am-im
45. Mr. Somchai Wichitbanchong
46. Mr. Khom Waenthongkham
47. Mr. Pit Chuesamutra
48. Mr. Tiem Saengkrachang
49. Mr. Yui Roongsawang
50. Mr. Roong Sridi
51. Mr. Chalerm Nak-fon
52. Mr. Thongbai Pohthikul
53. Mr. Silpachai Homsuwan
54. Mr. Chamnien Nak-fon
55. Mr. Boonpeng Champanil
56. Mr. Thanom Klinkhamhom
57. Mr. Bualoy Suksai
58. Mr. Peng Chanphen
59. Mr. Ong Thepnarong
60. Mr. Tan Sukpueg
61. Mr. Puan Somboonrod
62. Mr. Chan Waenthongkham
63. Mr. Od Pohpaichitr
64. Mr. Sawai Thongkhamsai
65. Mr. Poo Chaiyarid
66. Mr. Tha Kamlampha

32nd group

Curriculum "Introduction to Computer programing and utilizing"

Duration : December 20th-24th, 1982

1. Soil Science Division

1. Mr. Mongkol Panichakul
2. Mr. Chirapong Prasitthiket
3. Miss Somchitr Kanthasuwan
4. Miss Loddawan Lauhaprasitthiporn
5. Miss Kesarapron Wannithikul

2. Agricultural Chemistry Division

6. Miss Chantana Siripaiboon
7. Mr. Somchai Chedsadornpornphan

3. Botany & Weed Science Division

8. Miss Yuwadee Yingwiwatpong

4. Field Crops Research Center

9. Mr. Pracha Thamthong

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33rd group

Curriculum "Cropping System for the Central Region"

Duration : January 6th-8th, 1983

1. Department of Agriculture Extension

1. Mr. Kul Keusee
2. Mr. Therdthai Ketchit
3. Mr. Pimpa Sudcharit
4. Mr. Yui suesatt
5. Mr. amnarj Jirasomboon
6. Mr. Somchai Konthong
7. Mr. Tosapol Cheaucherng-ghan
8. Mm. Sombat Naeching
9. Mr. Sompong Kongchan
10. Mr. Wallop Sutthikul
11. Mr. Sitthichai Pimphan
12. Mr. Sutthichai Yodpayung
13. Mr. Thaweep Sarasri
14. Mr. Chalerm Promthong
15. Mr. Prayad Wongpruegsa
16. Mr. Udom amnuaysawad
17. Mr. Wiboon Sukmongkol
18. Mr. Suthin Hasachai
19. Mr. Maksak poora
20. Mr. Wichai Phadungsub
21. Mr. Khanchit Kaewsai
22. Mr. Thiras Intapong
23. Secong Lieutenant Prasobchok Chordokmai
24. Mr. Chatra Poompsuthat
25. Mr. Thosaporn Kaewsaigham
26. Mr. Niyom Suwanwanich
27. Mr. Sa-mien Ploybanpaew
28. Mr. Na-res Khunprom
29. Mr. dabos Kiemsamutra
30. Mr. Kowit Nualwat
31. Mrs. Usa Siriwan
32. Mrs. Nawaratt Narapiromsuk
33. Miss Rattana Sawaetalai
34. Miss Pranom Tantitrakul
35. Miss Puangwanna Boonyaparattabud
36. Miss Ghamnit Duangwichien

2. Department of Agriculture

37. Mr. Boonsom Suwanarak
38. Dr. Damkhoeng Chandrapanya
39. Mr. nichai Taipanich
40. Mr. Poolsawad Ajlaka
41. Mr. Wesed Panyanuwatra
42. Dr. wisanu boonying
43. Mr. Somporn Isaranulak
44. Mr. Natthawut Pasayawan
45. Mr. Supachai Banglieng
46. Mr. Rasamee Keereethaweep
47. Dr. Apichai Chanchai
48. Mrs. Achana Siripatra
49. Mr. Chalermkiet Saisoong
50. Mr. Niwat Wanichwattanaramrueg
51. Mr. Morakot Aksornsawas
52. Mr. Somsri Taiwes
53. Dr. Weerawuth Katanyukul
54. Mr. Damri Thawornmas
55. Mr. Narongsak Saena-narong
56. Mr. Somchai Kommilai
57. Mr. Thawee Saengthong
58. Mr. Chaiyos Supatthanakul
59. Mr. Preecha Surin
60. Mr. Chumporn Saranad
61. Mr. Winai Rattanaprakarnchai

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34th group

Curriculum "Introduction to Computer Programing and Utilizing

Duration : January 17th-21st, 1983

1. Soil Science Division

    1. Mrs. Sompis Mairieng
    2. Mr. Choompol Nakwiroj
    3. Mr. Wiwat Ingkapradis
    4. Mr. Chaiyaratt Nilanon

2. Horticulture Research Institute

    5. Miss Knokratt Huasoongmern

3. Rice Experiment Station

    6. Mrs. Samlee Boonyawiwat

4. Agricultural Chemistry Division

    7. Miss Wasana Yuwadee
    8. Mr. Prasert Sudmai
    9. Mr. Kalaya Thamnupornphan
    10. Mrs. Aurawan Wangdeetham

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35th group

Curriculum "Introduction to Computer programing & Utilizing"

Duration : January 24th-28th,1983.

1. Horticulture Research Institute

   1. Mr. Wiroon Sitthipoj

2. Entomology & Zoology Division

   2. Miss Rattana Roong-Fah
   3. Mr. Thae win Kulpiyawatt
   4. Miss Pornthip Thepthidakarn
   5. Miss Panomkorn Permpoon

3. Agriculture Toxicology Division

   6. Miss Nipa Tangnipon
   7. Mrs. Marasri Udomchoke

4. Department of Agriculture Extension

   8. Miss Chantana Boonprapapitak

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36th group

Curriculum "Preparation for Training in Japan"

Duration : February 14th - March 15th, 1983.

1. Mr. Kulathas Nuchanatt
2. Mr. Kamron In-thap-than
3. Mr. Winai Saema
4. Mr. Samrerng Chamroenraksa
5. Mr. Somchai Wongsong
6. Mr. Pornsak Fuengkosol
7. Mr. Sanae Srithong
8. Mr. Wan-na Chalei-chanya
9. Mr. Narong Kongyai
10. Mr. Sutthichai Sutthiwarapirak

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37th group

Curriculum "Key-site Selection"

Duration : March 8th - 11th, 1983.

1. Mr. Vichien Sasiprapa
2. Mr. Rasamee Keereethaweep
3. Mr. Boonrod Thongdonpoomp
4. Mr. Wisanu Boonying
5. Mr. Morakot Aksornsawad
6. Mr. Wanchai Tansaipetch
7. Mr. Opas Chantasuk
8. Mr. Wichan Wothong
9. Mr. Nichai Taipanich
10. Mr. Ek-ghuan Choowisitkul
11. Mr. Supachai Banglieng
12. Mr. Niran Thongphan
13. Mr. Wised Panyanuwat
14. Miss Achana Siripatra
15. Miss Somporn Isaranurak
16. Mr. Pakorn Utaiphan
17. Mr. Samnieng Wiriyasiri
18. Miss Pataranee Chuthanon
19. Mr. Weerawuth Katanyukul
20. Miss Chamnong Narthsomboon
21. Mr. Cherdchat Samitthobol
22. Mr. Chanwith Lusanan
23. Mr. Natt Thesachabutra
24. Mr. Apichai Chanchai
25. Miss Supaporn Thanee
26. Mrs. Kanchana Poohghern
27. Miss Wilaiwan Chaowayothin
28. Mr. Thawee Saentthong
29. Mr. Sumeth Kantrarom
30. Mr. Wichien Bamroongsri

38th group

Curriculam "Data Analysis and Research Planning for Suphan Buri key-site

Duration : March 21st - 25th, 1983.

1. Miss Supaporn Thanee
2. Mrs Kanchana Pohghern
3. Mr. Sumeth Kantrarom
4. Miss Manisa Theerawatsakul
5. Dr. Damkhoeng Chandrapanya
6. Mrs. Pattaranee Chuthanon
7. Mrs. Samnieng Wiriyasiri
8. Dr. Wisanu Boonying
9. Mr. Pakorn Utaiphan
10. Mr. Wiset Panyanuwat
11. Mr. Moragote Aksornsawad
12. Mr. Sompron Isaranurak
13. Mr. Wichan Woe-thong
14. Mr. Nattawuth Pasayawan
15. Mr. Chalermkiat Saisoong
16. Mr. Rasamee Keereethaweep
17. Dr. Weerawuth Katanyakul
18. Mr. Eg-ghuan Choovisithkul
19. Mr. Supachai Banglieng
20. Dr. Apichai Chanchai
21. Mr. Chalerm Sukpong
22. Mrs. Achana Siripat
23. Mr. Pairoj Suwanchinda
24. Dr. Cherdchat Samithobol
25. Mr. Sermsak Hong-nak
26. Mrs. Nongyau Asawapaitoon
27. Mr. Chalermsak Laucharoensuk
28. Dr. Aran Pattanothai
29. Dr. Edwin Price
30. Dr. Richard A. Morris
31. Ed. B. Pantastico
32. Gerald Van Kooverden
33. Mr. Boontham Prom-malee
34. Mr. Danai Taipanich
35. Mr. Surachai Suntrasanti
36. Mr. Charoen Panil
37. Mr. Patiphat Sae-Eng
38. Mr. Vichien sasiprapa
39. Mr. Opas Chantasuk
40. Mr. Wanchai Tansaipetch
41. Miss Chamnong Nadsomboon
42. Miss Suda Yimpraserd
43. Dr. T. Sugahara
44. Mr. Decha Tuna
45. Mr. Auyporn Atthayuti
46 Mr. Sucheep
47. Mr. Boonsanong Semaknth
48. Mr. Boonthan Umalee
49. Mr. Thavil Dogmaites
50. Mr. Champa Kunmaigham

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39 th group

Curriculum "Seminar for Agriculture Extension technicians in Western Region"

Duration : April 14th - 15th, 1983.

1. Mr. Suthep Putthisomsathit
2. Mr. Sakchai Sang-thong
3. Mr. Prawat Boonyakanth
4. Mrs. Sinee Wattanapahu
5. Mr. Sunard Cheaywech
6. Mr. yothin Manapakdee
7. Mr. Poom Yangyuenyong
8. Mr. Kietsak Amboontham
9. Mr. Sonthaya Kaewmanee
10. Mr. Prachoom Klaewplodtuk
11. Mr. Chaiya Methaniweth
12. Mr. Chamnong Champaghame
13. Mr. Prasith Tansrisawad
14. Mr. Sam-ang Khaokham
15. Mr. Preecha Sutthitham

15. Mr. Preecha Sutthitham

16. Mr. Widhaya Pengnorapath
17. Mr. Sommai Tuladecharak
18. Mr. Pinyo Lerd-anan
19. Mr. Choompon Sayankul
20. Mr. Pradith Rakthong
21. Mr. Am-roon Theepapal
22. Mr. Sakda Thavichsri
23. Mr. Cherdsuk Pawanawichien
24. Mr. Chalermkiet Pokpatthana
25. Mr. Kamolsak Kesawayuth
26. Miss Chunnakes Panich
27. Mr. Klom Sombatsiri
28. Miss Somsri Thaiweth
29. Miss Kanokthip Lerdprasertwat
30. Mr. Banyong Saengphanta

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40th group

Curriculum "Meeting of Working Group and farmers of Suphan Buri Key-site

Duration : June 10th, 1983.

1. Farming System Research Institute

1. Mr. Rasamee Keereethaweep
2. Mr. Somporn Isaranurak
3. Mr. Chalit Sethabutra
4. 4. Mr. Panut Wancheau
5. Mrs. Achana Siripat
6. Mr. Surachai Sunthrasantik
7. Mr. Pornlerd Yuwattana
8. Mr. Kris Poomkacha
9. Mr. Vichien Sasiprapa
10. Mr. Wanchai Tansaipetch
11. Miss Chamnong Nardsomboon
12. Mr. Opas Chantasuk

2. Entomology and Zoology Division

13. Mr. Sutthichai Somsuk
14. Mr. Sermsak Hongnak

3. Office of Agricultural Economics

15. Mr. Wirat Jamchanya

4. SuphanBuri Livestock Office

16. Mr. Somsak Laucharoensuk

5. Amphur Bang-Plama's Farmers

17. Mr. Samoe Klingaesorn
18. Mr. Charoon Chimwai
19. Mr. Chan Wongsripeug
20. Mr. Charoon Klinhom
21. Mr. Chan Yamsakul
22. Mr. Thavil Dogmaithet
23. Mr. Aeu Chaitrong
24. Mr. Sompit Kalawai
25. Mr. Mee Yimpraserd
26. Mr. Somchai Limthong
27. Mr. Sawaeng Sunpracha

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41st group

Curriculum "Administration and Activities of Provincial Livestock officer"

Duration : July 18th - 27th,1983.

1. Mr. Panya Sradhogbua
2. Mr. Rueng Suelesaiphan
3. Mr. Chuea Pinyaratt
4. Mr. Boonprom Klinpongsa
5. Mr. Bancha Itaratt
6. Mr. Sanae Santatheerakul
7. Mr. Kamol Kontheewongse
8. Mr. Thawachai Thapthimthai
9. Mr. Loy Khamchien
10. Mr. Prayiem Kumindra
11. Mr. Soras Nilprapasorn
12. Mr. Pichai Nak-poom
13. Mr. Chantasamutra Pojana
14. Mr. Songyuth Poonpipattanakarn
15. Mr. Puchong Kanchanakomol
16. Mr. Samuth Samak-karn
17. Mr. Pradid Kanchanasaen
18. Mr. Suwuth Chalai-jorn
19. Mr. Warongchai Pannarunothai
20. Mr. Sukhum Sanithnan
21. Mr. Plang Kraithong
22. Mr. Preecha Ujwathee
23. Mr. Somnuk Akarapol
24. Mr. Busit Thongthaemongcharoen
25. Mr. Suwith Pol-lap
26. Mr. Thawal Wannakul
27. Mr. Samart Charanyanon
28. Mr. Prachum Intachote

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42nd group

Curriculum "Activities of young farmers for district extension officer"

Duration : August 1st - 6th, 1983.

1. Kanchanaburi

1. Mr. narong Pukpasuk
2. Mr. Pratueng Tonyim
3. Mr. Wachara Kong-udnun
4. Mr. Somchai Luengsa-ard
5. Mr. paichon Yamban
6. Mr. Sirichai Daurueng
7. Mr. Arnat Somprasong
8. Mr. Chamnien Rengtien

2. Nakhorn Phathom

9. Mr. Niphon Prommoon
10. Mr. Bopich Khemsom
11. Mr. Kanchit Kaewsai
12. Mr. Kasem Kamolphithan
13. Mr. Banyat Khaosa-ard
14. Mr. Thiras intapong

3. Prachuab Khiri Khan

15. Mr. Somkhuan Ghampaiboon
16. Mr. Wirat Pakdeesamoe
17. Mr. Arkhom Dedrakthip
18. Mr. Somchai Suwansinthu
19. Mr. Boonlerd Pradab
20. Mr. Songsak Kuesakij
21. Mr. Kasetsilp Nualsa-ard

4. Suphan Buri

22. Mr. Wichien Thongkhamsuk
23. Mr. Permsak Kingsamrij
24. Mr. boonchu Usuwan
25. Mr. Urhai Samlerdrum
26. Mr. Wichien Kun-no
27. Mr. Taraporn boonya-anan
28. Mr. Wicha Boonyachit
29. Mr. Seree Somgham
30. Mr. Adisak Rawipong

5. Petchaburi

31. Mr. Boonlieng Thonglim
32. Mr. Surapol Krai-aram
33. Mr. Sai-yan Sawedsuwannakul
34. mr. Kietpong Chulaprom
35. Mr. Montree In-suwan

6. Rachaburi

36. Mr. Wichai Rantacherdchai
37. Mr. Ong-aj Maneechote
38. Mr. Somkuan Thammaneechote
39. Mr. Preecha Kongkaluang
40. Mr. Adul Polasen
41. Mr.Chainarong Chirawuth

7. Samut Songkhram

42. Mr. Tanakorn Samlee

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43rd group

Curriculum "Rice Cultivation Technique in irrigated area"

Duration: September 5th-9th, October 10th-14th, November 7th-11th
December 19th-23rd, 1983.

1. Botany & Weed Science Division

1. Mrs. Duangchan Pookiewsak
2. Mr. noparat Yodchan

2. Office of Agricultural Economics

3. Mr. Suwim Pecharij
4. Mr. Kriengsak Rodmek

3. Rice Research Institute

5. Mr. Somnuek Noo-niem
6. Mr. Somboon Thong-sen
7. Mrs. Thanomchit Rij-montree

4. Royal Irrigation Department

8. Mr. Wichai sang-krod
9. Mr. Wichan Chan-pen
10. Mr. Apichai Wattanayomanaporn
11. Mr. Somhuan Kaminthakul
12. Mr. Thananchai Chernghom

5. Farming System Research Institute

13. Mr. Chitti Suwansang
14. Mr. Krit Poomkacha
15. Mrs. Laddawan opanuraksatham
16. Mr. Chalit Sedthabutra
17. Mr. Thanoo Chan-urai
18. Miss Somporn Suriyan

6. Agricultural land Reform Office

19. Miss Wanida Tarnthawil

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EPILOGUE

The activities on training and transfering of technologies of Suphan Buri Farming System Research Institute, Department of Agriculture have been continued from 1979 until now, the end of the fiscal year 1983. There is a lot of participants to be trained from this Center around 2,356 persons, not including the mission or the groups which come to visit the Center that there are more than 500 persons in each year.

In this 1983 fiscal year, the Center has published text books on "Insects and its control" of 5,000 copies and distributed them to researchers and the trained officers from this Center. It is the second text book follow to the first one "Rice Disease and its control."

The admistration of this Center has been the same as before. The committee consists of project manager assistant who is the Director of the Training including other staffs as follows :

1.	Mr. Vichien Sasiprapa	Agriculture technician 7, Farming System Research Institute.
2.	Mrs. Achana Siripatt	Economist 5, Farming System Research Institute.
3.	Mr. Opas Chantasuk	Agriculture technician 5, Farming System Research Institute.
4.	Mr. Pairaj Duangpiboon	Agriculture technician 5. Farming System Research Institute.
5.	Miss Sasithorn Sowan	Scientist 5, Analysis Laboratorial Work.
6.	Suphan Buri Rice Experiment Station Officers	
7.	Dr. T. Sugahara	Japanese expert (JICA) of Suphan Buri Training Center.

Progressiveness of the Project in the 1983 fiscal year which was aided from Japanese Government, under Irrigated Agriculture Development Project (IADP), Ministry of Agriculture & Co-operative.

Vichien Sasiprapa
Making report of 1983
August, 1983.