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**KERALA
AGRICULTURAL UNIVERSITY**
COUNCIL OF AGRICULTURAL RESEARCH

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STATUS REPORT
(1985-86 to 1987-88)

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NATIONAL DEMONSTRATION SCHEME
ANANDAPPALLY, ADOOR — 691 523
PATHANAMTHITTA
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KERALA AGRICULTURAL UNIVERSITY
NATIONAL DEMONSTRATION SCHEME

ANANDAPPALLY, PATHANAMTHITTA DIST., KERALA

STATUS REPORT FOR THE PERIOD FROM 1985-86 TO 1987-88.

1. Introduction

National Demonstration Project, a nation-wide Programme of demonstration started during 1984, from the main plank of transfer of technology from the scientists to farmers. Kerala Agricultural University started implementing the scheme since 1975 with the specific object of transfer of technology to maximise the production and net return per unit area of land per unit period of time. The Project had covered Trichur and Quilon districts and was now shifted to Anandappally in Pathanamthitta District from 1-5-1988.

2. Cropping Pattern of Quilon-Dist.

There is high degree of polycropping in the district, particularly in the mid lands and uplands. Cultivation of crops is mainly under rainfed condition. Paddy is the main food crop in the low land. Crop combination and the crop sequences in the mid uplands, mid land and low land presently followed by the farmers of the district are given below:

Mid upland:

Perennial	: Rubber, Coconut, Arecanut, Pepper, Cashew, etc.
Annual	: Tapioca, Ginger, Banana, etc.
Seasonal	: Paddy, Pulses, etc.

Mid Land:

Perennial	: Coconut, Arecanut, Rubber, Jack, Cashew, Nutmeg, Cinnamon, Clove, Pepper, Cocoa, etc.
Annual	: Tapioca, Banana, Ginger, Yana, etc.
Seasonal	: Paddy, Pulses, Vegetables, Groundnut, Sesamum, etc.

Low Land:

- Perennial : Coconut,
 Annual : Tapioca, banana, fodder grass, etc.
 Seasonal : Paddy, Pulses, Vegetables, etc.

In the dry land area of the midland and the mid upland, mixed cropping pattern is generally followed. Coconut and Tapioca are the major crops. Tapioca is grown in the slopes of small hills, also Annuals like Sugarcane, Pineapple, fodder grass etc. Seasonal like tubers, pulses, vegetables, sesamum and a wide variety of perennials like cashew, jack pepper, cocoa etc. are invariably seen in the midlands and mid uplands.

In the wet lands where rice based cropping system is followed, the major crop sequences in three seasons in the order (Virippu: April-May to Sept. -Oct. Mundakan: Sept.-Oct. to Dece-Jan and Punja:Oct.-Jan to March-April) are as follows:

- Paddy - Paddy - Pulses.
 Paddy - Paddy - Vegetables/oil seeds.
 Paddy - Banana
 Paddy - Paddy - Fallow.

3. Staff position:

Designation	No. of posts	Name of incumbent.	Period in position	Period vacant.
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A. Scientists:

1. Professor(P.P)	1	Sri.G.Indrasenan	1-6-84 to 19-11-85	Vacant from
		Dr.K.S.Pillai	1-1-87 to 16-6-87	20-11-85 to 31-12-86
		Dr.K.V.Mammen	25-6-87 to till date	
2.Assoc.Prof.(S.S)	1	Sr.K.R.Nair	1-6-83 to till date	
3.Asst.Prof.(Agro.)	1	Sri.I.Johnkutty	1-1-83 to 6-6-88	
		Dr.M.A.Salam	7-6-88 to 30-9-88	Vacant from 1-10-88
4.Asst.Prof.(Hort.)	1	Sr.C.S.J.Nair	11-3-87 to 23-5-88	Vacant from 24-5-88

B. Supporting staff:

1. Farm Asst. Grade II	2. Sri.P.K.Rajasekhanan	1-6-83 to 31-8-86
	Smt.K.S.Sujatha	1-6-83 to 5-3-88
	Sri.D.Prasannakumar	17-3-86 to 2-6-87
	Sri.K.C.S.Prasad	6-3-86 till date
	Sri.P.G.Ajayakumar	3-6-87 to 6-6-88
	Sri.K.S.Ajayakumar	7-6-88 to 17-6-88
	Sri.E.N.R.Nair	18-6-88 till date
2. Jeep Driver 1	Sri.P.S.Babu	15-5-84 to 8-6-88
	Sri.K.S.Pillai	9-6-88 till date.

4. Year-wise demonstrations organised:

The total geographical area of the district is 3130.87 Sq.K.M. and consists of 5 Taluks viz.

Kottarakkara, Kunnathoor, Pathanapuram, Quilon and Karunagappally and Blocks contained in the district are furnished below:

<u>Taluks</u>	<u>Blocks</u>
Quilon	Ithikkara, Mukhathala, Anchalumoodu, Chittumala.
Kunnathoor	Sasthamkotta, Bharanikkavu.
Pathanapuram	Pathanapuram, Anchal.
Karunagappally	Chavara, Karunagappally.

Distribution of demonstrations

1) <u>1985-86</u>	Kottarakkara	- 16
	Pathanapuram	- 9
	Quilon	- 1

	Total	26
		=====

Cropping sequence:

Paddy-Paddy-Cowpea	- 4		
Paddy-Paddy-Sesamum	- 1		
Paddy-Paddy	- 8		
Paddy-Sesamum	- 2		
Paddy	- 2	Three crop sequence	- 5
Sweet Potato	- 1	Two crop sequence	-13
Groundnut-Tapioca	- 2	Single crop sequence	- 3
Cowpea-Sesamum	- 1	Entire Farming system	- 5
Entire Farms	- 5		

Total	26	Total	26
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Total Number of demonstrations	-	49
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ii) 1986-87

<u>Taluk</u>	<u>Location</u>	<u>Number</u>
Kottarakkara	Puthoor	15
Karunagappally	Adinadu	14
Pathanapuram	Elampal	8
Kunnathoor	Mynagappally	2
	Total	39

Cropping sequence:

Paddy-Paddy-Pulse	- 16		
Paddy-Paddy-Sesamum	- 14		
Paddy-Paddy	- 4	Three crop sequence	- 30
Cowpea-Tapioca	- 1	Two crop sequence	- 5
Cowpea	- 4	Single crop sequence	- 4
Total	39	Total	39

Total Number of demonstrations	-	104
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iii) 1987-88

<u>Taluk</u>	<u>Location</u>	<u>Number</u>
Pathanapuram	Elampal	20
Karunagappally	Adinadu	17
Kottarakkara	Puthoor	34
	Total	71

Cropping sequence:

Paddy-Paddy-Cowpea	- 54		
Paddy-Paddy-Sesamum	- 17	Three Crop sequence	71
Total	71		

Total Number of demonstrations	-	2135
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5. Year-wise average yield data of different crops:

1) Mean yield of different varieties of crops in the demonstration plots during 1985-86.

Sl. No.	Crop	Variety	Season	No. of demonstrations	Mean yield (Q/ha)	
					Grain	straw
1.	Paddy	1. Cul.23332/2	I Crop	3	54.50	52.16
		2. Lekshmy	II Crop	6	39.83	88.75
		3. Pavizhom	I Crop	1	55.50	50.00
		4. Jyothy	I Crop	5	50.55	52.34
		5. Sabari	I Crop	3	47.69	50.40
		6. Sabari	II Crop	1	38.50	45.00
		7. Karthika	II Crop	4	39.25	50.50
		8. H 4	II Crop	2	36.75	85.00
		9. Cul. 1907	I Crop	1	36.25	58.00
		10. Cherady	II Crop	2	35.25	81.00
		11. Ptb-4	II Crop	1	38.50	85.00
		12. PTB-2	II Crop	1	35.00	77.50
	Groundnut	1.TG-14		2	4.00	
	Sweet					
	Potato	1. Cross-4-		1	125 Q/ha.	
	Sesamum	1.ACV-1 (Soma)	III Crop	3	3.17	
		2.ACV-II (Surya)	I Crop	1	3.2	
	Pulse	1.C-152	III Crop	4	7.00	
		Krishnamony	III Crop	1	5.8	
		C-152	I Crop	1	6.5	
	Tapioca	Local		1	185 Q/ha.	

ii) Mean yield of different varieties of crops in the demonstration plots during 1986-87.

Sl. No.	Crop	Variety	No. of demonstrations	Mean yield q/ha		
				Grain	Straw	
1	Paddy	I Crop	Pavizhom	17	51.12	49.81
		Sabari	14	48.02	49.64	
		Jaya	1	46.50	47.75	
		Jyothy	2	45.25	49.25	
	II Crop	Lekshmy	23	38.41	81.40	
		Sabari	1	42.50	45.00	
		Ptb-20	5	36.81	68.70	
		Ptb-4	1	36.80	72.50	
		Cherady	4	35.18	80.13	

II Cowpea	I Crop C-152	4	4.93
	III Crop C-152	9	2.66
	Krishnamony4		2.61
III Greengram	III Crop C O 3	3	1.35
IV Sesamum	III Crop Kayamkulam		
	1	13	2.56
	Kayamkulam		
	II	1	2.65

III) Mean yield of different varieties of crops in the demonstration plots during 1987-88.

Sl. No.	Crop	Variety	No. of demonstrator	Mean Yield	
				Gravn	Strow
1.	Paddy I	Pavizhom	37	36.9	40.2
		Sabari	36	37.0	42.4
2.	Paddy II	Lekshmi	45	28.7	83.6
		Cherady	7	29.6	84.8
		PTB - 20	17	28.9	80.9
3.	Cowpea	C 152	54
	Sesamum	Kayamkulam I	17 <i>Crop field</i>

6. Cost-benefit analysis:

i) 1985-86 (Rs. per hectare)

Crop	Gross return	Operating cost	Return over ope rating	Output-Input Ratio
Paddy	12942	6570	6372	1.9
Cowpea	4504	1867	2637	2.4
Sesamum	3650	2022	1628	1.8
Groundnut				
Tapioca	10816	4685	6131	2.3

ii) 1986-87 (Rs. per hectare)

Paddy	15571	7695	7876	2.0
Cowpea	2887	1705	1182	1.6
Greengram	945	1133	188	0.8
Sesamum	3338	1672	1666	1.9

Note:- There was absolutely no rainfall from December '86 to March '87. The severe drought prevailed during the summer has adversely affected crop growth and production of summer pulses.

iii) 1987-88 (Rs. per hectare)

Paddy				
(Ist Crop)	9626	5299	4327	1.8
Paddy				
(IIInd Crop)	11793	5719	6074	2.0

Note:- During the year, the area received a total rainfall of 2472 mm and 106 rainy days. The untimely rains received during February to April caused water stagnation which eventually resulted in the rotting of seeds and seedlings of the crops sown during the III crop season. This situation lead to a complete crop failure and abandonment of the oil seeds and pulse demonstrations laid out during summer 1988. The same was the fate of the of the oil seeds and pulse crops grown in the summer follows of the entire district.

7. Farmers Training and Field days:

1) 1985-86.

Location	No. of trainings/ field days	No. of farmers participated
1. Kummil	5	67
2. Oyyor	5	62
3. Pattazhy	5	67
4. Perigalloor	1	8
5. Kuricode	1	13
6. Bharatheepuram	4	44
7. Thalavoor	3	37
8. Kadakkal	3	40
9. Mylacode	4	48
10. Sadanandapuram	1	15
11. Karingannoor	3	32
12. Yeroor	1	12
13. Velinalloor	2	22
14. Kizhakkatheruvu	1	10
15. Karikkom	1	15
Total	40	492

ii) 1986-87

1. Punalur	22	364
2. Puthur	10	282
3. Karunagappally	18	359
Total	58	1105

iii) 1987-88

1. Punalur	13	188
2. Puthur	12	216
3. Karunagappally	10	159
Total	35	563

8. N.D Convention/Seminar/Kissan Mela Organised:

1) 1985-86

<u>Location</u>	<u>No. of Farmers participated</u>
1. Sadanandapuram	100
2. Valamom	85
3. Thalachira	40

ii) 1986-87

<u>Location</u>	<u>No. of Farmers participated</u>
1. Mylom	50
2. Panavelly	45
3. Kottavattom	50
4. Karunagappally	195

iii) 1987-88

<u>Location</u>	<u>No. of Farmers participated</u>
1. Vilakkudy	262
2. Panavelly	85
3. Kampamcode	145
4. Adinadu	102
5. Puthur	106
6. Channappetta	300

Krishidarsan Programme:

1) 1986-87

<u>Location</u>	<u>No. of Farmers participated</u>
1. Karunagappally	200
2. CPCRI, Kayamkulam R.R.S., Kayamkulam	25

ii) 1987-88

<u>Location</u>	<u>No. of Farmers participated</u>
1. Adinadu	106
2. Puthur	100

Film shows arranged:

1987-88

<u>Location</u>	<u>No. of farmers participated</u>	<u>Sponsored by</u>
1. Vilakkudy	300	Farm Information Bureau, Trivandrum.
2. Elampal	140	Indian Potash Ltd.
3. Puthur	210	Indian Potash Ltd.

9. Improved practices demonstrated/instructed:

The N.D. Unit has introduced various new technologies through crop demonstrations and by conducting field days and seminars.

1. Popularisation of high yielding varieties of Paddy, Cowpea, Sesamum, etc.
2. Importance of liming was demonstrated to the farmers.
3. Fertilizer recommendation based on soil test data.
4. Use of nitrification inhibitors like neemcake was popularised.
5. Split application of fertilizers based on critical crop growth periods.
6. Foliar spray of urea + dimecron to pulses and sesamum.
7. Use of chemical weedicides

Chemical weedicides have been found effective and economic in paddy. Pre-emergent weedicides like Delchlore or Saturn @2.5 litres/ha have been found effective in kharif paddy and could reduce the cost of cultivation very much. Chemical weedicides will not be economical for Mundakan crop since the weed problem in that season is very less.

Use of 2, 4-D as a post-emergent weedicide in paddy has been popularised in the area of operation.

8. Popularised the practice of growing pulses and sesamum in summer rice follows:
9. Popularised a new rat trap 'Mancompu trap', devised by Kerala Agricultural University.

10. Feed Back:

1. Farmers are requesting for a suitable high yielding paddy variety for the Rabi season. Lakshmi, H.Y.V. recommended for the tract is not preferred by the cultivators and they are using local varieties like Cheradi, PTB-20, etc.

2. Based on the observations made in the demonstration plots for sesamum during summer, 1987 it is suggested that statistically layout experiments may be conducted to study the effect of tith and removal of stubbles, etc.
3. An experiment to determine the optimum seed rate for sesamum under different moisture regimes in different soil types is suggested.

The feed back have been transmitted to the Director of Extension, Kerala Agricultural University for necessary action.

11. Operational Problems/Suggestions:

1. As this N.D. Unit is situated away from the main campuses of the University the SMS's of the Unit do not have easy access to the library. In order to enable the scientists in touch with the latest developments in agriculture a small library has to be set up on the unit. Separate budget provision may be made to purchase books and to subscribe research journals.
2. Posts of Clerk-cum-Typist and Attender may be created in the scheme for attending the office, work, despatch of tapals, etc.
3. Provision may be made for the purchase of audio - visual equipments to be used during field days and seminars.
4. Provision may be made to conduct farmers' tours to the research stations and State Agricultural Farms.

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TARGET OF ACTIVITIES OF NATIONAL DEMONSTRATION SCHEME,
ANANDAPPALLY FOR THE YEAR 1989-90

I. DEMONSTRATIONS IN FARMER'S FIELD

Number of demonstration plats laid out in farmers field, cropping sequence to be followed and the number of farmers involved in the demonstration during 1989-90 are presented:-

Sl. No.	Location	Crop sequence	No. of Farmers	Area (Acre)	No. of demonstrations
1	Poovampara (Konni)	Paddy-Paddy-Pulse	12	10.00	12x3 = 36
2.	Tholuzham (Thatta)	Paddy-Paddy-Sesamum	15	9.00	15x3 = 45
3.	Pazhakulam	Paddy-Paddy	15	9.65	15x2 = 30
4.	Payyanallur	Pulse	15	10.00	15x1 = 15
<i>Problem area</i>					
Total			57	38.65	126

** Target suggested by ICAR - 100 Nos.

II. TRAINING COURSES

In order to create awareness about the package of practices recommended for the demonstrations and to find out timely solutions for field problems, trainings will be scheduled as.

1. Pre-season training before each cropping season at all locations : 9 Nos.
2. Mid-season training at all locations for each season : 9 Nos.
3. Harvest festival and training : 3 Nos. —
4. Seminars and Kissan melas : 3 Nos. —

III. METHOD DEMONSTRATION

1. Use of Plant protection equipments
2. Application of plant protection chemicals
3. Application of chemical fertilizers.

IV. FIELD DAYS

It is proposed to conduct 25 field days at various stages of cropping such as.

1. Field preparation/nursery
2. Planting
3. Weedicid^{de} application
4. Top dressing
5. Plant protection
6. Harvesting and post harvest operations.

V. LOCAL MANAGEMENT COMMITTEE

At each demonstration site, a local management committee is formed with the demonstrating farmers as the members and leaders of N.D. Scheme as the Chairman. A convenor is selected from among the members. The committee will discuss and formulate the field operations to be carried out and scientific practices to be adopted for each crop.

Four local management committee were constituted.

VI. PUBLICATIONS EXPECTED TO BE BROUGHT OUT AND RADIO TALKS ON NDS.

In order to popularise the advanced technology in agriculture and to create awareness among the farmers about the scheme and its activities, it is planned to publish articles and leaflets and also through radio talks.

1. Case studies
2. Success stories of demonstrating farmers
3. Leaf lets on agricultural technologies. *TV Journal*

VII. NUMBER OF BENEFICIARIES

The scheme will cater to the requirements of technical guidance and direct supervision of field operations of all the 57 demonstrating farmers.

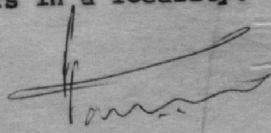
Participation of other farmers in the locality in seminars, field days and method demonstrations will be encouraged and each direct beneficiaries is expected to contact at least 10 other farmers in an year.

How? Involvement of women in N.D. Programmes ^{will} should be encouraged.

VIII. FOLLOW UP ACTIVITIES

Under the scheme, follow up activity is envisaged after conducting demonstrations for two years in a locality.

Anandappaly
24..5..1989


PROFESSOR