

Acknowledgements

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VARIETAL POSITION OF PADDY IN PALAKKAD
DISTRICT - A SURVEY REPORT

INTRODUCTION

Rice, the staple food of the state is the major crop of the central zone. Paddy covers nearly half the total cropped area of the zone. Palakkad district alone covers 46 percent of the rice area of the zone. The district with 23 percent of the rice growing area of the state contributes 28 percent of the total production. This region with its agroclimatic diversity represents a conglomerate of elite rice zones of the state. A wider spectrum of productivity will help to identify the basic aspects of rice culture as is adopted in the farmers fields. This is expected to give a general reflection of the adaptability pattern of the state.

BASIS OF THE SURVEY

The successful implementation of the group farming programme in the state raised the problem of identifying suitable HYV for the padasekharams. The preference of farmers to non-descript varieties for their group farms posed a problem to both the seed certification agency and the authorities of the State since only notified varieties come under the purview of the seed act. Hence a need to catalogue such varieties was felt. To plan a successful seed programme it was required to know the current status of the released varieties of the State. A malady remedy analysis of the

persistent yield stagnancy in the state calls for the development of a location specific management technology based on varietal adaptability.

Hence the XIII NARP zonal workshop of the scientist of the Kerala Agricultural University with the co-operation of the Department of Agriculture decided to undertake a pilot survey on the "Performance and coverage of HYV in the central region." The objectives of the survey were as follows:

- i) To assess the adoption and popularity of released varieties of the state.
- ii) To identify the released varieties which are not being cultivated.
- iii) To assess the extend and popularity of non-descript varieties.
- iv) To gather basic information on the pest and disease incidence pattern of the region.
- v) To develop a seed map based on the irrigation pattern.

The Associate Director, RARS, Pattambi and his team were entrusted with the responsibility.

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PHYSIOGRAPHY OF PALAKKAD DISTRICT

The rice area of the district is managed under four sub-division and through 92 krishibhavans. The rice soils of the district can be broadly classed into 1.laterite 2.riverine alluvium 3. black soil. Bharathapuzha and its tributaries constitute the main river system of the district which in addition to its role in building up a fertile riverine alluvium serves the irrigation objective in a two pronged manner: It supports the dams like Malampuzha, Mangalam, Meenkara, and the associated canal systems. There are eight such irrigation projects in the region. Secondly they maintain the water table in the adjoining areas this makes the lift irrigation projects viable throughout the

year. The unique feature of the rice culture of the district is the facility of minor and major irrigation systems and a set of management practices evolved for the area.

The limited availability of rainfall from north eastern monsoon leads to the development of semi arid weather in the latter phase of the second crop. The annual rainfall is concentrated during the south west monsoon period. Rains from the north east monsoon is marginal in almost all areas except the north eastern parts of the district where it may account for 30-40 percent of the rainfall.

Thus the semi-arid climate as well as the direct and indirect support of the river systems for facilitating irrigation makes rice culture a practice totally under control. However this controlled system progressively weakens towards the west especially in areas situated away from the rivers.

AREA DISTRIBUTION PATTERN OF THE DISTRICT

The distribution pattern of rice area and its irrigation pattern is presented in (table-1)

The rice culture in the district is concentrated during the first and second crop seasons. The crop covers about 66,500 hectares in these two seasons together as against a paltry figure of 1,400 hectares during the third crop.

Irrigation facility of the total area of 14,364 hectares depends exclusively on rainfall, while 18,731 hectares are benefited by irrigation systems of various kinds namely lift, canal, river and dam.

The virtual absence of a third crop inspite of irrigation facilities indicate that the latter is used for saving the virippu and mundakan crops against failure. Facility tunes the cultural practices for maximization of yield implying that there will be a natural preference for HYV and efficient and better use of managerial inputs like fertilizers and plant protection chemicals.

VARIETAL POSITION OF THE DISTRICT

The near enumeration studies covering 54 krishibhavans and 765 officially supervised farmer enterprise systems (padasekharams) reveal, (see appeendix) spread over the 4 subdivisions of the district reveal that unweildily large number of varieties are under cultivation in the district. Shornur sub-division ranks first with 39 rice varieties under cultivation in 21,610 hectares. Mannarkkad ranks second with 35 varieties in 14,839 hectares. Alathur and Chittur follow with 32 and 30 varieties in 11,786 and 19,714 hectares of land under rice respectively.

The spectrum of varieties should normally be suggestive of corresponding level of micro level diversity in agro climatic factors. This however is non existent as the weather in semi-arid soils belonging to three distinct adaphic groups.

The wide spectrum of varieties however are bound to bring management problems as well as interfere with objective planning for improving the productivity. As such it calls

TABLE I

SUB-DIVISION WISE AREA UNDER RICE IN PALAKKAD DISTRICT
AND THE PATTERN OF IRRIGATION

(IN HECTARES)

	VIRIPPU	MUNDAKA	PUNJA	No. OF PADASEKHARAMS	RAIN	LIFT IRRIGATION	CHANNE	RIVER	DAM
ALATHUR	6355.00	5431.00	0.00	81.00	793.60	2511.00	0.00	909.20	2142.00
CHITTUR	10875.00	8685.00	154.00	153.00	3608.00	409.00	5774.53	1855.00	145.00
SHORNUR	11088.00	9809.00	715.00	251.00	7553.00	1847.00	893.00	129.00	515.00
MANNAKK	8894.00	7393.00	552.00	280.00	5981.00	668.60	470.00	168.00	295.00
TOTAL	35210.00	31318.00	1421.00	765.00	14364.20	5435.60	7137.53	3061.20	3087.00

for detailed scrutiny. The spectrum itself is 3 dimensional with HYV, traditional and non-descript varieties constituting the mix.

TRADITIONAL VARIETIES

Traditional varieties can be seen to occupy substantial areas in Shornur sub-division of the district. This would mean that the resultant popularity of these varieties against the HYV in all probability appears to be the cause of their superior qualitative characteristics. It may be possible that it includes the higher yield of straw also.

HIGH YIELDING VARIETIES

The area coverage of released HYV varieties shows a distinct oscillation among places. The HYV programme commenced from the mid sixties and by 89-90 more than 68 varieties had been made available to the farmers in the state. An in-depth analysis of the HYV in totality indicates some specific disturbing trends. The most important among them is that inspite of large number of varieties released in regular succession the varieties now in the field are only those released in the early seventies. In the normal course these varieties should have been outdated by now. Secondly all these varieties have been unable to hold on. The preference of farmers is confined to Jyothi, Jaya, Mashoori, Triveni, Pavizham etc. This shows that they are superior to the varieties subsequently released. Grain qualities had not been a critical and deciding factor in the choice of varieties by the the farmers. This is amply

justified by the presence of white kernelled varieties like Jaya, Mashoori and Triveni which enjoy unabated preference by the farmers. This will incidentally suggest that the quantitative advantage of these varieties outweigh qualitative preferences. Farmers are still in quest of adaptable high yielding biotypes. The recent spread in Pavizham indicates that their varietal selection is based more on the yield and marketability of the grain.

NON-DESCRIPT VARIETIES

The existence of a third set of varieties has been noticed in the field-level. These do not fall under the category of traditional varieties as they have only very short stature and also they are of short duration. Since their pedigree is unknown, it is improper to classify them as HYV. The steady stand of the traditional varieties and the variable tendencies of the HYV suggests that there is a continuous competition between the HYV and the non-descript varieties. The gradual and steady ascend in coverage by the later suggests that these types combine the desirable quality characteristics of both these varieties. The area coverage of non-descript can be seen to vary from place to place. Thus when the area of Kunjukunju increased from 288 hectare to 473 hectare during 1988-91 at Melarcode krishibhavan, AP1 registered an increase of 514 hectare during the first crop at Nemmara during the period. The progressive increase in area coverage of these varieties is at the face of stiff opposition from official and quasi official level. All these evidence suggest that a superior yield expression of these varieties cannot be ruled out.

SUB-DIVISION WISE ANALYSIS

The total rice area of the district is 74,376 hectares during the first crop, 68,382 hectares and 1,907 hectares during the second and third crops respectively. This is managed by four agricultural sub-divisions comprising 92 krishibhavans. The details collected through questionnaire has achieved a 59 percent coverage of the district.

ALATHUR SUB-DIVISION.

The Alathur sub-division, with 24 krishibhavans has a total cropped area of 26,616 hectares, during the first cropped season. From the reports received from five krishibhavans (20%) of the sub -divisions occupying 6,924 hectares of the cropped area the following trends were discernible. The area under padasekharams has increased two fold from 1988-89 to 1990-91 (Appendix 2). The spectrum of varieties in the area has almost doubled from 7 in 1988-89 to 13 by 1990-91. The ruling variety of the area for both the first and second crop is Jaya which occupied nearly half the cultivated area during 1988-89. Succeeding years witnessed a slight decline due to the induction of other varieties in the area. Mashoori is the next popular variety followed by Kunjukunju and AP1. Triveni and Jyothi occupy very negligible area. Pavizham has received a major coverage by 1991. Other non-descript varieties like Vellaponny, Ponmani, AST16 are also popular in the padasekharams.

The region, which comes under the Ayacut area of irrigation projects, cultivation is mainly controlled by the water from the Mangalam, Pothundy and Chenamangalam dams.

The major pest reported from the area for all the three seasons is Leaf folder followed by BPH for the first crop and Stem borer for the second crop. The incidence of Rice bug has also been indicated.

Blast has been rated as the most devastating disease for all the three seasons followed by Helminthosporium Blight and Sheath Blight for the first and second crops respectively.

CHITTUR SUB-DIVISION

The sub-division has 16 krishibhavans managed by three assistant directors. Of this, details of twelve krishibhavans (75%) which covered 10875 hectare of the rice area during the first crop was available.

Mashoori is the ruling variety of the region followed by Jaya. IR20 is also a popular variety of the region which has retained its popularity in all the three years considered in the study. The spectrum of varieties cultivated in the padasekharams has increased from twelve in 1988-89 to seventeen by 1990-91. The area under group farming has also registered a corresponding increase. AP1, Kunjukunju, Ponmani, AST16 and TK9 are the major non descript varieties popular in the area.

Here also the crop is mainly irrigated with water from the Malampuzha dam and the Chitturpuzha projects.

The major pest reported is Leaf folder followed by Stem borer and Gail midge respectively for the first crop. For the second crop Stem borer is the major pest followed by Leaf roller and Rice bug. Third crop is virtually absent in the area.

BLB is the major disease reported from the area, followed by Sheath blight for the first crop and Blast for the second crop.

SHORNUR SUB DIVISION

The total area under paddy in this sub division is 12,507 hectares managed by 24 krishibhavans. Reports received from 22 krishibhavans (91%) covering a total area of 11,086 hectares during the first crop reveals Jyothi to be the most popular high yielding variety in the padasekharams covering nearly 40-60 percent of the cropped area. Mashoori is also a popular variety of the region, though it occupies considerable area during the first crop, the preference is more for the second crop. Jaya and Pavizham are other notable high yielding varieties cultivated in the area. For the second crop local varieties and Mashoori command a greater coverage. AP1 and Kunjukunju are the most popular non descript varieties of the region.

Shornur comes under the non ayacut area of irrigation projects, hence the cultivation is mainly rainfed with just a few areas benefited by water from Malampuzha canal, Bharathapuzha lift irrigation and Toothapuzha.

The most devastating pest of the region is Stem borer for all the three seasons, followed by Leaf folder and Rice bug respectively. Case worm attack has been reported for the second and third crops. Maximum pest incidence has been reported for the second crop.

Blast is the major disease of the area followed by Brown spot. Sheath blight is more severe during the second crop. For the third crop Brown spot is the major disease followed by Blast Blight and BLB.

MANNARKKAD SUB DIVISION

Reports received from fifteen krishibhavans of the sub division which has a total of nineteen krishibhavans (79%), covering an area of 6894 hectares during the first crop season indicated Jyothi to be the most popular high yielding variety in the padasekharams for both the first and second crop seasons, followed by Mashoori. A large number of traditional varieties like Chettadi, Aryan, Chenkayama etc. were also popular in the padashekarams. Chettadi was the most popular variety for the second crop. The non descript varieties, Kunjukunju and AP1 enjoyed moderate popularity in the area. About nineteen varieties were cultivated in the 280 padasekharams surveyed in the sub division.

TABLE III

DISEASE INCIDENCE PATTERN OF RICE IN PALAKKAD DISTRICT

VIRRIPI SEASON:

SUB DIVISION	MAJOR DISEASES OF THE REGION						
	BLAST	SHEATH BLI	BLB	BROWN SP	LEAF SPOT	BLIGHT	SHEATH RO
ALATHUR	0.80	0.40	0.00	0.00	0.00	0.60	0.20
CHITTUR	0.00	0.42	0.59	0.03	0.13	0.00	0.00
SHORNUR	0.45	0.26	0.19	0.34	0.11	0.00	0.04
MANNARGH	0.68	0.26	0.17	0.03	0.06	0.29	0.00

MUNDAKAN SEASON

SUB DIVISION	MAJOR DISEASES OF THE REGION						
	BLAST	SHEATH BLI	BLB	BROWN SP	LEAF SP	BLIGHT	
ALATHUR	0.60	0.20	0.20	0.00	0.00	0.20	
CHITTUR	0.23	0.15	0.50	0.05	0.00	0.00	
SHORNUR	0.56	0.05	0.22	0.54	0.07	0.03	
MANNARGHAT	0.65	0.34	0.00	0.09	0.06	0.15	

FUNJA SEASON

SUB DIVISION	MAJOR DISEASES OF THE REGION				
	BLAST	BLIGHT	BLB	BROWN SP	SHEATH ROT
SHORNUR	0.07	0.04	0.04	0.12	0.05
MANNARGHAT	0.18	0.00	0.00	0.06	0.00

TABLE II

PEST INCIDENCE PATTERN OF PALAKKAD DISTRICT

VIRRIPI SEASON:

SUB DIVISION	MAJOR PESTS OF THE REGION					
	LEAF FOLDE	STEM BOR	RICE BUG	GALL MIDG	CASE WO	THRIPS
ALATHUR	0.85	0.45	0.15	0.00	0.00	0.00
CHITTUR	0.65	0.48	0.15	0.36	0.03	0.03
SHORNUR	0.38	0.64	0.36	0.79	0.00	0.00
MANNARGH	0.50	0.59	0.15	0.51	0.07	0.04

MUNDAKAN SEASON

SUB DIVISION	MAJOR PESTS OF THE REGION					
	LEAF FOLDE	STEM BOR	RICE BUG	GALL MIDG	CASE WO	THRIPS
ALATHUR	0.90	0.85	0.20	0.00	0.00	0.00
CHITTUR	0.57	0.67	0.23	0.13	0.03	0.03
SHORNUR	0.62	0.80	0.13	0.10	0.47	0.00
MANNARGH	0.20	0.31	0.25	0.25	0.20	0.09

PUNJA SEASON

SUB DIVISION	MAJOR PESTS OF THE REGION					
	LEAF FOLDE	STEM BOR	RICE BUG	MEALY BU	CASE WO	JASSID
ALATHUR	0.20	0.00	0.00	0.00	0.00	0.00
CHITTUR	0.00	0.00	0.00	0.00	0.00	0.00
SHORNUR	0.10	0.22	0.02	0.00	0.06	0.00
MANNARGH	0.20	0.29	0.09	0.04	0.00	0.04

The cultivation is mainly rainfed with a few areas irrigated with water from Kanjirapuzha, Toothapuzha, Chethalloorpuzha, Thuppanadpuzha, Murikannipuzha and Malampuzha.

Stem borer and Leaf folder are the major pests reported in the region. Incidence of BPH and Rice bug was also indicated. Case worm and Thrips were reported as minor pests of the region.

The major disease reported was Blast for all the three seasons followed by Blight and BLB for both the first and second crop seasons. Sheath blight forms a threat only for the second crop.

INCIDENCE OF PESTS AND DISEASES

Leaf folder and Stem borer were found to be the most serious pests of rice in all the areas surveyed. The incidence of Leaf folders was sever during the first crop season and Stem borers during the second crop season. Both Leaf folders and Stem borers were found to be severely affecting the Alathur and Chittur areas where cultivation was more regulated.

Gall midge incidence was conspicuously more in Shornur subdivision.

Incidence of disease did not follow much variation from that of pests except in the case of Chittur sub division where it was less. Regulated cultivation in general tended to increase the diseases also.

Scores on the incidence of pests and diseases in the the different sub division also indicate at least indirectly the significance of the varietal relations involved. Thus at Alathur, the scores on the incidence of leaf folder and blast in the first crop and stem borer and sheath blight in the second crop had been higher. Alathur had registered nearly twenty percentage coverage by non descript varieties like "Kunjukunju" and "AP1" in the season together. This would probably suggest a higher susceptibility of these varieties to Leaf folder, Stem borer, Blast and Sheath blight. It would then mean that these varieties are being cultivated and extending in coverage of area inspite of its comparative high susceptibility which further lead to the conclusion that these varieties have one or more of the attributes for higher productivity, quality, adaptability and stability. Based on this hypothesis these varieties call for judicious and critical evaluation.

ANALYSIS OF POPULARITY SCORES

An in-depth analysis of the popularity rating of the varieties under cultivation in the four sub divisions of the district shows that a large number of traditional varieties and non descript varieties command a high popularity in the region as indicated in table 4.

The popularity scores of the HYV evolved and released in the state is presented in table 5. It can be seen that Jyothi released in 1972 still continues to be the most

Table IV

Distribution of Released, Non-discript, and Traditional Varieties in Palghat and

District	Sub-Divison	No. of Krishi Bhavan	No. of Varieties Commonly cultivated		
			Released HYV	Non-discript	Traditional
Palghat 9 blocks	Shornur	24	13	9	17
	Mannarghat	10	10	4	11
	Chittoor	10	9	4	7
	Alathur	15	9	6	2

Table II

Popularity Scores of Six Most Popular Paddy Varieties of Palghat

Sub-Division	High Yielding		Traditional		Non-discript	
	Jyothi	Triveni	P1b 10	P1b 12	Kunju Kunju	AP - 1
Shornur	4.09	2.40	2.05	3.18	4.32	1
Mannarghat	2.38	2	.25	.75	1.8	2,44
Chittoor	2.58	1.83	.25	.25	2.83	3.75
Alathur	13.0	10			10.8	

popular variety in the state and karthika the lowest in the ladder. The data also shows that the late releases like Pavizham, Matta triveni and Suvarnaprabha have spread to significant areas probably by substituting the intermediate releases. The persistence of Jyothi and the absence of intermediate releases coupled with commendable spread of the late releases would suggest farmers receptivity to high yielding genotypes. Traditional varieties appear to be confined to Shornur sub division except in the case of PTB1, PTB2, PTB10 and PTB12 which enjoy wide popularity.

A significant result of the survey has been the realisation of the presence of a number of non descript varieties like Kunjukunju, AP1, Ponmani etc. These are almost parallel with high yielding genotypes like Jyothi; are dwarf in nature and high yielding. These varieties appear to be recent introductions but some of them are spreading fast. AP1 and Kunjukunju appear to be the most predominant one followed by Ponmani. These varieties may be introductions by farmers from adjoining districts of Tamilnadu. This is possible as many farmers of the Palakkad district with Tamil as their mother tongue are linked to Tamilnadu with relatives there. Hence they lean more towards coimbatore for seeds and chemicals.

Another possibility is that some of these "varieties" may be "offtypes" derived from natural seggregants from fields cropped with HYV. The present Jyothi itself is an improvement of the original one similarly Matta triveni is a natural mutant with improved grain colour. The variety AP1 is

also locally known as "Unda masoori". The spread of these varieties indicate their adaptability and preference by the farmers. This calls for scientific evaluation of these varieties.

The evaluation of the causes for the spread of such varieties indicate the ineffectiveness of the seed programme prevalent in the state.

CONCLUSION

- (1) Jaya and Jyothi are the most predominant varieties under cultivation in Palakkad district during both the season.
- (2) Mashoori has been steadily increasing in area and has come to occupy large areas in the district especially during the second crop.
- (3) Traditional varieties are still found to cover large areas in the district and Mannarghat sub division has reported the maximum number of such varieties.
- (4) Pavizham was found to be an adaptable variety and slowly expanding in area in shornur sub division.
- (5) The spectrum of varieties differed in all the sub divisions. It was constituted by traditional, HYV and non descript varieties.

- (6) The padasekharam wise number of varieties in the sub division as shown in parentheses were : Alathur (13), Chittur (15), Mannarghat (20), Shornur (15).
- (7) Two non descript varieties namely "Kunjukunju" and "AP1" were under cultivation in all the sub divisions. The varieties "Ponmani" was also found in all the sub divisions except Shornur.
- (8) An appraisal of the patterns of spread of varieties show there has been a steady increase in the cultivation of "Kunju kunju " and "AP1" from 1988 onwards. Obviously this increase has been at the expense of released varieties.
- (9) None of the early released varieties other than Jyothi and Jaya were found to cover any appreciable area.
- (10) The wide and increasing spread of varieties including the non descript ones showed that the farmers are responsive to the new varieties. As a matter of fact, the spectrum is continuously changing.
- (11) Inspite of their susceptibility to major pests and diseases, varieties like Mashoori, AP1 and Kunjukunju were highly popular among the farmers.
- (12) The popularity of such non descript varieties among the farmers was not definitely due to the resistance to pests and diseases. This might be due to some other desirable attributes as felt by the farmers. This has to be subjected to further exhaustive studies before coming to any conclusion.

(13) The implementation of a sound seed programme becomes difficult due to the simultaneous cultivation of a large number of varieties in the panchayats.

DISTRIBUTION OF AREA UNDER RICE IN SELECTED KRISHIBHAVANS
OF ALATHUR SUB DIVISION

	KRISHIBHAVAN	No. OF PADASE- KHARAM	AREA IN HECTARES		PUNJA
			VIRUPPU	MUNDAKAN	
NEMMARA	AYALUR	0	1200.00	1200.00	0.00
NEMMARA	ELAVANCHERY	2	1046.00	614.00	0.00
NEMMARA	MELARCODE	14	1196.00	829.00	0.00
NEMMARA	NEMMARA	39	1311.00	1311.00	0.00
NEMMARA	PALLASSENA	26	1602.80	1477.00	0.00
*** Total ***		81	6355.80	5431.00	0.00

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IRRIGATION FACILITIES AVAILABLE SOURCE WISE IN

ON

ALATHUR SUB DIVISION

AREA IRRIGATED IN HECTARES

	AREA IRRIGATED IN HECTARES			RAIN	DAM
	RIVER	LIFT	CHANNEL		
AYALUR	0.00	1200.00	0.00	0.00	0.00
ELAVANCHERY	100.00	0.00	0.00	0.00	946.00
MELARCODE	0.00	0.00	0.00	0.00	1196.00
NEMMARA	0.00	1311.00	0.00	0.00	0.00
PALLASSENA	693.60	0.00	0.00	909.20	0.00
*** Total ***	793.60	2511.00	0.00	909.20	2142.00

DISTRIBUTION OF AREA UNDER RICE IN SELECTED KRISHIBHAVANS
OF CHITTUR SUB DIVISION

BLOCK	KRISHIBHAVAN	No. OF PADASE- KHARAM	AREA IN HECTARES		PUNJA
			VIRUPPU	MUNDAKAN	
CHITTUR	ERUTHAMPATHY	0	0.00	50.00	0.00
CHITTUR	KOZHINJAMPARA	7	0.00	744.00	0.00
CHITTUR	NALLEPPILLY	27	1815.00	1511.53	0.00
CHITTUR	PATTANCHERY	24	1770.00	0.00	0.00
CHITTUR	THATTAMANGALAM	11	791.00	742.00	0.00
CHITTUR	VADAKARAPATHY	0	539.00	180.00	0.00
KOLLENGODE	ELAPPULLY	16	1455.00	1256.00	78.00
KOLLENGODE	POLPULLY	14	813.00	795.00	0.00
KOLLENGODE	VADAVANNUR	6	1100.00	1100.00	0.00
PALAKKAD		0	0.00	0.00	0.00
PALAKKAD	KONGAD	21	756.00	560.00	60.00
PALAKKAD	MUNDUR	15	802.00	785.00	16.00
PALAKKAD	PUDUPPARIYARAM	12	1034.00	962.00	0.00
*** Total ***		153	10875.00	8685.53	154.00

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IRRIGATION FACILITIES AVAILABLE SOURCE WISE IN
CHITTUR SUB DIVISION

AREA IRRIGATED IN HECTARES

	RAIN	LIFT	CHANNEL	RIVER	DAM
ERUTHAMPATHY	60.00	0.00	140.00	0.00	0.00
KOZHINJAMPARA	150.00	280.00	314.00	0.00	0.00
NALLEPILLY	304.00	0.00	1511.53	0.00	0.00
PATTANCHERY	0.00	0.00	1770.00	0.00	0.00
THATTAMANGALAM	49.00	89.00	653.00	0.00	0.00
VADAKARAPATHY	539.00	0.00	0.00	0.00	0.00
ELAPPULLY	188.00	0.00	1256.00	0.00	0.00
POLFULLY	0.00	0.00	0.00	795.00	0.00
VADAVANNUR	0.00	40.00	0.00	1060.00	0.00
	0.00	0.00	0.00	0.00	0.00
KONGAD	756.00	0.00	0.00	0.00	0.00
MUNDUR	672.00	0.00	130.00	0.00	0.00
PUDUPPARIYARAM	888.00	0.00	0.00	0.00	145.00
*** Total ***	3606.00	409.00	5774.53	1855.00	145.00



DISTRIBUTION OF AREA UNDER RICE IN SELECTED KRISHIBHAVANS
OF SHORNUR SUB DIVISION

BLOCK	KRISHIBHAVAN	No. OF PADASE- KHARAM	AREA IN HECTARES		
			VIRUPPU	MUNDAKAN	PUNJA
TRITHALA	KAPUR	14	335.00	380.00	0.00
TRITHALA	THRITHALA	13	506.00	474.30	35.00
TRITHALA	CHALISSERY	11	330.00	350.00	0.00
TRITHALA	ANAKARA	9	360.00	403.00	25.00
TRITHALA	NAGALASSERY	11	563.00	563.00	0.00
TRITHALA	PATTITHARA	13	360.00	402.00	75.00
PATTAMBI	KULUKKALLUR	8	550.00	450.00	25.00
PATTAMBI	THIRUVEGAPURA	10	405.00	360.00	0.00
PATTAMBI	VILAYUR	9	312.00	312.00	0.00
PATTAMBI	PATTAMBI	6	386.20	0.00	0.00
PATTAMBI	KOPPAM	11	0.00	394.00	375.00
PATTAMBI	VALLAPUZHA	12	480.00	248.00	0.00
PATTAMBI	PARUDUR	8	570.00	600.00	50.00
PATTAMBI	MUTHUTHALA	8	462.00	390.00	0.00
PATTAMBI	ONGALLLUR	9	835.00	612.00	0.00
PATTAMBI	NELLYA	17	447.00	347.00	0.00
OTTAPALAM	VANIAMKULAM	10	557.00	438.00	37.00
OTTAPALAM	ANAGANADY	20	540.00	396.00	0.00
OTTAPALAM	LAKKIDIPERUR	16	868.00	850.00	80.00
OTTAPALAM	CHALAVARA	12	640.00	440.00	0.00
OTTAPALAM	OTTAPALAM	16	880.00	880.00	5.00
OTTAPALAM	SHORNUR	8	700.00	520.00	8.00
*** Total ***		251	11086	9009.3	715.00

IRRIGATION FACILITIES AVAILABLE SOURCE WISE IN
SHORNUR SUB DIVISION

AREA IRRIGATED IN HECTARES

	RAIN	LIFT	CHANNEL	RIVER	DAM
KAPUR	0.00	0.00	0.00	0.00	0.00
THRITHALA	471.00	35.00	0.00	0.00	0.00
CHALISSERY	0.00	0.00	0.00	0.00	0.00
ANAKARA	100.00	303.00	0.00	0.00	0.00
NAGALASSERY	563.00	0.00	0.00	0.00	0.00
PATTITHARA	292.00	110.00	0.00	0.00	0.00
KULUKKALLUR	440.00	35.00	0.00	75.00	0.00
THIRUVEGAPURA	197.00	79.00	0.00	54.00	50.00
VILAYUR	312.00	0.00	0.00	0.00	0.00
PATTAMBI	301.20	85.00	0.00	0.00	0.00
KOPPAM	394.00	0.00	0.00	0.00	0.00
VALLAFUZHA	480.00	0.00	0.00	0.00	0.00
PARUDUR	290.00	310.00	0.00	0.00	0.00
MUTHUTHALA	172.00	80.00	300.00	0.00	0.00
ONGALLLUR	595.00	240.00	0.00	0.00	0.00
NELLYA	447.00	0.00	0.00	0.00	0.00
VANIAMKULAM	520.00	37.00	0.00	0.00	0.00
ANAGANADY	540.00	0.00	0.00	0.00	0.00
LAKKIDIFERUR	181.00	106.00	593.00	0.00	0.00
CHALAVARA	640.00	0.00	0.00	0.00	0.00
OTTAPALAM	283.00	62.00	0.00	0.00	525.00
SHORNUR	335.00	365.00	0.00	0.00	0.00
*** Total ***	7553.2	1847.0	893.00	129.00	575.00

DISTRIBUTION OF AREA UNDER RICE IN SELECTED KRISHIBHAVANS
OF MANNARGHAT SUB DIVISION

BLOCK	KRISHIBHAVAN	No. OF PADASE- KHARAM	AREA IN HECTARES		
			VIRUPPU	MUNDAKAN	PUNJA
		0	0.00	0.00	0.00
MANNARGHAT	ALANALLUR	17	500.00	550.00	0.00
MANNARGHAT	KARAKURSSI	18	0.00	0.00	0.00
MANNARGHAT	KARIMBA	7	380.00	380.00	50.00
MANNARGHAT	KOTTOFADAM	20	939.00	826.00	0.00
MANNARGHAT	KUMARAMPUTHUR	15	713.00	713.00	0.00
MANNARGHAT	MANNARGHAT	6	500.00	580.00	100.00
MANNARGHAT	POTTASSERI	8	482.00	475.00	250.00
MANNARGHAT	THACHANATTUKARA	6	313.00	313.00	0.00
MANNARGHAT	Thachampara	8	200.00	200.00	40.00
SREE-K-PURAM	CHERPLACHERY	16	54.00	440.00	50.00
SREE-K-PURAM	KARIMPUZHA	36	490.00	567.16	30.00
SREE-K-PURAM	KATAMPAZHIPURAM	61	650.00	625.00	8.00
SREE-K-PURAM	POOKKOTTUKAVE	14	575.00	460.00	5.00
SREE-K-PURAM	SREE-K-PURAM	24	273.00	474.50	5.00
SREE-K-PURAM	TRIKKADERI	8	300.00	300.00	2.50
SREE-K-PURAM	VELLINAZHI	16	525.00	490.00	12.00
*** Total ***		280	6894.0	7393.7	552.50

IRRIGATION FACILITIES AVAILABLE SOURCE WISE IN
MANNARGHAT SUB DIVISION

BLOCK		RAIN	LIFTIRR	CANALIRR	RIVER	DAM
	KBHAVAN	0.00	0.00	200.00	0.00	0.00
MANNARGHAT	Thachampara	0.00	0.00	0.00	0.00	0.00
MANNARGHAT	KARAKURSSI	515.00	0.00	52.00	0.00	0.00
SREE-K-PURAM	KARIMPUZHA	935.00	0.00	4.00	0.00	0.00
MANNARGHAT	KOTTOPADAM	0.00	580.00	0.00	0.00	0.00
MANNARGHAT	MANNARGHAT	230.00	0.00	5.00	0.00	245.00
MANNARGHAT	POTTASSERI	0.00	0.00	0.00	50.00	50.00
MANNARGHAT	KARIMBA	550.00	0.00	0.00	0.00	0.00
MANNARGHAT	ALANALLUR	104.00	0.00	209.00	0.00	0.00
MANNARGHAT	THACHANATTUKARA	713.00	0.00	0.00	0.00	0.00
MANNARGHAT	KUMARAMPUTHUR	442.00	88.60	0.00	15.44	0.00
SREE-K-PURAM	CHERPLACHERY	546.00	0.00	0.00	0.00	0.00
SREE-K-PURAM	SREE-K-PURAM	300.00	0.00	0.00	0.00	0.00
SREE-K-PURAM	TRIKKADERI	575.00	0.00	0.00	0.00	0.00
SREE-K-PURAM	POOKKOTTUKAVE	421.50	0.00	0.00	103.50	0.00
SREE-K-PURAM	VELLINAZHI	650.00	0.00	0.00	0.00	0.00
SREE-K-PURAM	KATAMPAZHIPURAM	0.00	0.00	0.00	0.00	0.00

Coverage of varieties in Padasekharams : Alathur Sub-division

	TOTAL		PERCENTAGE	
	CROP I	CROP II	CROP I	CROP II
1988-89				
JAYA	1693.33	940.00	49.33	37.46
KUNJUKUNJU	517.23	286.00	15.07	11.40
TRIVENI	138.00	20.00	4.02	0.80
MASHOORI	747.33	719.00	21.77	28.65
AP1	309.00	521.00	9.00	20.76
JYOTHI	28.08	23.54	0.82	0.94
PAVIZHAM				
	3432.98	2509.54	100.00	100.00
1989-90				
JAYA	1390.13	1473.00	42.48	37.13
KUNJUKUNJU	800.13	395.00	17.98	9.96
TRIVENI	389.33	34.84	8.75	0.88
MASHOORI	434.80	1324.50	9.77	33.39
AP1	608.00	642.50	13.67	16.20
JYOTHI	131.80	36.00	2.96	0.91
ROHINI	16.00	0.00	0.36	0.00
IP20	169.00	61.00	3.80	1.54
PONMANI	10.00	0.00	0.22	0.00
	4449.20	3966.84	100.00	100.00
	4449.20	3966.84		
1990-91				
JAYA	2416.97	2134.60	34.91	30.57
KUNJUKUNJU	716.80	428.00	10.35	6.13
TRIVENI	309.94	66.33	4.48	0.95
MASHOORI	1059.33	2108.83	15.30	30.20
AST16	44.00	17.00	0.64	0.24
JYOTHI	78.00	2.00	1.13	0.03
PAVIZHAM	1251.63	812.00	18.08	11.63
ASHA	29.00	0.00	0.42	0.00
BR51(NEERAJ)	10.00	18.00	0.14	0.26
1727	0.00	155.00	0.00	2.22
PONMANI	155.50	259.00	2.25	3.71
API	852.83	973.00	12.32	13.94
VELLAPONNI	0.00	8.00	0.00	0.11
TOTAL	6924.01	6981.77	100.00	100.00
	6924.01	6981.77		

Coverage of varieties in Padasekharams : Chittur Sub - division

	TOTAL		PERCENTAGE	
	CROP I	CROP II	CROP I	CROP II
1988-89				
TK9	306.00	376.00	3.25	4.14
JAYA	2791.25	2033.75	29.64	22.39
KUNJUKUNJU	45.00	0.00	0.48	0.00
TRIVENI	17.50	28.00	0.19	0.31
MASHOORI	4317.91	5080.41	45.85	55.94
IR20	1040.50	904.00	11.05	9.95
SUWARNAPRA	461.00	392.00	4.90	4.32
PAVIZHAM	2.00	7.00	0.02	0.08
BALA	50.00	50.00	0.53	0.55
KEERTHI	74.50	0.00	0.79	0.00
IR50	136.00	80.00	1.44	0.88
PAYUR	175.00	131.00	1.86	1.44
TOTAL	9416.66	9082.16	100.00	100.00
1989-90				
TK9	209.00	16.00	1.92	0.16
JAYA	2665.25	1956.75	24.53	19.51
KUNJUKUNJU	47.00	0.00	0.43	0.00
TRIVENI	21.00	15.00	0.19	0.15
MASHOORI	4465.25	5494.75	41.10	54.78
AP1	400.00	500.00	3.68	4.99
BR51	1098.25	405.75	10.11	4.05
IR20	1093.25	432.75	10.06	4.31
PONMANI	578.75	540.75	5.33	5.39
BALA	55.00	52.00	0.51	0.52
KEERTHI	72.00	461.00	0.66	4.60
IR50	40.00	105.00	0.37	1.05
PAYUR	120.00	50.00	1.10	0.50
TOTAL	10864.75	10029.75	100.00	100.00

Coverage of varieties in Padasekharams : Chittur Sub - division

	TOTAL		PERCENTAGE	
	CROP I	CROP II	CROP I	CROP II
1990-91				
TK9	244.00	30.00	2.16	0.27
JAYA	2662.50	1945.75	23.52	17.60
KUNJUKUNJU	25.00	0.00	0.22	0.00
TRIVENI	95.00	204.00	0.84	1.84
MASHOORI	4912.50	5401.75	43.40	48.85
AST16	80.00	572.00	0.71	5.17
JYOTHI	104.00	170.00	0.92	1.54
PAVIZHAM	0.00	32.00	0.00	0.29
ASHA	0.00	17.00	0.00	0.15
BR51(NEERAJ	1425.50	618.75	12.59	5.60
1727	648.50	475.00	5.73	4.30
PONMANI	453.00	502.75	4.00	4.55
API	400.00	400.00	3.53	3.62
IR20	200.00	585.00	1.77	5.29
BALA	55.00	65.00	0.49	0.59
PAYUR	15.00	38.00	0.13	0.34
TOTAL	11320.00	11057.00	100.00	100.00

Coverage of varieties in Padasekharams : Shornur Sub division

COVERAGE OF VARIETIES IN PADASEKHARAMS:
SHORNUR SUB-DIVISION

	(HECTARES)			
	TOTAL		PERCENTAGE	
	CROP I	CROP II	CROP I	CROP II
1988-89				
JAYA	396.00	424.00	8.00	16.94
JYOTHI	2606.50	456.50	52.63	18.24
TRIVENI	418.80	79.00	8.46	3.16
MASHOORI	829.74	502.00	16.75	20.06
IR20	0.00	86.00	0.00	3.44
PTB 4	0.00	42.00	0.00	1.68
PAVIZHAM	20.00	99.00	0.40	3.56
LOCAL	465.00	602.00	9.39	24.05
SWARNAPRAB	3.00	10.00	0.08	0.40
PONNI	20.00	55.00	0.40	2.20
REDTRIVENI	13.76	0.00	0.28	0.00
AP1	155.00	7.50	3.13	0.30
KUNJUKUNJU	25.00	150.00	0.50	5.99
TOTAL	4952.80	2503.00		
	4952.80	2503.00	100.00	100.00
1989-90				
JAYA	506.40	293.50	9.68	9.42
JYOTHI	3144.50	587.00	60.13	18.84
TRIVENI	363.00	90.00	6.94	2.89
MASHOORI	715.00	930.15	13.67	29.86
AP1	74.00	314.75	1.42	10.10
PAVIZHAM	309.00	28.00	5.91	0.90
IR20	0.00	23.00	0.00	0.74
LOCAL	40.00	654.00	0.76	21.00
REDTRIVENI	37.50	6.50	0.72	0.21
SWARNAPRAB	15.00	0.00	0.29	0.00
PONNI	0.00	38.00	0.00	1.22
KUNJUKUNJU	25.00	150.00	0.48	4.82
TOTAL	5229.40	3114.90		
	5229.40	3114.90	100.00	100.00

Coverage of varieties in Padasekharams : Shornur Sub division

1990-91

JAYA	1350.20	596.10	14.77	13.39
JYOTHI	3649.00	887.36	39.90	19.94
TRIVENI	529.93	198.00	5.79	4.45
MASHOORI	914.50	997.10	10.00	22.41
SWARNAPRAB	60.00	0.00	0.66	0.00
PAVIZHAM	1088.50	246.16	11.90	5.53
ASHA	124.00	14.00	1.36	0.31
BR51(NEERAJ	26.00	38.40	0.28	0.86
API	375.00	161.00	4.10	3.62
IR20	0.00	23.50	0.00	0.53
BADRA	40.00	0.00	0.44	0.00
PONNI	158.00	530.00	1.73	11.91
KUNJUKUNJU	0.00	0.00	0.00	0.00
CHITTENI	40.00	150.00	0.44	3.37
LOCAL	440.00	529.00	4.81	11.89
REDTREVANI	350.00	79.70	3.83	1.79
TOTAL	9144.53	4450.32		

Coverage of varieties in padasekharams : Mannarghat Sub - division

	TOTAL		PERCENTAGE	
	CROP I	CROP II	CROP I	CROP II
1988-89				
ARYAN	85.00	0.00	2.11	0.00
JAYA	475.00	304.00	11.80	8.97
JYOTHI	1044.50	686.00	25.95	20.24
TRIVENI	229.00	40.00	5.69	1.18
MASHOORI	1091.00	758.50	27.11	22.38
IR100	4.00	6.00	0.10	0.18
PAVIZHAM	102.50	0.00	2.55	0.00
SWARNAPRAB	185.00	220.00	4.60	6.49
IR20	0.00	5.00	0.00	0.15
PONNI	114.00	101.00	2.83	2.98
ASHA	45.00	0.00	1.12	0.00
AP1	255.00	338.00	6.34	9.97
CHETTADI	0.00	750.00	0.00	22.13
CHETTANI	0.00	50.00	0.00	1.48
CHEINKAIMA	250.00	0.00	6.21	0.00
PONARYAN	70.00	0.00	1.74	0.00
KUNJUKUNJU	75.00	130.00	1.86	3.84
TOTAL	4025.00	3388.50	100.00	100.00
1989-90				
JAYA	347.00	195.00	8.14	5.76
JYOTHI	1445.85	982.00	33.90	29.01
TRIVENI	260.33	94.50	6.10	2.79
MASHOORI	1038.50	599.30	24.55	17.70
AP1	228.00	223.00	5.35	6.59
PAVIZHAM	5.00	0.00	0.12	0.00
PONARYAN	70.00	5.00	1.64	0.15
PONMANI	62.50	82.50	1.47	2.44
CHETTANI	0.00	50.00	0.00	1.48
IR100	17.00	6.00	0.40	0.18
CHETTADI	0.00	600.00	0.00	17.72
ARYAN	85.00	77.50	1.99	2.29
REDTRIVENI	0.00	10.00	0.00	0.30
SWARNAPRAB	207.50	222.00	4.86	6.56
PONNI	261.00	67.00	6.12	1.98
ASHA	62.50	62.50	1.47	1.85
KUNJUKUNJU	175.00	75.00	4.10	2.22
IR20	0.00	5.00	0.00	0.15