

STUDIES ON SOME FACTORS GOVERNING STOCKING, DISTRIBUTION AND USE OF CHEMICAL FERTILISERS IN KERALA

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The low yields of crops coupled with the high rate of increase in human population have made the food problem of Kerala State very acute. Use of chemical fertilisers has been accepted as one of the effective methods of increasing crop yields. Though the farmers of Kerala are sufficiently fertiliser conscious many problems related to the supply, distribution and availability of fertilisers very often stand in the way of their effective use. However, the precise nature of these problems are not known. Studies were hence taken up (1) to assess the organic manure consciousness of the farmers in the area, (2) to study the problems faced by the farmers in the use of chemical fertilisers and (3) to study the problems faced by the selling agencies in the stocking and distribution of chemical fertilizers. The details and results of these studies are presented in this contribution.

Materials and Methods

The studies were conducted in the N. E. S. Block, Athiyannoor, attached to the Agricultural College and Research Institute, Vellayani. This Block has an area of 95 sq. km. and a population of 124856 people and it started functioning in 1952 as a pilot community development project.

The methodology adopted involved both exploratory and descriptive studies of the samples. In the exploratory studies experience surveys were made amongst sampled farmers numbering 450 and the fertiliser distribution agents in the area which numbered ten. Two of these agents started functioning from 1956 and the rest between 1961 and 66; four of them were individuals and the rest co-operative societies; six had full time business while the others sold fertilizers only during the paddy season. The stocking capacities of the agents ranged from 10 to 30 tons and none of them followed any stocking schedule. In descriptive studies the selected farmers were supplied with prepared questionnaires and the fertiliser distribution agencies interviewed. An interview schedule was used for this purpose followed by the examination of the records maintained by them. The questionnaire and interview replies were coded and the data established and interpreted. Of the 450 farmers sampled 297 responded.

Results

Findings based on farmers' opinions:—Table 1 shows that 59.93 percent of the total 297 respondents possess wet land for paddy cultivation. It is also found that 21.91 percent of the paddy growers rotate paddy with other crops like legumes and banana.

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Oa abnormal paddy earhead

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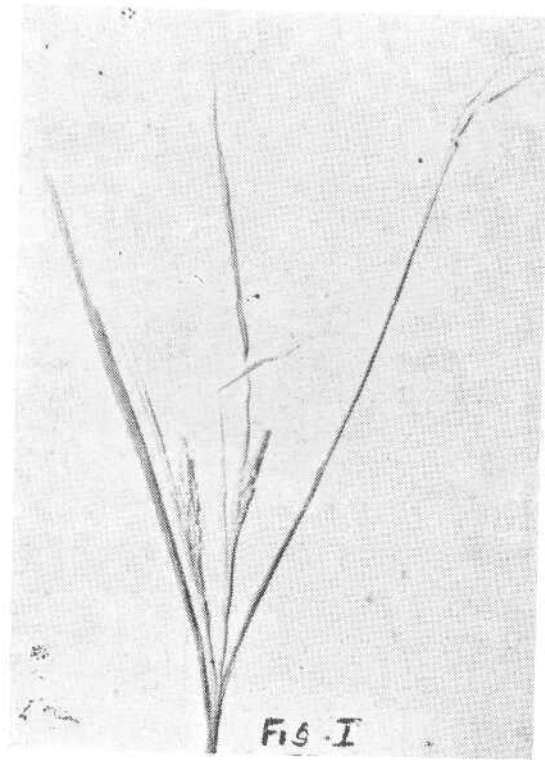


Fig. 1. Abnormal earhead of paddy with two terminal earheads

the season the period taken to exhaust one consignment ranges from one week to four weeks •

Types of chemical fertilisers sold:—All the agents sell all the straight and mixed fertilisers supplied by the main distribution agencies though there is considerable variation in the quantity of each type sold. Thus two agents have equal sales of straight and mixed fertilisers, four a 2:1 ratio and three a 1:2 ratio.

Transport problems:—Six agents have suggested a 3 percent increase in the transport cost or an increase of commission rate to Rs • 10/- to meet the extra expenditure in transportation. It has also been suggested by some agents that transportation cost has to be distance oriented or the charges met by the central depot •

Storage problems:—Eight agencies have no problems regarding purchase of adequate stock. The other two have expressed financial difficulties for investment for large scale purchase and hence have suggested supply of chemical fertilisers on loan. Four agents have experienced difficulties in getting the demanded quantities of chemical fertilisers due to lack of stock in the central depot during seasons.

Packing problems:—Nine agents do not approve the packing of chemical fertilisers in gunny bags. Every one is of the opinion that it will be better to provide polythene or alkathene lining to all the bags containing fertilisers that dissolve in water. Some agents are willing to meet the extra cost of the lining • Some of them have suggested the weighing of the bags at the central godowns and billing for the actual quantity sold to the agents instead of the present practice of billing for the marked quantity.

Period of requirement:—Five agents have only seasonal sales; others have sales throughout the year.

Financial capability to stock:—All the agents have financial capability to maintain a stock of 10 to 75 tons of chemical fertilisers during seasons •

Fertiliser quantity purchased by farmers:—Lowest quantity of fertiliser purchased by an individual in one season from different depots in the area ranges from one half to five kilograms, while the highest quantity ranges from 100 kilograms to 1 ton.

Summary

A study of some factors governing the use of chemical fertilisers in the N. E. S. Block, Athiyannoor, was conducted during 1966-67, sampling 450 farmers and 10 chemical fertiliser agencies of the area and using the questionnaire and interview methods • Though the area was mainly a coconut producing area, the farmers there used chemical fertilisers on paddy crop only. The low rate of use or non-use of chemical fertilisers was attributed mainly to their non-availability in time. A large percent (70.35) of the sample farmers using chemical fertilisers depended on co-operative societies for their fertiliser supply. Necessity for opening more sub-depots for easy accessibility of fertilisers was indicated. Increased commission or rates for transportor meeting the full transport cost was suggested. Packing of chemical fertilisers in bags with polythene or alkathene liners was found better than packing them in mere gunny bags.

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necessity for publicity in villages has been expressed by 15.15 percent of the farmers. Organisation of more training camps for farmers has been suggested by 3.7 percent of the respondents and 31.31 percent of the farmers have expressed the need for

increasing the demonstrations for all crops. Subsidised sale of all chemical fertilisers has been favoured by 15.15 percent of the farmers. A small percentage desires to have more loans and sale of chemical fertilisers in small and convenient packets.

TABLE - 5

Opinions of the farmers on storage, distribution and use of fertilisers

Sl. No.	Opinion	Response	
		No.	%
1.	Chemical fertilisers should be stored in advance by agents.	121	40.74
2.	Chemical fertilisers should be made available in sufficient quantities for stocking.	58	19.53
3.	More agencies or sub depots should be started.	117	39.73
4.	More subsidised sale for chemical fertilisers should be encouraged.	45	15.15
5.	Government to control the price of chemical fertilisers and sale at low prices.	34	11.45
6.	Government to control the sale of chemical fertilisers.	40	13.50
7.	Each Gramsevak Office should have a depot attached to it.	22	7.40
8.	Each Panchayat or Ward should have a depot for chemical fertilisers.	20	6.74
9.	Loan facilities for purchase of chemical fertilisers have to be increased.	14	4.71
10.	Chemical fertilisers have to be sold in small convenient packets for each crop.	8	2.70
11.	Number of demonstration plots on the use of chemical fertilisers should be increased.	93	31.31
12.	Publicity methods like film shows and discussions should be organised	45	15.15
13.	More training camps on the use of chemical fertilisers should be organised for the benefit of farmers.	11	3.70

Finding based on opinions of fertiliser agencies: Availability of chemical fertilisers: Four agents have expressed difficulty regarding availability of chemical fertilisers in time. Five expressed no opinion in the

matter and one expressed that it is available in time.

Period taken to Exhaust One Consignment:— The consensus of opinion is that during

TABLE 4

Factors affecting the use of chemical fertilisers by farmers

Question	Answer	Number responded	Percentage response
Farming considered as ?	Livelihood	243	89.0
	Important profession	27	9.9
	Profitable business	3	1.1
	Total	273	100.00
Expenditure on Chemical fertilisers	High	103	48.8
	Very high	53	25.1
	Average	48	22.8
	Low	6	2.8
	Very low	1	0.5
Total	211	100.10	
Use of Chemical fertilisers : Reasons for low rate of application	Non-availability	161	54.4
	Financial incapability	66	22.3
	Additional expenditure	47	15.9
	Lack of knowledge	11	3.7
	Non-profitable	10	3.4
	Ignorant about fertilisers	1	0.3
Total	296	100.00	
Reasons for being non-profitable	Low crop yields	46	48.4
	Uneconomic holding	31	32.6
	Infertile land	18	19.0
Total	95	100.00	
Reason for lack of knowledge	Lack of interest	48	73.9
	Lack of publicity	9	13.9
	Lack of education	8	12.2
Total	65	100.00	
Source of availability of fertilisers	Cooperative society depots	121	70.35
	Private agency depots	51	29.65
Total	172	100.00	

TABLE 2

Crops grown in dry land

Sl. No-	*Crops grown	No. of farmers	Percentage responded
1	C & T	75	26.79
2	C, T, B & V	63	22.50
3	C, T & B	42	15.00
4	C, T & O	31	11.07
5	G, T, B & O	11	3.93
6	C, T, B, V & A	9	3.22
7	C, T, B, V & O	9	3.22
8	P, C, T, B & V	9	3.22
9	C	5	1.79
10	P, C, T & B	3	1.07
11	C, T & V	3	1.07
12	C, T, B, V, A & O	3	1.07
13	G, T, B & A	3	1.07
14	P, C, T & V	2	0.70
15	P, C, T, B, V & A	2	0.70
16	P & G	2	0.70
17	C, T, B, A & O	1	0.36
18	C, T, A & O	1	0.36
19	P, G, B & V	1	0.36
20	T	1	0.36
21	P & G	1	0.36
22	T & B	1	0.36
23	G & B	1	0.36
24	P, G, T, B, V, A & O	1	0.36
Total		280	100.00

* C=Coconut; A=Arecanut; T=Tapioca; P=Paddy; B=Banana;
O=Other crops like legumes; V=Vegetables.

TABLE 3

Opinions of farmers on the-use of manures and fertilisers for different crops

Opinions	Paddy		Coconut		Tapioca	
	No.	%	No.	%	No.	%
Expensive	146	82.02	158	56.84	107	39.63
Profitable	69	38.71	221	79.49	55	22.37
Green manure used	141	73.59	64	23.02	33	12.02
Cowdung and ash used	107	60.11	156	56.12	101	37.41
Chemical fertilisers used	103	57.30	***	***	***	***

TABLE 1

Crops grown in wet land

Sl. No.	Crops*	Number of responded farmers	Percentage response
1	P	139	78.09
2	P & O	27	15.17
3	P, T & O	3	1.68
4	P & B	3	1.68
5	P, B & V	3	1.68
6	P & V	2	1.13
7	P, T, B & V	1	0.57
	Total	178	100.00

* P-Paddy; V-Vegetables; T-Tapioca; B-Banana O-Other crops like legumes •

It can be seen from Table 2 that 280 farmers cultivate dryland. Coconut is grown by all the farmers excepting two. Tapioca is grown by 96.43 per cent of farmers having dry land. Other crops in the order of popularity are banana, vegetables, arecanut and other crops.

It is evident from Table 3 that 79.49 per cent of the farmers have cited coconut as profitable followed by paddy and tapioca. The use of cowdung and ash is almost in the same proportion for paddy and coconut. It is also seen that the use of green manure and fertilisers is quite common in the case of paddy cultivation. It is significant that while 57.30 per cent of the respondent farmers use chemical fertilisers for paddy none of the respondents apply chemical fertilisers to coconut and tapioca. Tapioca appears to be the least cared for crop in the area in respect of the use of fertilisers and manures.

It may be seen from Table 4 that 89 per cent of the respondents consider farming as

a means of livelihood. Regarding the expense on chemical fertilisers 48.8 per cent of the farmers have ranked it as high whereas 25.1 per cent have ranked it as very high compared to that of other expenses in farming. Another notable fact is that 54.4 per cent of the responded population has expressed difficulties in obtaining chemical fertilisers. About a quarter does not use chemical fertilisers due to financial incapability. It is significant that 3.7 per cent of the farmers do not possess the required know-how about the use of chemical fertilisers. Among the farmers using chemical fertilisers 70.35 per cent depend on co-operative societies and the rest on private agency depots for their supply of fertilisers.

Table 5 summarises the opinions of the farmers on the storage, distribution and use of fertilisers. It may be seen that 7.4 per cent of the farmers favour one depot for each Gramsevak circle, 6.74 per cent have suggested one depot for each Panchayat or even for each Ward. The