https://doi.org/10.29321/MAJ.10.A03901

Trends in Fertilizer Use in the Intensive Agricultural District Programme Areas (Paddy Crop).*

by

J. H. S. PONNAYYA [1]

Synopsis: A study on the trends in the fertilizer use undertaken in the Intensive Agricultural District Programme areas in Tanjavur district with special reference to paddy crop has clearly indicated the need for the farmers to understand fertilizers and their use and also the important role the Agricultural Extension Officer has to play in bringing about this understanding.

Introduction: The Intensive Agricultural District Programme (Package Programme) has entered the fourth year of its implementation in Tanjavur district. One of the major factors in this programme which is expected to contribute to additional production is fertilizers. Based on soil analysis, fertilizer recommendations have been made for each Block in the Intensive Agricultura District Programme area. An intensive programme for educating the farmers through meetings, group discussions, campaigns and demonstrations has been in progress.

A study was taken up to find out (a) the impact of the programme and (b) the existing practices with a view to help the extension workers to plan a sound Extension programme, and (c) to test the truth of the repeated statement that the farmers in Tanjavur district know all about fertilizers and nothing has to be told them about fertilizers.

Method Adopted: Of the 26 Blocks under the "Intensive Agricultural District Programme", the 2 blocks which have a major portion of the area under dry paddy and natural hazards were eliminated. The study was restricted to villages where the programme was in operation for atleast two years. Five per cent of the villages were selected at random by using random numbers and in each village, five farmers were selected by using random numbers. A questionnaire was drawn up and the farmers were interviewed and their answers recorded.

As the sample taken is small viz., 5 farmers in 5% of the villages, the conclusions arrived at are suggestive of trends only.

Results: *Period over which the farmers have been using fertilizers:* The farmers were questioned as to the number of years they have been using fertilizers for paddy. Their answers are given below:

---

1 Compost Development Officer, Madras.

* Received on 21—2—1964.

TABLE I.

Number of years the farmers have been using fertilizers		Number of farmers	
		Nitrogenous fertilizers	Phosphatic fertilizers
1 Year	...		5
2 Years	...	27	19
3 Years	...	19	10
4 Years & more	...	43	29
Not applying	...	6	31
Total	...	100	100

This indicates that 51% of the farmers have taken to application of fertilizers and 40% have taken to application of Phosphatic fertilizers for paddy after the implementation of "Intensive Agricultural District Programme". A larger percentage of farmers do not apply phosphatic fertilizers.

Application of Fertilizers to Kuruvai, Samba and Thaladi Crops: The farmers were questioned about the application of fertilizers to these crops. Their answers are given below:

TABLE II.

Crop	Number of farmers applying				Percentage of farmers applying			
	'N' alone	N+P	'P' alone	Not applying	'N' alone	N+P	'P' alone	Not applying
Kuruvai	25	45	2	12	30	54	2	14
Samba	18	43	4	19	21	51	5	23
Thaladi	35	35	1	13	42	42	1	15

From the table II it is seen that (a) Nearly 50 per cent of the farmers apply both N and P to the lands. It also reflects the fact that the efforts made in Intensive Agricultural District Programme to apply a balanced dose of fertilizer, both N & P has been successful.

(b) The study indicates that there are still a good number of farmers who apply nitrogenous fertilizers alone.

(c) Though Table I indicated that only 6 per cent of the farmers do not apply any fertilizer to paddy crop, this table shows that when season war crop is taken, the percentage of farmers who do not apply fertilizers are high for a particular crop.

Perference of Different Fertilizers: Ammonium sulphate was first introduced and has been popular with the farmers. In recent years, other fertilizers are being produced and the farmers' preference of particular fertilizers was tested. The preferences are as follows:

TABLE III.

Fertilizers	Farmers Prefering it	
	Number	Percentage
Ammonium sulphate	28	30
Urea	22	23
Ammonium sulphate or Urea	2	2
Ammonium sulphate and Urea	32	34
Calcium ammonium nitrate	2	2
Ammonium sulphate or calcium ammonium nitrate	1	1
No preference	8	8

Thus it is seen from the table that: (a) Ammonium sulphate is still preferred by a large number of farmers;

(b) Urea has gained popularity and many farmers prefer urea to other fertilizers;

(c) The majority of farmers (34%) have come to the conclusion that both Urea and ammonium sulphate have to be applied to paddy crop, the fertilizer to be applied depending on the time of application.

(d) Calcium ammonium nitrate has not yet gained popularity among the farmers.

How do the farmers decide on the quantity of Fertilizers to be used: According to the fertilizer recommended for each Block, a specific recommendation has been made for each Block and the farmers are being persuaded to apply that dose of fertilizers. The farmers however apply fertilizers as follows:

TABLE IV.

Conditions	Farmers	
	Number	Percentage
(a) Applies at fixed rate	2	2
(b) Depending on land	17	18
(c) Depending on the condition of the crop	33	35
(d) Based on availability of cash	32	34
(e) Other reasons	11	11

Only 2 per cent of the farmers apply fertilizers at a fixed rate. The others apply it only if they feel that crop needs it or depending on the land.

Time of Application of Fertilizers: According to the departmental recommendation, all the phosphatic fertilizers and 50% of the nitrogenous fertilizers are to be applied as a basal dressing. The balance of the nitrogenous fertilizers are to be applied as top dressing, 20–25 days after planting in the case of kuruvai, 60 days in the case of long duration varieties as in Samba and 50 days in the case of medium duration varieties as in Thaladi.

Phosphatic Fertilizers: All the farmers apply this as a basal dressing before last ploughing.

Nitrogenous Fertilizers: The following number of farmers apply nitrogenous fertilizers as basal dressing.

TABLE V.

Crop	Farmers applying nitrogenous fertilizer as basal dressing	
	Number	Percentage
Kuruvai	6	7
Samba	5	6
Thaladi	3	4

This indicates that less than 10% of the farmers alone apply nitrogenous fertilizers as basal dressing.

The following number of farmers apply nitrogenous fertilizers as per departmental recommendations, both as basal and top dressing. Only a negligible portion of farmers apply as recommended by the department.

TABLE VI.

Crop	Farmers applying nitrogenous fertilizers at the time recommended by the department	
	Number	Percentage
Kuruvai	2	2
Samba	1	1
Thaladi	1	1

A study of the time at which farmers apply fertilizers indicates the following:

TABLE VII.

Application of 'N' Fertilizers as single and split doses:

Crops	Farmers applying in single dose		Farmers applying in split doses	
	Number	Percentage	Number	Percentage
Kuruvai	41	59	29	46
Samba	40	66*	19	31*
Thaladi	45*	64	24	34*

*Some of the farmers questioned, did not know about it as it was left to the "Pannial" to do as and when he wanted it.

The farmers questioned, apply nitrogenous fertilizers at different times. The number of variations met with for different crops is given below:

TABLE VIII.

Crops	Variations met with in time of application of nitrogenous fertilizers
Kuruvai	25
Samba	26
Thaladi	22

The tables given above indicate that there is wide variation in the time of application of fertilizers. (Tables V, VI, VII & VIII.)

Implications of the Study in Extension Work: (1) There is a feeling that all the farmers apply fertilizers. The Intensive Agricultural District Programme has definitely made the farmers fertilizer-minded and take up to application of fertilizers, but there are still some farmers who do not apply fertilizers at all and some who do not apply for particular crops. There is need for educating these farmers to use fertilizers for all the crops. (Table I)

(2) Under "Intensive Agricultural District Programme" special stress is laid on application of balanced fertilizers (i.e.) both nitrogenous and phosphatic fertilizers. The study indicates that 35 to 45 per cent of the farmers apply both the fertilizers. A good percentage apply nitrogenous fertilizers alone and a small percentage apply phosphatic fertilizers alone. There is need for intensifying the work under this item to make all the farmers apply balanced fertilizers. (Table II)

(3) There is a common belief that the farmer wants only ammonium sulphate and he does not take up other types of fertilizers or reduces his demand when other fertilizers are offered. The study however indicates that a good number of farmers prefer urea to ammonium sulphate. A good percentage of them prefer urea and ammonium sulphate, urea to give long and sustained effect and ammonium sulphate to give quick and immediate effect. This is a healthy sign which has to be further expanded through extension work. (Table III)

(4) The application of fertilizers has to become a part of the "Package of Practices" to be followed for each crop. With this in view, based on the analysis of soils, specific fertilizer recommendations have been made for each Block. On an analysis of the basis for application of fertilizers, it is found that only 2% of the farmers apply the fertilizers at a fixed rate. The others vary the dosage according to the different conditions. Some apply it only in poor soils, while others apply it when crop growth is not good and others use it when other causes are present. This indicates the need to educate the farmers to look on fertilizers also as manure and to make him apply it as a part of the manuring programme

for each crop to maximise production. The extension workers have to concentrate on giving the farmers a sound idea of fertilizer use and dispel from the minds of the farmers the idea that fertilizers, like medicines and tonics are intended for treating certain conditions. (Table IV)

(5) The time of application of fertilizers is very important for getting the maximum benefit out of fertilizers. As far as the phosphatic fertilizers are concerned the fertilizers are applied as a basal dressing by the farmers as recommended.

In the case of nitrogenous fertilizers however, only a negligible percentage of farmers (1–2%) apply as recommended. There is a large variation in the number of times fertilizers are applied to paddy crop. Practically, every third farmer applies the fertilizer at a different time. Based on experiments conducted the best time for application of fertilizers has been worked out and it is necessary that more intensive work is done to educate the farmer in this aspect of fertilizer use.

Conclusion: Often in meetings and group discussions, one hears the saying that the Tanjavur farmer knows all about fertilizers and nothing need be done except to provide him with necessary credit and supplies to make him utilise the fertilizers in abundance. Many a technical person also feels that there is very little to be done in Tanjavur in respect of fertilizers and the farmers know all about it. The study has clearly indicated that the farmers may know about it but there is need for the farmers to understand fertilizers and their use. The Agricultural Extension worker has an important role to play in bringing about this understanding.