

National Demonstrations A Fore-runner of Change in Agricultural Technology

By

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ABSTRACT

The concept of National Demonstrations was developed to create the first line of demonstrations for transferring new technology of high yielding varieties to farmers, fields by scientists. Currently these demonstrations are considered as an eye-opener showing the tremendous possibilities of increasing the agricultural production by adoption of modern farming technology. This study brings out the achievements of National Demonstrations conducted by the Tamil Nadu Agricultural University in Madurai district during 1972-73.

INTRODUCTION

Demonstrations are age old medium through which agricultural inputs and techniques have been popularised for the adoption of farmers. Although efforts to modernise Indian Agriculture started early in 1960, the progress in transforming research results to farmers was limited to a few innovative farmers. The need to quicken the pace of information transference was felt very strongly when the high yielding varieties of cereals were introduced in the mid sixties. It was also around the same time that thoughts were given to establish a two way traffic of information flow between farmers and research workers. Thus the concept of National Demonstrations was developed to create the first line demonstration for transferring the technology of improved agriculture.

MATERIALS AND METHODS

A total number of 24 demonstrations on regular cropping pattern and one special demonstration on problem soil were laid out during 1972-73 in Madurai district. Out of 25 demonstrations conducted, 10 were to demonstrate the production potential in two crop sequence, 14 for demonstrating the total outturn possible in a three crop sequence and one special demonstration to prove the productivity that is possible on a problem soil. The details of crop sequences with number of demonstrations are furnished in Table 1.

The demonstrations were conducted in farmers' fields in an area of one acre. The team of subject matter specialists in agronomy, soil science, plant protection and agricultural engineering have guided the farmer in carry-

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Table 1. Crop sequence and demonstrations

Crop sequence	No. of demonstrations
Paddy - Paddy	2
Paddy - Millets	5
Paddy - Cotton	1
Paddy - Groundnut	1
Wheat - Potato	1
Paddy - Paddy - Paddy	2
Paddy - Paddy - Pulses	10
Paddy - Paddy - Vegetables	1
Pulses - Paddy - Groundnut	1
Total	24

ing out the improved methods of cultivation for securing the maximum production per unit area in unit time. Besides demonstrating the good performance of the varieties released, adaptive research with pre-release varieties was also conducted to fix varieties that would fetch higher return than those raised in National Demonstration plots in the current year.

RESULTS AND DISCUSSION

The results of seven successful two crop demonstrations, 14 three crop sequences and individual crops are presented in Table 2, 3 and 4 respectively.

Table 2. Two crop sequence

Crop sequence	No. of demonstrations	Yield in Q/ha		Total production in Q/ha
		I	II	
Paddy - Cotton	1	87.8	35.0	122.8
Paddy - Cholan	2	80.5	38.9	119.4
Paddy - Cumbu	2	78.3	37.0	115.3
Paddy - Ragi	1	70.8	31.1	101.9
Paddy - Groundnut	1	76.0	17.5	93.5

Table 3. Three crop sequence

Crop sequence	No. of demonstrations	Yield in Q/ha			Total production in Q/ha
		I	II	III	
Paddy - Paddy - Paddy	2	61.6	64.0	69.0	194.6
Paddy - Paddy - Vegetables	1	102.3	62.2	6.5	170.7
Paddy - Paddy - Pulses	10	79.7	72.1	4.3	156.1
Pulses - Paddy - Groundnut	1	8.4	67.1	25.6	101.1

Table 4. Individual crops

Crop and strain	Total No. of demonstrations in two crop and three crop sequence	Targetted yield in kg/ha	Mean yield in kg/ha
Paddy			
IR 8	5	4,500	9658
Jaya	2	4,500	8605
IR 20 (<i>Kharif</i>)	2	4,500	6811
IR 20 (<i>rabi</i>)	7	4,500	7824
Karuna	1	4 500	6396
Ratna	1	4,500	6904
Millets			
CSH 1 (Cholam)	2	4 000	3900
CO 10 (Ragi)	1	3,000	3110
Oil seeds			
POL 1 (Groundnut)	1	2,000	2558

Results obtained from two and three crop sequences indicate that there is every possibility of producing 11 to 19 tonnes per/ha per year from the same piece of land (Kanwar, 1971). Out of 7 successful two crop demonstrations, the maximum production was obtained from a paddy - cotton sequence with 12.28 tonnes per hectare followed by paddy - cholam, paddy - cumbu and paddy - ragi. Among the various three crop sequences followed in 14 demon-

strations, the highest production was in a paddy - paddy - paddy rotation followed by paddy - paddy - vegetables and paddy - paddy - pulses. Such a marked rise in production was due to the choice of high yielding varieties grown with adequate fertiliser doses and plant protection measures (Swaminathan, 1970).

In Madurai district, the pivotal crop is paddy. A number of other crops are fitting in two or three crop rotations. Hybrid cholam, cotton, groundnut and pulses are combining very well in these rotations. A farmer in a good situation can make any selection depending upon the agro-climatic conditions, resources and market requirements (Kanwar, 1970). The choice of the variety is the most important for maximising the production per unit area per unit time.

Among the paddy varieties tried for the *rabi* season IR 20 was the best. The strain 'Bhavani' was found to be suitable for growing in all the three seasons in the district yielding on an average 6.8 tonnes per ha. TMV 7 and POL 1 were found better than the existing variety of TMV 2 groundnut. CBS 156 hybrid cotton proved to be the best with an yield of 42 quintals per ha which is a record yield over MCU 5. The cholam hybrid culture 2219 A x CS 3541 was

observed to record an yield of 6422 kg/ha with more straw which is an advantage over the existing hybrid cholam varieties. The above mentioned varieties can be substituted in the place of some of the existing varieties in Madurai district. Thus the National Demonstrations in Madurai district have created an impact in the minds of enthusiastic farmers that high yields of crops could

be obtained under their conditions by adopting improved farm practices with the high yielding varieties of crops.

REFERENCES

- KANWAR, J. S. 1970. Multiple cropping: Trends and Problems. *Ind. Farming* 20: 5-7.
- KANWAR, J. S. 1971. National Demonstrations. Retrospect and Prospect. *Ind. Farming* 6: 13-17.
- SWAMINATHAN, M. S. 1970. New varieties for multiple cropping. *Ind. Farming* 7: 9-12.