*Pak. J. Agri. Sci., Vol. 42(3-4) 2005*

# ROLE OF DEMONSTRATIONS IN THE DISSEMINATION OF RICE PRODUCTION TECHNOLOGY

Sher Muhammad, M. Athar Latif and Ijaz Ashraf
Department of Agricultural Extension, University of Agriculture, Faisalabad.

In Pakistan, rice is the second most important food as well as a cash crop, which occupies 11% of the country s' cropped area. Pakistan is the fifth largest rice exporting country in the world. It has been generally observed that rice growers who adopt latest plant protection measures and follow other recommended practices; get much higher yield per hectare than those who do not adopt latest rice production technology. The Dept. of Agri. (Ext.) Govt. of the Punjab has been trying its best to increase per hectare yield of various crops including rice by using different extension methods especially the demonstrations. Demonstrations are considered to be the foundation stone of extension teaching. The present paper aims to assess the role of demonstrations in the adoption of recommended agricultural technologies by the farmers. The data show that a simple majority (56.67%) of the respondents was aware of the existence of rice crop demonstration plots in their area/village. None of the respondents acknowledged the role of demonstrations in the dissemination of rice crop recommendations including seed rate, seed treatments, time of sowing/transplanting, seed bed preparation, use of fertilizers, application of Zinc Sulphate, irrigation, weed control, application of plant protection measures and harvesting. While rating the contribution of demonstrations in the dissemination of information about rice recommendations with regard to sowing method of rice, one-fourth of the respondents rated the demonstrations as high, 12.50% rated very high. However, 9.17, 4.17 and 3.33% of the respondents rated the contribution as medium low and very low respectively.

**Key words**: Demonstrations, dissemination of rice production technology.

## INTRODUCTION:

Rice (*Orya sativa* L.) is one of the oldest cereals on the earth. It can grow at more than 3,000 m elevation in the Himalayas and at sea level in the deltas of river of Asia. More than 90% of the world's rice is grown and consumed in Asia, where about 80% of the world s' population is living (Bhambhro, 2001). In Pakistan, rice is the second most important food as well as a cash crop, which occupies 11% of the country's cropped area. Pakistan is the fifth largest rice exporting country in the world. Rice was cultivated on an area of 2461 thousands hectare during 2003-04, which was 10.6% higher than that of 2002-03. Production of rice during 2003-04 was 4848 thousands ton, which was 8.3% higher than that of 2002-03. The higher production was due to favorable weather condition in last year (Govt. of Pak., 2003-04).

The potential yield of recommended rice varieties of Basmati is 3500 kg and that of Irri is 5000 kg per hectare. The average yield obtained by farmers during the 2001-02 was 2500 kg of Basmati and 3500 kg of Irri. It becomes clear that there is much difference in the actual and potential yields. It has been generally observed that rice growers who adopt latest plant protection measures and follow other recommended practices; get much higher yield per hectare than those who do not adopt latest rice production technology. This situation demands that farmers should be made aware of latest recommendations and be motivated for their adoption. This is mainly the job of an extension organization. The Department of Agriculture (Extension) Government of the Punjab is one of the organizations that has been trying its best to increase per hectare yield of various crops including rice by using different extension methods especially the demonstrations. Demonstrations are considered to be the foundation stone of extension teaching. They are based on the basic principle of 'seeing is believing'. In a demonstration, an improved practice is presented in terms of its practical application under a specific situation. Successful demonstrations are very effective in convincing people and getting practices adopted by them. Demonstrations may be regarded as the most effective tool in the hands of the extension worker for technology transfer. It involves the three important processes of learning: seeing, hearing and doing, so it is highly convincing (Rajput, 1997).

Result demonstration is one of the most powerful extension teaching methods particularly useful for those farmers who are illiterate and believe in seeing (Muhammad, 2001). The result demonstration teaches farmers why a new practices or input should be adopted by comparing it with a commonly used local practice. This technique is often used in such situations where farmers are not ready to believe and accept what is being said by the extension worker. The purpose of using the result demonstration is to prove

that the new practice is superior to the one currently being used, to persuade extension clientele to try the new practice. A successful demonstration can produce positive results for extension workers and developing confidence in them. It is a teaching method, which extension workers who are new to an area, might want to use to establish their credibility in the community. However, workers should consider the consequences if the demonstration fails, and choose the demonstration technique carefully (Kang and Sang, 1984).

The common hurdles, in the way of extension field staff in using demonstrations effectively for the dissemination of information include non-cooperation of farmers, financial constraints, non-availability of needed material, conservative attitude of farmers, prevalent customs and traditions, believing in fatalism, rivalries among the farmers and inadequate allowances (Ali, 1996).

Since the demonstrations are the major teaching tools used by extension field staff, there is a need to study the effective of demonstrations as a communication medium used for the dissemination of agriculture technologies among the farmers. The present study has, therefore, been designed to assess the contribution of demonstrations in the adoption of recommended production technologies by rice growers of tehsil Gujrat.

## MATERIAL AND METHODS

All the rice growers of Gujrat tehsil served as the universe for the study. This area was selected because no commendable research on this particular aspect had been conducted in spite of immense importance of this crop in that area.

The Gujrat tehsil consists of 61 union councils, of which 19 come under urban and 42 fall in rural areas. Since the study related to farmers, the rural union councils were taken for this research project. Five union councils were selected randomly as the sample area. Then from each sample union council, two villages were selected at random and from each village 12 rice growers were drawn by using simple random sampling technique. In this way a total of 120 respondents constituted the sample for this study.

In order to collect the required information, an interview schedule was developed. To check the validity of the interview schedule, it was pre-tested on 12 farmers and necessary amendments were made in the light of pre-testing experience before finalizing the schedule. The questions were asked in local language of the respondents. The data were analysed to draw conclusions and to make pertinent recommendations.

## RESULTS AND DISCUSSION

All the farmers may not know about the existence of rice crop demonstration plots in their area/village. Some of them may be aware of and other may not. The data in this regard are given in Table 1.

The data presented in Table 1 show that a simple majority (56.67%) of the respondents was aware of the existence of rice crop demonstration plots in their area/village. However, quite a good number (43.33%) of respondents did not know about the demonstrations. This implies that nearly half of the respondent did not know about the existence of demonstration plots. The results are supported by the findings of Zehri (1993) who concluded that result demonstration were known to only 43.33% of the farmers. However, the results are not in line with those of Ilyas (1988) who found that all the respondents were aware of demonstration plots/blocks arranged under the crop maximization programme. This difference may be the result of efforts made by extension field staff to make people aware of the demonstration plots arranged under crop maximization programme.

**Table 1. Distribution of respondents on the basis of their awareness about rice crop demonstrations in their area/village**

| Category | No. | % |
|---|---|---|
| Aware | 68 | 56.67 |
| Unaware | 52 | 43.33 |
| Total | 120 | 100.00 |

It is evident from Table 2 that none of the respondents gave any response about rice crop recommendations including seed rate, seed treatment, time of sowing/transplanting, seed bed preparation, use of fertilizers, application of Zinc Sulphate, irrigation, weed control, application of plant protection measures and harvesting. Only two recommendations, i.e. sowing method and selection of appropriate variety were reported by 54.17 and 2.5% respondents respectively. While rating the contribution of demonstrations in the dissemination of information about rice recommendations with regard to sowing method of rice, one-fourth of the respondents rated the demonstrations as high, 12.50% rated very high.

**Table 2. Contribution of demonstrations in the dissemination of rice recommendations to the farmers**

| Recommendations | Extent of contribution | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Very Low | | Low | | Medium | | High | | Very High | | No Response | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Selection of appropriate variety | – | | – | – | – | – | 3 | 2.50 | – | – | 117 | 97.50 |
| Seed treatment | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Land preparation | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Time of sowing nursery | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Time of transplanting | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Sowing method (line sowing) | 4 | 3.33 | 5 | 4.17 | 11 | 9.17 | 30 | 25.00 | 15 | 12.50 | 55 | 45.83 |
| Seed rate | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Irrigation | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Application of fertilizer | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Application of pesticides | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Application of herbicides | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |
| Harvesting | – | | – | – | – | – | – | – | – | – | 120 | 100.00 |

However, 9.17, 4.17 and 3.33% of the respondents rated the contributions as medium low and very low respectively. It can be concluded that rice crop demonstration plots had contributed in introducing only one aspect of rice cultivation i.e. sowing method (line sowing). As regard other recommendations, the contribution of demonstration plots was perceived as nil. This is highly alarming situation for extension field staff as demonstrations are generally considered as one of the effective methods for technology transfer.

**Table 3. Rating of demonstrations by the respondents based on their effectiveness**

| Criteria | Very Low | | Low | | Medium | | High | | Very High | | No Response | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Provision of information about recommendations | 8 | 6.67 | 2 | 1.67 | 9 | 7.50 | 33 | 27.50 | 14 | 11.67 | 54 | 45.00 |
| Motivating farmers for adoption | 12 | 10.00 | 5 | 4.17 | 101 | 8.33 | 35 | 29.17 | 3 | 2.50 | 55 | 45.00 |
| Helping farmers in the adoption of recommendations | 59 | 49.17 | 1 | 0.83 | 4 | 3.33 | 0 | 0 | 0 | 0 | 56 | 46.67 |

**Note:** The responses included in Table 3 related to only one aspect, i.e. sowing methods, which was demonstrated by extension field staff.

The data presented in Table 3 show that almost half (45.00-46.67%) of the respondents gave no response while rating the effectiveness of the demonstrations. In order to make relative ranking of the criteria against which the effectiveness of demonstrations was assessed, their weighted scores were calculated by multiplying the score value allotted to each category of the scale with the frequency count. The scores computed in this way are presented in Table 4.

**Table 4. Ranking of the criteria for effectiveness of rice crop demonstrations**

| Criteria | Rank order | Mean | Score | Standard deviation |
|---|---|---|---|---|
| Provision of information about recommendations | 1 | 3.65 | 241 | 1.21 |
| Motivating farmers for adoption | 2 | 3.18 | 207 | 1.24 |
| Helping farmers in the adoption of recommendations | 3 | 1.14 | 73 | 0.50 |

The data presented in Table 4 indicate that the respondents assessed the demonstrations as most effective in providing information about recommendations to farmers with a mean score of 3.65 followed by 'motivating farmers for adoption' (mean score=3.180) and 'helping farmers in the adoption of recommendations' (mean score=1.14). First two aspects fell in between medium and high categories.

Farmer tended more towards high but the latter tended more towards medium category. The third and the last aspect fell in between very low and low categories. Former tended more towards very low category. It may imply that demonstrations were perceived effective in providing information and motivating farmers for adoption thereof. However, their contribution towards 'helping farmers for adoption' was perceived to be poor.

## CONCLUSIONS

A simple majority (56.67%) of the respondents was aware of the existence of rice crop demonstration plots in their area/village. However, quite a good number (43.33%) of respondents did not know about the demonstrations. None of the respondents acknowledge the role of demonstration in the dissemination of rice crop recommendations including seed rate, seed treatment, time of sowing/transplanting, seed bed preparation, use of fertilizers, application of Zinc Sulphate, irrigation, weed control, application of plant protection measures and harvesting. Only two recommendations, i.e. sowing method and selection of appropriate variety were reported by 54.17 and 2.5% respondents respectively. While rating the contribution of demonstrations in the dissemination of information about rice recommendations with regard to sowing method of rice, one-fourth of the respondents rated the demonstrations as high, 12.50% rated very high. However, 9.17, 4.17 and 3.33% of the respondents rated the contribution as medium low and very low respectively. The demonstrations were perceived to be effective in providing information and motivating farmers for adoption thereof. However their contribution towards helping farmers for adoption was perceived to be poor.

## REFERENCES

Ali, S. 1996. A study into the teaching effectiveness of rice crop result demonstrations among the farmers of Sheikhupura tehsil. M.Sc. (Hons.) Agri. Ext., Thesis, Univ. of Agri., Faisalabad.

Bhambhro, S.A. 2001. Plant hopper: a serious threat to rice crop in upper Sindh. The Daily Dawn. Economic & Business Review, Oct. 8-14, 2001, pp. III.

Govt. of Pak. 2003-04. Economic Survey of Pakistan. Finance Division, Economic Advisor's Wing, Islamabad.

Ilyas, A. 1988. A study into the effect of crop maximization programme on agricultural production in Islamabad district. M.Sc. (Hons.) Agri. Ext., Thesis, Univ. of Agri., Faisalabad.

Kang, J.T. and H.K. Song. 1984. Individual and group extension teaching methods In: Swanson, B.E. (ed.). Agricultural Extension: A Reference Manual. Food and Agriculture Organization of the United Nations, Rome, Italy, pp. 130-143.

Muhammad, S. 2001. Agricultural Extension: Strategies and Skills. Unitech Communications, Faisalabad, Pakistan.

Rajput, F.K. 1997. Group-dynamic techniques In: Memon, R.A. and E. Bashir (eds.) Extension Methods. National Book Foundation, Islamabad, Pakistan, pp179-205.

Zehri, N. 1993. Determination of effectiveness of agricultural extension field staff in the diffusion of agricultural information among the farmers of district Jafferabad. M.Sc. (Hons.) Agri. Ext., Thesis, Univ. of Agri., Faisalabad.