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Maladies and Remedies for KVK trained Paddy Growers in Cuddalore District of Tamilnadu, India

M. Bharath[1]*, N. Sriram[2], M. Nirmala Devi[3], S. R. Padma[4] and R. Gangai Selvi[5]

[1]PG Scholar, [3]Professor, Department of Agricultural Extension & Rural Sociology, TNAU, Coimbatore, Tamil Nadu, India
[2]Professor, Directorate of Research, [4]Assistant Professor, Office of Controller of Examinations, TNAU, Coimbatore, Tamil Nadu, India
[5]Associate Professor (Statistics), Department of Physical Sciences & Information Technology, TNAU, Coimbatore, Tamil Nadu, India
*Corresponding author email id: bharatthvirat@gmail.com

HIGHLIGHTS

- Major constraints for KVK-trained paddy growers include inadequate training duration & high input costs while adopting recommended technologies.
- Suggestions from farmers emphasized the need for Government support for low-cost inputs & timely distribution of inputs after training.
- The adoption of KVK recommendations requires addressing these constraints and implementing farmer suggestions for improving training programmes and supporting KVK.

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ABSTRACT

KVK organizes a number of trainings related to paddy cultivation for improving the productivity and income of the paddy growers. To understand the maladies/constraints while attending the training and while adopting the KVK recommended technologies, the study was conducted in the Cuddalore District of Tamil Nadu in the year 2023. A list of trainees from the three bocks namely Srimushnam, Bhuvanagiri, & Vridhachalam of Cuddalore district were compiled with the assistance of the Krishi Vigyan Kendra (KVK). Using a simple random sampling technique, 150 respondents were selected from the three blocks. A well-structured interview schedule was utilized to gather data, tabulate the findings, and analyze the results. It was found that inadequate training duration (77.33%) followed by inadequate demonstrations (67.33%) while attending the KVK paddy related trainings. High input costs (85.33%), the non-availability of improved varieties (73.33%), were felt as major constraints while adoption of KVK recommended Paddy technologies. Providing low-cost inputs (88.67%), and timely distribution of inputs after training (80.00%) as suggestions given by the KVK-trained farmers. The constraints and suggestions expressed by the KVK Paddy farmers should be considered while organizing any paddy related training by the KVK system for further improving the adoption level of paddy growers.

INTRODUCTION

Paddy (*Oryza sativa*) a widely cultivated cereal crop in India and other Asian countries, holds significant importance in the country's agriculture. India ranks second in paddy cultivation and consumption, following China. Paddy, a member of the grass family Gramineae, is grown during both the Rabi and Kharif seasons. In some Indian regions, paddy is cultivated three times a year(Bhattacharya, 2022). While paddy is grown in nearly all Indian states, the top five paddy-producing states are West Bengal, Uttar Pradesh, Andhra Pradesh, Punjab, and Tamil Nadu. In Tamil Nadu, paddy cultivation covers 22.05 lakh hectares, accounting for 37 per

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cent of the state's total gross cropped area of 58.97 lakh hectares. Paddy ranks highest in both area and production among cereal crops cultivated in Tamil Nadu (Sujatha & Sivasankari, 2023). This prominence is due to its role as the main staple food, crucial for meeting the nutritional and caloric needs of the population, thereby playing a key role in maintaining food security in the state. Paddy is a crucial crop for millions of small farmers who cultivate it on extensive hectares across the region, as well as for the many landless workers who earn income from these farms. Given the growing population, paddy production needs to increase substantially to ensure future food security. By providing targeted training in modern paddy cultivation techniques, productivity and profitability of paddy farming can be enhanced and sustained. We will make progress in agriculture only if we develop human capital through a good training system. Training has enabled agriculture and allied industries to increase productivity and income on a sustainable basis. To reach the expected breakthrough, agricultural technology needs to be transferred to farmers, the man behind the plough. Agricultural innovations and the diffusion of new technologies are essential to achieving this goal, offering farmers a competitive edge over traditional farming practices and facilitating better standards of living (Davis & Sulaiman, 2014).

Krishi Vigyan Kendra (KVK), established by the Indian Council of Agricultural Research (ICAR), is a vital resource for demonstrating the application of scientific and technological advancements in agricultural research and education within rural farming communities to provide knowledge and skills training to farmers, rural youth, and field-level extension workers (Singh et al., 2023). Since agriculture varies from one area to another, the training programme must be tailored to the local conditions. KVKs play a crucial role in the dissemination of agricultural technologies across India (Kumbhare & Khonde, 2009). KVK used to organize need based trainings to the paddy growers for improving their productivity and income. Still, there is a yield gap and income divide among the paddy growers due various reasons (Vasanthakumar, 2017). In order to understand the farmers' constraints while attending the KVK training programme as well as adopting the KVK recommended technologies, the study was conducted with major objectives of maladies and remedies for KVK trained farmers.

METHODOLOGY

This study was undertaken in the Cuddalore district of Tamil Nadu since KVK Vridhachalam is one of the oldest KVKs in Tamilnadu. In addition to that Paddy is grown in more than 1.35 lakh ha in Cuddalore district and KVK organized a number of trainings related to Paddy cultivation since its inception. A list of trainees from the major paddy growing blocks of Srimushnam, Bhuvanagiri, & Vridhachalam was compiled with the assistance of KVK to select respondents. Farmers who participated in a paddy-related training course between 2018 and 2020 were chosen as a sample. 10 respondents were selected from each village and five villages were chosen from each block so each block contains 50 respondents. In total, 150 respondents were selected from three blocks by applying a simple random sampling technique. Primary data were collected from beneficiaries through personal interviews using a pre-tested structured interview schedule. The collected data were then tabulated and processed in light of the objectives to draw the result and conclusion in terms of percentage and frequency. The constraints faced by KVK-trained paddy growers while attending and adopting KVK-recommended paddy production technologies and their suggestions to overcome the constraints were identified, analysed and discussed.

RESULTS

Paddy farmer's Maladies while participating in the KVK Training Programme and adopting KVK – recommended Paddy production technologies

Results from the Table 1 indicate that a significant portion of respondents encountered the constraint of the insufficient duration of the KVK training period to cover all aspects of crop production in detail (77.33%). Many participants also pointed out that

Table 1. Constraints faced by Paddy farmers while attending the KVK Training Programme

S.No.	Constraints	Percentage	Rank
1	Training period of KVK is not sufficient to cover all the aspects of paddy production technologies	77.33	I
2	Inadequate demonstrations and trials to develop confidence	67.33	II
3	Shortage of time to visit KVK and attend its activities frequently	64.00	III
4	Course content is finalized without ascertaining the needs	56.00	V
5	Insufficient monitoring and follow-up action.	53.33	VI
6	Size of the training group was large	49.33	VII
7	Benefits are provided to a specific group of individuals.	45.33	VIII

Table 2. Constraints faced by Paddy farmers while adopting KVK-recommended paddy production technologies

S.No.	Constraints	Percentage	Rank
1	High cost of inputs	85.33	I
2	Non-availability of improved varieties at an appropriate time	73.33	II
3	Lack of adequate information on IWM technologies	70.67	III
4	Non-availability of labour at an appropriate time	62.67	IV
5	Lack of knowledge in identifying pests and diseases	58.67	V
6	Lack of scientific knowledge of plant protection techniques	48.00	VI
7	Insufficient knowledge regarding the appropriate use of chemical fertilizers	44.67	VII

Table 3. Suggestions collected from the KVK trained Paddy growers

S.No.	Suggestions	Percentage	Rank
1	Government should provide inputs at low cost	88.67	I
2	Distribution of inputs at the end of training	80.00	II
3	Practical demonstration should be a part of every training	66.67	III
4	More number of exposure visit / field visit should be arranged during the training programmes	64.67	IV
5	Organize more off-campus training	62.00	V
6	High-quality seeds should be made available promptly and at a low cost.	54.67	VI
7	Timely information on pest and disease control measures should be provided via SMS by the State Department of Agriculture or agricultural universities.	53.33	VII

Inadequate demonstrations and trials related to focused technologies in the training programme (67.33%). It was also found that Course content is finalized without ascertaining the needs of farmers. Insufficient monitoring and follow-up action by KVK as malady was revealed by a 53.33 per cent. In addition to that the size of the training group was large as constraints indicated by 49.33 per cent. There was a perception among KVK trained farmers that benefits are given to a specific group of individuals by the KVK system. The findings in Table 2 reveals that the majority of the respondents (85.33%) expressed that the higher cost of inputs as maladies while adopting KVK recommended technologies. Non-availability of improved variety at appropriate expressed by a little less than three-fourth percentage of the respondents (73.33%). Lack of scientific knowledge of plant protection techniques also expressed as constraints by a little less than half percentage of the respondents while adopting the recommended practices in paddy cultivation.

Suggestions given by the KVK trained farmers for overcoming the constraints

Data from the Table 3 indicates that the majority of the respondents (88.67%) suggested that Government should provide inputs at low cost to farmers for adoption of recommended technologies in paddy cultivation. The reason might be due to that Paddy growers are mostly resource poor farmers and not afford to buy some of the recommended technologies from the private input dealers. Hence, the paddy growers suggested that Government should sale the critical inputs at lower cost. Distribution of inputs at the end of the training should be given by KVKs as suggested by 80 per cent of the respondents. The available inputs at KVK sales centres especially bio-inputs may be supplied to the farmers at the end of the training programme since bio-inputs are hardly available with private input dealers. Likewise, practical demonstration should be a part of every training as suggestion given by 66.67 per cent of the respondents. This may be due to that "seeing is believing" principle and demonstration inculcate the real skill aspects of the technologies which are very important for adoption of the recommended technologies.

Arrangement of a greater number of exposure visit/field visit during the training programmes as one of the key suggestions for facilitating adoption of KVK recommended technologies in paddy cultivation, expressed by 64.67 per cent of the respondents. Organize more off-campus training (64.00%) and Quality seeds should be made available in time at a low cost (54.67%) as key suggestions expressed by the respondents for overcoming the maladies in paddy cultivation. Besides, a little higher than half percentage (53.33%) of the respondents highlighted the need for timely information on pest and disease control measures vis SMS like platform as remedies for solving the problems related to pest and disease management in paddy cultivation. of Agriculture or State Agricultural Universities.

DISCUSSION

During KVK training, not all aspects of paddy production technologies are covered. The results were in line with the findings of (Aprilhrin , 2023). They also found that there was a lack of training duration for farmers which hinder the farmers from acquiring the knowledge and expertise in the specific field. This may be due to KVK mostly organize one day training as on campus or off campus training as per ICAR norms on paddy production technologies which may not sufficient to cover all technologies in detail. Inadequate trails plots and demonstrations during KVK training as maladies expressed by the majority of the respondents. This might be due to that demonstration plot used to maintain during the season only subject to availability of budget and not all the seasons.These findings were in agreement with (Sahare et al., 2019). Similar findings reported by Paul et al., (2015); Kaur et al., (2018). Increasing input costs is one of the biggest challenges, may be due that the KVK recommends improved paddy production technologies which require the purchase of recently released pesticides, fungicides, and high-yielding varieties which demand high cost. Many marginal farmers were unable to purchase the input due to non-availability of credit / cost in time. Similar constraints were recorded by (Yadav et al., 2018; Singh & Kaur, 2023; Giritharan & Selvarani, 2024). The reason for the Improved varieties are not available in the market may be due to that the seasonal demand for improved paddy varieties and limited stock by the suppliers which cause delays in the delivery of improved varieties to farmers or non-availability during season. The similar type of findings also found by Yadav et al., (2024).

Most of the time, these technologies may not be aware by local input dealers or agro service centre for providing additional information to needy farmers. Hence majority of the respondents expressed Lack of adequate information on Integrated Weed Management (IWM) technologies as maladies in paddy cultivation. Similar findings reported by (Kumar et al., 2023). These constraints are normally faced by major of farmers across the state due to labour migration, less number of visit to KVK and less contact with extension service provides for following the scientific recommended practices in paddy cultivation. Hence, these constraints were

expressed by the respondents in the study area. To facilitate adoption of recommended technologies, the government sector should supply recommended critical inputs at affordable prices. The reason may be due to the lack of affordability of inputs for small and marginal farmers. Similar suggestions were reported by(Shivakumarappa et al., 2023).At the end of the training, inputs should be distributed by KVKs or other agencies to facilitate adoption of technologies this might be due to that adoption of gained knowledge during training programme is possible if recommended technologies in the form inputs given to farmers immediately after training. Similar results were also reported by (Kumbhani et al., 2023). It is an accepted fact that farmers could gain more knowledge and skills in paddy production technologies if KVK organizes method demonstration of seed treatment, cono weeder, handling pesticides, and other critical technologies while organizing the training programme, similar suggestions recorded by (Patel et al., 2023).

CONCLUSION

While attending the KVK training programmes, the farmers faced the key maladies viz., Insufficient training duration, inadequate trail demonstrations plots and course content is finalized without consulting the farmers. It is concluded that maladies and remedies expressed by the respondents while organizing KVK training programme and while adopting recommended practices in paddy cultivation may be considered while organizing any capacity building programme in paddy cultivation by the KVK system. Based on this study, it is suggested that all KVKs across the India should establish KVK Sales cum agro advisory service centre in front of the KVK for providing critical inputs and agro advisory services for adopting the KVK recommended technologies in crop cultivation.

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