J Krishi Vigyan 2018, 7(1) : 209-212 DOI : 10.5958/2349-4433.2018.00134.4

Technological Empowerment of Rural Women of Assam on Improved Practices of Rice Production System through Intervention

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ABSTRACT

Rural women in Assam play a very significant role in agriculture and allied operations. They are actively participating in all range of agricultural activities including pre and post-harvesting. They are in urgent need of understanding and acquiring new knowledge and skills, so they could contribute more effectively to production process. The present study was conducted to identify the knowledge of rural women of Assam about scientifically validated existing rice production technologies. A multi-stage purposive cum stratified random sampling design was followed covering 400 respondents. Three training programmes and one exposure visit were organized covering different aspects of rice production technology and post harvest processing in which the knowledge of the respondents was found low. The impact of the intervention programme was assessed by comparing the knowledge score before the intervention and after the intervention. The knowledge test was applied at different times with an interval of 30 d.

Key Words: Empowerment, Knowledge, Improved practices, Impact, Intervention, Technology.

INTRODUCTION

Women produce over 50 per cent of the world's food (FAO, 2011) and comprise about 43 per cent of the agricultural labour force globally and in developing countries (Doss, 2014). Despite women's significant contribution to agriculture as cultivators, labourers and family workers, they face barriers and inequalities in terms of access and control over resources such as land, capital and credit as well as access to agricultural inputs and technology such as improved crop varieties, training, information and marketing services (Kirean *et al*, 2015).

In Asia, women undertake much of the back-breaking labour in rice production, including tasks such as transplanting and weeding. They are the keepers of the seed and heavily engaged in post-harvest processing, value chains, and seed storage. The rural women have no or very little access to new technologies, scientific achievement and modernization in agriculture. The package of practices for empowering farm women through recommended technology must concentrate on the basis of factors like identifying gender issues and providing suitable women friendly technologies for promoting gender equality, enhancing capabilities of farm women in rice production through effective technologies and programmes, presentation and refinement of technologies with active participation of rural women. Looking at the present status of women in agriculture and their limited access to research and extension services, it is urgently needed to revamp the entire approach towards women farmers to cater to their existing needs.

MATERIALS AND METHODS

The study was conducted in the state of Assam in two agro-climatic zones namely Upper Brahmaputra Valley Zone and Central Brahmaputra Valley Zone. A multistage random sampling design was followed. From each selected agro-climatic

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zone one district from each sub-division two blocks and two villages from each block were selected by using simple random sampling method. Thus, finally eight villages were selected for carrying out the present study. For selection of respondents, a list of rural women from each selected villages was prepared separately in consultation with the village level workers and member of representative Gram Panchayat. From each list, fifty rural women were selected by using simple random sampling method. Altogether 400 rural women were selected as respondents for the present study. An intervention programme in the form of training and exposure visit were conducted for technological empowerment of respondents and impact was assessed through pre and post knowledge tests. For the intervention, 30 rural women from Titabor development block of Jorhat district of Assam, who were members of self help group (SHGs) and also actively engaged in rice production system were selected.

Construction of Knowledge Scale

A knowledge scale was developed for measuring knowledge of rural women about scientifically validated rice production technologies in different aspects namely variety and seed selection, improved nursery raising, site selection, land preparation and transplanting, crop management, harvesting, scientific processing and storage and packaging. The scale consisted of 10 statements in each aspect thus total 70 statements were there. Knowledge test were administered to the respondents and their responses were recorded in the form of correct or incorrect answers. The correct answer was assigned a weightage of 1 and for incorrect as 0. On the basis of score farm women were categorized into 3 categories: low with score range below (X-Sd), medium with (X-Sd to X+Sd) and high with above (X+Sd).

Technological empowerment of rural women through intervention

To fulfil the objective, a series of training programme were organized for 30 rural women regarding scientific practices of rice production technology. The area for intervention was selected wherever the knowledge of the respondents was found to be low in majority of course. Initially a pre knowledge test was conducted to find out the existing knowledge of the rural women. Simultaneously post knowledge test was introduced after completion of training to see the effectiveness of the training programme. Further to see the retention of the different information on the above practices given to the rural women, a post knowledge test was administered at 15 d interval. The gain in knowledge was measured by differentiating mean score of calculated pre and post test.

RESULTS AND DISCUSSION

Existing knowledge of rural women

The data (Table 1) revealed that majority of the respondents had medium level of knowledge in Variety and seed selection (67.0%), site selection, land preparation and transplanting (72.25%), harvesting (65.75%) followed by low level of knowledge Improved nursery raising (54.50%), crop management (64.50%), scientific processing (53.00%)and storage and packaging (58.50%). It indicates that these are the important areas in which the rural women felt lack of confidence and inadequacy of knowledge to perform these operations effectively.

The low level of knowledge may be due to the fact that respondents had only little exposure to training on rice production technology. On the basis of the results the medium level of knowledge percentages was very high. It may be due to lack of awareness and lack of proper information regarding recommended rice production practices. (Singh and Yadav, 2014 and Meena et al, 2012)

Correlation between level of knowledge and independent variables

The data (Table 2) revealed that correlation between knowledge level and age was significant. It means knowledge of rural women increased as their age increased. Again, correlation between knowledge and mass media exposure was positively

Table 1. Existing knowledge of rural women on improved practices of rice production. N=400

Sr. No.	Thematic area	Category (score)	Frequency	Per cent
1	Variety and seed selection	Low < 3.43	89	22.25
		Medium 3.43 to 6.03	268	67.00
		High > 6.03	43	10.75
2	Improved Nursery raising	Low < 3.06	218	54.50
		Medium 3.06 to 5.24	167	41.75
		High > 5.24	15	3.75
3	Site selection, land preparation and Transplanting	Low < 2.54	59	14.75
		Medium 2.54 to 5.74	289	72.25
		High > 5.74	52	13.00
4	Crop management	Low < 3.38	258	64.50
		Medium 3.38 to 5.74	103	25.75
		High > 5.74	39	9.75
5	Harvesting	Low < 2.68	78	19.50
		Medium 2.68 to 4.78	263	65.75
		High > 4.78	59	14.75
6	Scientific processing	Low < 2.76	212	53.00
		Medium 2.76 to5.03	140	35.00
		High > 5.03	48	12.00
7.	Storage and packaging	Low < 3.87	234	58.50
		Medium 3.87 to 6.34	128	32.00
		High > 6.34	38	9.50

significant. Higher the mass media exposure lead to increase in the level of knowledge, thus, found to be positive and significant related. The educational qualification, extension contact, organizational membership and socio-economic status had positive but non-significant relationship with level of knowledge.

Table 2. Correlation between knowledge and selected independent variables N=400

Sr. No.	Variable	'r' value
1	Age	0.21*
2	Educational qualification	0.13
3	Extension contact	0.08
4	Mass media exposure	0.26*
5	Organizational membership	0.05
6	Socio-economic status	0.18

* Significant at 0.05 level probability

Table 3. Distribution of respondents according to mean score of retention of knowledge N=30

Period of knowledge test	Mean Score	SD	Mean gain in knowledge
Pre knowledge	11.73	4.87	-
At immediate	19.43	3.01	7.7
At 15 days	17.13	4.29	5.4
At 30 days	16.33	4.18	4.6

Average score of the post test –pre knowledge test = 17.63 - 11.73 = 5.9

The data (Table 3) indicated that there was slight decrease in the knowledge score as the gap increased but overall gain in knowledge was found to be 5.9. The mean differences were found to be significant through paired' test immediately at 15 d and at 30 d.

As compared with pre knowledge test score.

Further, to establish the gain in knowledge at all stages paired 't' test was applied taking the pre knowledge test score and post knowledge score at all these point of time i.e., immediate post, at 15 and 30 d. Thus, the findings revealed that intervention is effective in enhancing the total technical knowledge of rural women in rice production practices, hence it can be recommended that in all technology transfer system intervention using different media and farm will lead to enhancement in technical knowledge (Table 4).

Table 4. Knowledge score of rural women before and after training. N=30

Pair	Mean	t value
Pre knowledge score- Post immediate	11.73 19.43	6.122**
Pre knowledge score- Post 15 d	11.73 17.13	14.350**
Pre knowledge score-Post 30 d	11.73 16.33	9.864**

* Significant at 0.05 level probability

The outcome of the intervention programme which was organized for dissemination of scientific knowledge to the rural women under the present study showed a tremendous change in the overall behavior of the rural women specifically in the time of taking decision and adoption of most of the recommended practices in their respective farm as well as household activities which were reflected after frequent visits by the researchers of those areas after intervention. The impact of the intervention has been presented in the Table 5.

CONCLUSION

In spite of the key roles performed by rural women in farm activities, they have low level of knowledge on scientific rice production technologies. Therefore, KVK/line department, extension functionaries should give attention for increasing social and mass media participation, achievement motivation and innovativeness of farm women through effective and participatory trainings/ demonstrations for better understand and adoption of improved technology.

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Received on 8/5/2018 Accepted on 30/6/2018

Table 5. Impact of the intervention programme.

Sr. No	Activity	Decision to adopt (%)	Rank	Adoption (%)	Rank
1	Processing	90.0	III	87.0	I
2	Storage and packaging	87.0	II	76.0	II
3	Crop management	72.0	I	53.0	III
4	Improved Nursery raising	60.0	IV	47.0	IV