

Impact of training in rice cultivation on farm women of Odisha

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ABSTRACT

The present investigation was carried out in Odisha state to find out the impact of training on rice cultivation by government agencies on farm women and the problems perceived by them. Training, being an important input for knowledge and skill development, is a part and parcel of all the programmes launched for enriching the existing knowledge. This study revealed that chemical pesticide application (98%), variety selection (88%), fertiliser application (87%) was the areas where most of the trained farm women had availed training. In harvesting of rice, both the trainees and non-trainees were found having maximum knowledge. The knowledge of farm women on weedicide application was very poor (3.75%). The maximum knowledge gap between trainees and non-trainees was found in safe storage method. Farm women perceived selection of time of training and much theory in training were the major hindrance in achieving the objectives of training.

Key words: rice cultivation, training, farm women, knowledge gap

Training is an extension tool for upgradation of knowledge and skill. In corporate sector training is a major component of human resource development. According to rural sociology the objective of training is to educate a person so as to be fit, qualified and proficient in doing some job (Dahama and Bhatnagar, 1985). Among the extension tools for dissemination of technologies, training has been playing a major role. Farm women in India perform 78 percent of activities as cultivators and agriculture workers (Mohapatra *et al.*, 2003). Their contribution to the global as well as national food basket is more than their male counterparts, yet they were not given due importance and their role was regarded as only supportive till 1970s in India. Rice, the major food grain of the nation is cultivated in 45.5m ha (2008-09) from the net sown area. In rice cultivation, leaving land preparation and plant protection in all other operations the role of women are no less than their male counterparts (Bargali, 2009). Government has taken various steps to upgrade the knowledge and skill of farm women through training. In all the government programmes aiming towards boosting up of rice production and productivity, e.g. farmers field school (FFS), national food security mission (NFSM), agricultural technology management agency (ATMA)

etc. training is an important component. Training to farm women is essential keeping an eye to the level of their involvement in rice cultivation. Hence it is imperative to find out the impact of training programmes on farm women in rice cultivation and the loopholes in them.

MATERIALS AND METHODS

This investigation was undertaken in purposively selected Odisha state of eastern India where Government of India is putting a lot of emphasis on increasing of productivity of rice through second green revolution. Through multistage sampling method 120 respondents were selected for the study. Balasore and Deogarh districts of the state were randomly selected to minimise the regional bias. Balasore district was selected from the coastal plain areas and Deogarh district represented the western plateau region. One block each from both the districts, i.e. Baliapal from Balasore and Tileibani from Deogarh district were randomly selected for the study. Ten farm women from randomly selected six villages of each block were taken to study the impact of training. The farm women were selected only from marginal and small farming categories as both the district have more than 80 percent

of farmers coming under both the categories. The farm women who had ever undergone any training on rice cultivation were taken as respondents of this impact study. Trainings on rice cultivation conducted by different government agencies were only taken into consideration. Data were collected from all the 120 farm women through personal contact method. A semi-structured interview schedule was designed for the purpose to find out the areas in rice cultivation where they had been trained. Efforts were made to find out the problems in training, they perceived, in a 3- point continuum with disagree, partially agree and fully agree allotted to 0, 1, 2 scores, respectively. The knowledge on various operations were tested in the same scale (Nath and Nayak, 2008) and compared with the non-trained farm women of the same village to study the impact of training on them.

Knowledge obtained (%) =

$$\sum \frac{\text{score obtained of individual operation}}{\text{Maximum obtainable score}} \times 100$$

Knowledge gap is calculated as the difference between the knowledge of trainees and non-trainees in rice cultivation.

RESULTS AND DISCUSSION

Rice contributes 90 percent of the total food production of Odisha state. The productivity of rice of the state remains much below the national level as well as the neighbouring states (Anonymous, 2008). Knowledge of farm women on rice cultivation may be one among the major factors behind it as previous studies (Bhuyan *et. al*, 1988 and Mishra *et. al*, 2009) had reported that leaving ploughing and plant protection operations in all other areas there has been a major contribution from the farm women community.

The operations in rice cultivation can be broadly classified into pre-sowing, nursery, transplanting, crop growth stage, harvesting stage and Post-harvesting stage. It was found that these six stages include thirty seven operations of rice farming (Table 1). Government agencies through their routine training programmes disseminate the use of technology which is intended to upgrade the knowledge and skill of farm women. Farm women were asked to indicate whether they had ever availed the knowledge or skill on any of the operations during the training.

Though all the responding farm women had availed training most of them were not at all aware of some factors which were vital from the point of rice production and productivity. The first, second and third crucial operations where farm women had not availed any training were land levelling (92%), soil amelioration (88%) and maintaining the farm yard (82%), respectively. All the three activities have a major role on improving rice productivity. Seed germination testing (76%), soil testing (74%), seedling root dip (67%) and seed treatment (63%) were the other major operations where the respondents had not availed any training. These important areas hardly find a place in the training programmes of government agencies. Ninety eight percent of trainees had admitted that they had undergone training on chemical pesticide application in rice cultivation while 88 percent and 87 percent of the respondents had availed training on variety selection and application of fertiliser, respectively. It was found that as both the trainer and the trainees perceive these three contribute the most towards rice productivity. Components of insect pest and disease management were the areas where highest number of women availed training once or more than once in their life. Sreedevi (1996) found from her study that participation in training had a significant relationship with the farming performance of farm women.

It was observed that in most of the activities related to rice farming, the difference of knowledge between the trainees and non-trainees was very low (Table 1). It shows the poor receptive capacity of farm women in training programmes. It was further revealed that both trainees and non-trainees had maximum knowledge on harvesting i.e., 47.5 percent and 40 percent, respectively. Transplanting was the second operation on which trainees had better knowledge (45.83%) than others. In both of these operations non-trainees had also more knowledge than the others. This might be due to the major participation of farm women in these two operations than their male counterparts. The participation of farm women in storage and transplanting was 70 to 87 percent and 89 to 93 percent respectively (Bargali, 2009). Least knowledge of both trainees and non-trainees was on application of weedicide 3.75 percent, 1.67 percent respectively. The maximum knowledge gap (21.25%) among the trainees and non-trainees was found in safe storage methods. This may be due to the involvement of women in storage

Table 1. Areas for training in rice cultivation (N=120)

Stages of rice farming	Activities	Not at all	Once	More than once
Pre-sowing stage	Soil testing	89(74)	27(23)	4(3)
	Soil amelioration	105(88)	12(10)	3(2)
	Variety and seed selection	14(12)	74(61)	32(27)
	Germination testing	91(76)	25(21)	4(3)
	Seed treatment	76(63)	30(25)	14(12)
	Ploughing and land preparation	79(66)	35(29)	6(5)
	Land levelling	110(92)	7(6)	3(2)
	Weed and stubble collection	62(52)	40(33)	18(15)
Nursery stage	Application of farm yard manure, compost	21(18)	72(60)	27(22)
	Preparation of nursery bed	34(28)	61(51)	25(21)
	Sowing of seed	72(60)	31(26)	17(14)
	Irrigation to nursery	47(39)	51(42)	22(19)
	Fertiliser application to nursery	37(31)	60(50)	23(19)
Transplanting stage	Pest management in nursery	25(21)	75(62)	20(17)
	Puddling	38(31)	62(52)	20(17)
	Trimming of bonds	54(45)	57(48)	19(16)
	Application of fertiliser	16(13)	72(60)	32(27)
	Seedling root dip	81(67)	25(21)	14(12)
	Transplanting	22(18)	66(55)	32(27)
	Water management	31(26)	54(45)	35(29)
	Green manuring and application of bio-fertilisers	46(38)	44(37)	30(25)
Crop growth stage	Beusaning	55(46)	51(42)	14(12)
	Gap filling and plant density	20(17)	62(52)	38(31)
	Weed management	69(57)	33(28)	18(15)
	Pest surveillance and diagnosis	28(23)	57(48)	35(29)
	Application of various types of chemical pesticides	02(2)	76(63)	42(35)
	Management of pests by Bio-pesticides	18(15)	69(57)	33(28)
	Use of indigenous knowledge	21(18)	63(52)	36(30)
	Use of different machines	23(19)	67(56)	30(25)
Harvesting stage	Harvesting	45(37)	52(44)	23(19)
	Maintaining the yard	99(82)	15(13)	06(5)
	Threshing	61(51)	36(30)	23(19)
	Winnowing	52(43)	43(36)	25(21)
Post-harvesting stage	Drying	72(60)	33(28)	15(12)
	Safe storage methods	37(31)	70(58)	13(11)
	Management of stored grain pests	48(40)	52(43)	20(17)
	Maintaining quality of the stored rice	63(52)	39(33)	18(15)

Figures in parenthesis represent percentage

activities and they are more concerned about the safe storage of the produce. Singh and Verma (1997) from their study on farm women had reported that 82.7 percent of farm women participated actively in storage operation. Singh et.al (2004) and Chayal and Dhaka (2010) also reported 100 percent farm women participated in storage and processing activities. These findings are also in conformity with the findings of Abdullah and Zeidenstein(1982), Devi (1987) and

Kalitha and Pathak (1996). Seed treatment and plant protection in nurseries were the areas where the knowledge gap was the next highest, *i.e.* 15.4 percent. The least knowledge gain as well as the gap was in weedicide application (1.67%). Hence it could be concluded that the knowledge gap between trainees and non-trainees on major activities was very small. It shows the poor impact of government sponsored trainings on the farm women.

Table 2. Comparison between the knowledge level of trainees and non-trainees on rice production technologies

Technologies	Knowledge of trainees (%)	Knowledge of Non-trainees (%)	Knowledge gap (%)
Germination test	12.08	3.75	8.33
Seed treatment	25.0	9.58	15.42
Proper application of farm yard manure	26.25	12.08	14.17
Soil testing	17.08	10.83	6.25
Preparation of nursery bed	34.58	25.83	8.75
Fertilization to nursery	21.67	14.17	7.5
Plant protection measures in nursery	34.16	18.75	15.41
Transplanting	45.83	35.83	10.0
Application of recommended dose of fertiliser	13.33	6.67	6.66
Plant density	30.41	25.83	4.58
Weeding (herbicide application)	3.75	1.67	1.67
Pesticide application	19.58	10.83	8.75
Irrigation management	25.83	16.7	9.13
Pest surveillance and use of indigenous knowledge	12.08	4.2	7.88
Use of machines	5.41	2.5	2.91
Harvesting	47.5	40.0	7.5
Quality maintenance	7.92	2.91	5.01
Safe storage	35.42	14.17	21.25

Though farm women were provided with training facilities on rice production technology under various programmes but the impact of the trainings in increasing knowledge level were not satisfactory (Table 2). Data on the perception of farm women pertaining to the problems in the training programme were collected and enumerated below.

After calculating the average mean it was revealed that farm women perceived the selection of the time of training was the first bottleneck towards success of the training programme. During discussion it was found that the line departments conduct training when the farm women remain busy with their domestic works. Trainings were more theoretical, hence the purpose of the training was not achieved, was the second cause. Trainers want to communicate the maximum information at once which causes redundancy and farmers cannot realise all the things.

Table 3. Perceived problems in training on rice cultivation (N=120)

Problems	Avg. Mean score	Rank
Objectives of training not clear	10.83	XV
Subject irrelevant to their work	18.75	VIII
Not specific to time of cultivation	21.67	VI
No incentive	25.83	V
No motivation	19.58	VII
Information overloading	35.42	III
Improper learning situation	17.08	XI
More theoretical	47.5	II
Improper selection of time	68.75	I
Lack of homogeneity among trainees	18.33	IX
Ineffective use of communication channels	12.08	XIV
Wrong selection of resource persons/ trainers	14.17	XIII
Gender insensitivity in training	17.91	X
Improper use of training methods	16.7	XII
No friendly atmosphere in training	34.58	IV

It came on third position in the rank analysis. Objectives of training not clear to the women trainees mattered a little as they opined and it came at the last. Sinha and Singh (2000) concluded from their study that special trainings should be organised exclusively for farm women to increase their efficiency.

Hence it can be concluded that training is an important component for farm women to enhance their awareness, interest and knowledge in various factors of rice production. Trainings delivered on safe storage methods, application of manures, germination test of the seeds, seed treatment etc. have been able to increase knowledge level of farm women substantially, thus found higher than the untrained farm women. They will be beneficial in increasing the productivity of small and marginal farm families reducing the cost of production. Trainings intended for farm women should be concise, according to their need and should be delivered with suitable methodology. Their involvement and all the factors of rice production should be given equal priority by the trainer. Taking feedback after the training can be helpful in minimising the loopholes.

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