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Impact of agricultural technologies on rural women

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ABSTRACT

The study was conducted in Bagalkot district, Karnataka to find out the impact of training programmes of Krishi Vigyan Kendra, Bagalkot, Karnataka on adoption of agricultural technologies by the trainee rural women. In total 120 trained and 120 untrained rural women were selected for the study. The results revealed that more number of trained women adopted dairy management technology whereas integrated farming system technology was adopted by less number. Main occupation of the families showed positive and significant and size of landholdings exhibited significant but negative relationship with adoption level. Major constraints faced by trained women in adoption of agricultural technologies were lack of finance, non-cooperation and lack of family encouragement, lack of market facilities and non-availability of raw materials.

Keywords: Adoption; agriculture; rural women; technology; training

INTRODUCTION

Woman is the backbone of agricultural workforce but worldwide her hard work has mostly been unpaid. She does the most tedious and back-breaking tasks in agriculture, animal husbandry and homes. About 70 per cent of the agricultural workers, 80 per cent of food producers and 10 per cent of those who process basic foodstuffs are women and they also undertake 60 to 90 per cent of the rural marketing thus making up more than two-third of the workforce in agricultural production (http://www.fao.org/docrep/v4805e/v4805e03.htm). The research efforts at the ICAR institutes have been made to relieve her of the drudgery by providing time and labour saving tools. Vocational trainings are also being conducted to impart skills to undertake different avocations. In extension activities the woman is now the centre point and activities are being planned keeping her in view. Her enlightenment will change the face of rural India (Logeswari and Thiruchenduan 2016).

Training is the process of improving the knowledge and skills and changing the attitude of an individual for doing a specific job. Imparting the needed training effectively is so essential for accelerating the process of adoption which leads to increased agricultural development. With this in view the Indian Council of Agricultural Research (ICAR) during the fifth five year plan launched an innovative project for imparting training in agriculture and allied areas to the farmers, school drop-outs and field level extension functionaries in the country by establishing Krishi Vigyan Kendras (Prasad et al 2008).

METHODOLOGY

The study was conducted in Bagalkot district of Karnataka state during 2014-15. A list of trainees was obtained from Krishi Vigyan Kendra (KVK), Bagalkot, Karnataka who were imparted training on agricultural technologies. Out of six Taluks of Bagalkot district highest number of trainees were observed in Bagalkot, Mudhol and Hunagund Taluks. From each Taluk number of villages were listed and final selection of villages was made based on availability of women trained by the KVK. The selected villages were Chikkasounsi, Benakatti, Sorakoppa and Honaralli from Bagalkot; Naagaral from Mudhol and Kandagal from Hunagund Taluk. Total 240 rural women were selected

for the selected 4 technologies. Equal number of trained and untrained rural women were considered for each selected technology from the 6 villages ie 120 trained rural women who had undergone training at KVK and 120 untrained rural women from the same village were randomly selected for the study.

To study the impact of trainings on rural women 3 agriculture related trainings viz seed treatment, integrated farming system and dairy management were selected. Keeping in view the objective of the study a structured interview schedule was prepared by reviewing the previous research studies as well as consulting and discussing with the agriculture specialists and KVK staff and pre-tested in a non-sample area.

On the basis of pre-tested results necessary modifications and changes were made in the schedule. The data were collected from trained and untrained women with the help of finalised schedule by personal interview technique. Mean and standard deviation were used for classification of respondents into various categories. Correlation was employed to know the relationship between dependent and independent variables.

RESULTS and DISCUSSION

Adoption of seed treatment by trained rural women

Data given in Table 1 reveal that 26.67 per cent of adoption was found in seed treatment used for the control of diseases and bruchids in pulses by putting neem leaves or leaf powder in Bengal gram for better storage while 23.33 per cent of adoption was found in seed treatment for the control of drying of seedlings in groundnut and fumigation method for the control of storage pest in godown. Only 03.33 per cent adoption was found in seed treatment for storage of oilseeds. The women did not adopt the practices like putting EDB ampules to control pests and seed treatment to control soil borne diseases. Overall adoption index of seed treatment was 13.

Adoption of integrated farming system (IFS) by trained rural women

An investigation of Table 1 reveals that cent per cent adoption was found in practicing animal husbandry and goat rearing activity followed by mixed cropping, crop rotation and crop combination (83.33%); growing of green manuring crops (63.33%) and organic waste recycling to increase soil fertility (46.67%).

Trainings might have influenced the attitude of the respondents to adopt good practices of IFS as it leads to good income and supports the family. The awareness of soil fertility and increased family income may be influencing factors in mixed cropping, crop rotation and crop combination. Rural families mainly SC/ST communities had been taking the advantage and benefits of IFS by rearing sheep, goats and milking animals. These could be the reasons for good adoption of IFS.

Masur et al (2014) reported that highest number of women beneficiaries had attended trainings on integrated farming system. Growing of horticultural crops and use of farm pond water for protective irrigation were not adopted by trained rural women.

Adoption of dairy management by trained rural women

The data given in Table 1 show that adoption was found to be cent per cent in washing of hands, cows' udder and milking utensils before milking, maintaining cleanliness in shed and keeping constant time for milking. An adoption of 76.67 per cent was found wrt not smearing any oil or fat to the udder before milking. Adoption indices with respect to washing of animals daily, washing udder after milking and maintaining records were 58.33, 56.67 and 16.67 per cent respectively. They were not following the recommended practice of giving clean drinking water to the animals for 5-6 times. Overall adoption index in dairy management was 50.33.

Adoption level of trained rural women about agricultural technologies

The data presented in Table 2 reveal that 66.67 per cent of trained women had low level of adoption followed by high (26.67%) and medium (6.66%). Tough names of chemicals and non-availability of chemicals in the nearby markets may be other probable reasons for low adoption. The findings of the study are not in conformity with the findings of Borua and Brahma (2012).

More number of women (36.67%) belonged to low level of adoption category while 33.33 and 30.00 per cent of them belonged to medium and high levels of adoption respectively with regard to integrated

Table 1. Adoption of different technologies by trained rural women (n= 30)

Component	Adoption index
Adoption of seed treatment technology	
Using seed treatment for control of seed and soil borne diseases	26.67
Putting EDB ampules in storage structures for the control of *Sitophilus oryzae* in sorghum	0.00
Putting neem leaves in storage structures for the control of bruchids in pulses	26.67
Using thiram seed treatment for better storage of oilseeds	03.33
Putting neem leaves or leaf powder in Bengal gram for better storage	26.67
Using *Trichoderma* seed treatment for the control of soil borne diseases	0.00
Using thiram and captan seed treatment for the control of drying of seedlings in groundnut	23.33
Fumigation method for the control of storage pests	23.33
Overall	13.00
Adoption of integrated farming system (IFS)	
Adopting minimum two components of IFS in the farm	100.00
Growing green manuring crops to increase soil fertility	63.33
Adopting horticulture crops to obtain higher income	0.00
Practicing organic waste recycling to increase soil fertility	46.67
Adopting mixed cropping, crop rotation and crop combination to enhance the ecological diversity	83.33
Using water from farm pond for protective irrigation	0.00
Adopting animal husbandry as an allied farming activity	100.00
Practicing goat rearing activity	100.00
Overall	39.33
Adoption of dairy management	
Keeping records of animal health and milk production	16.67
Washing of animals daily	58.33
Washing of hands, cows' udder and milking utensils before milking	100.00
Keeping animal shed clean to prevent udder infection	100.00
Keeping constant time for milking every day	100.00
Not smearing any oil or fat to the udder before milking	76.67
Giving clean water to the milking animals minimum 5-6 times	0.00
Washing udder with warm water and drying with soft and clean cloth after milking	56.67
Overall	50.33

Table 2. Adoption level of trained rural women about agricultural technologies (n= 90)

Technology	Adoption level	Respondents	
		f	%
Seed treatment	Low	20	66.67
	Medium	02	6.66
	High	08	26.67
	Total	30	100
Integrated farming system	Low	11	36.67
	Medium	10	33.33
	High	9	30.00
	Total	30	100
Dairy management	Low	9	30.00
	Medium	5	16.67
	High	16	53.33
	Total	30	100

farming system. Similar findings were reported by Meti (2013). The probable reason could be that most of the SC/ST respondents were having limited land where IFS practices could not be adopted.

In case of dairy management fifty 53.33 per cent of women had high level of adoption followed by low (30.00%) and medium (16.67%). Training and guidance given to the trainees might have played

prime role in influencing the adoption of technology. The findings are in line with the work of Chauhan (2012).

Socio-personal characteristics and adoption level of the agricultural technologies of trained rural women

Data given in Table 3 show that main occupation of the family exhibited positive and significant relationship with adoption level about agricultural technologies. The main occupation of the selected trained women was agriculture hence they intended to gain more knowledge and to learn the skills to adopt improved and innovative technologies which could help their farming. Thus they were eager to attend training programmes in agriculture. The findings of the study are not in line with the findings of Jebapreetha and Selvin (2013). Size of the landholding exhibited significant but negative relationship with adoption level. Age and occupation of the respondents and mass media participation were found to be having positive but non-significant relationship with adoption level about agricultural technologies.

Constraints in adoption of agricultural technologies

Data in Table 4 points out that lack of financial assistance was the main constraint in adoption of agricultural technologies as expressed by 65.00 per cent of trained women. It could be mainly due to their low economic status, inadequate access to credit and agricultural inputs and other services. Other problems were non-cooperation and lack of family encouragement (41.66%) followed by lack of market facility (27.50%). The reason for non-cooperation could be the nuclear families where they had to take the

Table 3. Relationship between independent variables and adoption of the agricultural technologies of trained rural women (n= 120)

Independent variable	Pearson's correlation coefficient 'r' value
Age	0.074^{NS}
Education	-0.065^{NS}
Marital status	-0.161^{NS}
Family income	-0.015^{NS}
Family size	-0.013^{NS}
Type of family	-0.093^{NS}
Size of landholding	-0.234*
Occupation of respondents	0.034^{NS}
Main occupation of family	0.337**
Mass media participation	0.043^{NS}
Extension contact	-0.173^{NS}
Cosmo politeness	-0.079^{NS}

*Significant at 0.05 level, **Significant at 0.01 level, NS= Non-significant

Table 4. Constraints in adoption of agricultural technologies by trained rural women (n= 120)

Constraint	Respondents	
	f	%
Non-availability of raw materials	25	20.83
High cost of raw material	10	08.33
Lack of financial assistance	78	65.00
Lack of market facility	33	27.50
Lack of guidance	15	12.50
Lack of adequate time	13	10.83
Non cooperation and lack of family encouragement	50	41.66

Multiple responses

burden and dual responsibility of both home and farm. The probable reasons for lack of market facility might be the distance from the home, no labour to sell products, less marketing channels, spending more money to go to other places to sell their products etc. The constraint of non-availability of raw materials in nearby cities was expressed by 20.83 per cent of trained women. The findings of the study are in accordance with the findings of Raghuparasad et al (2008) and Santhi et al (2013). Lack of guidance (12.50%), lack of adequate time (10.83%) and high cost of raw materials (08.33%) were also other reasons for non-adoption of technologies.

CONCLUSION

The study revealed that more number of trained women adopted dairy management technology whereas less adoption was found in case of seed treatment and integrated farming system. Lack of financial assistance, non-cooperation and lack of family encouragement, lack of market facility, non-availability of raw materials etc were main reasons for low adoption of technologies. Hence the KVK, Bagalkot should conduct feedback and follow up visits to get still better impact of imparted trainings.

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