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KNOWLEDGE AND ADOPTION LEVEL OF DRUDGERY REDUCING TECHNOLOGIES BY FARMWOMEN OF AURANGABAD DISTRICT

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Abstract

Women play a vital role in Indian agriculture and agricultural activities are one of the most drudgery prone occupations of unorganized sector due to lack of access to drudgery reducing technologies. The present study was planned to assess improved drudgery reducing technologies in agriculture and its impact evaluation on farmwomen's knowledge and adoption levels of Krishi Vigyan Kendra (KVK) adopted villages. The study was conducted with four villages of Aurangabad district with 200 respondents (50 respondents each village). Data was collected with structured questionnaire and found that majority of respondents had knowledge of drudgery reducing tools like serrated sickles, cycle hoe, cotton picking coat, Insect probe trap, multiple mittens, safe grain bag, cotton stalk puller, sapling transplanter and solar drier. In context with adoption level 95.5 percent of the respondents were fully adopted serrated sickles technology for harvesting of crops followed by 93.5 percent of respondents were fully adopted the cycle hoe technology for intercultural operation of crops. Whereas multiple mittens, safe grain bag and insect probe trap were fully adopted by more than 80 per cent of respondents. While 65.5 percents of respondents were partially adopted the vegetables sapling transplanter technology for transplanting the vegetables seedlings followed by 57.5 percents respondents were partially adopted the cotton-picking coat technology.

Keywords: Adoption, Drudgery, Farmwomen, Knowledge, Technology.

Introduction

Women as a farmers, laborers and entrepreneurs are the driving force of India's farmland. According to OXFAM 2018, agriculture sector employs 80% of all economically active women in India; they comprise 33% of the agriculture labour force and 48% of the self-employed farmers. In spite of their large contribution women continue to remain invisible in the rural economy of India though they play a very vital role in domestic and socio-economic life of society. (https://fiinovation.co.in/female-participation-in-agriculture-in-india/).This is because these activities fall into the category of home production, the importance of which is yet to be properly acknowledged, at least in most of development world. In general women do all these activities, just for household purpose, without keeping the financial bearing in mind. If they do these jobs on scientific lines with better management and in connection with the information sources, it will boost their family income and uphold their standard of living as well as socio-economic status and which will also help them to compensate their loss in one sector with the profit of other sectors and their family income will be in a secured state.

Multiple challenges faced by women in farms across developing economics, including finding gender-sensitive solutions to reduce drudgery involved in farm work with better technology innovation. The new technologies must be the basis for growth in agriculture which requires recent knowledge, skills and sources of information for the farmwomen. Training is the important need of the farming community in this technological era. The ultimate effectiveness of any programme depends on the ability of the farmwomen to make sound decisions based on the understanding of the alternatives opened to them and on appraisal of their consequences. In order to inculcate sound, practical oriented, need based, location specific, decision making capacity and to update their knowledge, training is vital. Krishi Vigyan Kendra (KVK), is the light house for rural people, is an innovative science-based institution, which undertakes vocational training of farmers, farm women, and rural youths, conducts on-farm research for technology refinement and organizes front line demonstrations to promptly demonstrate the latest agriculture technologies to the farmers as well as the extension workers. The KVK functions on the principles of collaborative participation of scientists, subject-matter experts, extension workers and farmers. The Technological Socialization Process for farm women through KVK has turned to be a unique social process. In the first stage KVK accommodate the innovations or adoptable technologies in the micro-farming system through a capacity building of farm women. The KVKs have been playing a vital role in imparting various activities for farm women which not only increases their knowledge, develop their skill but also reduce the drudgery faced by them during various farm operations and also increased the nutritional status. The KVK implemented On Farm Trial, Front Line Demonstration and training courses in agriculture and allied discipline for farm women with emphasis on learning by doing for higher production on farms, income generation and generating self-employment. In this context R. C. Chaudhary at el. studied during 2017 at Gorakhpur &Deoria districts of Uttar Pradesh by gathering data of 200 farmwomen and stated that a majority (63.5%) of farmwomen had high level of adoption of drudgery reducing tools and implements whereas 26.5 per cent of respondents had medium level of adoption of drudgery reducing

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implement. The study was conducted to understand the beneficiaries and non-beneficiaries' knowledge and adoption level about selected agricultural technologies.

Materials and Method

Krishi Vigyan Kendra, Aurangabad working under Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani was purposively selected for the study. Keeping in view the objectives of the study, total sample of 200 respondents were selected from four villages which was adopted by KVK. Knowledge and adoption level of respondents in respect to drudgery reducing technologies,were collected with the help of structured questionnaire. The collected data were coded and tabulated for applying statistical tools. The analyzed data were interpreted to get meaningful findings.

Result & Discussion

Table 1: Socio –economic profile of the respondents N=200

Particular	Frequency	Percentage
Age		
18 to 25 yrs	18	9
26 to 35 yrs	81	40.5
36 to 45 yrs	50	25
Above 45 yrs	51	25.5
Education level		
Illiterate or informal schooling	37	18.5
Primary (1^{st} to 4^{th} std)	36	18
Middle school (5^{th} to 7^{th} std)	36	18
Higher school (8^{th} to 10^{th} std)	71	35.5
Jr. College (11^{th} to 12^{th} std)	18	9
Graduate (More than 12^{th} std)	02	1
Occupation		
Labour	2	1
Farming	165	82.5
Housewife	31	15.5
Own Business	2	1
Land holding		
Marginal farmer (up to1ha)	95	47.5
Small farmer (1.1 to 2ha.)	87	43.5
Medium farmer (2.1 to 4 ha)	14	7
Big farmer (more than 4.1 ha)	4	2
Annual Income (Rs.)		
50000-100000	42	21
101000-150000	43	21.5
151000-200000	59	29.5
201000-300000	46	23
301000-350000	6	3
More than 350000	4	2
Total	**200**	**100**

Socio-economic profile characteristics of respondents

The socio-economic status of the respondents were analyzed and presented in Table 1. The table 1 showed that majority (40.5%) of the respondent's belonged 25 to 35 years age group where as 25 % of the respondents under the age group of 36 to 45yrs. and above 45 years categories. As far as concern with educational qualification, majorities (35.5%) of them were educated up to higher school (8^{th} to 10^{th} std), 18 per cent of the respondents were educated in primary (1^{st} to 4^{th} std) and middle school (5^{th} to 7^{th}std) while 18.5 of respondents were illiterate,9 per cent of them were up to junior college and 1 percent was completed graduation. It was also observed that majority (82.5%) of the respondents were in the farming occupation followed by 15.5 percent were house wife. With regard to land holding, majority (47.5%) of the respondents belonged to marginal farmer's category with a land holding of up to 1ha. 43.5 percent of them were small farmers with a land holding of 1.1 to 2 ha. While 7 percent respondents belonged towards

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medium farmer (2.1 to 4 ha) and only 2 per cent of them were big farmers (more than 4.1 ha). In respect to annual income of respondents 29.5 per cent were came under Rs. 151000-200000, 23 percent respondents income were Rs.201000-300000 whereas 21.5 percent of them annual income were Rs.101000-150000 and 21 percent Rs.50000-100000. Only 2 percents of the respondent's annual income were more than Rs 350000.

Table 2: Knowledge and awareness regarding drudgery reducing technology of respondents N=200

Sr. No	Name of technology	Frequency	Percentage
1	Cotton Picking coat	198	99
2	Serrated sickle	200	100
3	Cycle Hoe	200	100
4	Cotton stalk puller	168	84
5	Multiple mittens	194	97
6	Sapling transplanter	123	61.5
7	Insect probe trap	196	98
8	Safe grain bag	179	89.5
9	Solar drier	160	80

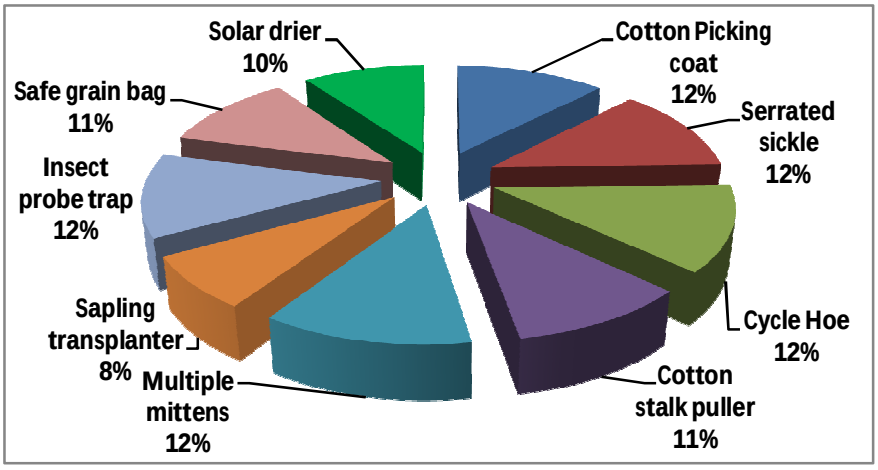

Fig1: Knowledge level of respondents regarding drudgery reducing technology

Knowledge level of respondents regarding drudgery reducing technology

To measure the knowledge level of respondents regarding drudgery reducing selected technologies. Fig 1 depicted that hundred percentages of the respondents were having knowledge and awareness of serrated sickles and cycle hoe whereas ninety nine percent were aware regarding cotton picking coat. In respect to insect probe trap (98%), multiple mittens (97%), safe grain bag (89.5%), solar drier (80%), cotton stalk puller (84%) and 61.5 percent of respondents were aware regarding sapling transplanter. It might be due to their interest and active participation in trainings and demonstration regarding drudgery reducing technologies which was conducted by KVK. Similar findings have been reported by Grupdeshkaur and Rachna Single (2017) in their studied entitled "Mitigating drudgery of farm women through technology intervention in rural Punjab" among 90 farm women in the age group of 20-45 years who were involved in various agricultural operations were selected for this study. A self-structured interview schedule was used to collect data and found that 78.2 percent gain in knowledge regarding drudgery reducing technologies after attended training and demonstration which was conducted by KVK, Patiala. Kumar s. and at el conducted a study with 75 farmwomen in the age group of 28-55 years who were involved in various agricultural activities was selected for these studies and revealed that participation of farmwomen was higher in activities like seed treatment, transplantation, raising nursery, weeding, pruning, grain storage, manual harvesting, picking of vegetables, collection of animal dung and its transportation to fields. After trainings, the farmwomen had 74.6 percent gain in knowledge and skill about drudgery reduction technologies.

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Table 3: Extent of adoption level regarding drudgery reducing technology by respondents N =200

Sr. No	Name of technology	Fully adopted		Partially adopted		Not adopted	
		Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
1	Cotton Picking coat	15	7.5	115	57.5	70	35
2	Serrated sickle	191	95.5	8	4	1	0.5
3	Cycle Hoe	187	93.5	12	6	1	0.5
4	Cotton stalk puller	2	1	66	33	132	66
5	Multiple mittens	163	81.5	32	16	5	2.5
6	Sapling transplanter	23	11.5	131	65.5	46	23
7	Insect probe trap	167	83.5	31	15.5	2	1
8	Safe grain bag	163	81.5	31	15.5	6	3
9	Solar drier	45	22.5	89	44.5	66	33

Extent of adoption level regarding drudgery reducing technology

It has been observed from table 3, the majority (95.5%) of the respondents regarding drudgery reducing serrated sickles technologies followed by cycle hoe (93.5%), insect probe trap (83.5%), safe grain bag and multiple mittens (81.5%) technologies were fully adopted. As far as concern with sapling transplanter (65.5%) , cotton picking coat (57.5%), solar drier (44.5%), cotton stalk puller (33%) , insect probe trap and safe grain bag (15.5%) technologies were partially adopted by respondents where as 66 percent of the respondents were not adopted the cotton stalk puller technology, cotton picking coat technology were not adopted by 35 percent of respondents while 33 percent respondents were not adopted the solar drier technologies as respondents felt it is not easily accessible and they were not habitual to use these improved technology so they were not ready to adopt. The study was carried out with 120 farmwomen from Aurangabad district in the year of 2016 by VrushaliWalmik Jagtap and reported that 60 percent of the respondents had medium level of adoption whereas 30.83 per cent of the respondents had low level of adoption and high level of adoption by 9.17 percent of respondents in respect to serrated sickles.

Conclusion

It can be concluded from this study majority of the respondents were aware regarding drudgery reducing technologies and also enhanced their adoption level in respect to serrated sickle for harvesting of crops, cycle hoe for intercultural operations, insect probe trap, safe grain bag for grain storage and multiple mittens for picking and harvesting of vegetables as they were exposed these technologies by KVK scientist very effectively. Therefore, it is necessary that farmwomen become technologically empowered. Mitigation of drudgery on farm women can lead to empowerment of rural women in terms of physical and mental stress.

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