

Original Research Article

Knowledge of Rural Women about Drudgery Reduction, Grain Storage and Processing Technologies

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ABSTRACT

The objective of the present study was to find out the knowledge of rural women about homestead technologies in Chittorgarh district. The study was conducted in Bhadesar and Bassi panchayat samities of Chittorgarh district of Rajasthan state. From each panchayatsamiti, two villages where the homestead technologies have been promoted by the KVK since last five years were included in the study. The sample consisted of randomly selected 100 rural women, 25 from each village. Personal interview method was used for data collection. Frequency distribution, percentage and mean per cent score were used for analysis of data. The knowledge of the respondents about homestead technologies revealed that majority of the respondents (70-89%) possessed good knowledge about drudgery reduction component. However, their knowledge was found to be average in grain storage and processing and preservation components.

Keywords

Rural women, Knowledge, Drudgery reduction, Grain storage and Processing technologies

Introduction

Indian rural women who fulfill multifarious responsibilities daily without any hue and cry, is the mother, wife or sister responsible for family's well-being as well as a farmer producing food for the family. She does not hold any apparent and discrete identity of her own on world platform but undoubtedly perform the most arduous and time consuming work behind the curtain without much resources and technologies at her disposal. Although she does all the multiple productive functions from bearing the children to performing house hold chores, her role has often been underestimated or ignored. It is a matter of great concern that in spite of magnificent tradition of women's

participation in the affairs of the family, women still lag behind men in every sphere. In spite of the rapid strides made in scientific and technological development women has not yet received due importance in transfer of technology programmes. Technological innovations and their reach to the rural women can result in enhancing women's welfare and their empowerment. Low cost, reliable homestead technologies related to nutrition, health and sanitation, drudgery reduction, post-harvest technologies etc. can provide a great leap forward for meeting rural women's practical needs for reducing their drudgery, increasing their efficiency and improving family's health condition. However, presently access of women to

improved technology is meager mainly due to lack of knowledge. Hence, the present study was undertaken with the objective to find out knowledge of the rural women about selected homestead technologies.

Materials and Methods

The study was conducted in Chittorgarh district of Rajasthan state. The district has 11 Panchayat Samities out of these; two Panchayat Samities namely Bhadesar and Bassi were selected purposively where the homestead technologies have been promoted by the KVK since last five years (2009-2013). Total four villages from two selected panchayat samities were included in the study. Sample for the study consisted of 100 rural women, 25 from each village. Personal interview method was used to collect the data from the respondents. Frequency, percentage, mean percent score were used for analysis of the data.

Results and Discussion

Background information of the respondents: More than 40 per cent respondents belonged to the age group of 18-30 years and 38 per cent were from 31-45 years of age. Majority of the respondents (60%) were under upper caste category. Regarding education, 29 per cent respondents were illiterate and 24 per cent were educated up to middle level. Only 15 per cent respondents were graduates. Farming was the main family occupation of 89 per cent respondents. All the respondents were involved in some subsidiary occupations like farm labor, business and service. Majority (63%) belonged to nuclear family. More than 40 per cent respondents had small size family consisting of up to 4 members. Majority of the respondents (62%) were small and marginal farmers. Majority of the respondents (75%) were residing in pucca houses.

Knowledge of the respondents about drudgery reduction, grain storage and processing technologies

Fig. 1 presents knowledge of the respondents about drudgery reduction, grain storage and processing technologies. Critical examination of the knowledge score highlights that the respondents possessed good knowledge about drudgery reduction (82.03 MPS). However, their knowledge was found to be average in grain storage (51.16 MPS) and processing and preservation (66.94 MPS).

An in depth enquiry into knowledge of the respondents in different components was made to find out specific deficiencies in knowledge so that necessary efforts can be made to increase the knowledge of the rural women about homestead technologies

Drudgery reduction

Perusal of Table 1 reveals that the rural women had good knowledge about improved tools and appliances as cent percent respondents knew about chips maker, lemon squeezer, *poori* making machine, pressure cooker and electric butter churner. Similarly 60-70 per cent respondents had knowledge about electric mixer grinder, potato peeler and grater. The reason for good knowledge of the respondents was that majority of the respondents possessed these kitchen tools and appliances and were using these on regular basis to improve their work efficiency.

Data presented in Table 2 clearly depict that all the respondents (100%) had knowledge about various advantages of chips maker, lemon squeezer, *poori* making machine, pressure cooker and electric butter churner. Similarly majority of them (70-89%) knew about advantages of potato peeler, grater, electric mixer grinder viz. time saving, energy saving and easy to operate.

The results are in conformity with findings of Sant (2006) who concluded that majority of the respondents had knowledge about pressure cooker (77%), grater (65%), butter churner (57%), mixer grinder (50%), lemon squeezer (48%) and potato peeler (42%). Some of the respondents also had knowledge of *poori* making machine (30%).

Grain storage

Table 3 depicts knowledge of the respondents about storage of food grain. Regarding storage insects, it was found that none of the respondents was able to tell the scientific name of insects however, they could tell the common name of some of the insects like *Khapra* (92%) and *Ghun* (89). When asked about the improved storage structures, it was found that 32 per cent respondents had knowledge about metal bins however, none of them knew about cemented and stone slab bins. Cent per cent respondents had knowledge about treatment of bins by neem leaves however, no one knew about melathian spray before storage. All the respondents (100%) were aware of the method of sun drying for treatment of gunny bags however, no one had knowledge of treatment of gunny bags by boiling in hot water or using insecticide.

For storage of produce proper placement of structures also counts a lot. It was encouraging to note that 84 percent respondents were aware of the fact that the storage bin should be kept above plinth level and away from the wall. Similarly 63 per cent respondents knew that storage structure should be kept away from the dampness. Another important point with regard to storage i.e. prevention from direct sunlight was known to only 38 per cent respondents. With regard to considerations while storing the produce, it was found that 98 per cent respondents knew that old and new grains

should be kept separately and 78 per cent respondents had knowledge that produce should be cleaned properly before storage. The storage structure should be kept airtight was known to 70 per cent respondents. Other important precautions like proper drying of produce before storage and cooling of grain at room temperature after drying were known to only 23 and 21 per cent respondents, respectively.

When the respondents were asked about importance of using inlet and outlet in storage structure, 79 per cent respondents reported that it makes the bin moisture proof. Similarly 89 per cent respondents knew that it also checks the entry of insects and pests in the bin. None of the respondents reported that use of inlet-outlet regulates the oxygen content in the storage structure.

With regard to knowledge of the respondents about rat control, it was found that cent percent respondents had knowledge about use of iron cages and poison bait for rat control. More than 70 per cent respondents knew that the problem of rats at domestic level could be solved by making storage structure rat proof. However, they were not able to tell the exact name of rodenticides used for rat control and method of preparing poison bait. As far as precautions in the use of poison bait were concerned, it was found that though 78 per cent respondents had knowledge that the poison bait should be kept away from the reach of the children however, only 17 per cent respondents knew that bait should be kept away from water. Similarly 30 per cent respondents knew that non poisonous bait should be placed before placing poison bait to attract the rats. When further asked about disposal of dead rats and remaining poison bait, 89 per cent respondents had knowledge about the method of burying in the ground and no one knew about burning.

Preservation and processing

Fruits and vegetables are important for the well being of an individual. They not only provide essential vitamin and minerals but are also rich in roughage or dietary fibers. In our country, the diet of rural people is generally deficient and lack in body-building foods such as fruits and vegetables. This might be due to widespread illiteracy and unawareness of women about their functions and various food preservation and processing technologies. Hence, knowledge of the rural women about preservation and processing of food material was assessed.

Data presented in Table 4 reveal that majority of the respondents knew about nutrients found in soybean i.e. protein (67%), calorie (81%) and fat (61%). Likewise, almost all the rural women (94-100%) were aware about the soya products viz. soya milk, flour, curd and *badi / papad*. Regarding method of preparing soya products, it was recorded that majority of the respondents (77-85%) knew

about soya milk and soya flour however, none of them was aware of method of preparing soya curd. Processing of soybean before consumption by boiling and soaking was known to 42 and 7 per cent respondents, respectively.

With regard to knowledge of the rural women about preservation of fruits and vegetables, Table 5 reveals that majority of the respondents (77-89%) had knowledge about various products that can be prepared by fruits and vegetables like jam, jelly, squash, sauce, *chutney*, pickle and *murabba*. Regarding importance of preservation, 75 per cent respondents knew that it ensures off season availability of fruits and vegetables and 21 per cent respondents knew that it adds variety to meal. Cent percent respondents had knowledge about method of preparing mango pickle, 69 per cent respondents knew about anola *murabba* and more than 40 per cent respondents knew about method of preparing squash.

Table.1 Knowledge of the respondents about drudgery reduction technologies
n=100

S. No.	Items	Purpose	f / %
1.	Potato peeler	Peeling of vegetables and fruits	70
2.	Electric mixer grinder	For blending, grinding, churning and mixing of food materials	60
3.	Chips maker	To make slices of potato / raw banana	100
4.	Lemon squeezer	For extracting lemon juice	100
5.	Grater	For grating vegetables	70
6.	<i>Poori</i> making machine	To make <i>poori</i> and <i>papadi</i>	100
7.	Pressure cooker	To cook food by steaming and boiling	100
8.	Electric butter churner	For churning curd and extracting butter and buttermilk	100

Table.2 Knowledge of the respondents about advantages of drudgery reduction technologies

n=100

S. No.	Advantage	Potato peeler f / %	Electric mixer grinder f / %	Chips maker f / %	Lemon squeezer f / %	Grater f / %	Poori making machine f / %	Pressure cooker f / %	Electric butter churner f / %
1.	Time saving	70	89	100	100	70	100	100	100
2.	Energy saving	70	89	100	100	70	100	100	100
3.	Easy to operate	70	89	100	100	70	100	100	100
4.	Easily available	70	89	100	100	70	100	100	100
5.	Protect hands from cuts	70	NA*	100	NA	NA	NA	NA	NA
6.	Complete juice can be extracted	NA	NA	NA	100	NA	NA	NA	NA
7.	Fine and even grating	NA	NA	NA	NA	70	NA	NA	NA
8.	Proper shape of <i>poori</i>	NA	NA	NA	NA	NA	100	NA	NA
9.	Cooking becomes faster	NA	NA	NA	NA	NA	NA	100	NA
10.	Saves fuel and don't require continuous attention	NA	NA	NA	NA	NA	NA	100	NA
11.	Large amount of curd can be churned at a time	NA	NA	NA	NA	NA	NA	NA	100
12.	Any type of food can be grinded	NA	89	NA	NA	NA	NA	NA	NA

Table.3 Knowledge of the respondents about storage of grain

n=100

S. No.	Aspect	f / %
1.	Major storage insects of wheat and maize a) <i>Rhizopertha dominica</i> (Sureri) b) <i>Tricoderma granarium</i> (Khapra) c) <i>Callosobruchus maculatus</i> (Pulse Beetle/Ghun) d) <i>Sitophilus oryzae</i> (Susari)	0 92 89 0
2.	Scientific storage structures	32
3.	Improved storage structures a) Cemented Bin b) Metal Bin c) Stone Slab Bin	0 32 0
4.	Methods of treatment of bin before storage a) Neem leaves b) Melathian spray	100 0
5.	Prevention of mud bin from termite attack a) Use of chloropyriphos/ Endosulphan/ Methyle parathion 2% powder	0
6.	Treatment of gunny begs a) Treatment by fumigants/ Melathian/Nuvan or any other insecticide b) Boiling in hot water c) Sun drying	0 0 100
7.	Placement of Storage structure a) Should be kept away from the dampness b) Prevented from direct sunlight c) Above plinth level and away from the wall	63 38 84
8.	Considerations in storage of produce a) Proper drying of produce before storage b) Keeping old and new grain separately c) Cooling of grain at room temperature before storage d) Proper cleaning of produce before storage e) Keeping storage structure airtight	78 98 21 23 70
9.	Importance of inlet and outlet in storage bin a) To make bin moisture proof b) To avoid entry of insects and pests c) To regulate the oxygen content in the structure	79 89 0
10.	Methods of rat control at household level a) By making storage structures rat proof b) Use of cages	74 100

	c) Use of poison bait	100
11.	Name of rodenticides used for rat control a) Zinc phosphide b) Anticoagulant (Rodoferin, Bromolidiyon)	0 0
12.	Method of preparing poison bait (zinc phosphide) a) 1 Kg flour + 20-25 gm zinc phosphide + 20 ml edible oil + Jaggery	0
13.	Points to be kept in mind while placing poison bait a) Non poisonous bait should be placed before placing poison bait b) Bait should be kept away from water c) Bait should be kept out of reach of children	30 17 78
14.	Disposal of dead rats a) By burying b) By burning	89 0
15.	Disposal of remaining poison bait a) By burying b) By burning	89 0

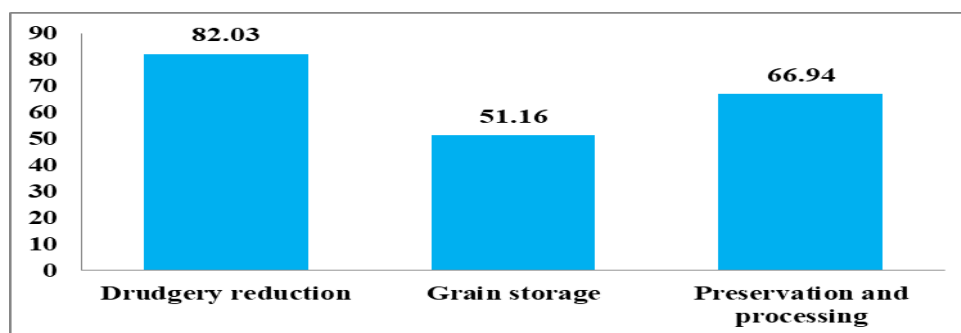
Table.4 Knowledge of the respondents about processing of soybean
n=100

S. No.	Aspects	f / %
1.	Nutrients found in soybean a) Protein b) Calorie c) Fat	67 81 61
2.	Soya products a) Soya milk b) Soya flour c) Soya curd d) Soya badi / papad	100 100 94 94
3.	Methods of preparing soya products a) Soya milk b) Soya flour c) Soya curd	77 85 0
4.	Processing soybean before consumption a) By soaking b) By soiling	7 42

Table.5 Knowledge of the respondents about preservation of fruits and vegetables
n=100

S. No.	Aspect	f / %
1.	Importance of preservation of fruits & vegetables food stuff a) Off season availability b) Adds variety to meal c) Make meal attractive	75 21 0
2.	Preserved product from fruits and vegetables a) Jam b) Jelly c) Squash d) Sauce e) <i>Chutney</i> f) Pickle g) <i>Murabba</i>	82 84 77 74 83 89 84
3.	Method of preparing following preserved product a) Mango pickle b) Squash c) <i>Anola Murabba</i>	100 42 69
4.	Chemicals used for preservation of fruits and vegetable a) Sodium benzoate b) Potassium metabisulphite	75 36
5.	Natural preservatives used in preservation of fruits and vegetable a) Oil b) Salt c) Sugar d) Vinegar	100 100 72 29
6.	Consideration during storage of preserved products a) Use of sterilized jars, b) Store in cool and dry place c) Use of air tight container	68 89 92

Fig.1 Knowledge of the respondents about drudgery reduction, grain storage and processing technologies



With respect to use of chemical preservatives, 70 per cent respondents had knowledge about sodium benzoate whereas, only 36 per cent respondents knew about potassium metabisulphite. Cent percent respondents had knowledge about salt and oil as a natural preservative in fruits and vegetables likewise, more than 70 per cent respondents had knowledge about sugar and 29 per cent knew about use of vinegar as a natural preservative in fruits and vegetables. Majority of the respondents had knowledge about points to be considered during storage of preserved products i.e. use of sterilized jars and airtight container and storage in cool and dry place.

Mandowara (2005) also observed that the majority of the respondents (53%) had average knowledge about fruit and vegetable preservation technologies, nearly 12 per cent had good knowledge and 35 per cent respondents had poor knowledge. Regarding importance of preservation, 57 per cent respondents could tell about availability of the product round the year, prevent spoilage of foods (36%), save money (20%) and adds variety in diet (16%). Nearly 43 per cent respondents knew about various methods of preservation viz. pickling, *chutny*, *murabba* etc. A majority of the respondents (70%)

knew about use of salt and oil as natural preservatives while, 26 per cent knew about chemical preservatives.

Based on the findings it could be concluded that the respondents had good knowledge about drudgery reduction component however, their knowledge was found to be average in grain storage and processing and preservation components. Hence, in order to improve knowledge of the rural women about homestead technologies it is utmost important to educated and train them in the grain storage and processing and preservation components.

References

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