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# A Study on Knowledge and Adoption Level of Improved Animal Husbandry Practices by Farm Women of Haryana

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### Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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## ABSTRACT

The study was conducted in kurukshetra district of Haryana to assess the extent of knowledge and adoption level of farm women for improved animal husbandry practices. Four villages were selected at random from randomly selected two blocks of kurukshetra district and finally 160 respondents selected purposively for the study. Thirty five practices of improved animal husbandry were subdivided into seven major aspects of animal husbandry viz., housing, feeding, pregnant & calf management, breeding management, health management, milking management and marketing. Semi structured interview schedule was used to collect the data, using personal interview. Majority of the respondents had higher knowledge about breeding management with mean knowledge score (4.88) followed by milking management (4.71), health management (4.66), pregnant animal and calf management (4.13) and housing (3.51). Medium level of knowledge of women was found in case of feeding (3.0). The poor knowledge of respondents among all the practices was found about marketing (1.54). In case of adoption the higher adoption mean score was found in health management (4.79) followed by breeding management (4.66), milking management (4.24), pregnant animal and calf management (4.12). Medium level of adoption was reported in case of feeding and low adoption in marketing practices. The age of the respondents was positively correlated with

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women knowledge in animal husbandry while age and farm assets were negatively correlated with adoption of animal husbandry practices by women.

*Keywords: Kurukshetra; women; knowledge; adoption; animal husbandry; extent; mean score.*

## 1. INTRODUCTION

Animal husbandry development in India has played a major role in increasing milk production, improving the nutritional standards of the people, generating employment opportunities, improving income level in rural areas, especially for small and marginal farmers. They constitute about 55 per cent to the total agricultural labour and 60 per cent of the labour engaged in livestock. Therefore, educating rural women about modern technologies in agriculture, animal husbandry and allied fields can go a long way in enhancing their knowledge and skill and ultimately, the productivity of the system and farm incomes.

To make livestock extension programme effective it is imperative to study the involvement of women, their perception and knowledge. Studies have revealed rural women earn extra income from the sale of milk and animals. Mostly women are engaged in cleaning of animal, sheds, watering and milking the animals. Rural women are also responsible for collection, preparing dung cakes an activity that also brings additional income to poor families. Evidently, rural women are involved in almost all livestock related activities. Except grazing, all other livestock management activities are predominantly performed by females. Majority of women are involved in shed cleaning and collection of farm yard manure. Males, however, share the responsibility of taking care of sick animals. It is evident that the women are playing a dominant role in the livestock production and management activities. Achieving self sufficiency in animal husbandry price stability is important objective in low-income countries. To achieve this goal one important factor is to make farmers knowledgeable about improved practices of animal husbandry.

However, with the changing scenario, the need for involving changes in extension programmes and approaches is being felt for capacity building and skill up gradation of farm women. The research systems have generated highly useful results for synthesis of appropriate technologies for farmers, most of these have been either not adopted or adopted, partially. Since adoption is a decision to make full use of a new technique as

the best alternative available, it is affected by many factors like farming situation, resource availability, needs and aspirations of the farmers having different socio economic and cultural background.

Real strides in poverty alleviation cannot be achieved unless women are fully included in all the benefits from improved practices. Keeping the above facts in mind the present study was carried to assess the extent of knowledge and adoption level of farm women for improved animal husbandry practices.

## 2. MATERIALS AND METHODS

Out of the two existing farming system in Haryana, one dominant farming system with one major crop of the state i.e. rice along with animal husbandry was selected, purposively. Rice is grown in 18 districts of Haryana. Out of which seven districts are in high productivity group, that is, yield more than 2,500 kg/hac. Out of seven districts under high productivity, Kurukshetra district was selected purposively due to maximum yield in the state. A list of blocks and villages adopted by KVK, Kurukshetra was procured. From the list, two blocks were randomly selected i.e. Thanesar and Ladwa block. Two villages from each block were selected randomly. The villages selected from Thanesar block were Jyotiser, Bhorsaida and villages Mehrabakali and Badarpur from Ladwa block. Purposive selection of 40 women farmers from small land holding categories from each village growing rice along with animal husbandry and thus a total of 160 farm women rice-growers were selected as the sample for the study. Knowledge in the present study was operationalized as the range of information and theoretical or practical understanding. In simple words, it was the sum of what was known. The knowledge score of farm women about various practices of paddy cultivation and animal husbandry were calculated with the help of close ended knowledge inventory of AICRP. The respondents were asked to reply on each of the component comprised of several knowledge indicating question related to the practices. The responses of the respondents were obtained under dichotomized categories Yes / No. Thus,

the scores assigned to the responses were one and zero respectively. The aggregate scores of each respondent for various component of the practice were computed to work out of overall knowledge scores for various messages.

Adoption has been operationalised as the new practice learned by the respondent has been adopted practically. This was measured with the help of pre tested structured interview schedule. A list of all the practices/technologies was prepared. The respondents responses were recorded against each selected practice on a two continuum namely Adoption and No adoption with the respective score of 1 and 0. On the basis of total adoption, adoption scores were computed. The knowledge and adoption of animal husbandry was comprised of the following practices.

### 2.1 Animal Husbandry

Housing, feeding, pregnant animal and calf management, breeding management, health management, milking management, marketing, implements and machines. The data were collected with the help of a pre-tested and validated interview schedule.

### 3. RESULTS AND DISCUSSION

Knowledge is defined as the person range of information and theoretical or practical understanding. As per the requirements of the study, attempts were made to find out knowledge of rural women towards improved practices. The knowledge level of farm women was seen for seven different practices. These were housing,

feeding, pregnant & calf management, breeding management, health management, milking management and marketing. The sampled villages were adopted by Krishi Vigyan Kendra Kurukshetra for providing awareness and knowledge on different aspects of improved home and farm practices.

### 3.1 Knowledge Level of Farm Women for Improved Animal Husbandry Practices

The overall knowledge level of farm women in different aspect of animal husbandry practices in the study area is depicted in Table 1. The result indicated the knowledge of farm women for improved practices in seven major aspects of animal husbandry viz., housing, feeding, pregnant & calf management, breeding management, health management, milking management and marketing and the knowledge mean score were found to be 3.51, 3.0, 4.13, 4.88, 4.66, 4.71 and 1.54 respectively. High level of knowledge was observed in breeding management practices while low level of knowledge was in marketing.

The data in Fig. 1 highlight that on the basis of knowledge mean scores majority of the respondents had higher knowledge about breeding management as evident by their mean knowledge score (4.88) followed by milking management (4.71), health management (4.66), pregnant animal and calf management (4.13) and housing (3.51). Medium level of knowledge of women was found in case of feeding (3.0). The poor knowledge of respondents among all the practices was found about marketing (1.54).

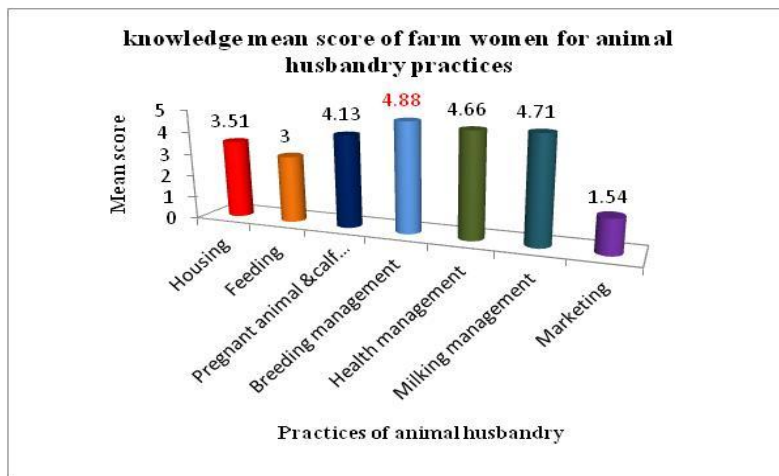


Fig. 1. Knowledge mean score of farm women for animal husbandry practices

**Table 1. Knowledge level of farm women for improved animal husbandry practices**

					N=160
Sr. no.	Practices	Knowledge statements	Frequency	Percentage	Knowledge mean score
1.	Housing	Ideal type of house and floor	160	100.00	3.51
		Drainage slope	44	27.50	
		Space between the animals	160	100.00	
		Orientation of house	37	23.13	
		Importance of ventilation	160	100.00	
2.	Feeding	Crop residues feed to animals	160	100.00	3.0
		Important to prepare silage	-	-	
		Necessary to prepare hay	-	-	
		Cement /brick manger	160	100.00	
		Feeding concentrates	160	100.00	
3.	Pregnant animal & calf management	Pregnancy diagnosis method	160	100.00	4.13
		Special care during pregnancy	147	91.88	
		Colostrums good for health	160	100.00	
		Necessary to seal the navel cord	123	76.88	
		Feeding time of calf with mother milk	70	43.75	
4.	Breeding management	Age of heifer come to heat	160	100.00	4.88
		Age to be inseminated	160	100.00	
		Animal in heat	160	100.00	
		Ideal intercalving period	155	96.88	
		Recommended practice if animal is not come to heat	145	90.63	
5.	Health management	Regular cleaning/grooming	160	100.00	4.66
		Vaccination important against contagious diseases	116	72.50	
		Importance of deworming to the animal	160	100.00	
		Isolate sick animals	150	93.75	
		Keeping the cattle shed clean reduces the incidence of worms, ticks, lice & diseases	160	100.00	
6.	Milking management	Washing udder and utensils	160	100.00	4.71
		Straining of milk to removes dirt & impurities	160	100.00	
		Washing hands before milking	160	100.00	
		Correct method of milking	133	83.13	
		Type of utensils used for milking	141	88.13	
7.	Marketing	Aware of milk co-operatives societies	-	-	1.54
		Selling of milk to private milk production is not profitable	66	41.25	
		Aware of purity testing mean	-	-	
		Fat Content of milk	20	12.50	
		Important to know the market rates/trends before selling	160	100.00	

Out of 35 practices of animal husbandry, the maximum knowledge was found in awareness of ideal type of house and floor, space between the animals, importance of ventilation, crop residues feed to animals, feeding concentrates,

colostrums good for health, age of heifer come to heat and to be inseminated, recognize an animal in heat, importance to clean the shed, washing udder and utensils, milk to be strained to remove dirt and impurities and important to know the

market rates before selling followed by ideal intercalving period, important to isolate sick animals, recommended practice if animal is not come to heat, correct method of milking and type of utensils used for milking. The inferences may be drawn from the results of the study that farm women had high knowledge about breeding, milking, health and housing management. It implies that management practices of animal husbandry are generally performed by women farmers which are very common and simple and does not involved any complexity. The poor knowledge of the respondents about marketing might be due to unawareness and ignorance of complicated procedure. Bhatt [1] concluded that slightly more than four fifth (83.00%) of milk producers had medium level of knowledge regarding improved animals husbandry practices. It can be summarized that women have a great deal of information about local feed resources and a good working knowledge of animal behavior, feed preference and production characteristics. Low level knowledge was found in fat content of milk and what should be orientation of animal house. Lack of knowledge of respondents was observed regarding importance of hay and silage and purity testing mean. The findings of Deepak and Singh [2] and Bhatt [3] supported the present study. They reported that that cent percent of the dairy farmers possessed knowledge about average period of gestations in buffalo/cow and Artificial Insemination, followed by more than 90 percent of the dairy farmers had knowledge regarding importance to clean the udder before milking and

symptoms of a buffalo/cow being in heat/estrus, while slightly more than forty percent of the dairy farmers had aware of the need of concentrate to a advanced pregnant animal. High level of knowledge was recorded in case of buffalo coming in heat after calving, age of first calving, right time of insemination. The findings were in close agreement with Raval and Chandawat [4].

### 3.2 Adoption Level of Farm Women for Improved Animal Husbandry Practices

Animal husbandry sector plays a vital role in providing household nutritional security, increase income and employment especially of women and is rural transformation. The ability of the rural women to generate more income from animal husbandry largely depend on the effective adoption of improved animal husbandry practices that lead to increase in the productivity. The adoption level of farm women was seen for seven different practices. The result presented in the Table 2. indicated the adoption level of farm women for improved practices in seven major aspect of animal husbandry viz., housing, feeding, pregnant and calf management, breeding management, health management, milking management and marketing and the adoption mean score were found to be 3.86, 3.0, 4.12, 4.66, 4.79, 4.24 and 1.08 respectively. High level of adoption was observed in health management practices while low level of adoption was in marketing.

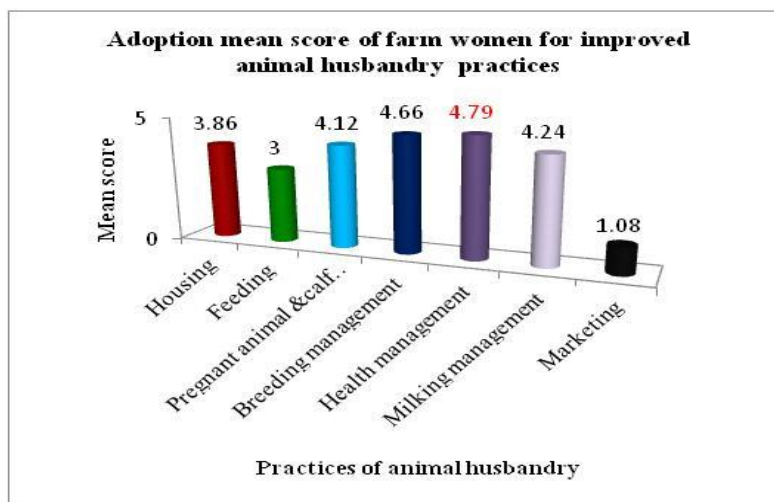


Fig. 2. Adoption mean score of farm women for improved animal husbandry practices

**Table 2. Adoption level of farm women of improved animal husbandry practices**

N=160					
Sr. no.	Practices	Adoption statements	Frequency	Percentage	Adoption mean score
1.	Housing	Had pucca cattle shed with brick flooring	160	100.00	3.86
		Maintained the drainage slope	92	57.50	
		Space between the animals	144	90.00	
		Orientation of shed in the East-West direction	64	40.00	
		Maintained proper Ventilation	158	98.75	
2.	Feeding	Feed Crop residues to animals	160	100.00	3.0
		Prepare silage	-	-	
		Prepare hay	-	-	
		Cement /brick manger has been constructed	160	100.00	
		Feeding concentrates as per recommended	160	100.00	
3.	Pregnant animal & calf management	Pregnancy diagnosis method	160	100.00	4.12
		Special care during pregnancy	160	100.00	
		Feed Colostrums	160	100.00	
		Seal the navel cord after birth	96	60.00	
		Feeding of calf with mother milk	83	51.88	
4.	Breeding management	Wait for right age consider animal for breeding	160	100.00	4.66
		Animal inseminated by natural method	160	100.00	
		Select the breed by which the animal should be inseminated	116	72.50	
		Maintain ideal intercalving period	149	93.13	
		Practice if animal is not come to heat	160	100.00	
5.	Health management	Regular cleaning/grooming of animal	160	100.00	4.79
		Animal vaccinated against contagious diseases	160	100.00	
		Take up deworming regularly	154	96.25	
		Isolate sick animals	133	83.13	
		Clean cattle shed everyday	160	100.00	
6.	Milking management	Wash udder and utensils before milking	160	100.00	4.24
		Strain the milk	160	100.00	
		Wash hand before milking	160	100.00	
		Adopt Correct(full hand method) method of milking	74	46.25	
		Steel utensils used for milking	124	77.50	
7.	Marketing	Member of milk co-operatives societies	-	-	1.08
		Sell milk through co-operatives societies	-	-	
		Test for purity of milk	-	-	
		Selling milk product	13	8.13	
		Know the market rates/trends before selling	160	100.00	

In breeding management, more than 90 percent respondents maintained the ideal intercalving period. Under housing practices, majority had maintained space between the animals and proper ventilation.

Majority of the respondents had medium level of adoption (mean score 3.0) in feeding practices. They were feeding concentrate as per recommendation but had not given priority to the preparation of hay and silage. The results so appeared may be due to the fact that farm women know the importance of concentrates. Whereas the farm women are not given priority to preparation of hay and silage due to the unawareness about importance and method of preparation of hay and silage making. The results are supported by the observation of Sharma and Singh [5] also reported that 51.57 percent respondents had medium level in case of feeding practices.

The high level of adoption was found in breeding management, milking management, health management and pregnant animals and calf management. The higher adoption was recorded in pregnant diagnosis, care during pregnancy, vaccination of animals and cleaning before milking and colostrums feeding to newly born calf. The farm women were aware of the advantages of colostrums feeding to newly born calf because it develops antibodies and laxative for newly born calf. The other reason could be due to the fact that farm women are more attentive for taking care of their buffaloes.

The data in Fig. 2. highlight that higher adoption mean score was in health management (4.79) followed by breeding management (4.66), milking management (4.24), pregnant animal and calf management (4.12). Medium level of adoption was in feeding and low adoption in marketing practices.

### 3.3 Relationship between Socio-personal and Economic Variables with Farm Women’s Knowledge and Adoption of Improved Practices

In order to find out the relationship between socio-personal and economic variables with knowledge and adoption of the respondents Pearson product correlation coefficient was applied.

The relationship of women knowledge of practices in animal husbandry with independent variables revealed that age was found significantly

correlated with women knowledge in animal husbandry. With the age of the respondents knowledge level in animal husbandry was increased.

**Table 3. Correlation between women’s independent variables and their knowledge for improved animal husbandry practices**

Sr. No.	Variables	r value
1.	Age	0.342*
2.	Caste	-0.053
3.	Education	-0.073
4.	Family type	0.119
5.	Family size	0.114
6.	Land holding	0.028
7.	Family occupation	0.067
8.	Farm assets	-0.099
9.	Family income	0.001
10.	Livestock ownership	-0.076

*\*Significant at 5% level*

**Table 4. Correlation between women’s independent variables and their adoption for improved animal husbandry practices**

Sr. No.	Variables	r value
1.	Age	-0.169*
2.	Caste	-0.147
3.	Education	0.064
4.	Family type	-0.016
5.	Family size	0.005
6.	Land holding	-0.064
7.	Family occupation	0.070
8.	Farm assets	-0.166*
9.	Family income	0.005
10.	Livestock ownership	-0.017

*\*Significant at 5% level*

The results exposed that age and farm assets were found to be significantly but negatively correlated with adoption of animal husbandry practices by women. Respondents who were younger and had less numbers of farm assets adopt more animal husbandry practices. This may be due to the reason that most of the respondents were marginal and small farmers and were having less no of farm assets (improved agricultural implements).

## 4. CONCLUSIONS

On the basis of the findings of the study it may be concluded that the majority of the respondents possessed higher knowledge about breeding management (4.88) followed by milking management (4.71), health management (4.66),

pregnant animal and calf management (4.13) and housing (3.51). Medium level of knowledge of women was found in case of feeding (3.0). The poor knowledge of respondents among all the practices was found about marketing (1.54). In case of adoption the result further reported that higher adoption was found in health management (4.79) followed by breeding management (4.66), milking management (4.24), pregnant animal and calf management (4.12). Medium level of adoption was reported in case of feeding and low adoption in marketing practices.

Most of the respondents had better knowledge and adoption about improved practices of animal husbandry is a clear index of progressiveness of women farmer in Kurukshetra district. Still there is scope for organizing more extension education programmes like training, calf mela, Kisan mela and other activities to increase the knowledge of women farmers. Farming has been increasingly the profession of rural women and women need much greater access to technical information through training institutions like training centers, Krishi Vigyan Kendras and agricultural universities.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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