

Original Research Article

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## Adoption Level of Animal Husbandry Practices in Haryana, India

Anil Kumar Rohila<sup>1\*</sup>, P.S. Shehrawat<sup>1</sup> and Aditya<sup>2</sup>

<sup>1</sup>Department of Extension Education, <sup>2</sup>College of Agriculture, CCS Haryana Agricultural University, Hisar-125004, India

\*Corresponding author

### ABSTRACT

Present study was conducted in Haryana to find out adoption level of animal husbandry practices in Haryana. The data were collected with the help of well-structured and pretested interview schedule and analyzed through computer software Statistical Package for Social Sciences (SPSS) for tabulating results and drawing conclusions and recommendations. Present study concluded that adoption level was high about allow the animal to mate within 3 months after parturition (67.41%), mineral mixture (76.85%), protect the animals from harsh weather conditions (77.78%), disinfect the udder before milking (100.00%), and proper ventilated house for animals (72.59%). Study also concluded that 43.00 per cent variation in the adoption of the respondents regarding smart animal practices when other factors were kept constant.

#### Keywords

Adoption, Breeding, Feeding, Health and Practices

#### Article Info

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### Introduction

Dairying is a main occupation in rural India and provides employment and income. Now a day dairy farming has become a commercial enterprise and helps the farmers to improve their economic condition.

Milk production has been estimated to be increased by 6.4 per cent in 2016-17 over 2015-16. While, in case of seasonal estimation, the total milk production has increased from 51.33 Million Tonnes during 2016-17 (Summer) to 53.77 Million Tonnes during 2017-18 (Summer) with the growth

rate of 4.7 per cent (Anonymous, 2018). The Government of India (GOI) estimated demand for milk to increase to 200 million metric tons (MMT) by the year 2021- 22, requiring a 20 per cent increase in milk production.

So, Government of India has implemented the National Dairy Plan (NDP) through the National Dairy, Milk, Nonfat Dry Dairy, Milk, Fluid Dairy, Butter Dairy Development Board (NDDDB) which focuses on breed/genetic improvement, artificial insemination, fodder development and expansion of milk procurement systems at the village level (Anonymous, 2017).

Keeping these factors in mind, the present investigation was planned to identify the adoption level of animal husbandry practices in Haryana state of India.

### **Materials and Methods**

The study was conducted in Haryana state in 2017. Two districts viz. Hisar from South-West Zone and Kaithal from North-East Zone were selected, purposively. Further, three villages from each district were selected, randomly.

Thus, six villages namely, Ladwa, Shahrwa and Rawalwas Khurd villages from Hisar, while, Kaul, Rasina and Bhana villages from Kaithal were selected, randomly. Further, thirty farmers were selected, randomly from each selected village. Thus, a total number of 180 respondents were interviewed for the present study.

A schedule was developed to measure the adoption level after paid a deep discussion with advisory committee, experts and professionals. Available research based literature were also reviewed for the preparation of the interview schedule. The responses of farmers were obtained on three-point continuum scale as full adoption', 'partial adoption' and 'no adoption' and weightage were given as 3, 2 and 1, respectively. Aggregate total weightage score was calculated for each statement separately and on the basis of calculated score, total weighted score and weighted mean score were obtained. Further, rank orders were assigned based on the weighted mean score.

Adoption index was calculated with the following formula:

$$\text{Adoption Index (A.I.)} = \frac{\text{Total obtained adoption score}}{\text{Maximum possible obtained adoption score}} \times 100$$

### **Results and Discussion**

#### **Breeding**

It is clear from Table 1 that practice about 'allow the animal to mate within 3 months after parturition' ranked 1<sup>st</sup> with highest adoption index (A.I.) 67.41 per cent, followed by 'animal checkup time to time during pregnancy' (64.44%), 'diagnosis of your animal for pregnancy' (64.07%), and 'artificial insemination (A.I.) practices' (55.74%) ranked 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>, respectively. However, 'artificial insemination (A.I.) within 12 hours after detection of heat' ranked 5<sup>th</sup> with lowest adoption index. It was further revealed from research findings that farmers with less land holding had low level of adoption in buffalo husbandry practices. The extension agencies in study area need to take immediate initiatives to take up extension programs to enhance the farmers' awareness or knowledge level about the dairy farmers about breeding practices. Sharma and Singh (2011) and Sachan *et al.*, (2016) reported similar findings.

#### **Feeding**

Data presented in Table 2 showed that 'mineral mixture' was highly adopted, followed by 'colostrums to new born calves up to 3-5 days after its birth' (66.30%) and 'green fodder to the animal regularly' (66.30%) both were ranked 2<sup>nd</sup>. While, 'to feed extra 1-2kg concentrate to pregnant animal' (65.37%) and 'to feed concentrate mixture on the basis of milk production' (63.89%) ranked 3<sup>rd</sup> and 4<sup>th</sup>, respectively. Adoption of feeding practices can be increased through mass media and training programs at village level in collaboration of village panchayat. These finding were found to be partially support by reports of Aulakh *et al.*, (2011); Kumawat and Verma (2016) and Minhaj *et al.*, (2017).

**Table.1 Breeding**

(n=180)

S. No.	Practices	Fully Adopted (%)	Partially Adopted (%)	Not Adopted (%)	Total Weighted Score	Weighted Mean Score	Adoption in %	Rank Order
1	Artificial insemination (A.I.) practices	3 (1.67)	115 (63.89)	62 (34.44)	301	1.67	55.74	IV
2	Artificial insemination (A.I.) within 12 hours after detection of heat	4 (2.22)	111 (61.67)	65 (36.11)	299	1.66	55.37	V
3	Allow the animal to mate within 3 months after parturition	14 (7.78)	156 (86.67)	10 (5.55)	364	2.02	67.41	I
4	Diagnosis of your animal for pregnancy	10 (5.56)	146 (81.11)	24 (13.33)	346	1.92	64.07	III
5	Animal checkup time to time during pregnancy	9 (5.00)	150 (83.33)	21 (11.67)	348	1.93	64.44	II

**Table.2 Feeding**

(n=180)

S. No.	Practices	Fully Adopted (%)	Partially Adopted (%)	Not Adopted (%)	Total Weighted Score	Weighted Mean Score	Adoption in %	Rank Order
1	Colostrums to new born calves up to 3-5 days after its birth	3 (1.67)	172 (95.56)	5 (2.77)	358	1.99	66.30	II
2	To feed concentrate mixture on the basis of milk production	2 (1.12)	161 (89.44)	17 (9.44)	345	1.92	63.89	IV
3	To feed extra 1-2kg concentrate to pregnant animal	6 (3.33)	161 (89.44)	13 (7.22)	353	1.96	65.37	III
4	Mineral mixture	58 (32.22)	119 (66.11)	3 (1.67)	415	2.31	76.85	I
5	Green fodder to the animal regularly	2 (1.11)	174 (96.67)	4 (2.22)	358	1.99	66.30	II

**Table.3 Health care**

(n=180)

S. No.	Practices	Fully Adopted (%)	Partially Adopted (%)	Not Adopted (%)	Total Weighted Score	Weighted Mean Score	Adoption in %	Rank Order
1	Protect the animals from harsh weather conditions	62 (34.44)	116 (64.44)	2 (1.12)	420	2.33	77.78	I
2	Proper vaccination schedule	32 (17.78)	125 (69.44)	23 (12.78)	369	2.05	68.33	II
3	Deworm the animals timely against ecto and endo parasites	7 (3.89)	168 (93.33)	5 (2.77)	362	2.01	67.04	III
4	Segregate the diseased animals from the herd	4 (2.22)	46 (25.56)	130 (72.22)	234	1.30	43.33	V
5	Regularly consults the veterinary doctor/VLDA	14 (7.78)	89 (49.44)	77 (42.78)	297	1.65	55.00	IV

**Table.4 Milk production**

(n=180)

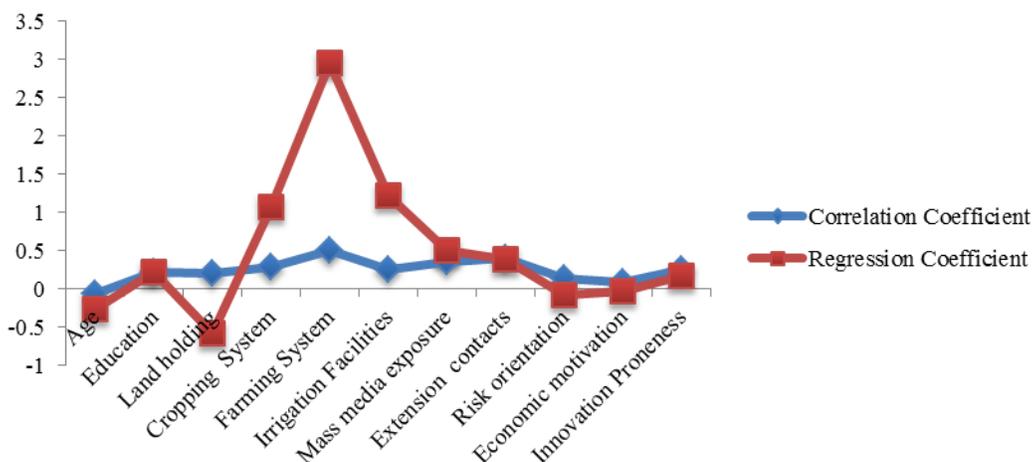
S. No.	Practices	Fully Adopted (%)	Partially Adopted (%)	Not Adopted (%)	Total Weighted Score	Weighted Mean Score	Adoption in %	Rank Order
1	Wash the animal before milking	11 (6.11)	169 (93.89)	0 (0.00)	371	2.06	68.70	III
2	Disinfect the udder before milking	180 (100.00)	0 (0.00)	0 (0.00)	540	3.00	100.00	I
3	Full hand method for milking	0 (0.00)	15 (8.33)	165 (91.67)	195	1.08	36.11	IV
4	Clean the utensils with boiled water/detergent before milking	95 (52.78)	85 (47.22)	0 (0.00)	455	2.53	84.26	II
5	Use of KMnO <sub>4</sub>	0 (0.00)	6 (3.33)	174 (96.67)	186	1.03	34.44	V

**Table.5 General management practices**

(n=180)

S. No.	Practices	Fully Adopted (%)	Partially Adopted (%)	Not Adopted (%)	Total Weighted Score	Weighted Mean Score	Adoption in %	Rank Order
1	Adequate open space to the animals	32 (17.78)	147 (81.67)	1 (0.55)	391	2.17	72.41	II
2	Proper ventilated house for animals	34 (18.89)	144 (80.00)	2 (1.11)	392	2.18	72.59	I
3	Proper water and feed to the animals	14 (7.78)	164 (91.11)	2 (1.11)	372	2.07	68.89	III
4	Segregate the pregnant animals from herd	0 (0.00)	25 (13.89)	155 (86.11)	205	1.14	37.96	V
5	Exercise and grooming	5 (2.78)	164 (91.11)	11 (6.11)	354	1.97	65.56	IV

**Fig.1 Relationship of adoption level of farmers' with their personality traits**



Dependent variable- Adoption  
 \*Significant at 0.05 levels  
 $R^2 = 0.43$ , Constant Value=39.07

## Health cares

Table 3 revealed that majority of farmers' adopted the practice about 'protect the animals from harsh weather conditions' ranked 1<sup>st</sup> with highest adoption index (A.I.) 77.78 per cent, followed by 'proper vaccination schedule' (68.33%), 'deworm the animals timely against ecto and endo parasites' (67.04%), and 'regularly consults the veterinary doctor/VLDA' (55.00%) ranked 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>, respectively. While, adoption level was low about 'segregate the diseased animals from the herd' ranked 5<sup>th</sup> with lowest A.I. 43.33 per cent. Animal production is totally depends on health of animals so there is need to improve the diffusion of health care practices among farmers' to be optimize their production and enhance overall farm income. Chander *et al.*, (2015) concluded that there was lack of awareness about deworming. While, Sachan *et al.*, (2016) who reported that majority of the farmers had medium adoption level of health care practices.

## Milk production

The data presented in Table 4 showed that practice about 'disinfect the udder before milking' was highly adopted with adoption index 100.00 per cent, followed by 'clean the utensils with boiled water/detergent before milking' (84.26%), 'wash the animal before milking' (68.70%), 'full hand method for milking' (36.11%) ranked 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>, respectively.

However, adoption was very poor about 'use of KMnO<sub>4</sub>'. Adoption regarding milk production can be increased through frequent contact with the dairy farmers and make them aware about these scientific dairy farming practices. These finding were found to partially support by findings of Sachan *et al.*, (2016).

## General management practices

Table 5 narrated that 'proper ventilated house for animals' ranked 1<sup>st</sup> with highest adoption index (A.I.) 72.59 per cent, followed by 'adequate open space to the animals' (72.41%), 'proper water and feed to the animals' (68.89%), 'exercise and grooming' (65.56%), and 'segregate the pregnant animals from herd' (37.96%) ranked 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup>, respectively.

Study got strength from past research study of Sharma and Singh (2011) and Sachan *et al.*, (2016) who reported that majority of farmers had medium adoption level of these management practices.

## Relationship of adoption level of farmers' with their personality traits

Figure 1 revealed that education, land holding, cropping system, farming system, irrigation facilities, mass media exposure, extension contacts, risk orientation and innovation proneness with the adoption level had positive and significant correlation at 0.05 level of probability. While in case of the partial regression coefficient land holding, cropping system, farming system, irrigation facilities, mass media exposure and innovation proneness were found to be significant. These finding were found to be partially support by report of Yadav *et al.*, (2013).

Further, it is revealed that all the eleven independent variables included in the study jointly contributed 43.00 per cent variation in the adoption of the respondents regarding smart animal practices when other factors were kept constant. This means that only 43.00 per cent of the variation in the dependent variable was due to these variables and remaining 57.00 per cent variations is due to other variables.

The present study concluded that overall adoption level was medium. Therefore, scientists, KVK's, veterinary officers, SAU's should be organized training and awareness programmes with respect to breeding, feeding, health care, milk production and management practices and motivate them to boost up level of adoption of animal husbandry practices.

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