



## **Assessment of Training Needs of Livestock Owners as Perceived by Field Veterinarians in Jammu District of Jammu and Kashmir, India**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author FS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author SAK guided the author FS during whole research period. Author RAB wrote the Final manuscript for submission and edited the manuscript after reviewing for final publication. All authors read and approved the final manuscript.*

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### **ABSTRACT**

Training is an essential element for appropriate human resource development, which enhances decision making ability of an individual. In India there is a pressing need for efficient human resource development in livestock sector to improve quality of livestock and to increase both quality and quantity of livestock products and, this may be achieved through training of the livestock farmers on scientific animal husbandry practices. The present study was conducted in Jammu district of Jammu and Kashmir state to assess the training needs of livestock owners as perceived by field veterinarians. Ex-post-facto research design and, multistage random sampling plan was followed for the selection of ultimate respondents. Sixty veterinarians working in Jammu district were

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randomly selected and were given suitably developed questionnaire to document their opinions regarding training-needs of livestock owners. The questions were in six broad groups (breeding, feeding, housing & management, health care, preparation and preservation of livestock products and marketing and finance) and were for evaluation of perceived training- needs in their respective sections. Respondents were asked to rate them in three point continuum *i.e.* most needed, needed, and least needed with their respective scores of 3, 2 and 1, based on importance of perceived training needs of livestock owners felt by field veterinarians. The summation of scores achieved by the respondents constituted the level of perceived training-needs in each sub-area. Findings of the study revealed that, veterinarians felt “estrous cycle and time of breeding”, “balanced ration feeding and its economical composition”, “care and management of new born/pregnant/productive/sick animals”, “zoonotic diseases and their transmission”, “preparation and preservation of milk and milk products” and “banking & insurance” as the most training needed areas of livestock owners.

*Keywords: Training needs; livestock owners; Jammu district; field veterinarians.*

## 1. INTRODUCTION

India is blessed with a huge number of livestock, which not only supplements the income of farmers but also buffer the risk of crop failure due to draught. As agriculture in India is mostly dependent on monsoons and failure of crop due to drought looms large; animal husbandry plays a prime role in socio-economic development of rural households by buffering the risk of crop failure. It has a significant positive impact on equity in terms of income, employment and poverty reduction in rural areas as the distribution of livestock is more egalitarian as compared to land [1]. India like any other developing country is having sufficient natural and particularly human resource, but the problem is the under-developed human resource which hampers the productivity in different sectors of the economy, particularly the livestock sector, which primarily depends on the human resource. So, training has been considered as an essential element for appropriate human resource development, which enhances decision making ability of an individual. Training is a process by which desired, knowledge, skill and ideas are inculcated, fostered and / or reinforced in an organism [2]. In livestock sector too, there is a pressing need for efficient human resource development and this may be achieved through training of the livestock farmers on scientific animal husbandry practices. Productive performance of Indian livestock is lesser than that of the world average, which to an appreciable extent is attributed to its underdeveloped human resource. In this industrialisation era, demand for various livestock based products has increased significantly due to the increase in per capita income, urbanisation, preferences and increased awareness about nutrition. Animal husbandry sector is likely to emerge as an engine for agricultural growth in

the coming decades [3]. So, training is one of the options to increase both quality as well as quantity of the livestock products. Farmers` training is a non-formal process of education which teaches groups of farmers some specific topics at a particular place [4]. There are various training needs that exist in livestock sector at different levels and these differ from one state to another, depending on place, time and other set of conditions. A need is the gap between “what is and what ought to be” and training need refers to the gap between “what is” and “what should be” in terms of the trainee’s knowledge, skills, attitude and the behaviour in a given situation and time [5]. In the present study, the focus has been on the importance of livestock extension services towards improving production by concentrating on the training needs of the farmers for profitable animal husbandry in...of India.

## 2. MATERIALS AND METHODS

The study was conducted in Jammu district of Jammu and Kashmir state to assess the training needs of livestock owners perceived by field veterinarians. Ex-post-facto research design and, multistage random sampling plan was followed for the selection of ultimate respondents. Jammu district comprises of twenty blocks and out of these only 4 blocks were selected by simple random method. The blocks selected were Marh, Bishna, Akhnoor and R. S. Pura. From each selected blocks 15 veterinarians working in Jammu district were selected randomly making a sample size of 60, and each field veterinarians were given suitably developed questionnaire to document their opinion regarding training needs of livestock owners. The questionnaire was divided into six broad areas namely breeding, feeding, housing &

management, health care, preparation and preservation of livestock products and marketing and finance for evaluation of perceived training needs in their respective sections. Responses were obtained in the areas of breeding, feeding, housing & management and health care. Each area of perceived training needs of livestock owners contained 7 statements in breeding, 7 in feeding, 7 in housing & management, 6 in health care, 3 in preparation and preservation of livestock products and 4 in marketing and finance, and the respondents were asked to rate them in three point continuum *i.e.* most needed, needed, and least needed with their respective scores of 3, 2 and 1, based on importance of perceived training needs of livestock owners felt by field veterinarians. The summation of scores achieved by the respondents constituted the level of perceived training needs within each sub-area. The perceived training needs were then ranked based upon their total score and total weighted mean score. Data were coded, classified, tabulated and analysed using the software; Statistical Product and Service Solutions – SPSS version 16.0, an IBM product [6]. The presentation of data was done to give pertinent, valid and reliable and reliable answers to the specific objectives. Frequencies, scores obtained.

Frequencies, score obtained, total scores, total weighted mean scores and ranks were worked out for meaningful interpretation.

### 3. RESULTS

#### 3.1 Training Needs of Livestock Owners in Sub Areas of Breeding Perceived by Field Veterinarians

Table 1 revealed that 86.66% of the veterinarians perceived estrous cycle and time of breeding as most needed sub-area in breeding with a total score of 171 at 1<sup>st</sup> place, followed by selection of animals for breeding with a total score of 168 at 2<sup>nd</sup>, identification of infertility problems with a total score of 165 at 3<sup>rd</sup>, information of artificial insemination with a total score of 164 at 4<sup>th</sup>, detection of oestrous in animals with a total score of 156 at 5<sup>th</sup>, information regarding parturition problems with a total score of 155 at 6<sup>th</sup> and information regarding pregnancy diagnosis with a total score of 144 at 7<sup>th</sup>.

#### 3.2 Training Needs of Livestock Owners in Sub Areas of Feeding Perceived by Field Veterinarians

Table 2 showed that 86.66% of the veterinarians felt balanced ration feeding and its economical composition as the most needed sub-area in feeding practices with a total score of 172 at 1<sup>st</sup> place, followed by importance of colostrums feeding at 2<sup>nd</sup> place with a total score of 171, nutritional management of breeding problems at

**Table 1. Average scores of training needs of livestock owners in sub areas of breeding perceived by field veterinarians (N=60)**

Breeding	MN (3)	N (2)	LN (1)	TS	TWMS	Rank
Selection of animals for breeding	48 (80.00)	12 (20.00)	0 (0.00)	168	2.80	2
Detection of oestrous in animals	41 (68.33)	14 (23.33)	5 (8.33)	156	2.60	5
Estrous cycle and time of breeding	52 (86.66)	7 (11.66)	1 (1.66)	171	2.85	1
Information of artificial insemination	44 (73.33)	16 (26.66)	0 (0.00)	164	2.73	4
Information regarding pregnancy diagnosis	26 (43.33)	32 (53.33)	2 (3.33)	144	2.40	7
Identification of infertility problems	46 (76.66)	13 (21.66)	1 (1.66)	165	2.75	3
Information regarding parturition problems	36 (60.00)	23 (38.33)	1 (1.66)	155	2.58	6

*MN= most needed, N= needed, LN=least needed, TS= total score, TWMS=total weighted mean score*

3<sup>rd</sup> place with a total score of 170, mineral mixture supplementation at 4<sup>th</sup> place with a total score of 167, urea treatment of straw at 5<sup>th</sup> place with a total score of 158, fodder varieties & their cultivation at 6<sup>th</sup> place with a total score of 139, preservation of fodder (silage/ hay making & its storage) at 7<sup>th</sup> place with a total score of 130.

### 3.3 Training Needs of Livestock Owners in Sub Areas of Housing & Management Perceived by Field Veterinarians

On perusal of Table 3, it was found that the majority of the veterinarians felt care and management of new born/pregnant/productive/sick animals as the most needed sub-area in housing and management with a total score of 175, followed by construction of low cost housing at 2<sup>nd</sup> place with a total score of 170, sanitation and drainage in animal shed at 3<sup>rd</sup> place with a total score of 169, clean milk production & milking methods at 4<sup>th</sup> place with a total score of 165, culling of non productive and sick animals (isolation) at 5<sup>th</sup> place with a total score of 155, record keeping at 6<sup>th</sup> place with a total score of 135, weaning at 7<sup>th</sup> place with a total score of 131.

### 3.4 Training Needs of Livestock Owners in Sub Areas of Health Care Perceived by Field Veterinarians

On the other hand, Table 4 showed that 98.33% of the veterinarians felt zoonotic diseases and their transmission as the most needed sub-area

in health-care practices with a total score of 179 at 1<sup>st</sup> place, followed by vaccination at 2<sup>nd</sup> place with a total score of 177, deworming at 3<sup>rd</sup> place with a total score of 174, ecto-parasite control at 4<sup>th</sup> place with a total score of 173, common diseases and its preventive measures at 5<sup>th</sup> place with a total score of 160, first aid treatment for simple ailments at 6<sup>th</sup> place with a total score of 125.

### 3.5 Training Needs of Livestock Owners in Sub Areas of Preparation and Preservation of Livestock Products Perceived by Field Veterinarians

Table 5 revealed that 83.33% of the veterinarians perceived preparation and preservation of milk and milk products as the most needed sub-area in preparation and preservation of livestock products with a total score of 115 at 1<sup>st</sup> place and followed by preparation and preservation of meat and meat products at 2<sup>nd</sup> with a total score of 105.

### 3.6 Training Needs of Livestock Owners in Sub Areas of Marketing and Finance Perceived by Field Veterinarians

The results of Table 6 show that 96.67% veterinarians perceived banking & insurance as the most needed area at 1<sup>st</sup> place in marketing and finance with a total score of 157, followed by purchase of livestock & its product at 2<sup>nd</sup> with a total score of 149 and the sale of livestock & inputs with a total score of 128 at 3<sup>rd</sup>.

**Table 2. Average scores of training needs of livestock owners in sub areas of feeding perceived by field veterinarians (N=60)**

Feeding	MN (3)	N (2)	LN (1)	TS	TWMS	Rank
Balanced ration feeding and its economical composition	52 (86.66)	8 (13.33)	0 (0.00)	172	2.86	1
Nutritional management of breeding problems	50 (83.33)	10 (16.66)	0 (0.00)	170	2.83	3
Importance of colostrums feeding	51 (85.00)	9 (15.00)	0 (0.00)	171	2.85	2
Mineral mixture supplementation	48 (80.00)	11 (18.33)	1 (1.66)	167	2.78	4
Fodder varieties & their cultivation	22 (36.66)	35 (58.33)	3 (5.00)	139	2.31	6
Urea treatment of straw	39 (65.00)	20 (33.33)	1 (1.66)	158	2.63	5
Preservation of fodder (silage/ hay making & its storage)	20 (33.33)	30 (50.00)	10 (16.66)	130	2.16	7

MN= most needed, N= needed, LN=least needed, TS= total score, TWMS=total weighted mean score

**Table 3. Average scores of training needs of livestock owners in sub areas of housing & management perceived by field veterinarians (N=60)**

Housing & management	MN (3)	N (2)	LN (1)	TS	TWMS	Rank
Care and management of new born/pregnant/productive/sick animals	55 (91.66)	5 (8.33)	0 (0.00)	175	2.91	1
Culling of non productive and sick animals (isolation)	38 (63.33)	19 (31.66)	3 (5.00)	155	2.58	5
Weaning	14 (23.33)	43 (71.66)	3 (5.00)	131	2.18	7
Record keeping	17 (28.33)	42 (70.00)	1 (1.66)	135	2.25	6
Construction of low cost housing	50 (83.33)	10 (16.66)	0 (0.00)	170	2.83	2
Clean milk production & milking methods	45 (75.00)	15 (25.00)	0 (0.00)	165	2.75	4
Sanitation and drainage in animal shed	49 (81.66)	11 (18.33)	0 (0.00)	169	2.81	3

MN= most needed, N= needed, LN=least needed, TS= total score, TWMS=total weighted mean score

**Table 4. Average scores of training needs of livestock owners in sub areas of health care perceived by field veterinarians (N=60)**

Health care	MN (3)	N (2)	LN (1)	TS	TWMS	Rank
Deworming	54 (90.00)	6 (10.00)	0 (0.00)	174	2.9	3
Vaccination	57 (95.00)	3 (5.00)	0 (0.00)	177	2.95	2
Ecto-parasite control	53 (88.33)	7 (11.66)	0 (0.00)	173	2.88	4
Zoonotic diseases and their transmission	59 (98.33)	1 (1.66)	0 (0.00)	179	2.98	1
First aid treatment for simple ailments	11 (18.33)	43 (71.66)	6 (10.00)	125	2.08	6
Common diseases and its preventive measures	41 (68.33)	18 (30.00)	1 (1.66)	160	2.66	5

MN= most needed, N= needed, LN=least needed, TS= total score, TWMS=total weighted mean score

**Table 5. Average scores of training needs of livestock owners in sub areas of preparation and preservation of livestock products perceived by field veterinarians (N=60)**

Preparation and preservation of livestock products	MN (3)	N (2)	LN (1)	TS	TWMS	Rank
Milk and milk products	5 (8.33)	45 (75.00)	10 (16.66)	115	1.91	1
Meat and meat products	3 (5.00)	39 (65.00)	18 (30.00)	105	1.75	2

MN= most needed, N= needed, LN=least needed, TS= total score, TWMS=total weighted mean score

#### 4. DISCUSSION

The findings of the result revealed that majority of the veterinarians perceived 'estrous cycle and time of breeding' as most important training need in breeding area and acquired 1<sup>st</sup> rank, followed

by 'selection of animals for breeding' on 2<sup>nd</sup> rank, 'identification of infertility problems' on 3<sup>rd</sup> rank, 'information of artificial insemination' on 4<sup>th</sup> rank, 'detection of oestrous in animals on 5<sup>th</sup> rank', 'information regarding parturition problems on 6<sup>th</sup> rank' and 'information regarding pregnancy

**Table 6. Average scores of training needs of livestock owners in sub areas of marketing and finance perceived by field veterinarians (N=60)**

Marketing and finance	MN (3)	N (2)	LN (1)	TS	TWMS	Rank
Purchase of livestock & inputs	31 (51.66)	27 (45.00)	2 (3.33)	149	2.48	2
Sale of livestock & its product	17 (28.33)	34 (56.66)	9 (15.00)	128	2.13	3
Banking & Insurance	39 (65.00)	19 (31.66)	2 (3.33)	157	2.61	1

*MN= most needed, N= needed, LN=least needed, TS= total score, TWMS=total weighted mean score*

diagnosis on 7th rank. This may be due to the fact that adequate knowledge about estrous cycle and time of insemination is immensely critical for carrying successful breeding of animals, which may suggest why most of the respondents felt a need of training in these sub areas of breeding. Moreover, 'knowledge about high yielding breeds' was also needed by most of the livestock owners. This may be attributed to the fact that most of the respondents had indigenous animals which are low producers and help in improving the genetic make-up of indigenous cattle through selective breeding. The results are in line with the findings of Durggarani and Subhadra [7] who described that majority of the respondents felt training needs in selection of breed, heat detection and time of insemination. In the area of feeding, majority of the veterinarians felt 'balanced ration feeding and its economical composition' as the most needed training area and acquired 1<sup>st</sup> rank, followed by 'importance of colostrums feeding' on 2<sup>nd</sup> rank, 'nutritional management of breeding problems' on 3<sup>rd</sup> rank, 'mineral mixture supplementation' on 4<sup>th</sup> rank, 'urea treatment of straw' on 5<sup>th</sup> rank, 'fodder varieties and their cultivation' on 6<sup>th</sup> rank and 'preservation of fodder (silage/ hay making and its storage)' on 7<sup>th</sup> rank. In the study area, animals were provided with nutritiously low quality fodder which affects the health of the animal and thus decreases production and training about formulation of balanced ration is must to improve the production and repeat breeding problem arises due to be nutritional deficiency. Results further revealed that in the area of housing and management, the majority of the veterinarians felt 'care and management of new born/pregnant/productive/sick animals' as the most needed training area and placed it at rank 1, followed by 'construction of low cost housing', 'sanitation and drainage in animal shed', 'clean milk production and milking methods', 'culling of non productive and sick animals (isolation) place', 'record keeping' and 'weaning' on rank 2, 3, 4, 5,

and 6, respectively. It was observed from the results that in the area of health-care, most of the veterinarians felt 'zoonotic diseases and their transmission' as the most needed training area on 1<sup>st</sup> place, followed by 'vaccination', 'deworming', 'ecto-parasite control', 'common diseases and its preventive measures' and 'first aid treatment for simple ailments' on 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> place. As the education status of the most of farmers was poor and they were not aware about the pathogenesis and transmission of zoonotic diseases which may adversely affect the productivity and economic losses. The findings were supported by an observation of Jondhale et al. [8] who reported that training in zoonotic diseases was most needed. In the area of preparation and preservation of livestock products, majority of the veterinarians perceived preparation and 'preservation of milk and milk products' as needed while 'preparation and preservation of meat and meat products' was felt as least needed. It was also observed in the field of marketing and finance that most of the veterinarians perceived 'banking and insurance' as the most needed area on 1<sup>st</sup> place, followed by 'purchase of livestock and its product' on 2<sup>nd</sup> place while the 'sale of livestock and inputs' was placed on 3<sup>rd</sup> place. Similar results were put forth by Balaraju et al. [9] in their study regarding training need assessment of livestock owners in devangere district of Karnatka, who reported that, within major areas of small ruminant farming, farmers and veterinarians perceived higher level of training needs in health care followed by feeding and marketing and finance. The study further revealed that majority of the field veterinarians' perceived higher extent of training needs for the farmers than farmer themselves.

## 5. CONCLUSION

It is evident from the study that there is an imperative need for the training in various sectors of livestock rearing, providing which shall boost

the productivity in the said sector and in turn alleviate the income of livestock farmers. From the findings of study it can be concluded that veterinarians felt “estrous cycle and time of breeding”, “balanced ration feeding and its economical composition”, “care and management of new born/pregnant/productive/sick animals”, “zoonotic diseases and their transmission”, “preparation and preservation of milk and milk products” and “banking & insurance” as most needed areas in training. So, training should be provided to the livestock farmers through various agencies by conducting various training programmes especially within the premises of the village.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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