



Original Research

Constraints in Availing Breeding Services from State Department of Animal Husbandry, Haryana: A Perceptual Study of Buffalo Owners

Rekha Yadav^{1*}, Hema Tripathi², Parveen Kumar³, Naresh Kumar⁴ and Nukala Ramesh⁵

^{1&5}IVRI, ICAR-CIRB, Hisar, Haryana, INDIA

²TOTE, ICAR-CIRB, Hisar, Haryana, INDIA

³Division of Veterinary Microbiology, LUVAS, Hisar, Haryana, INDIA

⁴Department of Animal Husbandry & Dairying, Government of Haryana, INDIA

*Corresponding author: rekha04yadav@gmail.com

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Abstract

Scientific breeding is one of the important factors that govern the production potential of livestock. Many stakeholders are indulged in providing scientific breeding services but contribution of state department of animal husbandry as public sector (SDAH) is at the top. In Haryana, SDAH is providing service through vast network of 942 government veterinary hospitals (GVH) and 1813 government veterinary dispensary (GVD). But sometimes they face many constraints while taking breeding service from SDAH. The keeping in view present study was conducted following ex-post facto and exploratory research design with objective to explore these constraints by interviewing 240 buffalo owners personally, selected with the help of twelve (12) GVH from two districts namely; Hisar and Jind in Haryana. Data on constraints were collected on three point continuum scale as major constraints, minor constraints and not a constraints with respective score 3, 2 and 1. Study revealed service delivery related constraints, knowledge and attitude and input and infrastructure were the major group of factors by using principal component method of factor analysis and on mean score basis it was found that service delivery related constraints secured rank first with highest mean score 1.24 followed by input and infrastructure ranked II (1.09), knowledge and attitude related constraints secured rank third with 1.05 as mean score. Thus, a multifaceted approach keeping in view of constraints could be used in Haryana to improve the breeding services.

Key words: Breeding Services, Constraints, State Department of Animal Husbandry (SDAH)

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Introduction

India secures rank first in milk production but far behind in term of productivity per animal against developed countries i.e. only 987 Kg against world average of 2038 Kg (FAO STAT (2014). Report of planning commission (2012-2017) reveals that production potential of livestock is not being fully realized



because of constraints related to feeding, breeding, health and management. Deficiency of feed and fodder accounts for half of the total loss followed by the problems of breeding and reproduction (21%) and diseases (18%) and poor productivity remains a cause of concern in Indian livestock sector (Chander *et al.*, 2010; Bardhan and Sharma, 2013 and Kaur and Kaur, 2013). To improve the productivity of animal Government of India (GOI) has started scientific breeding services for livestock owners by establishing large public infrastructure on livestock services (Planning Commission (2007-12) which is based on fixed model of veterinary hospital/dispensary/sub-centre nodal structure at the ground level (Kathiravan, 2012). Although, many stakeholders are indulged in providing breeding services including private sector, breeding organizations, NGOs bodies and public sector. Among all stakeholders, contribution of state department of animal husbandry as public sector (SDAH) is at the top (Ahuja *et al.*, 2006; Ravikumar *et al.*, 2007; Kathiravan, 2012 and Shweta, 2014). Breeding services include artificial insemination, pregnancy diagnosis, treatment of various reproductive disorders, organising infertility camps and also creating awareness among livestock owners. Amongst these artificial insemination is one of the important components. State of Haryana possess 8.81 million livestock population, comprising 6.1 million (2.5%) of the country's bovine population (Livestock census, 2012). The contribution of Haryana in milk production is 5.3 per cent in which buffaloes contribute 83.87 per cent (DAHD, Haryana -2015). In India, total number of artificial insemination performed exclusively in 63.20 lacs, out of these 32.71 lacs (> 50%) A.I. are performed in Haryana and share of buffaloes is 71.99 per cent (23.55 lacs) (DAHD, 2015). SDAH, Haryana is providing livestock services through vast network of 942 government veterinary hospitals and 1813 veterinary dispensary (DAHD, 2016) and playing an instrumental role in delivery of animal breeding services to enhance the efficiency in dairying since long period. But, no empirical and comprehensive evaluation of the constraints faced by animal owners while availing breeding services was studied so far. Keeping in view, the present study was contemplated with the objective of studying the constraints perceived by buffalo owners while availing breeding services from SDAH.

Material and Method

The present study was conducted following ex-post facto and exploratory research design in Murrah breeding tract of Haryana. Artificial insemination is one of the major breeding interventions of SDAH and every year target of AI is given to each district to cover the breeding population of that particular area. So, we had taken AI as criteria for selection of studied area. Under Murrah breeding tract seven districts viz. Rohtak, Jind, Hisar, Jhajhar, Fatehabad, Gurgaon and Bhiwani fell. Amongst these seven districts, five districts had achieved more than hundred per cent target of artificial insemination in year 2015-16. Out of these, 2 districts namely; Hisar and Jind were selected purposively for the study because of familiarity of the researcher with the local language, customs and culture that helped in building up rapport with the

respondents. From each of the selected districts, three Government Veterinary Hospitals (GVH) that had achieved maximum and another three GVH that could achieve minimum targets of AI during 2015-16 were selected for comparison. Thus six GVH that has achieved minimum target of AI named as locale I and another six GVH that has achieved maximum target were named as locale II. From each selected GVH, a list of buffalo owners, who had been benefited of some kind breeding services during the last three year (2014-17) were obtained and 20 buffalo owners were selected randomly from twelve GVH (6 from each locale). Thus 240 respondents (120 from locale I and 120 from locale II) were selected. A list of constraints prepared after consulting literature, discussion with experts and after pretesting a final list of 16 constraints was made for data collection. Data were collected by personal interview and constraints were measured by asking the respondents to mention the severity of constraints on three point continuums as major constraints, minor constraints and not a constraint, with respective score of 3, 2, and 1. Constraints were classified through principal component method of factor analysis by using SPSS software. Kaiser's varimax variation was applied and based upon Eigen value 1.4, factors were selected. Later, it was ranked according to their mean score obtained by the respondents.

Result and Discussion

After factor analysis three factors that have explained 71.37 per cent variance were selected and likewise constraints were classified in to three categories viz. service delivery, input and infrastructure related and knowledge and attitude related constraints based on their respective loading factor (Table 1).

Service Delivery Related Constraints

Table 2 indicates low conception rate of AI (23.8%), SDAH personnel organize less number of awareness and infertility camps in village (12.1%) and non-availability of breeding service during holidays and after office hours (12.1%) were the major constraints perceived by sampled respondents. However, Meena *et al.*, 2015, while conducted study in Uttar Pradesh reported that nearly sixty three per cent respondents (63.78%) asserted poor conception rate of artificial insemination. Constraints which were perceived as not a constraint by more than ninety five per cent of respondents were more charges of A.I., PD and treatment of reproductive disorder (98.3%) followed by, irregularity of delivery of breeding services by SDAH personnel (97.5%), lack of follow up by SDAH personnel after providing breeding services (97.1%), limited availability of service providers at GVH during hospital hour (97.1%) and SDAH personnel are not keen enough/reluctant to provide breeding services at door step (95.4%).

Table 1: Loading factor of each variables and explained Eigen value, per cent of variance of each factor

Factor analysis by using principle component method			
Types of Constraints	Loading Factor	Per cent of Variance Explained	Eigen Value
A. Service delivery related constraints		29.826	2.911
Lack of follow up by SDAH personnel after providing breeding services	0.505		
Irregularity of delivery of breeding services by SDAH personnel	0.671		
SDAH personnel organize less number of awareness and infertility camps in village	0.579		
More charges of A.I., PD and treatment of reproductive disorder	0.368		
Non availability of breeding service during holidays and after office hours	0.453		
SDAH personnel are not keen enough/reluctant to provide breeding services at door step	0.476		
Limited availability of service providers at GVH during hospital hour	0.566		
Low conception rate of A.I in buffaloes	0.311		
B. Knowledge and attitude related constraints		23.345	1.861
Lack of technical competency among staff available at GVH	0.468		
Less favorable attitude of SDAH personnel's in providing breeding service towards the farmers	0.55		
Farmers have lack of awareness and knowledge about importance of pregnancy diagnosis	0.334		
Farmers are less aware about right time of insemination	0.639		
Farmers are unable to detect heat in buffalo at right time due to silent heat	0.508		
C. Input and infrastructure related constraints		18.196	1.449
GVH are poorly equipped for providing breeding services	0.594		
GVH are distantly located	0.461		
Most of the time, required semen is not available at GVH	0.421		

Knowledge and Attitude Related Constraints

Farmers are unable to detect heat in buffalo at right time due to silent heat was perceived as major by only 5.0 per cent respondents followed by farmers have low awareness and knowledge about importance of pregnancy diagnosis (2.1%). However, Patil (2009) reported that about 70 per cent of the respondents did not know the proper timing for A.I., 60 per cent were unknown about the advantages of pregnancy diagnosis and 29 per cent did not know the symptoms of heat in Narmada district of Gujarat and Rathode *et al.*, 2014 found that that 36 per cent people have poor knowledge of heat detection in Maharashtra. That means SDAH personnel of Haryana imparting knowledge to farmers regarding heat detection, right time of insemination and advantages of pregnancy diagnosis. Rest constraints viz. lack of technical competency of the staff available at GVH, less favorable attitude of SDAH personnel towards the farmers and farmers are less aware about right time of insemination were not perceived as constraint by majority of sampled respondents.

Table 2: Constraints perceived by Buffalo owners along with mean score and rank while availing the livestock breeding service

Constraints	Locale I (n=120)			Locale I (n=120)			Overall (n=240)			Overall (n=240)		Rank	
	MC	MIC	NAC	MC	MIC	NAC	MC	MIC	NAC	Mean score	Rank	Mean score	Rank
A. Service Delivery Related Constraint													
Lack of follow up by SDAH personnel after providing breeding services	0 (0.0)	3 (2.5)	117 (97.5)	0 (0.0)	4 (3.3)	116 (96.7)	0 (0.0)	7 (2.9)	233 (97.1)	1.03	VII	1.24	I
Irregularity of delivery of breeding services by SDAH personnel	0 (0.0)	3 (2.5)	117 (97.5)	1 (0.8)	2 (1.7)	117 (97.5)	1 (0.4)	5 (2.1)	234 (97.5)	1.03	VII		
SDAH personnel organize less number of awareness and infertility camps in village	18 (15.0)	31 (25.8)	71 (59.2)	11 (9.2)	35 (29.2)	74 (61.7)	29 (12.1)	66 (27.5)	145 (60.4)	1.52	II		
More charges of A.I., PD and treatment of reproductive disorder	0	0	120 (100.0)	1 (0.8)	3 (2.5)	116 (96.7)	1 (0.4)	3 (1.2)	236 (98.3)	1.02	VIII		
Non availability of breeding service during holidays and after office hours	17 (14.2)	28 (23.3)	75 (62.5)	12 (10.0)	18 (15.0)	90 (75.0)	29 (12.1)	46 (19.2)	165 (68.8)	1.43	III		
SDAH personnel are not keen enough/relevant to provide breeding services at door step	2 (1.7)	8 (6.7)	110 (91.7)	0 (0.0)	1 (0.8)	119 (99.2)	2 (0.8)	9 (3.8)	229 (95.4)	1.05	VI		
Limited availability of service providers at GVH during hospital hours	0 (0.0)	3 (2.5)	117 (97.5)	0 (0.0)	4 (3.3)	116 (96.7)	0 (0.0)	7 (2.9)	233 (97.1)	1.03	VII		
Low conception rate of A.I in buffaloes	20 (16.7)	34 (28.3)	66 (55.0)	37 (30.8)	38 (31.7)	45 (37.5)	57 (23.8)	72 (30.0)	111 (46.2)	1.78	I		
B. Knowledge and Attitude Related Constraints													
Lack of technical competency among staff available at GVH	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	2 (1.7)	118 (98.3)	0 (0.0)	3 (1.2)	237 (98.8)	1.01	IX	1.05	III
Less favorable attitude of SDAH personnel's in providing breeding service towards the farmers	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	2 (0.8)	238 (99.2)	1.01	IX		
Farmers have lack of awareness and knowledge about importance of pregnancy diagnosis	2 (1.7)	2 (1.7)	116 (96.7)	1 (0.8)	3 (2.5)	116 (96.7)	3 (1.2)	5 (2.1)	232 (96.7)	1.05	VI		
Farmers are less aware about right time of insemination	0 (0.0)	2 (1.7)	118 (98.3)	0 (0.0)	2	118 (98.3)	0 (0.0)	4 (1.7)	236 (98.3)	1.02	VIII		
Farmers are unable to detect heat in buffalo at right time due to silent heat	4 (3.3)	8 (6.7)	108 (90.0)	8 (6.7)	7 (5.8)	105 (87.5)	12 (5.0)	15 (6.2)	213 (88.8)	1.16	V		
C. Input and Infrastructure Related Constraints													
GVH are poorly equipped for providing breeding services	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	4 (3.3)	116 (96.7)	0 (0.0)	5 (2.1)	235 (97.9)	1.02	VIII	1.09	II
GVH are distantly located	11 (9.2)	8 (6.7)	101 (84.2)	12 (10.0)	7 (5.8)	101 (84.2)	23 (9.6)	15 (6.2)	202 (84.2)	1.25	IV		
Most of the time required semen is not available at GVH	0 (0.0)	2 (1.7)	118 (98.3)	0 (0.0)	0 (0.0)	120 (100)	0 (0.0)	2 (0.8)	238 (99.2)	1.01	IX		

Figures in parentheses indicate percentage; MC=Major constraint (3), MIC= Minor constraints (2), NAC= Not a constraint (1)

Input and Infrastructure Related Constraints

Only single constraint of this category i.e. GVH are distantly located was perceived as major by 9.6 per cent respondents and rest constraints viz. GVH are poorly equipped for providing breeding services and most of the time required semen is not available at GVH were not perceived as major by none of the sampled respondents. Results were in consonance with Singh *et al.* (2012) who conducted study in Manipur district and found that distant location of veterinary hospital secured rank fourth (rank IV) and constraints i.e. ill equipped and poor service at AI centres were not considered as serious by respondents as it secured rank seventh.

Table 2 further depict the ranking of various constraints on the basis of mean score and constraints i.e. low conception rate of A.I. secured rank first with highest mean score of 1.78 followed by SDAH personnel organize less number of awareness and infertility camps in village ranked second (1.52), non-availability of breeding service during holidays and after office hours ranked third (1.43), GVH are distantly located (1.25) and farmers are unable to detect heat in buffalo at right time due to silent heat (1.16). However, constraints viz. farmers are less aware about right time of insemination, GVH are poorly equipped for providing breeding services, more charges of A.I., PD and treatment of reproductive disorder with mean score 1.02 each and lack of technical competency of the staff available at GVH, less favorable attitude of SDAH personnel's in providing breeding service towards the farmers, most of the time, required semen is not available at GVH perceived with mean score 1.01 each were perceived as major by hardly any respondents. Chi square test was applied to understand the differences if any between the constraints of two locale and no significant difference were found between constraints perceived by the respondents selected from two locale of except low conception rate of AI, that was significantly differed (<0.01) at 1% level of significance, despite of difference in per cent of target achieved between two locale (Table 3). Reason for less coverage of AI target in locale I (achieved minimum target of AI) as compare to its counterpart may be due to shortage of technical staff in few GVH and concerned Government Veterinary Dispensary (GVD) in the year 2015-16, the year of which target was taken in consideration. Due to absence of technical staff additional charges was given to SDAH personnel of adjacent GVH and GVD and that might have indirectly affected target achievement of AI. However, in few GVH of locale II (achieved maximum target of AI) technical staff was generally belonged to same village or nearby village so they could have attended the owner during holidays that could be reason for more coverage of target. Moreover respondents of locale II perceived low conception rate of AI which result in to more number of AI of same animals and that could added to target.

Table 3: Differences between locale I and locale II in terms of constraints perceived by buffalo owners in availing breeding services from SDAH

Constraints	Locale: I (n=120)			Locale: I (n=120)			Overall: (n=240)			Overall: (n=240)		Rank	
	MC	MIC	NAC	MC	MIC	NAC	MC	MIC	NAC	Mean score	Rank	Mean score	Rank
A. Service Delivery Related Constraints													
Lack of follow up by SDAH personnel after providing breeding services	0 (0.0)	3 (2.5)	117 (97.5)	0 (0.0)	4 (3.3)	116 (96.7)	0 (0.0)	7 (2.9)	233 (97.1)	1.03	VII	1.24	I
Irregularity of delivery of breeding services by SDAH personnel	0 (0.0)	3 (2.5)	117 (97.5)	1 (0.8)	2 (1.7)	117 (97.5)	1 (0.4)	5 (2.1)	234 (97.5)	1.03	VII		
SDAH personnel organize less number of awareness and infertility camps in village	18 (15.0)	31 (25.8)	71 (59.2)	11 (9.2)	35 (29.2)	74 (61.7)	29(12.1)	66 (27.5)	145 (60.4)	1.52	II		
More charges of A.I., PD and treatment of reproductive disorder	0	0	120 (100.0)	1 (0.8)	3 (2.5)	116 (96.7)	1 (0.4)	3 (1.2)	236 (98.3)	1.02	VIII		
Non availability of breeding service during holidays and after office hours	17 (14.2)	28 (23.3)	75 (62.5)	12 (10.0)	18 (15.0)	90 (75.0)	29 (12.1)	46 (19.2)	165 (68.8)	1.43	III		
SDAH personnel are not keen enough/reluctant to provide breeding services at door step	2 (1.7)	8 (6.7)	110 (91.7)	0 (0.0)	1 (0.8)	119 (99.2)	2 (0.8)	9 (3.8)	229 (95.4)	1.05	VI		
Limited availability of service providers at GVH during hospital hours	0 (0.0)	3 (2.5)	117 (97.5)	0 (0.0)	4 (3.3)	116 (96.7)	0 (0.0)	7 (2.9)	233 (97.1)	1.03	VII		
Low conception rate of A.I in buffaloes	20 (16.7)	34 (28.3)	66 (55.0)	37 (30.8)	38 (31.7)	45 (37.5)	57 (23.8)	72 (30.0)	111 (46.2)	1.78	I		
B. Knowledge and Attitude Related Constraints													
Lack of technical competency among staff available at GVH	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	2 (1.7)	118 (98.3)	0 (0.0)	3 (1.2)	237 (98.8)	1.01	IX	1.05	III
Less favorable attitude of SDAH personnel's in providing breeding service towards the farmers	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	2 (0.8)	238 (99.2)	1.01	IX		
Farmers have lack of awareness and knowledge about importance of pregnancy diagnosis	2 (1.7)	2 (1.7)	116 (96.7)	1 (0.8)	3 (2.5)	116 (96.7)	3 (1.2)	5 (2.1)	232 (96.7)	1.05	VI		
Farmers are less aware about right time of insemination	0 (0.0)	2 (1.7)	118 (98.3)	0 (0.0)	2	118 (98.3)	0 (0.0)	4 (1.7)	236 (98.3)	1.02	VIII		
Farmers are unable to detect heat in buffalo at right time due to silent heat	4 (3.3)	8 (6.7)	108 (90.0)	8 (6.7)	7 (5.8)	105 (87.5)	12 (5.0)	15 (6.2)	213 (88.8)	1.16	V		
C. Input and Infrastructure Related Constraints													
GVH are poorly equipped for providing breeding services	0 (0.0)	1 (0.8)	119 (99.2)	0 (0.0)	4 (3.3)	116 (96.7)	0 (0.0)	5 (2.1)	235 (97.9)	1.02	VIII	1.09	II
GVH are distantly located	11 (9.2)	8 (6.7)	101 (84.2)	12 (10.0)	7 (5.8)	101 (84.2)	23 (9.6)	15 (6.2)	202 (84.2)	1.25	IV		
Most of the time required semen is not available at GVH	0 (0.0)	2 (1.7)	118 (98.3)	0 (0.0)	0 (0.0)	120 (100)	0 (0.0)	2 (0.8)	238 (99.2)	1.01	IX		

Figures in parentheses indicate percentage; MC=Major constraint (3), MIC= Minor constraints (2), NAC= Not a constraint (1)

Conclusion

Low conception rate of AI and organisation of less awareness and infertility camp by SDAH personnel were perceived as major constraints by the respondents irrespective of locale. Thus SDAH personnel may be encouraged to conduct more infertility camps, awareness camps regarding proper timing of AI, better managerial practices and nutrition of animals. There should be provision for AI service during consecutive holidays, so farmers can avail service in this period also. It is praiseworthy that SDAH is providing breeding services in an efficient way and buffalo owners perceived less constraints related to service delivery, knowledge and attitude, input and infrastructure related dimensions.

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