



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; SP-12(10): 513-517
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www.thepharmajournal.com

Received: 23-08-2023

Accepted: 30-09-2023

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Buffalo healthcare management practices followed by the farmers of Vindhya region of Madhya Pradesh

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Abstract

The present study was undertaken to document information regarding health care management practices followed by the farmers of Vindhya region of Madhya Pradesh comprises of four districts namely Rewa, Satna, Sidhi and Singrauli. The data were collected personally by the researcher through face-to-face interview and analyzed by frequency and percentage. As concerned to the buffalo health care management practices, majority (58.83%) of respondents have proper veterinary facilities and 78.75% of respondents followed the vaccination to control the various contagious diseases while, 21.25% of respondents did not adopted these practices. It was also found that 25.83% of the respondents vaccinated their buffaloes against the Foot and Mouth followed by 11.67%, 13.33%, 10.00%, 8.33%, 8.75% and 15.41% of the respondents vaccinated their buffaloes against HS, BQ, BQ+HS, BQ+FMD, HS+FMD and BQ+HS+FMD, respectively. Majority of respondents (94.17%) kept sick buffaloes together with healthy ones while only 5.83% of the respondents adopted the segregation of diseased buffalo from healthy ones, while majority (87.08%) of the respondents got treated their sick dairy buffalo by qualified veterinarians, whereas 6.67% and 6.25% respondents got treated their sick dairy buffaloes by local personal and others, respectively. The practice of deworming of calves was adopted only 29.58% of the respondents regularly, whereas 70.42% of respondents did not adopted deworming and 25.42% of respondents followed the practices to control the ecto and endoparasites of the dairy buffaloes in the Vindhya region of Madhya Pradesh.

Keywords: Buffalo, healthcare, management, respondent and Vindhya

Introduction

The livestock sector plays a significant role in the nation's economy, and milk contributes significantly. Animal Husbandry contributes to the rural economy by supplementing the family incomes of landless workers, tiny and marginal producers, and women. The value output from milk and milk products is nearly 70% of the total value output from the livestock sector. Out of total milk produced in India, buffaloes' production is nearly more than half of the total milk production of the country and hence it can be said that buffalo is the mainstay of Indian dairy industry. Buffalo also has inherent ability to produce milk with high milk fat content ranging from 6 to 8.5 percent because of its higher milk fat contents, buffalo milk is preferred over cow milk and it fetches better price in the market. Understanding of livestock management practices followed by farmers is necessary to identify the strengths and weaknesses of the rearing systems (Gupta *et al.* 2008) ^[1]. Health care management practices such as vaccination and deworming ensure proper health of animals that promotes their productivity (Singh *et al.* 2007) ^[2]. Health management is one of the most important aspect of buffalo management but unfortunately it is generally ignored by the farmers of the rural areas. Therefore, the present study was undertaken to document information regarding health care management practices followed by the farmers of Vindhya region of Madhya Pradesh, India.

Materials and Methods

The present study was conducted in Vindhya region of Madhya Pradesh during 2020-21. The Vindhya region of Madhya Pradesh state comprises of four districts namely Rewa, Satana, Sidhi and Singrauli. Three tehsils were selected randomly from each identified district. From each selected tehsil, two villages were then randomly chosen using simple lottery method (Table 1). After the selection of the villages, a preliminary survey was conducted in the selected villages to know the total number of farmers practicing dairy farming. Among these selected villages, 10 buffalo owners as respondents were chosen randomly from each selected

villages. Thus the total respondents of the study were 240 dairy farmers. The exploratory research design was used in the study and a multistage random sampling technique was used for the selection of respondents. The interview schedule for the farmers on buffalo health care management practices and their constraints were developed and pretested before administering in the main sample area. Data was collected through informal and friendly visits to the farmers' homes and farms in the early hours of the day. The data collected were statistically analyzed for frequency and percentage.

Table 1: Selected district, tehsils and villages of Vindhya region of Madhya Pradesh state

District	Tehshil	Village
Rewa	Teonther	Maghigawan and Barha
	Jawa	Banigawan and Janakhai kalan
	Hanumana	Khatkhari and Gauri
Satna	Nagod	Semarwara and Bamhaur
	Maihar	Podi and Bharauli
	Raghuraj Nagar	Rampur and Guluwa
Sidhi	Sihawal	Bithauli and Bichhri
	Gopdbanas	Upani and Bhatha
	Majhauri	Tala and Saraiha
Singrauli	Chitrangi	Pondi (Bagdari) and Kusahi
	Deosar	Jhara and Jiawan
	Waidhan	Harrahawa and Tiwara

Results and Discussion

Veterinary facilities for dairy buffaloes

The findings in respect to veterinary facilities for dairy buffaloes are presented in Table 2, which showed that the majority (58.83%) of respondents told that proper veterinary facilities were available, while 14.17% of the respondents had no fair level of veterinary facilities for buffalo. The district wise results of present investigation was observed that majority about 83.33%, 96.67%, 66.67% and 96.67% of respondents had proper veterinary facilities, while 16.67%, 3.33%, 33.33% and 3.33% of the respondents had no fair level of veterinary facilities for buffalo in Rewa, Satna, Sidhi and Singrauli district respectively.

The findings indicated the well spread of the buffalo husbandry institutions in the study area and also the faith of the farmers on these institutions for veterinary health care services. Similar findings were reported by Vranda *et al.* (2017) [3] who revealed that high percentage of the farmers was receiving the facility of animal health care service from animal husbandry department. Kour *et al.* (2019) [4] reported that about 74.17% of respondents sometimes practiced timely treatment of the sick buffaloes by consultation of veterinary doctor and 25.83% always practiced it. It is mainly because the respondents mainly belonged to tribal community, who still follow traditional method of treating their buffaloes.

Table 2: Veterinary facilities for dairy buffaloes

Category	Rewa		Satna		Sidhi		Singrauli		Overall	
	N	%	N	%	N	%	N	%	N	%
Yes	50	83.33	58	96.67	40	66.67	58	96.67	206	58.83
No	10	16.67	2	3.33	20	33.33	2	3.33	34	14.17

(N and% indicate the number and percentage of respondents, respectively)

Vaccination for the dairy buffaloes

It was clear that majority (78.75%) of respondents followed the vaccination to control the various contagious diseases of buffaloes while, 21.25% of respondents did not adopted these practices. The district wise results of present investigation reported that majority about 70.00%, 83.33%, 81.67% and 80.00% of respondents carried regular vaccination to the buffaloes, while 30.00%, 16.67%, 18.33% and 20.00% of the respondents did not follow proper vaccination in Rewa, Satna, Sidhi and Singrauli district respectively (Table 3).

These finding indicated the awareness among the farmers regarding the importance of regular vaccination in the buffaloes. However, lesser percentage of the respondents did not get their buffaloes vaccinated simply because of ignorance. Similar findings were reported by Kalyankar *et al.* (2008) [5], Sabapara *et al.* (2010) [6], Kumar (2015) [7], Sarita *et al.* (2017) [8] and Vranda *et al.* (2017) [3] who noticed higher percentage of the farmers carried regular vaccination in the buffaloes.

Table 3: Vaccination for the dairy buffalo

Category	Rewa		Satna		Sidhi		Singrauli		Overall	
	N	%	N	%	N	%	N	%	N	%
Yes	42	70.00	50	83.33	49	81.67	48	80.00	189	78.75
No	18	30.00	10	16.67	11	18.33	12	20.00	51	21.25

(N and% indicate the number and percentage of respondents, respectively)

Vaccination done by respondents

It was found that 25.83% of the respondents vaccinated their buffaloes against the Foot and Mouth disease (FMD) followed by 11.67%, 13.33%, 10.00%, 8.33%, 8.75% and 15.41% of the respondents vaccinated their buffaloes against HS, BQ, BQ+HS, BQ+FMD, HS+FMD and BQ+HS+FMD, respectively. The district wise results of present investigation revealed that majority about 30.00%, 28.33%, 28.33% and 30.00% of the respondents vaccinated their buffaloes against the Foot and Mouth disease (FMD) whereas, 16.67%, 10.00%, 20.00% and 25.00% vaccinated against *Haemorrhagic Septicaemia* (HS) and 8.33%, 15.00%, 15.00%

and 11.67% vaccinated against Black Quarter (BQ) disease in Rewa, Satna, Sidhi and Singrauli district respectively (Table 4).

This was suggestive of fairly high level of awareness in farmers regarding protecting the buffaloes by vaccination. Higher percentage of vaccinated buffaloes could be due to no cost of vaccination in the region. These findings were in agreement with that reported earlier by Singh (2018) [9] and Sinha *et al.* (2010) [10], who revealed that most of the respondents got their buffaloes vaccinated against FMD, BQ and HS. Ahirwar *et al.* (2010) [11], who reported that majority, carried out vaccination against FMD followed by HS and BQ.

Table 4: Vaccination done by respondents

Category	Rewa		Satna		Sidhi		Singrauli		Overall	
	N	%	N	%	N	%	N	%	N	%
BQ	5	8.33	9	15.00	9	15.00	7	11.67	37	15.41
HS	10	16.67	6	10.00	12	20.00	15	25.00	48	20.00
FMD	18	30.00	17	28.33	17	28.33	18	30.00	62	25.83
BQ+HS	7	11.67	8	13.33	6	10.00	5	8.33	30	12.50
BQ+FMD	8	13.33	7	11.67	7	11.67	4	6.67	26	10.83
HS+FMD	6	10.00	5	8.33	4	6.67	6	10.00	21	8.75
BQ+HS+FMD	6	10.00	8	13.33	5	8.33	5	8.33	37	15.41

(N and% indicate the number and percentage of respondents, respectively)

Segregation of diseased buffaloes form the healthy ones

It was reported that majority of the respondents 94.17% kept sick buffaloes together with healthy ones while only 5.83% of the respondents adopted the segregation of diseased buffalo from healthy ones. The district wise results of present investigation found that the isolation/segregation of sick/diseased buffaloes was not adopted by majority 98.33%, 91.67%, 90.00% and 96.67% of the respondents whereas, only 1.67%, 8.33%, 10.00% and 3.33% of the respondents adopted segregation of sick buffaloes from healthy ones in Rewa, Satna, Sidhi and Singrauli district respectively (Table 5).

It might be due to lack of knowledge as well as non-

availability of separate space could be the reason for above finding. These findings were in agreement with that reported earlier by Meena *et al.* (2008) [12], Kumar *et al.* (2011) [13], Sunil *et al.* (2011) [14] and Sarita *et al.* (2017) [8], Vranda *et al.* (2017) [3] who reported majority per cent of farmers did not isolated contagious disease infected buffaloes from healthy ones. Yadav *et al.* (2009) [15] reported that many of the farmers do not practice any precautionary measures in sick/diseased buffaloes. Whereas, contrary to the findings of Rathore and Kachwaha (2009) [16], Rangamma *et al.* (2016) [17], who reported that majority of the respondents isolated their sick buffalo from healthy buffaloes.

Table 5: Segregation of diseased buffaloes form the healthy ones

Category	Rewa		Satna		Sidhi		Singrauli		overall	
	N	%	N	%	N	%	N	%	N	%
Tied separately	1	1.67	5	8.33	6	10.00	2	3.33	14	5.83
Kept in general herd	59	98.33	55	91.67	54	90.00	58	96.67	226	94.17

(N and% indicate the number and percentage of respondents, respectively)

Treatment of sick buffaloes

It was reported that majority (87.08%) of the respondents got treated their sick dairy buffalo by qualified veterinarians, whereas 6.67% and 6.25% respondents got treated their sick dairy buffaloes by local personal and others, respectively. These results are well supported by Kumar (2015) [7]. However, present findings are contrary to Rathore *et al.* (2010) [18] and Sabapara *et al.* (2015) [19]. The district wise results of present investigation was revealed that highest percentage about 83.33%, 100.00%, 65.00% and 100.00% of the farmers had received the facility of veterinary officer (buffalo health care service) from buffalo husbandry department. Whereas, 11.67%, 0.00%, 15.00% and 0.00% of the farmers was receiving the facility of local personal and 5.00%, 0.00%, 20.00% and 0.00% of the farmers was receiving the facility of para veterinarian in Rewa, Satna, Sidhi and Singrauli districts, respectively (Table 6).

The findings indicated the well spread of the buffalo husbandry institutions in the study area and also the faith of the farmers on these institutions for veterinary health care services. These observations were mostly similar to the findings of Sinha *et al.* (2010) [10], Rangamma *et al.* (2016) [17] and Vranda *et al.* (2017) [3], who revealed that majority of the farmers had buffalo health care facility and were availing buffalo health care services from veterinary doctor. Whereas, contrary to the findings of Sabapara *et al.* (2012) [20] who revealed that majority of the respondents reported that non availability of veterinary services regularly to treat their sick buffaloes. Singh (2018) [9] reported that majority of sick buffaloes are treated by livestock inspector’s help, followed by AI workers, veterinary officers and very few percent of the respondents practiced traditional knowledge to treat buffalo’s sickness.

Table 6: Treatment of sick buffaloes

Category	Rewa		Satna		Sidhi		Singrauli		overall	
	N	%	N	%	N	%	N	%	N	%
Veterinary officer	50	83.33	60	100.00	39	65.0	60	100.0	209	87.08
Local Personal	7	11.67	0	0.00	9	15.0	0	0.00	16	6.67
Other specify	3	5.00	0	0.00	12	20.0	0	0.00	15	6.25

(N and% indicate the number and percentage of respondents, respectively)

Deworming of the dairy buffalo calves

The practice of deworming of calves was adopted only 29.58% of the respondents regularly whereas 70.42% of respondents did not adopted deworming of buffalo calves in the Vindhya region. The district wise results of present investigation was concluded that the majority about 96.67%,

56.67%, 85.00% and 43.33% of the respondents did not practiced deworming of calves whereas, 3.33% 43.33% 15.00% and 56.67% of the respondents practiced deworming in Rewa, Satna, Sidhi and Singrauli district respectively (Table 7).

Which was due to ignorance and lack of knowledge about

harmful effects of endoparasites. Khadda *et al.* (2017) [21] observed that very few (36.25%) respondents practiced deworming to their calves at regular interval while 56.67% respondents practiced deworming for calves in occasionally.

Vishwkarma *et al.* (2018) [22] also observed that very few (10%) respondents practiced deworming to their calves at regular interval.

Table 7: Deworming of the dairy buffalo calves

Category	Rewa		Satna		Sidhi		Singrauli		overall	
	N	%	N	%	N	%	N	%	N	%
Yes	2	3.33	26	43.33	9	15.00	34	56.67	71	29.58
No	58	96.67	34	56.67	51	85.00	26	43.33	169	70.42

(N and% indicate the number and percentage of respondents, respectively)

Practices to control ecto and endoparasites of the dairy buffaloes

Observations with regard to control ecto and endoparasites of the dairy buffaloes revealed that 25.42% of respondents followed the practices to control the ecto and endoparasites, while majority (74.58%) of respondents did not adopted these practices. Similar results reported by Kumar (2015) [7] and Sabapara *et al.* (2015) [19]. The district wise results of present investigation was also observed that majority 58.33%, 93.33%, 60.00% and 86.67% of the respondents applying pesticide for the control of ecto and endoparasites of the dairy buffaloes in shed, whereas, 41.67%, 6.67%, 40.00% and 13.33% of the respondents did not adopted these practices to control ecto and endoparasites in Rewa, Satna, Sidhi and Singrauli districts, respectively (Table 8).

In the present study, majority of the farmers were aware about

the harmful effects of ectoparasites, which cause reduced buffalo production and performance through transmission of arthropod-borne diseases like trypanosomiasis, babesiosis and theileriosis. These findings are well comparable with finding of Sinha *et al.* (2010) [10] and Sunil *et al.* (2011) [14] who reported that high percentage among farmers was adopting controlling measure against ectoparasites. Whereas, contrary to the findings of Singh (2018) [9], Yadav *et al.* (2009) [15], Khadda *et al.* (2017) [21] and Rangamma *et al.* (2016) [17], they showed that the majority of respondents took no action to keep ectoparasites under control in animal housing. Sarita *et al.* (2017) [8] was also observed that all the respondents were adopting ectoparasites control measures but their method of control was different. Majority of respondent were adopting both manually and insecticides and small present were removing manually and through insecticides.

Table 8: Practices to control ecto and endoparasites of the dairy buffaloes

Category	Rewa		Satna		Sidhi		Singrauli		overall	
	N	%	N	%	N	%	N	%	N	%
Yes	25	41.67	4	6.67	24	40.00	8	13.33	61	25.42
No	35	58.33	56	93.33	36	60.00	52	86.67	191	74.58

(N and% indicate the number and percentage of respondents, respectively)

Conclusion

Based on the aforementioned findings, it can be inferred that the healthcare management situation in the examined region seems to be satisfactory, particularly in terms of the accessibility of veterinary services and the implementation of preventive measures. However, it is imperative to enhance the farmers' level of awareness to ensure the adoption of enhanced healthcare practises for their animals. This includes safeguarding them against endoparasites and ectoparasites, segregating diseased buffalo from healthy ones, and maintaining a hygienic environment for animal housing facilities. This study explores the potential implementation of sophisticated technologies in buffalo health care management practises, aiming to enhance the well-being of farmers.

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