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Shweta Choudhary
Assistant Professor, Department of Livestock Production Management, Arawali Veterinary College, N.H. – 52 Jaipur Road, V.P.O. Bajor, Sikar, Rajasthan, India

ML Gurjar
Assistant Professor & In-charge, Department of Livestock Production Management, College of Veterinary and Animal Science, (Rajasthan University of Veterinary and Animal Sciences), Navania, Vallabhnagar, Udaipur, Rajasthan, India

Vikas Choudhary
Veterinary Officer, Veterinary Hospital (Govt. of Rajasthan), Palasara, Sikar, Rajasthan, India

Padma Meel
Ph.D. Research Scholar Department of Livestock Production Management, College of Veterinary and Animal Science, (Rajasthan University of Veterinary and Animal Sciences), Navania, Vallabhnagar, Udaipur, Rajasthan, India

Kavita Rohlan
M. V. Sc. Scholar, Department of Veterinary Anatomy and Histology, College of Veterinary and Animal Science, (Rajasthan University of Veterinary and Animal Sciences), Bikaner, Rajasthan, India

Subha Ganguly
Associate Professor, Department of Veterinary Microbiology, Arawali Veterinary College (Affiliated to Rajasthan University of Veterinary and Animal Sciences), N.H. – 52 Jaipur Road, V.P.O. Bajor, Sikar, Rajasthan, India

Correspondence
Shweta Choudhary
Assistant Professor, Department of Livestock Production Management, Arawali Veterinary College, N.H. – 52 Jaipur Road, V.P.O. Bajor, Sikar, Rajasthan, India

Study on cattle calf rearing and health care practices in relationship to herd size in non tribal area of Udaipur district of Rajasthan

Shweta Choudhary, ML Gurjar, Vikas Choudhary, Padma Meel, Kavita Rohlan and Subha Ganguly

Abstract
The present study was conducted in Mavli and Vallabhnagar tehsils of Udaipur district of Rajasthan. The study group consisted of 160 cattle rearers, which were selected randomly, from eight villages of above two tehsils. Results revealed that 93.13 percent of the respondents did not cut naval cord of calf and 67.50 percent cattle owners disposed off placenta by deep burial. It was found that practice of deworming of calf was not adopted by 74.38 percent of the respondents. Dehorning and castration was not performed by any of the respondents. Regarding vaccination it was found that 82.50 percent of cattle owners do not vaccinate their cattle against diseases. Out of total Cattle owners study group, 78.13 percent of them left the dead body of animals outside the village as a method of disposal and 94.38 percent of the farmers studied controlled flies by smoke of waste grasses.

Keywords: Cattle calf rearing, health care practices, herd size, non-tribal area, Udaipur, Rajasthan

Introduction
Livestock is an economic enterprise and can also be considered as a 'survival enterprise' for millions of people in India. [6] Livestock sector is significantly contributing to the national economy and its growth rate is increasing. Due to liberalization and globalization policies, the demand for livestock products has increased. The main handicaps in the promotion of dairying along with the adverse climatic conditions are poor management, low genetic potential, inadequate veterinary aid, non-scientific calf rearing and health care practices. Efforts should be aimed to collect and correlate all available information. Few efforts are known to have been made to study systematically the cattle management practices in rural areas.

Materials and Methods
The study was conducted to collect the First hand information on cattle calf rearing and health care practices adopted by cattle rearers in Udaipur district of Rajasthan. The study was conducted in two selected tehsils, Mavli and Vallabhnagar (which are Non-tribal). Further, four villages (Gadoli, Garda ki Bhagal, Golwara, Rahmi) from Mavli and four villages (Ranchhorpura, Siyakheri, Roopawali, Netawala) from Vallabhnagar tehsil were identified and from each village 20 respondents were selected randomly. Thus, the entire sample consists of 160 respondents from selected eight villages in two tehsils of the district. The data was collected through personal interview technique from each selected respondent with a pre prepared interview schedule.
The respondents were categorized on the basis of herd size of cattle possessed by them. The adult cattle units were calculated as either milch, dry, pregnant cattle or bull assumed one adult unit and heifer and calf was assumed as 0.5 and 0.25 adult unit, respectively and respondents were classified as small (up to 1.5 units), Medium (from 1.6 to 4.5 units) and Large (above 4.5 units) groups. Herd size was statistically correlated with existing calf rearing and health care management practices by using Chi Square (χ^2) Snedecor and Cochran [8].

Results and Discussion

Table 1: Calf rearing practices in cattle

S. no.	Practices	Small herd	Medium herd	Large herd	Overall	χ^2 value
1	Attend cattle at calving					
A	Yes	56(100) #	80(100)	24(100)	160(100)	NA
B	No	0(0)	0(0)	0(0)	0(0)	
2	Clean calf after calving					
A	Yes	50(89.29)	75(93.75)	24(100)	149(93.13)	3.109
B	No	6(10.71)	5(6.25)	0(0)	11(6.88)	
3	Cut & disinfect naval cord					
A	Yes	4(7.14)	6(7.50)	1(4.17)	11(6.88)	0.33
B	No	52(92.86)	74(92.50)	23(95.83)	149(93.13)	
4	Feeding of colostrum					
A	Within 2 hours	5(8.93)	9(11.25)	2(8.33)	16(10.00)	2.077
B	2 to 4 hours	10(17.86)	9(11.25)	2(8.33)	21(13.13)	
C	After drooping of placenta	41(73.21)	62(77.50)	20(83.34)	123(76.88)	
5	Quantity of colostrum feeding					
A	Ad lib suckling	15(26.79)	23(28.75)	6(25)	44(27.50)	NA
B	One quarter	33(58.93)	46(57.50)	13(54.17)	92(57.50)	
C	Half quarter	8(14.29)	11(13.75)	5(20.83)	24(15.00)	
D	As per body weight	0(0)	0(0)	0(0)	0(0)	
6	Measures for Retention of Placenta treatment					
A	Vet/LSA	40(71.43)	64(80.00)	22(91.67)	126(78.75)	4.261
B	Quack/stockman	16(28.57)	16(20.00)	2(8.33)	34(21.25)	
7	Disposing of placenta					
A	Deep burial	36(64.29)	54(67.50)	18(75.00)	108(67.50)	0.879
B	Throw off	20(35.71)	26(32.50)	6(25.00)	52(32.50)	
8	**Suckling days of calf**					
A	Weaning	0(0)	0(0)	0(0)	0(0)	NA
B	Upto 6 months	14(25.00)	17(21.25)	4(16.67)	35(21.88)	
C	Less than 4 months	39(69.64)	60(75.00)	20(83.33)	119(74.38)	
D	More than 6 months	3(5.36)	3(3.75)	0(0)	6(3.75)	
9	**Deworming of calves**					
A	Yes	12(21.43)	21(26.25)	8(33.33)	41(25.63)	1.282
B	No	44(78.57)	59(73.75)	16(86.67)	119(74.38)	
10	**Lice/tick eradication**					
A	Yes	48(85.71)	69(86.25)	24(100)	141(88.13)	3.813
B	No	8(14.29)	11(13.75)	0(0)	19(11.88)	
11	**Protect calf against weather inclement**					
A	Yes	56(100)	80(100)	24(100)	160(100)	NA
B	No	0(0)	0(0)	0(0)	0(0)	
12	**Dehorning**					
A	Yes	0(0)	0(0)	0(0)	0(0)	NA
B	No	56(100)	80(100)	24(100)	160(100)	
13	**Castration**					
A	Yes	0(0)	0(0)	0(0)	0(0)	NA
B	No	56(100)	80(100)	24(100)	160(100)	

Figure in parenthesis indicate herd wise percentage
*significant (p<0.05). ** significant (p<0.01),NA (Test not applicable)

Health care practices

The results obtained on different calf rearing practices of cattle in study area from 160 respondents are summarized below and detailed information is provided in Table 1.

The results of the present study indicated that all the respondents attend cattle at calving in the study area. The association between herd size and practice of cleaning calf after calving was non-significant (χ^2 =3.109) and it was found that 93.13 percent of total respondents clean calf after calving while 6.88 percent had not adopted this practice. The study revealed that 6.88 percent of total respondents cut and disinfect naval cord while 93.13 percent had not adopted this practice and the association between herd size and practice of cutting and disinfecting naval cord was non-significant (χ^2=0.330). The association between herd size and practice of feeding colostrum was non-significant (χ^2=2.077). It was found that 76.88 percent prefer feeding colostrum to calf after dropping of placenta followed by 13.13 percent respondents who prefer to feed colostrum to calf between 2 to 4 hours of birth and 10.00 percent of respondents who feed colostrum within 2 hours to their new born calf. The study indicated that 57.50 percent of total respondents prefer feeding colostrum from dam's one quarter to calf followed by 27.50 percent respondents who prefer ad lib suckling to calf and 15.00 percent of respondents who feed colostrum from half quarter of dam to new born calf. The association between herd size and measures for treatment of Retention of Placenta was non-significant (χ^2=4.261). The study revealed that 78.75 percent

of total respondents consult veterinarian/Livestock Assistant for treatment of Retention of Placenta while 21.25 percent call in Quack/Stockman for treatment of Retention of Placenta. The association between herd size and practice of disposing of placenta was found to be non-significant (χ^2=0.879). Results indicated that 67.50 percent of total respondents had adopted the practice of deep burial and 32.50 percent of total respondents had adopted practice of throwing off placenta as a method of disposing of placenta. Results indicated that 74.38 percent respondents allowed suckling of calf upto 4 months of birth followed by 21.88 percent of respondents who allow suckling upto 6 months of age and 3.75 percent of respondents who allow their calf to suckle dam for more than 6 months of age. The association between herd size and practice of deworming of calf was non-significant (χ^2=1.282). Results indicated that 25.63 percent of total respondents had adopted the practice of deworming their calves while 74.38 percent had not adopted this practice. The association between practice of lice/tick eradication and herd size was found to be non-significant (χ^2 =3.813). The respondents who had adopted the practice of lice/tick eradication were 88.13 percent of total respondents studied while 11.88 percent of respondents had not adopted this practice. All the 160 respondents studied had adopted the practice of enclosing their calf in shed as a measure for protection against weather inclement. None of the respondents had adopted practice of dehorning of calf. None of the respondents had adopted the practice of castration of their calf.

The findings of attending cattle at calving and cleaning calf after calving are in line with the observation of Kumar *et al.* [1] and Rathore *et al* [7]. The findings about suckling days of calf are in close conformity with the reports of Mathur [5]. The result of calf deworming practice observed in this study was contrary to the finding of Malik *et al.* [2]. Dehorning and castration of calves were not followed by any respondents. These findings are quite similar as Kumar *et al.* [1] but do not fall in line with observed by Malik *et al.* [2].

Table 2: Health care practices in cattle

S. No	Practices	Small herd	Medium herd	Large herd	Overall	χ^2value
1	**Consultation for treatment**					
A	Vet/LSA	29(51.79)	40(50.00)	13(54.17)	82(51.25)	NA
B	Stockman	0(0)	0(0)	0(0)	0(0)	
C	Quack	27(48.21)	40(50.00)	11(45.83)	78(48.75)	
2	Vaccination					
A	Yes	12(21.43)	14(17.50)	2(8.33)	28(17.50)	1.995
B	No	44(78.57)	66(82.50)	22(91.67)	132(82.50)	
3	Deworming					
A	Yes	12(21.43)	21(26.25)	8(33.33)	41(25.63)	1.282
B	No	44(78.57)	59(73.75)	16(66.67)	119(74.38)	
4	Isolation					
A	Yes	39(69.64)	55(68.75)	15(62.50)	109(68.13)	0.423
B	No	17(30.36)	25(31.25)	9(37.50)	51(31.88)	
5	Dispose dead animals					
A	Deep burial	13(23.21)	17(21.25)	5(20.83)	35(21.88)	0.092
B	Leaves as such for decay/vultures	43(76.79)	63(78.75)	19(79.17)	125(78.13)	
6	Cleaning water trough & mangers					
A	Daily	1(1.79)	5(6.25)	0(0)	6(3.75)	4.154
B	Alternate day	5(8.93)	11(13.75)	4(16.67)	20(12.50)	
C	Weekly	50(89.29)	64(80.00)	20(83.33)	134(83.75)	
7	Cleaning animal shed					
A	Daily	52(92.86)	77(96.25)	21(87.50)	150(93.75)	NA
B	Alternate day	4(7.14)	3(3.75)	3(12.50)	10(6.25)	
C	Weekly	0(0)	0(0)	0(0)	0(0)	
8	Measures to control flies/mosquitoes					
A	Smoke of waste grass	53(94.64)	75(93.75)	23(95.83)	151(94.38)	0.162
B	Electric fan	3(5.36)	5(6.25)	1(4.17)	9(5.63)	
9	Control of flies/ticks					
A	Dusting of tick repellent	52(92.86)	68(85)	23(95.83)	143(89.38)	3.381
B	Manual	4(7.14)	12(15.00)	1(4.17)	17(10.63)	
10	Veterinary aid available					
A	Yes	56(100)	80(100)	24(100)	160(100)	NA
B	No	0(0) #	0(0)	0(0)	0(0)	

Figure in parenthesis indicate horizontal percentage
*significant (p<0.05). ** significant (p<0.01)

The results indicated that 51.25 percent of the total respondents consult Veterinarian/LSA and 48.75 percent consult Quack/Stockman for treatment of their animals. The association between practice of vaccination and herd size was found to be non-significant (χ^2=1.995). Results indicated that 17.50 percent of the total respondents get their animals vaccinated and 82.50 percent do not get their animals vaccinated against common occurring diseases. The association between practice of deworming and herd size was found to be non-significant (χ^2=1.282) and it was found that 25.63 percent of the total respondents adopted the practice of deworming and 74.38 percent had not adopted it. The association between practice of isolation of sick animals and herd size was found to be non-significant (χ^2=0.423). Data indicated that 68.13 percent of the total respondents adopted the practice of isolation and 31.88 percent had not adopted it. The study revealed that 21.88 percent of total respondents had adopted deep burial as method of disposing dead animals while 78.13 percent of total respondents leaves dead animal as such for decay/vultures. The association between practice of disposing dead animals and herd size was found to be non-significant (χ^2 =0.092). The association between practice of cleaning of water trough & mangers and herd size was found to be non-significant (χ^2=4.154). The study indicated that 83.75 percent of total respondents clean water trough and mangers weekly followed by 12.50 percent cleaning them on alternate days and 3.75 percent of respondents cleaning them daily. The results indicated that 93.75 percent of total respondents clean animal shed daily followed by 6.25 percent of total respondents cleaning it on alternate days. The association between measures to control flies/mosquitoes in animal surroundings and herd size was found to be non-significant (χ^2=0.162). Results indicated that 94.38 percent of total respondents use smoke of waste grass to control flies/mosquitoes while 5.63 percent use electric fan to control flies/mosquitoes in animal surroundings. The association between measures to control flies/ticks on animal body and herd size was found to be non-significant (χ^2=3.381). The study revealed that 89.38 percent of total respondents adopted dusting of tick repellent/insecticide as a measure to control flies/ticks on animal body while 10.63 percent removes/protect against them manually. The study indicated that veterinary aid was available to all 160 cattle rearers for consultation in form of Veterinarian or Livestock Assistant.

Almost similar results regarding vaccination were reported by Mathur [5]. Regarding deworming practices, isolation and disposing of dead animals similar findings were also reported by Manohar [4], Rathore *et al.* [7] and are not in accordance with the observations of Malik and Nagpaul [3]. The findings regarding cleaning of water trough & mangers, cleaning animal shed and method of control of flies/ticks are in line with the observations of Malik and Nagpaul [3].

From this study it was found that the adoption of common scientific animal husbandry management practices is still lacking on Grass root level in villages. There is a need to promote more studies of this type, which could act as a base of policy formulation and awareness programmes, so that the ultimate goal of farmer's social and economic up gradation can be achieved.

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