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Socio economic study on managerial practices of buffalo farming in Phulera block of Jaipur district, Rajasthan

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Abstract

The present study entitled 'Socio economic study on managerial practices of buffalo farming in Phulera Block of Jaipur District, Rajasthan' was conducted in the year 2019- 20 with a sample of 80 respondents. The results indicated that the majority (66.25 per cent) of the respondents got conceived their buffaloes by A.I where as natural method service was followed by 33.75 only. About 38.75 per cent of the respondents used purebred bull for service and 61.25 percent respondents use cross bred. Majority (58.75 per cent) of the respondents inseminated/crossed their buffalo at early heat stage. About 62.5 per cent practiced P.D of buffaloes. 100 per cent of the respondents got treated their buffaloes for anoestrus and repeat breeding by veterinarian. Majority (72.50 per cent) of the respondents grazed their animals in group. About 70.00 per cent buffalo keepers grazed animals on harvested/fallow field, while 30 per cent kept own pasture land for grazing. All the respondents use to chop the dry fodder before feeding, while 78.75 per cent of the respondents chopped green fodder. Home prepared concentrate mixture is given by 21.25 per cent of the respondents in the study area. A large number (60.00 per cent) of buffalo keepers soaked and boiling concentrate mixture before feeding. Only 37.50 and 21.25 per cent of the respondents fed common salt and mineral mixture, respectively. None of the buffalo keeper has been recorded to prepare hay and silage.

Keywords: Buffalo, managerial practices, Jaipur

Introduction

Livestock sector plays a crucial role in shaping the rural economy of India. It is a major continuous income generating activity for the rural households. Livestock rearing and crop husbandry are the two important components of mixed farming which influence agricultural economy leading to sustainable agriculture and are complementary to each other. On an average animal husbandry contributes about 30 per cent to agricultural gross domestic product (GDP) of the country, whereas, the contribution is much higher in hot semi-arid and arid region where conventional crop production is always a gamble due to uncertain and scanty rainfall.

Livestock play a vital role in the agricultural and rural economies of the developing world. Not only do they produce food directly, they also provide key inputs to crop agriculture. Most farms in the developing world are too small to justify owning or using a tractor, and the alternatives are animal power or human labor.

About 8 per cent of G.D.P. of Rajasthan is contributed by Livestock sector alone. This sector has great potential for rural self-employment at the lowest possible investment per unit. Therefore, livestock development is a critical pathway to rural prosperity. As per the 20th Livestock census 20019, there are 56.8 million Livestock (which include cattle, buffalo, sheep, goat, horse & ponies, mules, donkeys, camel and pig) and 14.6 million poultry (Source-Department of Animal Husbandry, Govt. of Rajasthan, Livestock census 2019 (Provisional)).

Buffalo holds the greatest promise for food security and sustainable development in the 21st century as these animals form an integral part of the typical farming system in India. In India, buffalo has been the backbone of rural economy. It is the mainstay in the production of butter and ghee. Not only this, buffalo is also considered more useful for reasons of higher fat content in milk, ability to utilize agricultural byproducts more efficiently and requires less amount of kilo calories to produce 1kg milk. Buffalo is the largest capital asset as well as the friend of small farmers. It is a fit companion for Indian farmers, who grow older with their

buffaloes developing a high degree of mutual understanding. As with many of the livestock species maintained by the rural families, there is a socio-cultural linkage with buffaloes also. Efficient management is necessary to increase milk production. An efficient management needs a strong database. Efforts should be aimed to collect and correlate all available information. Few efforts are known to have been made to study systematically the buffalo management practices in rural areas. The information available and the notation prevalent on the subject have been based on assumptions, usual observations, experience and reports of some specialists and professional workers.

Research Methodology

The study was conducted in Phulera tehsil, Jaipur district of Rajasthan, which was selected purposively. The district comprised of 13 tehsils, out of which one tehsil was selected. Further, four villages selected from tehsil were identified. From each village 20 respondents were selected. Thus, the entire sample consists of 80 respondents from selected four villages in Phulera tehsils of the district. A list of buffalo owners of selected villages was prepared with the help of village Sarpanch and Patwari with the criteria to select from all strata, was divided in three categories according to herd size *viz.* small, medium, large.

Results and Discussions

Existing breeding management practices

The overall results in table 1 indicated that 66.25 per cent of the respondents adopted A.I and 33.75 per cent adopted natural service. The chi-square statistic is 1.3792. The p-value is .501776. The result is not significant at $p < .05$. This may be

due to wrong notion among livestock owner for natural. and also due to lack of natural facility in the study area.

Regarding quality of breeding bulls majority (61.25 per cent) of the respondents used crossbred and pure bred indigenous (38.75 per cent) bull for insemination/ natural service of their buffaloes. The chi-square statistic is 0.0163. The p-value is .991873. The result is not significant at $p < .05$.

As regards to the stage of heat at which buffaloes were allowed for insemination 58.75 and 41.25 per cent of the respondents followed the practice in early heat and mid heat, respectively, whereas none was observed to detect heat in later stage. The chi-square statistic is 5.1132. The p-value is .077566. The result is not significant at $p < .05$. It was noted that all the respondents observed their buffaloes for heat symptoms regularly. Regarding pregnancy diagnosis, 62.50 per cent of the respondents practiced pregnancy diagnosis of their buffaloes, but remaining 37.50 per cent did not practice pregnancy diagnosis. The chi-square statistic is 0.138. The p-value is .933308. The result is not significant at $p < .05$.

The result indicated that all the respondents treated their buffaloes for anoestrous and repeat breeding. Regarding the treatment of anoestrus and repeat breeding problems, 75 per cent of the respondents properly treated their problematic buffaloes with the help of veterinary doctor and stockman. The chi-square statistic is 0.4473. The p-value is .799606.

Only 25 per cent of the respondents were dependent on quacks for the treatment due to ignorance. Thus, it is quite evident from the emerging results of various breeding practices followed by the buffalo keepers in the study area that majority of the respondents were adopting the recommended breeding practices. But there was a wide gap in adoption of natural practices.

Table 1: Existing breeding management practices

Practices	Households (Herd size)			Overall	χ^2 Value
	Small	Medium	Large		
1. Method of breeding					
a) Natural	7	11	9	27(33.75)	1.38NS
b) A.I	8	25	20	53(66.25)	
2. Quality of breeding bull					
a) Indigenous (purebred)	6	13	12	31(38.75)	0.02NS
b) Cross bred (unidentified)	10	20	19	49(61.25)	
3. Heat detection					
a) Yes	20	35	25	80(100)	---
b) No	0	0	0	00	
4. Stage of heat at which buffalo all owed for insemination					
a) Early heat	9	20	18	47(58.75)	5.11NS
b) Mid heat	8	20	5	33(41.25)	
c) Later heat	0	0	0	00	
5. Pregnancy diagnosis					
a) Yes	10	22	18	50(62.50)	0.14NS
b) No	7	13	10	30(37.50)	
6. Treatment of Anoestrous/repeaters					
a) Yes	22	30	28	80(100)	-----
b) No	0	0	0	00	
7. If yes, then					
a) By veterinary doctor/stockman	15	25	20	60(75.00)	0.45NS
b) By quacks	4	10	6	20(25.00)	

Existing feeding management practices

The existing feeding management practices of the studied area are given in table 2. The data indicated in table showed that 18.75 per cent respondents both (grazed and stall feeding) to their animals and 68.75 per cent respondents were using stall feeding the chi-square statistic is 0.242. The p-value is

.886041. The result is not significant at $p < .05$. and 12.50 percent respondents were using grazing for their buffaloes. The chi-square statistic is 11.8027. The p-value is .018881. The result is significant at $p < .05$. Majority 72.50 per cent of the respondents fed their animals in groups, while 27.50 per cent of the buffalo keepers fed their animals individually.

The data of grazing site revealed that 70.00 per cent of respondents grazed their animals on harvested/ fallow field and 30.00 per cent of respondents on harvested\ fallow field and own pasture land, while no respondent was reported to graze the buffalo over common pasture land. Pearl millet stover (Bajra Karbi) and wheat straw were the main dry fodder with some quantity of grass collected during crop weeding. The chi-square statistic is 0.8891. The p-value is .641126. The result is not significant at $p < .05$. The dry fodder (Bajra Karbi) was chopped by all the respondents in the study. About 78.75 per cent of the respondents chopped green fodder. The chi-square statistic is 0.1164. The p-value is .943479. The result is not significant at $p < .05$.

About 21.25 per cent of respondents gave green fodder as such, this might be due to a shortage of labour or ignorance about advantages of giving chopped fodder. Cultivation of green fodder was done by the farmers who had irrigation facilities that are 83.75 per cent. Majority of the respondents fed green fodder only 2-3 months in monsoon season (July to September).

The results of the table 2 indicated that about half (50 per cent) of the respondents fed readymade concentrate mixture to their animals followed by home prepared 21.25 per cent and mixture of home prepared and readymade 28.75 per cent. The chi-square statistic is 0.1383. The p-value is .997717. The result is not significant at $p < .05$. Home prepared concentrate mixture constituted crushed grain of Bajra, barley and guar mixed with cotton seed cake.

Regarding pretreatment of concentrate mixture 40 per cent of the respondents soaked concentrate mixture before feeding and 60.00 per cent soaked and boiled concentrate mixture before feeding. The chi-square statistic is 0.9028. The p-value is .636743. The result is not significant at $p < .05$. Majority of the buffalo owners (62.50 per cent) were not feeding salt

regularly to their animals. The chi-square statistic is 1.7858. The p-value is .409462. The result is not significant at $p < .05$. Feeding of mineral mixture to buffalo was also not adopted by 78.75 per cent respondents, as they felt it was not profitable the chi-square statistic is 2.784. The p-value is .248573. The result is not significant at $p < .05$. Only 37.50 per cent respondents fed common salt and only 21.25 per cent of the respondents fed mineral mixture, in the ration of buffalo. None of the respondents was found to prepare hay and silage in study. Majority (55.00 per cent) of the respondents were feeding concentrate to lactating buffaloes at the time of milking. Only 45.00 per cent of the respondents fed concentrate mixture at both milking time as well as mixed with fodder. The chi-square statistic is 0.0168. The p-value is .991618. The result is not significant at $p < .05$. The data of concentrate feeding to advance pregnant buffalo was encouraging i.e. 76.25 per cent of the respondents were feeding concentrate mixture as a special ration to advance pregnant buffaloes. The chi-square statistic is 0.2648. The p-value is .875986. The result is not significant at $p < .05$.

Majority (51.25 per cent) of the buffalo keepers were not feeding concentrate to young calves but only 26.25 per cent of the buffalo keepers were feeding concentrate to heifers. The chi-square statistic is 0.2658. The p-value is .87555. The result is not significant at $p < .05$. They were not feeding more concentrates to these heifers and these were mostly dependent on grazing. The chi-square statistic is 0.3044. The p-value is .85882. The result is not significant at $p < .05$.

Regarding quantity of concentrate feeding, 15.00 per cent of the respondents fed 2-3 kg. per day to lactating buffaloes followed by 26.25 per cent of respondents fed 3-5 kg/day and 58.75 per cent respondents fed 1 kg. for 2 litres of milk per day. The chi-square statistic is 0.5734. The p-value is .965974. The result is not significant at $p < .05$.

Table 2: Existing feeding management practices

Practices	Households (Herd size)			Overall	χ^2 Value
	Small	Medium	Large		
1. Feeding of animals					
a) Stall feeding	16	30	9	55(68.75)	11.80S
b) Only Grazing	1	3	6	10(12.50)	
c) Both (stall + grazing)	2	6	7	15(18.75)	
2. Method of feeding					
a) Group	8	28	22	58(72.50)	0.24NS
b) Individual	4	10	8	22(27.50)	
3. Grazing site					
a) Common pasture land	0	0	0	00	
b) Harvested/fallow	10	30	16	56(70.00)	
c) Fields					
d) Own pasture land	4	8	12	24(30.00)	
4. Type of dry fodder					
a) Bajra Karbi + dry grass	9	20	19	47(58.75)	0.89NS
b) Bajra Karbi + dry grass + wheat straw	6	17	10	33(41.25)	
5. Chopping of dry fodder					
a) Yes	20	35	25	80(100)	-----
b) No	0	0	0	00	
6. Chopping of green fodder					
a) Yes	9	34	20	63(78.75)	0.12NS
b) No	2	9	6	17(21.75)	
7. Cultivation of green fodder					
a) Yes	17	33	17	67(83.75)	-----
b) No	2	7	4	13(16.25)	
8. Type of concentrate mixture					
a) Home prepared	3	9	5	17(21.25)	0.14NS
b) Readymade	7	20	13	40(50.00)	
c) Mixture of home prepared and readymade	4	11	8	23(28.75)	

9. Pretreatment of concentrate mixture					
a) Soaking	6	18	8	32(40.00)	0.90NS
b) Soaking and boiling	10	22	16	48(60.00)	
10. Feeding of common salt					
a) Yes	5	14	11	30(37.50)	1.79NS
b) No	15	20	15	50(62.50)	
11. Feeding of mineral mixture					
a) Yes	4	8	5	17(21.25)	2.78NS
b) No	13	32	18	63(78.75)	
12. Preparation of hay and silage					
a) Yes	0	0	0	00	-----
b) No	15	35	30	80(100)	
13. Mode of concentrate feeding to lactating buffalo					
a) At milking time	9	22	13	44(55.00)	0.02NS
b) Both at milking time and mixed with fodder	7	18	11	36(45.00)	
14. Concentrate feeding of advance pregnant buffalo					
a) Yes	11	33	17	61(76.25)	0.27NS
b) No	4	9	6	19(23.75)	
15. Concentrate feeding of young calf					
a) Yes	7	20	12	39(48.75)	0.27NS
b) No	9	19	13	41(51.25)	
16. Concentrate feeding to heifer					
a) Yes	3	12	6	21(26.25)	0.31NS
b) No	11	30	18	59(73.75)	
17. Quantity of concentrate fed to the lactating buffalo per day					
a) 1-2 Kg. concentrate	0	0	0	00	0.57NS
b) 2-3 Kg. concentrate	2	6	4	12(15.00)	
c) 3-5 Kg. concentrate	3	11	8	21(26.25)	
d) 1 Kg. for 2 litres	9	20	18	47(58.75)	

Conclusion

The study shows that the Most of the respondents are not following recommended breeding and feeding management practices. Most of the respondents follow the A.I method of insemination of their animal and not rely over the natural insemination.

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