BREEDING AND FEEDING MANAGEMENT PRACTICES FOLLOWED BY RATHI CATTLE OWNERS FOR CONSERVATION OF RATHI CATTLE IN BIKANER DISTRICT OF RAJASTHAN[#]

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ABSTRACT

The study was conducted in Bikaner district of Rajasthan, out of 8 tehsils of Bikaner district two tehsils i.e. Bikaner, and Lunkaransar were selected purposively**.** Further, four villages from each selected tehsil were identified. From each village 20 respondents were selected randomly. Thus, the entire sample consists of 160 respondents. The data was collected through the personal interview. The field survey was conducted to collect the first hand information on existing breeding and feeding management practices followed by Rathi cattle owners in Bikaner district of Rajasthan. It was observed that only 40.62% of respondents adopted natural service, 35.62% used indigenous (pure bred) under quality of breeding bull. Majority 98.12% can detect heat, 62.50% inseminate their cows at an early heat stage. 68.12% Rathi cattle keepers followed pregnancy diagnosis. Regarding feeding practices, most of the farmers followed group feeding and grazed in fallow/harvested field. 81.25% of Rathi cattle keeper soaked concentrate mixture before feeding, 93.75% of cattle keepers fed concentrate mixture to cattle in advance pregnancy.

Key words**:** Management practice, breeding, feeding, livestock owner

Introduction

Major economic activity of the rural people is animal husbandry, especially in the arid and semi arid regions of Rajasthan. Development of livestock sector has a significant beneficial impact in generating employment thereby reducing poverty in rural areas. Rathi is an important milch breed of cattle found in the arid regions of Rajasthan. This breed functions as a major livelihood source for the farmers in this region. So the study was conducted in Bikaner district of Rajasthan to find out the various existing breeding and feeding management practices followed by Rathi cattle owners.

Materials and Methods

The study was conducted in Bikaner district of Rajasthan, which was selected purposively. The district comprised of 8 tehsils, out of which two tehsils were selected purposively. The selected tehsils were Bikaner, and Lunkaransar. Further, four villages from each selected tehsil were identified. From each village 20 respondents were selected randomly.

Thus, the entire sample consists of 160 respondents. The data was collected through the personal interview. The existing breeding and feeding management practices were separately enlisted. The frequencies were obtained for different breeding and feeding management practices included in the study. The score of individual practice was converted into percentage.

Results and Discussion

The different breeding and feeding management practices followed by all the 160 Rathi cattle owners were studied and each of them described in sub points as follows.

Existing breeding management practices

The overall results in Table 1 indicated that only 40.62% adopted natural service and 59.38% of the respondents adopted A.I. This may be due to wrong notion among livestock owner for A.I. and also due to lack of A.I. facility in the study area. The present results of A.I are in accordance with the results observed by Gadhwal *et al*. (2015), Prajapati *et al*. (2015), Letha (2013) and Sabapara *et al*. (2010). The present result of A.I. are in contrast with the findings observed by Singh *et al*. (2014), Chand *et al*. (2014), Manohar *et al.* (2014), Kishore *et al.* (2013), Tanwar *et al*. (2012), Rathore *et al*. (2010) and Yadav *et al*. (2009). As regards to the quality of breeding bulls, majority (64.38%) of the respondents used crossbred and 35.62% indigenous (purebred). These results are almost similar as observed by Gadhwal *et al*. (2015), Manohar *et al*. (2014), Rathore *et al*. (2010) and Yadav *et al.* (2009).

As regards to the stage of heat at which cattle were allowed for insemination 62.50 and 31.25% of the respondents followed the practice in early heat and mid heat, respectively, whereas 6.25% observed to detect heat in later stage. The results are in accordance with Gadhwal *et al.* (2015), Manohar *et al.* (2014) and Rathore *et al.* (2010) but are contradictory with findings of Gupta *et al.* (2008). It observed that majority of the respondents (98.12%) relied on behavioural signs for the detection of heat and only 1.88% farmers were not able to detect heat in animals. Similar findings were reported by Prajapati *et al.* (2015). The above findings are in consonance with the findings of Kishore *et al.* (2013).

Regarding pregnancy diagnosis, 68.12% of the

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respondents practiced pregnancy diagnosis of their cattles, but remaining 31.88% did not practice pregnancy diagnosis. These results are almost similar as observed by Manohar *et al.* (2014), Sabapara *et al.* (2010) and Gupta *et al*. (2008) but in contradiction to the finding of Chand *et al.* (2014), Kishore *et al*. (2013), Tanwar *et al*. (2012) and Rathore *et al.* (2010). The result indicated that all the respondents treated their cattles for anoestrus and repeat breeding. Regarding the treatment of anoestrus and repeat breeding problems, 78.12% of the respondents properly treated their problematic cattle with the help of veterinary doctor and stockman. The present findings recorded in text are well supported by Gadhwal *et al.* (2015) and Manohar *et al.* (2014). 21.88% 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 Rathi cattle owners in the study area that majority of the respondents were adopting the recommended breeding practices.

Existing feeding management practices

The data indicated in Table 2 showed that 86.88% respondents both (grazed and stall fed) to their animals and all the respondents were using stall feeding for their cattle. Majority 68.75% of the respondents fed their animals in groups, while 31.25% of the Rathi cattle owners fed their animals individually. These findings are almost similar to that recorded by Malsawmdawngliana *et al.* (2016), Mahla *et al.* (2015), Manohar *et al.* (2014), Sreedhar *et al.* (2011), Rathore *et al.* (2010), Gupta *et al*. (2008) and Bainwad *et al.* (2007). The data of grazing site revealed that 57.5% of respondents grazed their animals on harvested/ fallow field and 32.5% of respondents on harvested/fallow field and own pasture land, while only 10% respondents reported to graze the cattle over common pasture land. These findings are almost similar to that recorded by Mahla *et al.* (2015), Manohar *et al.* (2014) and Rathore *et al.* (2010).

Bajra karbi and wheat straw were the main dry fodder with some quantity of grass collected during crop weeding. The dry fodder (Bajra karbi) was chopped by all the respondents in the study area. Only 43.75% of the respondents chopped green fodder. Similar findings were observed by Mahla *et al.* (2015), Manohar *et al.* (2014), Rathore *et al.* (2010) and Gupta *et al.* (2008) but in consonance with the findings of Mahla *et al.* (2015), Kishore *et al.* (2013) and Sabapara *et al.* (2010). About 56.25% of respondents gave green fodder as such, this might be due to a shortage of labour or lacking the knowledge and unaware about the importance of using chaffed fodders. It might be due to non-availability of chaff cutter at cheaper rate in hometown, lack of manger facility, inadequate knowledge of efficient utilization of feed and fodders. Cultivation of green fodder was done by the farmers who had irrigation facilities that are 75%. Majority of the respondents fed green fodder only 2-3 months in monsoon season (July to September) Almost similar findings have also been observed by Mahla *et al.* (2015) and Manohar *et al.* (2014) but in contrary with the findings of Naik *et al.* (2013), Kishore *et al.* (2013) and Rathore *et al.* (2010). About half (50%) of the respondents fed home prepared concentrate mixture to their animals followed by readymade 37.5% and mixture of home prepared and readymade 12.50%.

Home prepared concentrate mixture constituted crushed grain of bajra, barley and guar mixed with cotton seed cake. Similar findings were observed by Manohar *et al.* (2014) and Gupta et al. (2008) and these findings are contrary to Mahla *et al.* (2015), Naik *et al.* (2013), Rathore *et al.* (2010) and Sabapara *et al.* (2010)

Regarding pre treatment of concentrate mixture 81.25% of the respondents soaked concentrate mixture before feeding and 18.75% soaked and boiled concentrate mixture before feeding. This finding is in accordance with Mahla *et al.* (2015), Manohar *et al.* (2014), Tanwar *et al*. (2012), Rathore *et al.* (2010) and Gupta *et al*. (2008).

Majority of the cattle owners (53.13%) were not feeding salt regularly to their animals. Feeding of mineral mixture to cattle was also not adopted by 75.63% respondents, as they felt it was not profitable. Only 46.87% respondents fed common salt and only 24.37% of the respondents fed mineral mixture, in the ration of cattle. None of the respondents was found to prepare hay and silage in study. These findings of common salt, mineral mixture and preparation of hay and silage are in accordance with the results of Mahla *et al.* (2015), Singh *et al.* (2014), Manohar *et al.* (2014), Kishore *et al.* (2013), Letha (2013), Tanwar *et al*. (2012), Sabapara *et al.* (2010) and Rathore *et al.* (2010) but in contrast with the findings of Letha (2013) and Gupta *et al*. (2008).

Majority (76.87%) of the respondents were feeding concentrate to lactating cows at the time of milking. Only 23.13% of the respondents fed concentrate mixture at both milking time as well as mixed with fodder. The data of concentrate feeding to advance pregnant cow was encouraging *i.e.* 93.75% of the respondents were feeding concentrate mixture as a special ration to advance pregnant cows. These findings recorded in present study, are in agreement with the reports of Mahla *et al.* (2015), Manohar *et al.* (2014), Rathore *et al.* (2010) and Sabapara *et al.* (2010) but in contrary with the findings of Singh *et al.* (2014) and Sabapara *et al.* (2010).

Majority (64.9%) of the Rathi cattle owners were feeding concentrate to young calves and 53.12% of the Rathi cattle owners were feeding concentrate to heifers. They were not feeding more concentrates to these heifers and these were mostly dependent on grazing. Similar findings were reported by other researchers, Mahla *et al.* (2015) and Manohar *et al.* (2014).

Regarding quantity of concentrate feeding, 18.75% of the respondents fed 2-3 kg. per day to lactating cows followed by 31.25% of respondents fed 3-5 kg/day and 50 per cent respondents fed 1 kg. for 2 litres of milk per day. These findings agree well with earlier reports by Mahla *et al.* (2015), Manohar *et al.* (2014), Tanwar *et al.* (2012) and Bainwad *et al.* (2007) but in consonance with the findings of Kishore (2013) and Sreedhar *et al.* (2011).

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Table1: Existing breeding management practices

S.No.	Existing practices	Frequency	Percentage
1.	Method of breeding a. Natural b. A.I.	 65 95	 40.62 59.38
2.	Quality of breeding bull a. Indigenous (purebred) b.Crossbred (unidentified)	 57 103	35.62 64.38
3.	Heat detection a. Yes b. No	157 03	98.12 01.88
4.	Stage of heat at which cow allowed for insemination/service a. Early heat b. Mid heat c. Later heat	 100 50 10	 62.50 31.25 06.25
5.	Pregnancy diagnosis a. Yes b. No	109 51	68.12 31.88
6.	Treatment of anoestrus/repeaters: a. Yes b. No	 156 04	 97.50 02.50
7.	if yes, then a. By veterinary doctor/stockman b. By quacks	 125 35	 78.12 21.88

Table 2: Existing feeding management practices

S.No.	Existing practices	Frequency	Percentage
1.	Feeding of animals a. Stall feeding b. Only Grazing c. Both (stall + grazing)	 160 00 139	 100 00.00 86.88
2.	a.Group b. Individual	110 50	68.75 31.25
3.	Grazing site a. Common pasture land b. Harvested/fallow fields c. Harvested/fallow fields and own pasture land	 16 92 52	 10.00 57.50 32.50
4.	Type of dry fodder a. Bajra karbi + dry grass b.Bajra karbi + dry grass + wheat straw c. Wheat straw + dry grass	 40 112 08	 25.00 70.00 05.00
5.	Chopping of dry fodder a. Yes b. No	160 00	100.00 00.00
6.	Chopping of green fodder a. Yes b. No	 70 90	 43.75 56.25
7.	Cultivation of green fodder a. Yes b. No	 120 40	 75.00 25.00
8.	Type of concentrate mixture a.Home prepared b.Readymade c.Mixture of home prepared and readymade	 80 60 20	 50.00 37.50 12.50
9.	Pretreatment of concentrate mixture a. Soaking b. Soaking and boiling	 130 30	 81.25 18.75
10.	Feeding of common salt a. Yes b. No	75 85	46.87 53.13
11.	Feeding of mineral mixture a. Yes b. No	 39 121	 24.37 75.63
12.	Preparation of hay and silage a. Yes b. No	 00 160	 00.00 100.00
13.	Mode of concentrate feeding to lactating cow a. At milking time b. Both at milking time and mixed with fodder	 123 37	 76.87 23.13
14.	Concentrate feeding of advance pregnant cow a. Yes b. No	 150 10	 93.75 16.25
15.	Concentrate feeding of young calf a. Yes b. No	 108 52	 64.90 35.10
16.	Concentrate feeding to heifer a. Yes b. No	 85 75	 53.12 46.88
17	Quantity of concentrate fed to the lactating cow per day a.1-2 Kg. concentrate b.2-3 Kg. concentrate c.3-5 Kg concentrate d. 1 Kg. for 2 liters	 00 30 50 80	 00.00 18.75 31.25 50.00

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