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Seasonal variation in reproductive problems of buffaloes under field conditions

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ABSTRACT

Seasonality in the reproductive disorders in buffaloes was studied on five years (1992-96) data collected from adopted villages of NDRI, Karnal. The year was divided into five seasons viz., winter, spring, summer, rainy and autumn. The reproductive disorders recorded were anestrus, repeat breeding, metritis, antipartum prolapse, post partum prolapse, abortion, dystocia and retention of placenta. The occurrence of reproductive disorders varied significantly between seasons. The incidences of anestrus was maximum among all the reproductive disorders value varied from 66.73 to 55.99 per cent, the minimum incidences were of dystocia which varied from .07 to 3.92 per cent across the seasons. The maximum (66.73%) cases of anestrus were in autumn and minimum (55.99%) in summer season. Among all the reproductive disorders the maximum incidences were of anestrus followed by metritis, retention of placenta, repeat breeding, antipartum prolapse, post partum prolapse, abortion and dystocia. The maximum occurrence of reproductive disorders was found in summer and rainy seasons. From the study it can be concluded that the anestrus was the main reproductive problem across the seasons and maximum incidences of reproductive disorders were found in summer and rainy seasons in buffaloes under field conditions.

Key words: Buffalo, reproductive problems, field conditions, seasonal variation

INTRODUCTION

River buffalo is known to exhibit seasonality in its breeding behaviour (Gangwar, 1980, Pandey and raizada,1982). The symptoms of heat in buffaloes are weaker than the cattle. Rainfall, feed supply and high ambient temperature may contribute to seasonality. Over 95% of buffaloes are reared under low input and low output system where there is a little economic necessity to maintain breeding records. Due to the seasonal, nutritional and managemental factors buffalo has very high calving interval and develop several reproductive disorders, which are generally regulated by season. Therefore, keeping in mind the above concept, this study was carried out to investigate the various reproductive disorders in buffaloes under field conditions.

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MATERIALS AND METHODS

The five years data from 1992-96 on reproductive disorders in various categories of buffalo was recorded from eight villages adopted by National Dairy Research Institute, Karnal under its Operational Research Project, surrounding the Karnal. Every adopted village had a dairy Vikas Kendra regulated by ORP. The technical person appointed by NDRI at these villages maintained the proper records of every activity at the Kendra. The records of the various reproductive disorders prevailed in various categories of buffaloes under the different seasons were taken. The reproductive disorders recorded were anestrus, repeat breeding, metritis, prolapse, dystocia and retention of placenta. The total 2983 incidences of reproductive disorders were recorded and the analysis was done using the $\chi 2$ test of significance described by Snedecore and Cochran (1980).

RESULTS AND DISCUSSION

The incidence of reproductive disorders in buffaloes during different seasons has been presented in tables 1 and 2.

Table 1. Season-wise occurrence of reproductive disorders in buffaloes under field management conditions

Reproductive disorders	Season					
	Winter	Spring	Summer	Rainy	Autum	$\chi 2$
Anestrus	395 (65.94)	242 (59.75)	357 (55.99)	579 (57.38)	341 (66.73)	48.00**
Repeat breeding	46 (7.67)	24 (5.92)	21 (4.57)	49 (4.85)	36 (7.04)	57.87**
Metritis	62 (10.35)	35 (8.69)	52 (11.32)	100 (9.91)	47 (9.19)	4.72NS
Antipartum prolapse	17 (2.83)	10 (2.46)	20 (4.35)	28 (2.77)	10 (1.95)	6.0*
Postpartum prolapse	16 (2.67)	28 (6.91)	19 (4.13)	53 (5.25)	22 (4.30)	2.37NS
Abortion	16 (2.67)	21 (5.18)	22 (4.79)	32 (3.17)	14 (2.73)	43.35**
Dystocia	11 (1.83)	3 (0.74)	18 (3.92)	26 (2.57)	9 (1.76)	13.68*
Retention of placenta	36 (6.01)	42 (10.37)	50 (10.89)	142 (14.00)	32 (6.26)	22.28**
Total	**599**	**405**	**459**	**1009**	**511**	

** ($P < 0.01$)
* ($P < 0.05$)
Figure in parenthesis indicates per cent value

Table 2. Season-wise occurrence of reproductive problems among various categories of buffaloes under field management conditions

Season/categories	Reproductive problems					
	Heifer	Ist calver	2nd calver	3rd calver	>3rd calver	Total
Winter	141 (23.53)	113 (18.86)	109 (18.19)	158 (26.37)	78 (13.02)	599
Spring	105 (25.92)	68 (16.79)	69 (17.03)	100 (24.69)	63 (15.55)	405
Summer	118 (25.70)	95 (20.69)	85 (18.51)	103 (22.44)	58 (12.63)	459
Rainy	280 (27.75)	158 (15.65)	162 (16.05)	251 (24.87)	158 (15.65)	1009
Autumn	142 (27.78)	104 (20.35)	68 (13.30)	105 (20.54)	92 (18.00)	511

Figure in parenthesis indicates per cent value

Table 1 depicts the per cent occurrence of all the reproductive disorders in each season. The incidence of anestrus were maximum among the reproductive problems with the values 65.94%, 59.75%, 55.99, 57.38 and 66.73 percent in winter, spring, summer, rainy and autumn seasons, respectively followed by metritis and retention of placenta cases. The minimum cases in all the seasons were of dystocia 1.83, 0.74, 3.92, 2.57 and 1.76 percent in winter, spring, summer, rainy and autumn season, respectively.

When the data was subjected to the $\chi 2$ test, the results revealed that the occurrence of anestrus, repeat breeding, abortion and retention of placenta varied very significantly ($P<0.01$) between the seasons and antipartum prolapse, dystocia and retention of plaacenta also varied significantly ($P<0.05$) in all the seasons. Whereas, metritis and post partum prolapse did not vary significantly between the seasons.

The percent occurrence of reproductive disorders were maximum during the rainy season 35.62, 29.30, 32.86, 35.66 and 35.18 per cent in heifers, 1st calver, 2nd calver, 3rd calver and >3rd calver, respectively. The minimum cases were in spring season. The rainy season was having maximum reproductive disorders in all the categories of buffalo ($P < 0.01$). Salisbury and Vandeman (1961) also stated the higher

magnitude of the reproductive disorders during the humid -hot climatic conditions in cattle. The higher incidence of prolapse was observed in August to November in Surti buffaloes by Seth (1970). Pandit et al (1982) reported anestrus and repeat breeding as most common problems in cows and buffaloes, the highest anestrus cases (66.8%) of the total anestrus were recorded in may. The incidence of quiescent ovaries followed by seasonal trend with significant difference between seasons in heifers and cows has also been reported (Rao and Sreemannarayana, 1982). The significant correlation between the incidence of estrus and maximum day temperature (0.86) has been found by Rao et al (1983). The findings of present study are similar to Kumar (1986). Bhalaru *et al.* (1983) also reported significantly higher retention of placenta in the rainy than the spring season. Tomar and Tripathi (1983) reported significantly higher percentage of retained placenta during summer than winter season, the abnormal calving had significantly higher percentage of retention of placenta, metritis and prolapse cases. The age of the buffalo had significant effect on prolapse and metritis these being higher in 1st calvers. The same authors during 1986 further observed that the season of calving had significant effect on all the reproductive disorders, the calving period and seasons also had significant effect on the incidence of repeat breeding, utero-vaginal disorders, retention of placenta and metritis.

Tomar and Verma (1987) reported effect of period, season of calving and level of milk production on incidence of reproductive problems. Tomar and Tripathi (1994) found that parity of calving had significant effect on reproductive disorders, the incidence being higher in first calver; the period of calving significantly affected all the incidences, whereas seasons of calving affected significantly the metritis, being higher in buffaloes calving in rainy season, all the problems; prolapse, retention of placenta and metritis tended to occur together and the buffaloes following the abnormal calving had significantly higher incidence of retained placenta, the similar trend of the disorders has been observed in the present study, where the maximum cases of the retention of placenta, metritis, repeat breeding have been observed in the rainy season because maximum calving in buffaloes take place during this season and also those buffaloes calved in the summer season their post partum period fall in rainy season ,therefore, the buffaloes are more susceptible to wards the reproductive problems. The study is further supported by Tomar and Tripathi (1995) who also observed significant effect of the period and seasons of calving on the rate of abnormal calving, being significantly higher in summer than other seasons.

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