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Survey on anestrus in buffalo in winter season

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Abstract

A total of 510 buffaloes belonging to 125 households of Hisar district were surveyed for the incidence of anestrus in winter season. The door-to-door survey was conducted on random basis and all the sections of the society are almost equally included. The condition was diagnosed based on the owner's history and the absence of corpus luteum on either ovary via per-rectal examination. The overall incidence was reported to be 7.65% of which 6.25% were found to suffering from true anestrus condition. Incidence of prepubertal anestrus and silent estrus was reported in 2.55% and 1.37% of buffaloes, respectively.

Keywords: Buffalo, anestrus, winter season, survey

Introduction

The water buffalo (*Bubalus bubalis*) is an economically important farm animal species reared in the tropic and subtropical regions as a major source of high quality animal products like milk, meat and hide. It can maintain optimum production level even in low input system (Zicarelli, 1994) [1]. According to 20th livestock census, the buffalo population in India is about 109.85 million showing a positive increase of 1.06% over the previous census in 2012. Buffaloes contribute 20.5% of total livestock in India and accounts nearly 49% of total milk produce to Indian dairy industry (Annual report-DAHD, 2018-19). As of 2020, dairy production contributed 4.2% to Indian GDP (Hussain, 2020) [12]. Riverine buffaloes are domesticated in almost all parts of India and Murrah breed is considered as the best one. Hisar, Jind and Rohtak districts of Haryana are considered as the breeding tracts of Murrah buffaloes indicating the best genetic make-up to be found here.

Reproduction is a major factor affecting the economics of a dairy enterprise and optimal reproduction rates greatly benefits the animal breeders. Buffaloes are polyestrus animals and show seasonality in their reproductive pattern (Baruselli *et al.*, 1997). They show amplified reproductive activity in the cooler months of the year with their breeding season ranging from October to March while a significant reduction in fertility is observed during the summer season (Baithalu *et al.*, 2013). Delayed onset of puberty, silent ovulation, prolonged inter-calving periods, summer anestrus, luteal insufficiency etc., are the major hurdles in achieving optimum reproduction rates in buffalo production system (Nanda *et al.*, 2003; Das *et al.*, 2013) [6, 5].

Seasonality in reproduction pattern is more directly linked to environmental factors than genetic ones (Gangwar, 1980; Zicarelli 1994) [7, 1]. Light hours markedly influence melatonin secretion from the pineal gland which shows a significant effect on reproductive pattern (Zicarelli, 1994) [1]. Increased light hours, environmental temperature and high relative humidity generate stress conditions in body of the animal resulting in suppression of reproductive activity especially in the summer season and hence, termed as summer anestrus (Singh *et al.*, 1989; Das *et al.*, 2010) [11, 8]. Summer anestrus is a major problem in buffaloes with variable incidence ranging from 36.6 to 59.5 percent (Luktuke and Sharma, 1978; Singh *et al.*, 1989) [10, 11]. It is a major problem not only in unorganized herds but also noticed in well organized dairy farms; although the incidence is much higher in nomadic herds, even upto 83% (Brar and Nanda, 2004) [9]. Keeping this in view, almost all the studies are focused on dealing with summer anestrus and not much attention has been given to animals in anestrus during the winter months but this will lead to loss of almost complete year. Most of the studies done previously included animals presented in village camps or veterinary clinics which may affect the actual incidence of the reproductive condition. Hence, we decided to conduct a random door-to-door survey of buffaloes during the winter season.

Materials and Method

The survey was conducted on random basis at the farmer’s doorstep in villages of district Hisar during the months of October, 2020 to January, 2021. A detailed proforma was prepared keeping in view the major details (Annexure 1). Owner’s interview was conducted to collect the necessary details and per-rectal examination was performed to assess the reproductive status of the animal and the presence of corpus luteum on either of the ovary was considered as indicator of cyclicity.

Results and Discussion

Total households approached = 125

Total breedable buffaloes = 510

Breedable buffaloes without overt signs of estrus = 39

Table 1: Differential incidence of anestrus affected buffaloes.

	Without corpora lutea	With corpora lutea	Total
Heifer	13	3	16
Post-parturient buffalo	19	4	23
Total	32	7	39

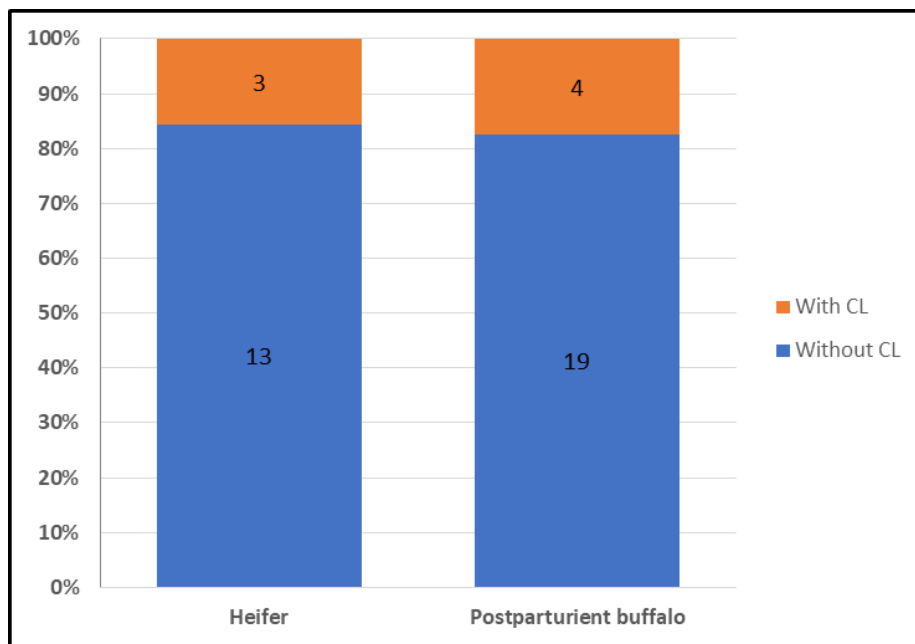


Fig 1: Proportion of true anestrus and false anestrus affected buffaloes.

Incidence of anestrus affected animals = 7.647%

Incidence of true anestrus = 6.275%

Incidence of prepubertal anestrus = 2.549%

Incidence of silent estrus = 1.372%

save approximately the whole production year. With passage of this time, the recovery rates are severely depleted in the summer season due to the depletion of reproductive stimulant melatonin in buffaloes.

Table 2: Distribution of households included in the study.

Class	Land holding	Frequency	Percentage (%)
Lower	<1 acre	40	32
Middle	1-5 acres	63	50.4
Upper	>5 acres	22	17.6
Total		125	100

Conclusion

Anestrus is a well-known problem in buffaloes since decades and causes huge economic loss to buffalo breeders. Various managerial, nutritional and environmental factors are responsible in triggering this condition. There is a need to educate the animal breeders about the proper managerial practices in rearing buffaloes. Area-specific mineral mixtures and balanced ration formulae need to be developed to aid in upliftment of animal breeders/ farmers.

Estrous cycle in animals is regulated by various factors like genetic make-up of animal, weather/climate, housing practices, nutrition, etc. Among these, nutrition and housing are the criteria that can be easily manipulated to achieve better results.

A balanced diet and regular deworming practice can control the condition to a greater extent. During the survey, it has been found that 49.6% and 30.4% farmers practice deworming of animals and supplementation of mineral mixture in diet, respectively. Most among these do this on irregular basis leading to lowered potential of the animals.

Lack of proper knowledge at the ground level regarding balanced diet formulation and its importance is a major reason behind reproductive problems in breedable animals. It is important to note that the winter season is the breeding period of buffaloes and if we can save the animal from anestrus condition at this peak breeding time then we will be able to

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(Annexure 1)
Survey on Anoestrus in Buffaloes

Sr. No.:	Date: / /	
Owner's Name:	Mob.:	
Address:		
Occupation:	Land holding:	
Species:	Age:	Sex:
No. of Animals kept:	Experience in Animal Husbandry:	
Animal Purchased/ Home born:	Milk Yield:	(Peak) (Current)
Breeding history:		
Parity	Previous Parturition:	
Breeding through AI/NS:	Heat detection:	
Feeding practice		
Feeds given:	Mineral mixture:	
Amount of concentrate:	Deworming:	Vaccination:
Health care practice:		
Treatment option preferred: Through Govt. Vets/para vets/local dispensary		
Treatment for reproductive problems (if given any):		
Clinical Examination		
General health:	BCS:	
Any other:		
Per-rectal examination		
Cervix:	Uterus:	
Ovary:	Left:	Right:
CL:		
Diagnosis:		
Advised:		