

OESTRUS BEHAVIOUR IN ASSAM LOCAL GOATS

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ABSTRACT

Physical and behavioural signs and intensity of oestrus were studied in 34 Assam local goats. Oestrus detection was carried out in does by exposing them to a teaser buck four times during the 24-hour period as well as by close visual observation. Observations on oestrus were recorded from 1 day before oestrus till 2 days post oestrus. Swelling of vulva and pink vaginal mucosa were the most conspicuous physical signs of oestrus and observed at night hours of the day of oestrus in frequency percentage of 87.50 and 85.71 respectively. Wagging of tail and standing to be mounted by buck constituted predominant behavioural signs of oestrus and recorded in 92.86 - 94.64 and 80.36 - 82.14 per cent observations respectively at evening to night hours of day of oestrus. Other common behavioural signs of oestrus were seeking and sniffing of male, the highest frequency percentage being 75.00 and 67.86 respectively recorded at evening hours of day of oestrus. Bleating and loss of appetite were also prominent behavioural features observed at high frequency percentage during different periods on the day of oestrus. Manifestation of oestrus was 'intense', 'intermediate' and 'weak' in 47.06, 35.29 and 17.65 per cent observation respectively.

Key words : Behavioural signs, goat, intensity, oestrus, physical signs.

Genetic conservation of native breeds of animal in a country is of paramount importance. Indigenous goats of Assam are highly prolific giving birth to multiple kids under optimum feeding and managerial condition. Selective breeding of the prolific Assam local goats would be economically rewarding for the farmers. Observations of physical and behavioural signs of oestrus are essential for detection of oestrus to breed goats naturally or through artificial insemination. Although limited works were carried out on physical and behavioural

manifestations of oestrus in Assam local goats,^{3,4} a comprehensive study is warranted and hence the present investigation was taken up.

MATERIALS AND METHODS

Thirty four Assam local does weighing 15 to 22 kg maintained at Goat Research Station, Assam Agricultural University, Burnihat, Assam under uniform managerial conditions were included in the study. Oestrus in does was detected by exposing them to a vasectomised teaser buck in the early morning and evening. Does approaching oestrus were more closely observed using the teaser buck four times a day, - morning (5 a.m.), noon (11 a.m.), evening (5 p.m.) and night (10 p.m.) along with visual observation.

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Observations on oestrus in does were made one day before, on the day, and after one and two days of oestrus. A doe was considered in oestrus when it accepted the vasectomized teaser buck. Different physical and behavioural signs of oestrus were recorded in this periods.

Intensity of oestrus exhibited in does was categorized differently depending upon extent of behavioural sign. It was denoted as 'intense', when the does had 'continuous bleating', 'restlessness', 'mounting on flockmates' and 'loss of appetite'; 'intermediate', when the does showed the signs of 'seeking male', 'sniffing of male' and 'intermittent bleating', and 'weak', when the does revealed seldom 'intermittent bleating', 'sniffing of male' and 'seeking male'.

RESULTS AND DISCUSSION

The frequencies of occurrence of different physical and behavioural signs obtained at different periods from day-1 to day 2 of oestrus are presented in Tables 1 and 2 respectively.

The quantity of vaginal mucus was scanty which increased in frequency percentage from 1.79 to 64.29 from evening hours of day -1 to night hours of day of oestrus. No vaginal mucus on the day of oestrus was found in 35.71 per cent observations. Similar finding was reported by other workers⁴ who also obtained a high percentage of Assam local goats without vaginal mucus during oestrus. Clear colour of the vaginal mucus increased from 1.79 to 57.14, and opaque colour decreased from 33.93 to 5.36 per cent during evening hours of day -1 to night hours of day 0, and noon to night hours of day 1, respectively. The consistency of vaginal mucus was thin in 1.79 to 10.71 per cent does from evening of day -1 to that of day of oestrus, while exhibition of the highest thick consistency (57.14 %) was recorded at night of day 0 which decreased to 5.36 per cent at night of the subsequent day. Thus the consistency of vaginal mucus was predominantly thick on the day of oestrus and the next day. A preponderance

of thick vaginal mucus during oestrus was also reported in Surti and Marwari goats⁹. There was a tendency for change in colour of mucus from clear to opaque and from thin to thick consistency during day 1. Similar findings were reported by earlier workers^{2,6,7,12,13} in different breeds of goat. The circulatory ratio of oestrogen to progesterone, which is known to be altered with progression of oestrus might have influenced the colour and consistency of vaginal mucus. The frequency percentage of pink colouration of vaginal mucosa gradually increased from day-1 to day 0 (85.71 %) and remained high till night of day 1 and declined subsequently. The swelling of vulva was markedly high (64.29%) at morning of day of oestrus that rose to 87.50 per cent at night and high frequency percentage persisted till evening of day 1 and subsided quickly thereafter. The pre-eminent physical signs of pink vaginal mucosa and swollen vulva found in the local goats were in accordance with reports of earlier workers^{5,8,10,11} in various breeds of goat. Higher incidence of vulval swelling was reported in Assam local (95.11%)⁴ and in Surti and Marwari goats (100%)⁹. This could be due to the variation in circulating level of gonadal steroids¹ resulting in differential action on tubular genitalia.

The frequency of occurrence of most of the behavioural signs of oestrus increased from morning hours of day 0 reaching a peak at evening and night hours of that day and declined at evening and night hours of day 1. Among the prominent behavioural signs frequency percentage of wagging of tail increased from 12.50 at evening hours of day -1 to 94.64 at night hours of day of oestrus. Lower incidence of wagging of tail in Assam local does as compared to that of present study was reported earlier⁴. The highest percentage of occurrence of 82.14, 75.00 and 67.86 in respect of standing to be mounted by buck, seeking male and sniffing of male observed at evening hours of day of oestrus decreased to lowest level of 14.29, 5.36 and 5.36 at night of day 1.

Oestrus behaviour in goats

Table 1: Frequency of occurrence of different physical signs of oestrus at different periods in Assam local goats (n = 56)

Physical signs		Frequency (%)															
		Day -1				Day 0				Day 1				Day 2			
		Morning	Noon	Evening	Night	Morning	Noon	Evening	Night	Morning	Noon	Evening	Night	Morning	Noon	Evening	Night
Quantity of vaginal mucus	Scanty	0.00	0.00	1.79 (1)	7.14 (4)	25.00 (14)	32.14 (18)	51.79 (29)	64.29 (36)	57.14 (32)	53.57 (30)	21.43 (12)	5.36 (3)	0.00	-	-	-
	Absent	100.00 (56)	100.00 (56)	98.21 (55)	92.86 (52)	75.00 (42)	67.86 (38)	48.21 (27)	35.71 (20)	42.86 (24)	46.43 (26)	78.57 (44)	94.64 (53)	100.00 (56)	100.00 (56)	-	-
Colour of vaginal mucus	Clear	0.00	0.00	1.79 (1)	7.14 (4)	25.00 (14)	32.14 (18)	51.79 (29)	57.14 (32)	25.00 (14)	19.64 (11)	5.36 (3)	0.00	0.00	-	-	-
	Opaque	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.14 (4)	32.14 (18)	33.93 (19)	16.07 (9)	5.36 (3)	0.00	-	-	-
Consistency of vaginal mucus	Thin	0.00	0.00	1.79 (1)	7.14 (4)	7.14 (4)	10.71 (6)	10.71 (6)	7.14 (4)	0.00	0.00	0.00	0.00	0.00	-	-	-
	Thick	0.00	0.00	0.00	0.00	17.86 (10)	21.43 (12)	41.07 (23)	57.14 (32)	57.14 (32)	53.57 (30)	21.43 (12)	5.36 (3)	0.00	-	-	-
Colour of vaginal mucosa	Pink	0.00	5.36 (3)	14.29 (8)	23.21 (13)	64.29 (36)	73.21 (41)	85.71 (48)	85.71 (48)	78.57 (44)	71.43 (40)	57.14 (32)	46.43 (26)	14.29 (8)	3.57 (2)	0.00	-
	Pale	100.00 (56)	94.64 (53)	85.71 (48)	76.79 (43)	35.71 (20)	26.79 (15)	14.29 (8)	14.29 (8)	21.43 (12)	28.57 (16)	42.86 (24)	53.57 (30)	85.71 (48)	96.43 (54)	100.00 (56)	-
Swelling of vulva	Present	0.00	3.57 (2)	14.29 (8)	19.64 (11)	64.29 (36)	75.00 (42)	76.79 (43)	87.50 (49)	75.00 (42)	67.86 (38)	60.71 (34)	28.57 (16)	7.14 (4)	0.00	-	-
	Absent	100.00 (56)	96.43 (54)	85.71 (48)	80.36 (45)	35.71 (20)	25.00 (14)	23.21 (13)	12.50 (7)	25.00 (14)	32.14 (18)	39.29 (22)	71.43 (40)	92.86 (52)	100.00 (56)	-	-

Figures in parentheses indicate number of observation.

*Total number of observation

Table 2: Frequency of occurrence of different behavioural signs of oestrus at different periods in Assam Local goats (n = 56)

Behavioural signs	Frequency (%)																
	Day -1				Day 0				Day 1				Day 2				
	Morning	Noon	Evening	Night	Morning	Noon	Evening	Night	Morning	Noon	Evening	Night	Morning	Noon	Evening	Night	
Bleating	Continuous	0.00	0.00	0.00	0.00	28.57 (16)	39.29 (22)	35.71 (20)	35.71 (20)	17.86 (10)	8.93 (5)	0.00	0.00	0.00	-	-	-
	Intermittent	0.00	0.00	0.00	8.93 (5)	35.71 (20)	50.00 (28)	53.58 (30)	50.00 (28)	35.71 (20)	23.21 (13)	17.86 (10)	7.14 (4)	0.00	0.00	-	-
Wagging of tail	0.00	0.00	12.50 (7)	25.00 (14)	75.00 (42)	85.71 (48)	92.86 (52)	94.64 (53)	80.36 (45)	64.29 (36)	50.00 (28)	32.14 (18)	12.50 (7)	0.00	-	-	
Micturition	0.00	0.00	0.00	0.00	14.29 (8)	17.86 (10)	25.00 (14)	10.71 (6)	0.00	0.00	0.00	0.00	-	-	-	-	
Mourning on flockmates	0.00	0.00	0.00	0.00	3.57 (2)	8.93 (5)	10.71 (6)	10.71 (6)	5.36 (3)	5.36 (3)	0.00	0.00	-	-	-	-	
Seeking male	0.00	0.00	0.00	0.00	67.86 (38)	53.57 (30)	75.00 (42)	53.57 (30)	50.00 (28)	33.93 (19)	16.07 (9)	5.36 (3)	0.00	-	-	-	
Sniffing of male	0.00	0.00	12.50 (7)	19.64 (11)	53.57 (30)	57.14 (32)	67.86 (38)	50.00 (28)	32.14 (18)	17.86 (10)	10.71 (6)	5.36 (3)	0.00	-	-	-	
Standing to be mounted by buck	0.00	0.00	0.00	0.00	46.43 (26)	71.43 (40)	82.14 (46)	80.36 (45)	32.14 (18)	21.43 (12)	17.86 (10)	14.29 (8)	0.00	-	-	-	
Restlessness	0.00	0.00	0.00	0.00	14.29 (8)	17.86 (10)	21.43 (12)	17.86 (10)	23.21 (13)	17.86 (10)	10.71 (6)	7.14 (4)	0.00	-	-	-	
Loss of appetite	0.00	0.00	0.00	0.00	46.43 (26)	64.29 (36)	53.57 (30)	50.00 (28)	44.84 (25)	33.93 (19)	0.00	-	-	-	-	-	

Figures in parentheses indicate number of observation.

*Total number of observation

CONCLUSION

Thus the most common behavioural signs of oestrus were wagging of tail and standing to be mounted by buck followed by seeking male and sniffing of male. The frequency of occurrence of behavioural sign of intermittent bleating was higher than that of continuous bleating which persisted for shorter period.

Bleating as a common behavioural sign of oestrus was also observed in Assam local goats⁴. The behavioural sign of loss of appetite was at higher frequency percentage at different periods of day of oestrus and declined thereafter on day 1.

The behavioural signs of oestrus recorded in the present study were also reported by other workers^{2,7,8,9} in different breeds of goat.

The frequency percentage of 'intense', 'intermediate' and 'weak' oestrus was 47.06, 35.29 and 17.65 respectively. The higher incidence of 'intense' oestrus recorded in Assam local does was also observed earlier¹¹. The intensity of oestrus was found to vary with breed. Low incidence (16.66%) of pronounced oestrus was reported in Pashmina goats⁵. The manifestation of intensity of oestrus could be due to endocrine constitution of animals¹⁴ coupled with variation in climatic condition.

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