

STUDIES ON SUCKLING BEHAVIOR OF GIR CALVES

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ABSTRACT

A study was conducted on suckling behavior of 13 Gir calves of 0 to 15 days maintained at Kasturba Gandhi National Memorial Trust, Dairy Farm Kasturbagram Khandwa Road, Indore M.P.. The male calves required lesser attempt to teat seeking (6.11 ± 0.86) as compared to female calves (11.77 ± 0.82). The male calves took longer duration (216.75 ± 2.18 minutes) to hold the udder for first time than that of female calves (121.00 ± 2.08) and lesser stroke for letting down of milk (1.86 ± 0.35) than female ones (2.81 ± 0.33 times). The summer born calves searched the udder in lesser attempts (7.33 ± 0.33) than those born in winter (10.54 ± 0.78). The effect of suckling traits on growth rate up to 45 days of their life showed that it had significant effect on growth rate at 30th days of age and there is no significant effect had exert at 15th and 45th days of age of Gir calves.

Keywords: Gir calves, suckling behaviour, suckling traits, teat seeking

The neonatal link with the mother is an important ethological phenomenon. Four primary stages can be recognized in neonatal behavior during the formation of the neonatal-maternal ties¹. These are coordinating recumbence, elevation ambulation, and orientation and responding to stimuli. The first few hours following parturition are especially important in ungulates. There appears to be a critical period during which specific neonatal-maternal ties are established and after all unrecognized neonates are rejected. The aim of present study is to evaluate the Gir cattle in respect of survivability of young stock and suckling behavior of different sex upto 15 days of their life for bringing about improvement overall efficiency. There is very scanty information as the performance of this breed in Madhya Pradesh. Keeping in view the importance of survivability and suckling behavior as a pre-requisite to production

and also the survivability of an excellent herd of Gir breed.

MATERIALS AND METHODS

The data for present study was collected from the records of Gir herd, maintained at Kasturba Gandhi National Memorial Trust, Dairy Farm Kasturbagram Khandwa Road, Indore M.P., covering a period of 16 years from 1994 to 2009. Furthermore, the data on suckling behaviour of 13 new born Gir calves was recorded from 0 to 15 days of age. Managerial and feeding practices of different categories of calves were adapted as per technical standard. Weaning was not practiced and calves were allowed to suckle their dams up to 3 months of age. In order to determine patterns of various suckling traits and their effect on growth rate of the new born calves from 0 to 15 days of age.

- a) Effect of number of attempt to teat seeking - The capability of each calf for searching of teat is different. In order to determine the teat seeking capability, the total attempts made by calves on different body parts of dam (like dewlap, brisket) was counted and analysed.
- b) Effect of duration from placing the calf nearby cow to holding of teat by the calf – The time taken by the calves for first suckling was counted in first suckling.
- c) Effect of number of effort (strokes) made during suckling for letting down– The letting down of milk, however, is a trait of parturated cow, but the calves might have its role in early or late letting down time of milk. To find out the role of calf on letting down time, the duration of letting down of milk was calculated.
- d) Effect of letting down time - The let down time (in minutes) was taken as time interval from touching of teat by calf to the first drop of milk drawn in pail.
- e) Effect of Sex and different season on sucking behavior. Effect of duration from placing the calf nearby cow to holding of teat by calf (min.), Effect of no. of attempt to teat seeking, effect of no. of stroke made during suckling for letting down and effect of let down time (sec.) Data will be analyzed as per procedure⁶.

RESULTS AND DISCUSSION

1. Effect of sex, parity and season on number of attempt to teat seeking

The overall means of traits was found to be 8.94 ± 0.57 . The values of different sex, parity and season wise means showed significant differences in their classes. The female calves required more no. of attempts for teat seeking (11.77 ± 0.82) which was greater than that required by the male calves (6.11 ± 0.86). The calves delivered by primipara cows succeeded to reach to dam's teat in lesser

number of attempts (3.61 ± 0.86)⁵. The winter born calves required more number of attempts (10.54 ± 0.78) to seeking the teat than those born in summer (7.33 ± 0.33) Table-1. The similar study made by⁸ in buffaloes calves, who also reported the more number of attempt required by female calves.

2. Effect of sex, parity and season on duration from placing the calf nearby cow to holding of teat by calf (First suckling)

The least squares means and standard errors for effect of sex, parity and season on duration of first suckling calculated to be 168.79 ± 1.44 minutes. There was significant difference between the times taken by both the sexes. The male calves took more time (216.75 ± 2.18 minutes) to hold teat, when it was first placed nearby its dam, whereas female took lesser time (121.00 ± 2.08 minutes). The finding is in closed agreement with the result of³ in exotic dairy calves. The parity wise means showed that the time taken by calf to hold the teat is more or less similar in primipara as well as in pluripara.

3. Effect of sex, parity and season on no. of stroke made during suckling

The least squares means and standard errors for effect of various factors are indicated overall number of stroke made during suckling for letting down of milk was observed to be (2.32 ± 0.23). The male calves required fewer strokes for letting down of milk (1.86 ± 0.35). Similarly, primiparous and winter born calves also required lesser strokes (2.31 ± 0.33) and (1.64 ± 0.32 respectively) for letting down of milk.

4. Effect of sex, parity and season on let down time (seconds)

The least squares means and standard errors of letting down times was 94.66 ± 0.82 seconds. There was significance difference between parity. The calf born from the multiparous succeeded in letting down of milk, earlier (76.78 ± 1.16 seconds) than those born from

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primiparous cows. Similarly, winter born calf took lesser time to let down the milk (94.32 ± 1.10 seconds) than that of summer born (95.00 ± 1.18 seconds). The result in present finding is lower than that reported² in buffaloes calves, whereas, the values are much higher than the means given by⁴ in various Sahiwal crossbred calves.

5. Effect of suckling traits on growth rate of calves up to 45 days

The effect of various suckling traits on growth rate of calves is presented in the table 2. It is clear from the table that all the suckling traits have significantly effect on growth rate from 15th to 30th day of age. The growth of first fortnight and 3rd fortnight age group did not have any significant effects. Results are in agreement with few workers⁷.

Table 1: Effect of sex, parity and season on no. of attempt to teat seeking

Sub-class description		No. of observation	Mean \pm S.E. treatment 1	Mean \pm S.E. T-2	Mean \pm S.E. T-3	Mean \pm S.E. T-4
Overall		13	8.94 \pm 0.57	168.79 \pm 1.44	2.32 \pm 0.23	94.66 \pm 0.81
Sex	M	6	216.75 \pm 2.18 ^b	1.86 \pm 0.35	91.04 \pm 1.22	91.04 \pm 1.22
	F	7	121.00 \pm 2.08 ^a	2.81 \pm 0.33	98.28 \pm 1.16	98.28 \pm 1.16
Parity	Primipara	6	168.07 \pm 2.18	2.33 \pm 0.33	112.54 \pm 1.2 ^b	112.54 \pm 1.2 ^b
	Pleuripara	7	169.50 \pm 2.08	2.31 \pm 0.33	76.78 \pm 1.16 ^a	76.78 \pm 1.16 ^a
Season	Winter	7	169.58 \pm 1.97	1.64 \pm 0.32	94.32 \pm 1.10	94.32 \pm 1.10
	Summer	6	168.79 \pm 1.44	3.00 \pm 0.33	95.00 \pm 1.18	95.00 \pm 1.18

Table 2: Effect of suckling traits on growth rate of calves up to 45 days

Traits	Growth rate		
	15 days	30 days	45 days
Constant	-9.886	-1.005	10.54
No. of observation	13	13	13
Effect of duration from placing the calf nearby cow to holding of teat by calf	0.024	0.0239	0.067
Effect of no. of attempt to teat seeking	0.274	0.106	0.0178
Effect of no. of stroke made during suckling for letting down	0.491	-0.412	0.197
Effect of let down time	0.100	0.0471	0.022
Coefficient of determination (R ²)	0.603	0.644	0.237
F-Value	3.038 ^{NS}	3.612*	0.620 ^{NS}

NS= Non significant

*Significant at (p<0.05)

CONCLUSION

It is concluded that the first attempt to teat seeking by calf, no. of attempt to teat seeking, no. of stroke made during suckling time and let down time were important traits soon after the

birth. Sex of the calf had significant effect on all the traits of suckling. Male calves took longer time to first attempt to teat seeking than that of female calves. The suckling traits have significant effect on growth rate of Gir calves from 15 day to 30 days age group.

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