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Studies on reproductive performance of Berari goats

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Abstract

The present study was conducted to analyse the reproductive performance of Berari goat. The Berari goat was recently recognized at National level as 23rd goat breed of India with accession number INDIA_GOAT_BERARI_0623. Berari is breed of Vidarbha Region of Maharashtra, low yielding prolific meat breed thriving well in tropical wet and dry climate. The given study was conducted for duration of 18 months. The percentage of single birth and twin birth was 66.66 %, 33.33% respectively. The average birth weight of single and twin Berari kids were 2.07±0.08 and 1.85±0.62 kg respectively. In single and twin kids mean values of traits like age at puberty was 328.5±4.77, 334.41±0.75 (days), age at maturity 350.23±4.71, 358.14±1.16 (days), weight at conception 17.01±0.44, 16.88±1.84 (kg), gestation length 148.71±2.73, 151.25±6.75 (days) and duration of estrus 26.41±1.87, 24.89±7.62 (hrs.) all the parameters which were non-significant for single and twin birth respectively. Age at first kidding 500±7.04, 512±0.18 (days), time required for kidding 110.85±6.25, 118.27±0.65 (min.), time required for expulsion of placenta 110.25±2.70, 106.43±1.27 (min.), weight of placenta 249.16±12.64, 254.51±2.05 (gm) and lochial disappearance 15.41±0.41, 14.74±2.72 (days) were taken. All the observed parameters found non-significant.

Keywords: Berari goats, reproductive performance, goats

Introduction

The Berari is a newly accredited (INDIA_GOAT_1100_BERARI_0623) goat breed of central region of India, which is mainly used for meat purpose by farmers of this region. (Annual Report 2013). The breed derived its name from its native region the Central Provinces and Berar which was a province in central India and covered much of present-day by Madhya Pradesh, Chhattisgarh and Vidharbha region of Maharashtra state. As the goats are found in Berar region, so goat named as Berari. (Kuralkar *et.al.* 2013) [7]. In goats reproduction is an elaborate natural process which is structurally organized, phenomenally sequence and eventfully coordinated with external and internal stimuli in such a precise manner that a series of neuro-physiological, endocrinological events occur spontaneously in cycle (Goel and Kharche, 2009) [4]. The reproductive performance of goat is very important as it has direct effect on production and profitability of goat farming. The growth of the animal is series of consequence of complex interaction between the genetic potential of animal, with several hormones, feed supply and the environment. The reproductive parameters including average birth weight, age at puberty, age at maturity, gestation length, duration of estrus, weight at conception, age at first kidding, time required for kidding, time needed for expulsion of placenta, weight of placenta, and time required for lochial disappearance were salient events to analyse reproductive performance of Berari goats. Amongst puberty is important reproductive trait and represents the time at which first oestrus detected and it is characterized by ovulation and cyclic ovarian activity in females (Lawrence and Flower, 1997) [8]. Puberty emanated adulthood and it is reached at age which varies considerably with breed and also among individuals within a breed.

It is important to differentiate puberty from sexual maturity which is the state reached when the animal is cable to express its full reproductive power.

Materials and Methods

The present study was conducted for duration of 18 months in 12 female kids of Berari Goats at Berari Goat and Deccani Sheep Reserach and Training Center, Borgaon Manju, under the

Post Graduate Institute of Veterinary and Animal Sciences Akola, Maharashtra. All goats used for study were maintained under uniform management and feeding conditions. To study the reproductive performance several parameters were taken including the body weight of newborn kids which was taken immediately after birth of the kid cleaned and dried. Subsequently the body weight of kids was regularly recorded for every fortnight interval from the day of birth of individual kids. Data of birth weight and body weight at different age of all kids born in different type of birth conditions were collected. other reproductive parameter such as age at puberty, age of maturity, weight at conception, age at first kidding, time required for kidding, time required for expulsion of placenta, weight of placenta, lochial disappearance, gestation length and duration of estrus were taken to analyzed reproductive performance of Berari goats.

Results and Discussion

In the present study out of 12 kids, 04 were twin births and 08 were single births. The Birth Percentage of single and twin birth was 66.66%, 33.33% respectively. The birth weight (kg) of single kids 2.07 ± 0.08 and twin kids was 1.85 ± 0.62 respectively. The mean values of reproductive traits like, age at puberty were taken 328.5 ± 4.77 , 334.41 ± 0.75 (days). Age at maturity 350.23 ± 4.71 , 358.14 ± 1.16 (days) and weight at conception 17.01 ± 0.44 , 16.88 ± 1.84 (kg) which was non-significant in single and twin birth. The age at first kidding 500 ± 7.04 , 512 ± 0.18 (days), time required for kidding 110.85 ± 6.25 , 118.27 ± 0.65 (min.), time required for expulsion of placenta 110.25 ± 2.70 , 106.43 ± 1.27 (min.), weight of placenta 249.16 ± 12.64 , 254.51 ± 2.05 (gm), lochial disappearance 15.41 ± 0.41 , 14.74 ± 2.72 (days), gestation length

148.71 ± 2.73 , 151.25 ± 6.75 (days), duration of estrus 26.41 ± 1.87 , 24.89 ± 7.62 (hrs.) has been shown in table 1. All the above mentioned parameters found non-significant difference between single and twin kidding.

This possibly due to breed characteristics or difference in the management practices. Incidence of single and twin birth was found to be 66.66–and 33.33- % respectively. Roy *et al.* (2005) reported 44.44 single and 55.56 % twin birth while Das (1979) [3] observed single, twin and triplet birth to be 81.3, 18.7 and 0% respectively. Siddiqui (1981) reported that the birth weights of single born Osmanabadi kids were higher than the twin born kids however, our result did not agree with the finding of Roy (2005) and Das (1979) [3].

The time required for kidding reported by Verma (1991) [14] in single and twin was 85.5 and 103.06 (hrs.) in Black Bengal goat respectively, which was lesser as compared to our observation. The present study was in agreement with Bhagat (2016) [1] reported that the average age at puberty, age at first service, age at first conception and gestation period in Konkan Kanyal goat were found as 342.13 ± 2.34 , 406.76 ± 4.09 , 431.81 ± 4.09 and 147.84 ± 0.27 days, respectively. Verma (1991) [14] who was also found lower time of expulsion of placenta in twin as compared to single born kids. Weight of placenta and lochial disappearance recorded in this study was agreement with finding reported by other workers including Verma and Singh (1985) [15] and Singh and Singh (1983) [13]. The gestation period and duration of oestrus observed in the present study was in accordance to finding of Singh and Singh (1983) [13], Verma *et al.* (1991) [14], Ananta *et al.* (2008). Pachur *et al.* (1991) [9] and Harikrishna *et al.* (2013) [5].

Table 1: Reproductive performance of Berari goats in single and twin birth

Sr. No.	Parameters	Overall	Single (08)	Twin(04)
1	Birth Weight(kg)	1.96 ± 0.35	2.07 ± 0.08	1.85 ± 0.62
2	Age at puberty (days)	331.45 ± 2.76	328.5 ± 4.77	334.41 ± 0.75
3	Age at maturity (days)	354.18 ± 2.9	350.23 ± 4.71	358.14 ± 1.16
4	Weight at Conception (kg)	16.94 ± 2.28	17.01 ± 0.44	16.88 ± 1.84
5	Age at first kidding(days)	503 ± 3.61	500 ± 7.04	512 ± 0.18
6	Time required for Kidding (min.)	114.56 ± 3.45	110.85 ± 6.25	118.27 ± 0.65
7	Time required for expulsion of placenta (min.)	108.34 ± 1.98	110.25 ± 2.70	106.43 ± 1.27
8	Weight of placenta (gm)	251.83 ± 7.34	249.16 ± 12.64	254.51 ± 2.05
9	Lochial Disappearance (Days)	15.07 ± 1.56	15.41 ± 0.41	14.74 ± 2.72
10	Gestation length(days)	149.98 ± 4.74	148.71 ± 2.73	151.25 ± 6.75
11	Duration of estrus(hrs.)		26.41 ± 1.87	24.89 ± 7.62

Conclusion

The Berari goat is low yielding medium size meat breed thriving well in tropical wet and dry region of Vidharbha region of Maharashtra. The breed had lower age at first oestrus, age at first kidding and higher reproductive performance, which can be exploited for improving the breeding efficiency of local non-descript goat population.

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