

THE GROWTH PERFORMANCE OF OSMANABADI KIDS UNDER CONVENTIONAL AND LOOSE HOUSING

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Abstract: This study was undertaken at the Red Kandhari Research and Instructional Farm, College of Veterinary and Animal Sciences, MAFSU, Parbhani. All the experiment was conducted up to 16 week with daily recording of growth rate during experiment period from 01.06.2016 to 31.09.2016. The mean weekly body weight recorded for conventional and loose housing system was 6.97 ± 0.14 and 7.81 ± 1.77 kg respectively. The corresponding values for weekly body weight gain and daily growth were 314.28 ± 0.01 , 485.0 ± 0.02 gm and 48.38 ± 0.25 , 58.92 ± 0.34 gm respectively. The results for growth rate were better in loose housing system as compared to conventional housing system. It may lead to concrete conclusion that loose housing system is more suitable than conventional housing system for Osmanabadi goat kids.

Keywords: Growth rate, Osmanabadi, kid, conventional, loose, housing.

Introduction

Osmanabadi goat breed is one of the most popular goat breed of the arid and semi-arid region of Maharashtra. Historically this breed is known to have existed on our Deccan Plateau since decades. The name Osmanabadi goat is derived from its distribution area Osmanabadi in Maharashtra. These Goats are reared mainly in 3 southern states of India and are one of the largest contributors to meat production in southern India as their meat is very tasty when compared with local breeds. The breed is spread over the greater part of the central peninsular region, comprising the semi-arid areas of Maharashtra, Andhra Pradesh and Karnataka. It covers the Major part of Southern Maharashtra (especially Osmanabad, Beed, Sholapur, Latur, Parbani and Ahmed Nagar Districts) Western Andhra Pradesh and North Eastern Karnataka.

The goats are usually kept under extensive management and reared on natural vegetation, but due to shrinkage of grazing land, sharp increase in livestock population and as it is blamed for soil erosion and desertification, the maintenance of flocks under extensive

system is threatened, semi-intensive and intensive system are therefore, gaining momentum with small flocks. In extensive system of management the animals are reared on poor and degraded grazing lands resulting in low production and reproduction.

Material and method:

Selection of animals: In this experiment Twelve Osmanabadi goat kids were separated in the two equal treatment groups of 6 each with 2 males and 4 females kids in each group of 3-4 months of age. These animals were selected from Red Kandhari Research and Instructional Farm, College of Veterinary and Animal Sciences, MAFSU, Parbhani. One treatment group was assigned for loose housing and other for conventional housing system. The space allowed for each kid was 5.38 and 10.76 sq.ft. in convention and loose housing system, respectively. The kids were provided with standard managerial practices in terms of space and the feed was provided ad libitum.

Table No. a. Treatment details of the selected kids for conventional housing system.

Conventional housing system				loose housing system			
Sr. No	Tag No.	Initial weight(kg)	Initial age (m)	Sr. No.	Tag No.	Initial weight(kg)	Initial age (m)
1	91	6	3	1	82	5	3
2	75	7	3	2	125	6	3
3	88	6.5	3	3	81	5	3
4	76	5	4	4	85	7	3.5
5	86	5.5	3.5	5	90	6.5	3
6	2	6	3	6	131	5	4

Growth rate: The weekly growth rate was recorded for each treatment i.e. loose vs conventional housing system. The weight of individual kid was taken at weekly interval from each treatment and average growth rate was calculated for both the groups.

Statistical analysis: The data generated were statistically analysed by using various parameters as per Statistical Analysis recommended by Thiruvankadan *et al.* (2009). The results of the Statistical analysis so obtained were spread over Results and Discussion for interpretation.

Result and Discussion

1. Weekly body weight

The average weekly body weight (in kg) of Osmanabadi goat kids under conventional housing system for 0-16 weeks were 5.75 ± 0.35 , 5.75 ± 0.35 , 5.91 ± 0.32 , 6.10 ± 0.34 , 6.31 ± 0.33 , 6.53 ± 0.34 , 6.70 ± 0.35 , 6.90 ± 0.34 , 7.05 ± 0.35 , 7.24 ± 0.35 , 7.40 ± 0.34 , 7.60 ± 0.33 , 7.76 ± 0.35 , 8.00 ± 0.36 , 8.21 ± 0.37 and 8.40 ± 0.35 respectively. The overall average body weight of Osmanabadi goat kids under conventional housing system was 6.97 ± 0.14 kg.

The average weekly body weight (kg) of Osmanabadi goat kids under loose housing system for 0-16 weeks were 6.00 ± 0.29 , 6.00 ± 0.29 , 6.28 ± 0.28 , 6.56 ± 0.29 , 6.83 ± 0.29 , 7.13 ± 0.29 , 7.41 ± 0.27 , 7.85 ± 0.20 , 8.06 ± 0.20 , 8.26 ± 0.19 , 8.50 ± 0.20 , 8.71 ± 0.21 , 8.91 ± 0.19 , 9.18 ± 0.15 , 9.46 ± 0.14 and 9.78 ± 0.19 respectively. The overall average body weight of Osmanabadi goat kids under loose housing system was 7.81 kg.

The significant difference ($P<0.05$) was observed for overall average body weight gain of Osmanabadi goat kids between conventional and loose housing system this findings are in agreement with the finding of Solanki *et al.*(2009); Singh *et al.* (2008 a); Koknaroglu *et al.* (2007) in calf steers whereas non significant difference were reported by Singh *et al.* (2008 b) in adult Marwari sheep between various housing system. This significant difference can be attributed to the better rearing environment in loose housing system as compared to conventional housing system which resulted in higher body weight in loose housing than conventional housing since the heat dissipation by animal in loose housing system is better in loose housing shed they were able to dissipate the heat stored during day time, in the night hours and thus they were able to alleviate the effect of stress, resulting in the more body weight gain as compared to conventional housing system. On contrary the conventional housing system group were unable to dissipate heat stored during night hours, due to which they were under heat stress and unable to gain the weight as compared to loose housing system.

2. Weekly body weight gain

The average weekly body weight gain (in kg) of Osmanabadi kids under conventional housing system for 1-16 weeks were 0.00 ± 0.00 , 314.28 ± 0.25 , 400.0 ± 0.34 , 342.85 ± 0.23 , 428.57 ± 0.77 , 342.85 ± 0.39 , 285.71 ± 0.73 , 314.28 ± 0.69 , 314.28 ± 0.57 , 257.14 ± 0.39 , 342.56 , 285.71 ± 0.54 , 342.85 ± 0.18 , 400.0 ± 0.55 , 285.71 ± 0.24 and 314.28 ± 0.64 respectively. The overall average weekly body weight gain of Osmanabadi goat kids under conventional housing system was 314.28 ± 0.01 gm.

The average weekly body weight gain (in kg) of Osmanabadi goat kids under loose housing system for 1-16 weeks were 0.00 ± 0.00 , 457.14 ± 0.34 , 485.71 ± 0.18 , 457.14 ± 0.19 , 514.28 ± 0.27 , 457.14 ± 0.21 , 457.14 ± 0.29 , 285.71 ± 0.10 , 400.0 ± 0.10 , 457.14 ± 0.34 , 342.85 ± 0.17 , 342.85 ± 0.32 , 342.85 ± 0.32 , 457.14 ± 0.32 , 542.85 ± 0.45 and 485.71 ± 0.85 respectively. The overall weekly average body weight gain of Osmanabadi goat kids under loose housing system was 485.0 ± 0.02 gm. The significant difference ($P<0.05$) was observed in weekly body weight gain of Osmanabadi kids under loose housing system as compared to conventional housing system.

3. Daily growth rate:

The average daily growth rate (gm) of Osmanabadi kids under conventional housing system for 0-16 weeks was 0.0 ± 0.00 , 44.89 ± 0.13 , 57.13 ± 0.87 , 48.97 ± 0.29 , 61.21 ± 0.14 , 48.97 ± 0.27 , 40.80 ± 0.26 , 44.89 ± 0.21 , 44.89 ± 0.14 , 36.72 ± 0.27 , 48.97 ± 0.26 , 40.80 ± 0.21 , 48.97 ± 0.14 , 57.13 ± 0.20 , 40.81 ± 0.07 and 44.89 ± 0.24 respectively. The overall average daily growth rate of Osmanabadi goat kids under loose housing system was 44.38 ± 0.25 g. The average daily growth rate (gm) of Osmanabadi goat kids under loose housing system for 1-16 weeks were 0.0 ± 0.0 , 65.29 ± 0.03 , 69.37 ± 0.18 , 65.29 ± 0.19 , 73.45 ± 0.14 , 65.29 ± 0.03 , 65.29 ± 0.03 , 40.81 ± 0.29 , 57.13 ± 0.10 , 65.29 ± 0.10 , 48.97 ± 0.23 , 48.97 ± 0.27 , 65.29 ± 0.03 , 65.29 ± 0.03 , 77.54 ± 0.32 and 69.38 ± 0.17 respectively. The overall average daily growth rate of Osmanabadi goat kids under conventional housing system was 58.92 gm.

The significant difference ($P<0.05$) was observed for daily growth rate of Osmanabadi kids between conventional and loose housing system. These findings are in contrast to the findings of Das *et al.* (2008), in muzzafarnagri lambs. A positive relationship in weight gain & dietary feed intake was also reported by many workers. Kuralkar *et al.* (2002) and Patel *et al.* (2007) reported lower average daily weight gain during 2-6 months age group compared to present study. Ghosh *et al.* (1993) reported higher average daily growth rate than the present findings (120 & 112gm) from 2-6 months in different production system. Higher growth was observed in (58.92 ± 0.34) loose housing as compared to conventional housing system, In the present study, this can be probably due to better environmental condition prevailing in loose housing system and also the variation in the daily growth rate for conventional and loose groups may be due to higher/lower feed intake during that particular week and also prevailing environmental condition at that time.

Conclusion

The overall picture for growth performance of Osmanabadi goat exhibited, the significant difference for weekly body, weekly body weight gain weight gain, daily growth rate under conventional and loose housing system indicating that there was minimum stress in loose housing which was responsible for better growth performance and also Osmanabadi goat are best adapted for this environment being the local breed.

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