

EVALUATION OF TEDDY BREEDING BUCKS ON THE BASIS OF PROGENY PERFORMANCE

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Thirteen breeding bucks of Teddy goat breed maintained at the Livestock Production Research Institute, Bahadurnagar, Okara during 1975-88 were used to rank them on the basis of performance of their progeny. The recorded weaning data were adjusted to 120 days age basis. The bucks were evaluated on the basis of weaning weight production by flock-mate comparison method. Average weaning weight of the progeny was found to 9.72 ± 1.82 kg. The weaning weight of progenies was significantly affected by the sires. The indices developed ranged from 8.68 ± 1.77 to 10.92 ± 2.30 kg. Of thirteen bucks evaluated, the indices of 53.85% were above and the remaining 38.46% were below the flock average. The deviation of buck indices from average contemporary means weight ranged between -1.06 and +1.24 kg.

INTRODUCTION

The importance of a sire in any breeding programme is evident. It is, therefore, very essential to know its genetic worth and the breeding value of each sire before its commercial use for breeding purposes. The improvement in any breeding programme mainly depends upon the positive selection of the best possible sire. Various methods have been used to estimate the breeding value of the sires. Falconer (1960) defined the breeding value as the potential of a bull as judged from its progeny. However, this important aspect of dairy animals as well as meat type animals remained badly neglected in Pakistan till recent past. Khan *et al.* (1983-84) evaluated four bucks kept at the Livestock Production Research Institute, Bahadurnagar, Okara and reported that only two bucks were above average and the other two bucks lowered the weaning weight of their progenies instead of improving it. Since body weight is a polygenic character, it is logical to consider

breed average while evaluating the sires. The present study was thus planned to evaluate the bucks of Teddy breed of goats kept at the LPRI, Bahadurnagar, Okara on the basis of performance of their progeny.

MATERIALS AND METHODS

The experimental data of 17 bucks used at the LPRI, Bahadurnagar, Okara during 1975-88 were collected. Of these 17, only 13 bucks were evaluated and the remaining 4 were excluded due to incomplete and less number of records. The weaning weight records of the daughters of each sire were adjusted to 120 days age and the bucks were evaluated on the basis of weaning weight production by flock-mate comparison method. The merit of each buck was established on the basis of superiority or inferiority of his daughters over their flock-mate average. The data were statistically analysed by using analysis of variance technique (Steel and Torrie, 1981) for significance. The following data were used:

1. Identification number of sire
2. Identification number of dam
3. Date of lambing
4. Date of weaning
5. Weaning weight

RESULTS AND DISCUSSION

The regression indices alongwith their contemporary average weaning weight and their deviations for 13 breeding bucks, have been presented in Table 1. The average weaning weight calculated from 410 progenies of 13 bucks used was 9.72 ± 1.82 kg. The maximum average weaning weight i.e. 10.92 ± 2.30 kg was observed among the progenies of buck No. 47 and minimum of 6.68 ± 1.77 kg in the progenies of buck No. 5.

The deviations of sire indices from the average weaning weights of contemporaries indicate that the differences in 61.54% of the sires were positive while in rest of the 38.46% sires the differences were on the negative side. The calculated buck indices also indicate that of 13 bucks evaluated, only 53.85% improved the weaning weight production of their progenies over the flock average, 7.69% maintained the flock average and 38.46% deteriorated the production potential of their progenies.

This clearly indicates the importance of sire evaluation for the improvement of traits of economic importance without which improvement is not possible because the phenotype does not clearly reflect the genotype of the individual. These results are in close agreement with those reported by Khan *et al*

Table 1. Buck evaluation by contemporary comparison of their progenies weaning weights

Merit	Identification No. of bucks	Progenies (females)		No.	Contemporaries	Contemporary deviation:
		No.	Ave. weaning Wt. (kg \pm SD)		Ave. weaning Wt. (kg \pm SD)	
1	47	13	10.92 ± 2.30	397	9.68 ± 1.79	+1.24
2	871	10	10.25 ± 1.84	400	9.70 ± 1.82	+0.55
3	78	36	10.18 ± 1.98	374	9.67 ± 1.80	+0.51
4	146	18	10.08 ± 1.44	392	9.70 ± 1.83	+0.38
5	218	47	9.97 ± 2.16	363	9.68 ± 1.76	+0.29
6	893	49	9.82 ± 1.55	361	9.70 ± 1.85	+0.12
7	91	9	9.80 ± 2.22	401	9.74 ± 1.83	+0.06
8	57	70	9.72 ± 1.71	340	9.72 ± 1.82	+0.00
9	154	43	9.59 ± 1.96	367	9.73 ± 1.80	-0.14
10	4	29	9.52 ± 1.56	381	9.73 ± 1.83	-0.21
11	217	25	9.28 ± 1.45	385	9.74 ± 1.83	-0.46
12	569	49	9.16 ± 1.61	361	9.80 ± 1.83	-0.64
13	5	12	8.68 ± 1.77	398	9.74 ± 1.82	-1.06
Total/Average		410	9.72 ± 1.82			

al. (1983-84) who evaluated 4 bucks by the same method and reported that 50% bucks positively proved their worth and were retained for future breeding, while 50% bucks were below flock average and were disposed off. Thus from the results, it may be concluded that bucks showing better indices than the flock average should be retained for further breeding and their progenies be reared and evaluated for future to improve production.

Table 2. Analysis of variance of effect of sire on the weaning weights of their progenies (females)

S.O.V.	d.f.	M.S.	F. ratio
Between sires	12	5.821	1.814*
Within sires	397	3.209	

* = Significant at 5% level of probability.

The same data when subjected to statistical analysis showed that there were significant differences between mean weaning weights of the progenies of the bucks used in the breeding programme (Table 2). The results of this study are in line with the findings of Jakubec *et al.* (1979), Mann *et al.* (1983) and Khinkovski and Tsvetanov (1988). Jakubec *et al.* (1979) evaluated the sires on the performance of progeny in a sheep flock. They obtained the data on 10 Askanian, Caucasian and Stavropol rams and on their progeny (81 males and 286 females) and reported that the effect of sire was significant for weight at 10 and 18 months of age.

Mani *et al.* (1982) obtained data on 326 Grozney lambs sired by 18 rams, born during 1973-79 and reported that body weight at 3 months of age averaged 12.22 ± 0.15 kg. They also reported that analysis of

variance indicated a significant sire effect. Mann *et al.* (1983) compared the matings of different breeds of sheep and calculated that there were significant sire breed differences for liveweight, fleece weight, litter weight at birth, number of lambs weaned and litter weight at weaning as a propitiation of ewe metabolic body weight. Khinkovski and Tsvetanov (1988) recorded 10 years data from 726 ewes of three breeds and observed an average body weight of 22.99 and 23.70 kg at weaning. They reported that the effect of sire within years was highly significant. Nakev (1988) obtained the data on 4554 ewes from 4 flocks comprising 12 lines and reported that average body weights were 28.01, 58.60 and 64.96 kg at 3, 18 and 30 months of age, respectively. It was concluded that the effects of flock-year and sire within flock-year on body weight at 3 ages were all significant.

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