1986

BODY WEIGHT OF HORNE -VS- POLLED-SIRED AWASSI LAMBS

J. E. Alkass
University of Baghdad

A. A. Alrawi
University of Baghdad

A. H. Al-Hillali
University of Baghdad

H. M. A. Al-Tayy
University of Baghdad

BODY WEIGHT OF HORNE -VS- POLLED-SIRED AWASSI LAMBS

J.E. ALKASS, A.A. ALRAWI, A.H. AL-HILLALI and H.M.A. AL-TAYY, IRAQ

Dept. of Animal Resources, College of Agriculture
University of Baghdad, Abu-Ghraib, Iraq

SUMMARY

Body weights of 120 progeny of horned and polled Awassi rams were compared. Ram group significantly influenced body weight at weaning ($p < 0.01$), 6 ($p < 0.05$) and 8 month ($p < 0.01$) of age in favour of horned-sires. It has been hypothesized that polled gene to exhibit overdominance and /or epistasis for body weight in the heterozygous lambs.

Ram lambs were significantly heavier than ewe lambs at all ages, and single lambs were significantly heavier at birth and weaning. Month of lambing had a significant effect on weaning weight. The effect of age of dam on birth weight was significant.

INTRODUCTION

The Awassi is the major breed of sheep in Iraq and comprises almost two thirds of the existing population of the 9.7 million (Central Statistical Organization, 1978). Most of the Awassi rams are characterized by long spiral horns and the females in most cases are polled.

There is some evidence suggesting that the presence of one poll gene may influence the body weight of Merino sheep (Dun,1958). This evidence was not confirmed by Dolling and Carter (1961), Pattie et al.(1963) and Pattie et al.(1965). However, the Iraqi flock owners believe that horned rams are superior in many productive and reproductive characters than polled rams. A question rises whether such differences exist. Therefore, this experiment was designed to compare the body weight of horned and polled rams.

RESULTS

Factors affecting birth and weaning weights:

Lambs sired by horned and polled rams weighed respectively 3.85 and 3.77 kg at birth and 18.76 and 17.11 kg at weaning ($p < 0.01$).

At birth, the horned and polled progeny weighed 3.73 and 3.86 kg respectively. The corresponding figures for weaning weight are 18.20 and 17.66 kg. However, the presence or absence of horns in the progeny had no significant effect on both traits.

Ram and ewe lambs weighed respectively 3.95 and 3.67 kg at birth ($p < 0.05$) and 18.64 and 17.23 kg ($p < 0.01$) at weaning.

Single lambs were significantly heavier than twins at birth (4.19 vs 3.43 kg) and weaning (20.06 vs 15.81 kg).

Month of lambing had no significant effect on birth weight, but its effect on weaning weight was significant. Hence, November born lambs attained the least weight at weaning (Table 1).

The effect of age of dam on birth weight was significant ($p < 0.05$); 2- and 5 years old ewes produced respectively the smallest and largest lambs (Table 1). On the other hand, weaning weight

Factors affecting weights at 6, 8, 10 and 12 month of age:
Progeny of horned rams were heavier at all ages than the progeny of polled rams (Table 2). The differences among them were significant only at 6 and 8 months of age. Whereas, the presence or absence of horns in the progeny did not influence any of the weights studied.

Ram lambs were significantly ($p < 0.01$) heavier than females at all ages (Table 2). The differences increased with advancing age.

Type of birth had no significant effect on weights at various ages.

DISCUSSION

In the current work, the superiorty of the progeny of horned rams in body weight may suggest that horned rams are superior to polled rams in their breeding values. Also this finding supports the claim of local sheep owners that horned sires are more suitable than polled sires for breeding.

Results also indicate that the presence of horns in the progeny had no influence on any of the weights studied. This may be due to the significant interaction between ram and progeny groups for these traits. Hence, significant interaction between ram and progeny groups (Table 2) indicate that highest weights of lambs were obtained when the sires were horned and the progeny were polled. Whereas, polled progeny of polled sires attained the least weights. This result could be due to overdominance and/ or epistasis of a polled gene in the heterozygous lambs (i.e. P_p since horns are recessive to the polled trait), which may have an advantageous effects on weights. Pattie et al.(1963) also indicated that body weight differences between polled and horned lambs were small and non-significant.

In the present study, as in many reports, males were heavier than females at various ages (Eliya, 1969; El-tawil et al.1970; Wright et al. 1975 and Juma et al.1985). Single born lambs were significantly heavier than twin lambs at birth and weaning only. This result is expected since lambs after weaning depend mainly on themselves in getting food. Similar result was reported by Juma et al.(1969).

The significant effect of age of dam on birth weight could be attributed to their stage of maturity. Several workers including Eliya (1969), Fahmy et al.(1969) and Juma et al.(1985) reported similar findings. The effect of month of lambing on weaning weight may be due to atmospheric effects on the quality and quantity of feeds, as well as, on the health and feed consumption of lactating ewes. Similarly, Kazzal (1973) claimed that Awassi lambs born during January in Iraq had the highest weaning weight.

CONCLUSIONS

From this experiment, it can be expected that neither homozygous nor heterzygous polled rams are suitable for breeding.

REFERNCES

Central Statistical Organization, Ministry of Planning, 1978.
Dolling,C.H.S. and Carter,N.B. 1961. Hornedness and [illegible] in

sheep. V. Some effects of the horn Allelels on characters in the Merino. Aust. J. Agric. Res.12,483-497.
Dun,R.B. 1958. The influence of the poll gene on certain production characters. Aust. J. Agric. Res.9,553-566.
Eliya, J. 1969. Studies on some economic characteristics in Awassi sheep. M.Sc. Thesis, College of Agric., University of Baghdad.
Eltwil,E.A., Hazel.L.N., Sidwell,G.M. and Terrill,C.E. 1970. Evaluation of environmental factors affecting birth, weaning and yearling traits in Navajo sheep. J. Anim. Sci. 31,823-827.
Fahmy,M.H., Galal,E.S.E., Ghanem,Y.S. and Khishin,S.S. 1969. Crossbreeding of sheep under semi-arid conditions. Anim. Prod. 11,351-360.
Juma, K.H., Faraj.J., Eliya,J. and Al-Abuidy,K. 1969. Studies on growth in Awassi sheep. Indian J. Anim. Sci. 39,503-512.
Juma,K.H., Alkass,J.E. and Aldoori,T.S. 1985. Studies on some economic characteristics in Awassi and Arabi sheep. I. Birth and weaning weight. Wld. Rev. Anim. Prod. (in press).
Kazzal,N.T. 1973. Evaluation of some genetic and environmental factors affecting growth and development of Awassi sheep in Iraq. Ph.D. Dissertation, Univ. of Tannessee, Knoxville. Tennessee.
Pattie,W.A., Armstrong,F.J. and Godlee,A.C. 1963. The influence of the poll gene and castration on lamb growth. Proc. Aust. Soc. Anim. Prod.4,175-177.
Pattie,W.A., Godlee.A.C. and Bouton, P.E. 1965. The effect of castration and of the poll gene on prime lamb production. Anim. Breed. Abstr. 33,240.
Wright, Lu Anne, Thrift,F.A. and Dutt,R.H. 1975. Influence of ewe age on productive characters of Southdown sheep. J. Anim.Sci. 41,517-521.

Table 1.

Overall mea
Rams
horned (
polled (
Progeny
horned (
polled (
Sex
male
female
Type of bir
single
twin
Age of ewe
2
3
4
5
Month of la
November
December
January
February

Table 1. Least-squares means and standard errors for birth and weaning weights.

	No.	Birth weight (kg)	Weaning wt. (kg)
Overall mean	120	3.82 ± 0.15	17.93 ± 0.53
Rams			
horned (HR)	55	3.85 ± 0.17	18.76 ± 0.60
polled (PR)	65	3.77 ± 0.16	17.11 ± 0.59
Progeny			
horned (HP)	43	3.73 ± 0.18	18.20 ± 0.67
polled (PP)	77	3.86 ± 0.17	17.66 ± 0.63
Sex			
male	65	3.95 ± 0.17	18.64 ± 0.57
female	55	3.67 ± 0.17	17.23 ± 0.16
Type of birth			
single	112	4.19 ± 0.10	20.06 ± 0.35
twin	8	3.43 ± 0.28	15.81 ± 1.00
Age of ewe (year)			
2	24	3.54 ± 0.21	17.21 ± 0.76
3	39	3.57 ± 0.19	17.51 ± 0.87
4	46	3.73 ± 0.17	18.17 ± 0.59
5	11	4.39 ± 0.25	18.85 ± 0.89
Month of lambing			
November	13	3.77 ± 0.24	15.54 ± 0.84
December	23	3.54 ± 0.19	18.70 ± 0.68
January	68	3.95 ± 0.17	19.19 ± 0.87
February	16	3.97 ± 0.25	18.39 ± 0.87

Table 2. Least- squares means and standard errors for body weights (kg) at 6, 8, 10 and 12 months of age.

	No.	6	8	10	12
Overall mean	120	20.1 ±0.6	25.2 ±0.7	28.8 ±0.7	30.7 ± 0.7
Rams					
horned (HR)	55	21.8 ±0.6	26.1 ±0.7	29.6 ±0.8	31.3 ± 0.8
polled (PR)	65	20.1 ±0.6	24.3 ±0.7	27.9 ±0.8	30.0 ± 0.8
Progeny					
horned (HP)	43	20.9 ±0.6	25.1 ±0.7	28.9 ±0.8	30.5 ± 0.8
polled (PP)	77	20.9 ±0.6	25.2 ±0.7	28.7 ±0.8	30.8 ± 0.8
Sex					
male (M)	65	22.7 ±0.6	27.9 ±0.7	31.8 ±0.8	34.5 ± 0.8
female (F)	55	19.1 ±0.6	22.5 ±0.7	25.8 ±0.8	26.8 ± 0.8
Type of birth					
single	112	21.2 ±0.4	25.3 ±0.5	28.6 ±0.5	30.7 ± 0.5
twin	8	20.7 ±1.1	25.0 ±1.2	28.9 ±1.3	30.6 ± 1.4
Interaction					
HR X HP	27	20.9 ±0.8	25.1 ±0.8	28.8 ±0.9	29.9 ± 0.9
HR X PP	28	22.6 ±0.8	26.9 ±0.8	30.5 ±0.9	32.6 ± 0.9
PR X HP	16	20.9 ±0.9	25.1 ±0.9	29.0 ±1.0	31.1 ± 1.1
PR X PP	49	19.2 ±0.6	23.5 ±0.7	26.9 ±0.8	28.9 ± 0.9
Interaction					
M X HP	34	23.3 ±0.6	28.6 ±0.8	32.9 ±0.9	35.6 ± 0.9
F X HP	9	18.6 ±0.9	21.7 ±1.1	24.9 ±1.2	25.5 ± 1.3
M X PP	31	22.2 ±0.7	27.1 ±0.9	30.8 ±1.0	33.4 ± 1.1
F X PP	46	19.6 ±0.6	23.3 ±0.8	26.6 ±0.9	28.2 ± 1.0