Indian J. Anim. Prod. Mgmt. Vol. 28 (3-4) 259–262 (2012)

PRE-WEANING PROGENY PERFORMANCE OF ELITE DECCANI RAMS UNDER FIELD CONDITION

U.Y. BHOITE[1], S.B. ADANGALE[2] AND MISS. S.T. SAWANT[3]
Department of Animal Science and Dairy Science,
Mahatma Phule Krishi Vidyapeeth, Rahuri
Dist.Ahmednagar (Maharashtra)

Received : 29.06.2012, Accepted : 15.05.2013

ABSTRACT

The data on pre-weaning body weights and measurements of 1641 Deccani lambs generated in the field with the use of elite selected rams were recorded. The least squares means of body weights and measurements viz. height, length and girth of lambs at birth and weaning age (3 months) were worked out. The overall mean birth weight and 3 months weights of Deccani lambs were 3.58±0.02 kg and 15.82±0.15 kg. The mean height, length and girth of lambs at birth and 3 months of age were 37.35±0.11, 35.98±0.10 and 41.23±0.11 and 48.45±0.32, 47.13±0.27 and 57.17±0.29 cm respectively. The season of birth and sex effects were significant (P<0.01) and center effect was non-significant on birth weight of lambs. The variations were significant (P<0.01) due to center and sex and non-significant due to season of birth in height, length and girth of lambs at 3 months of age. In Deccani lambs average daily body weight gain from birth to weaning age was 127 grams.

Key words: Pre-weaning, growth, Deccani, field

Deccani is promising sheep breed of Maharashtra mainly reared for mutton purpose. It also contributes for coarse wool, skin, and manure. The breed is hardy, adapted to varied climatic conditions and can walk for long distance for grazing. There are six different strains of Deccani sheep breed viz. Sangamneri, Parneri, Indapuri, Dhormendhi, Konkani and Malvi. Phenotypically, Deccani sheep are found in different colour patterns i.e. white, black, mixed (black and white) and rarely brown with spots. Optimum early growth of lambs is beneficial to obtain higher weights during later stage of growth, better reproduction and higher returns.

MATERIALS AND METHODS

The data on pre-weaning body weights and measurements of 1641 Deccani lambs generated in the field with the use of progeny tested rams were collected. The least squares means of body weights and measurements viz. height, length and girth of lambs at birth and weaning age (3 months) were worked out. The non-genetic factors i.e. center (Ambi and Panodi), season of birth (rainy- June to September, winter-October to January and summer- February to May) and sex (male and female) were considered for estimation of mean values. The centers were grouped on the basis of irrigation facilities as irrigated (Ambi) and rain fed (Panodi). Duncan's Multiple Range Test (DMRT) as modified by Kramer (1957) was used to make pair wise comparison between two mean values. Similarly, pre-weaning daily body weight gain of lambs was also calculated.

1. Professor and Scientist Incharge, Network Project on Sheep Improvement (Field Unit), MPKV, Rahuri,
2. Assistant Professor (Animal science) and
3. Research Associate

RESULTS AND DISCUSSION

The least squares means of pre-weaning body weights i.e. birth weight and 3 months weights of lambs as affected by center, season of birth and sex are presented in Table.

The overall mean birth weight of Deccani lambs under field condition was 3.58±0.02 kg. Similar results were reported by earlier worker in Bharat Merino sheep and Deccani sheep at farm condition 6 and 3. The effects of season of birth and sex were significant (P<0.01) and center was non-significant on birth weight of lambs. Significant seasonal effect on birth weight of lambs was also reported in Madgyal lambs 6. The lambs born during rainy (3.62±0.04) and winter season (3.49±0.03) had significantly higher weights than those born in summer (3.61±0.02). During rainy and winter seasons abundant greens available to pregnant ewes might have resulted in higher birth weights of lambs. The males had higher birth weights (3.66±0.13kg) than females (3.49±0.12kg).

The overall mean height, length and girth of Deccani lambs at birth were 37.35±0.11, 35.98±0.10 and 41.23±0.11 cm. respectively. The influence of center was non-significant and season of birth and sex were significant (P<0.05) on height and girth of lambs. The lambs born during winter season had significantly higher height (37.76±0.17 cm) and girth (41.59±10.17 cm) than those born in summer season. The males had significantly higher (36.85±0.14, 38.26±0.12 and 41.81±0.13 cm) height, length and girth at birth than the females (35.10±0.12, 36.44±0.13 and 40.65±0.13 cm) respectively.

The overall mean 3 months weight of Deccani lambs was 15.82±0.15 kg. These results were close to the earlier results observed in Avikalin lambs1. The variations due to center and sex were non-significant and season was significant (P<0.05) on 3 months weights of lambs. Significant effect of season of birth on 3 months weights was also reported in Bharat Merino sheep 7. The lambs born during rainy season (15.52±0.22 kg) had significantly higher weights than those born in summer season (14.90±0.14 kg). Lower weights of lambs born during summer season might be due to shortage of green.

Although the effects of center and sex were non-significant on 3 months body weights the lambs of Panodi center (15.56±0.28 kg) had higher weights than Ambi center (15.00±0.08 kg). The progeny tested rams of Ambi center were distributed to Panodi center. Hence, the performance of progenies of Panodi center might be higher than Ambi center. Similarly, 3 months weight of males (15.34±0.19 kg) was higher than females (15.21±0.22 kg).

The differences were significant (P<0.01) due to center and sex and non-significant due to season of birth in height, length and girth of lambs at 3 months of age. The height, length and girth of lambs of Panodi center (49.27±0.60, 48.30±0.50 and 57.59±0.55 cm) was significantly higher than lambs of Ambi center (47.64±0.18, 45.90±0.15 and 56.75±0.17 cm) respectively. Similarly, males (49.65±0.40, 48.57±0.34 and 57.74±0.37 cm) had significantly higher height, length and girth than females (47.44±0.32, 45.71±0.27 and 56.61±0.30 cm) respectively. The higher body weights and measurement in males than females might be due to aggressive nature of feeding of males. In Deccani lambs average daily body weight gain from birth to weaning age was 127 grams.

Table : Least squares means of pre-weaning body weights and measurements in Deccani lambs

Traits/ Effects	Birth					3 months				
	N	Weight (kg)	Height (cm)	Length (cm)	Girth (cm)	N	Weight (kg)	Height (cm)	Length (cm)	Girth (cm)
		Mean±SE	Mean±SE	Mean±SE	Mean±SE		Mean±SE	Mean±SE	Mean±SE	Mean±SE
Overall Mean(u)	1641	3.58±0.02	37.35±0.11	35.98±0.10	41.23±0.11	1307	15.82±0.15	48.45±0.32	47.13±0.27	57.17±0.29
Center		NS	NS	NS	NS		NS	**	**	**
Ambi	1417	3.57±0.01	37.28±0.07	35.82±0.07	41.18±0.80	1170	15.00±0.08	47.64±0.18	445.90±0.15	56.75±0.17
Panodi	224	3.58±0.04	37.42±0.19	36.14±0.91	41.28±0.20	137	15.56±0.28	49.27±0.60	48.38±0.50	57.59±0.55
Season		**	**	**	**		NS	**	**	**
Rainy	290	3.62^{a} ±0.04	37.00^{b} ±0.17	35.71^{b} ±0.17	40.93±0.18	260	15.52^{a} ±0.22	48.27±0.49	47.40±0.41	57.22±0.45
Winter	320	3.49^{a} ±0.03	37.76^{a} ±0.17	36.36^{a} ±0.16	41.59±0.17	424	15.41^{a} ±0.19	48.84±0.42	46.94±0.35	56.95±0.38
Summer	1031	3.61^{b}±0.02	37.30^{b} ±0.09	35.88^{b} ±0.09	41.17±0.10	623	14.90^{b} ±0.14	48.25±0.31	47.06±0.26	57.36±0.29
Sex		*	**	**	**		NS	**	**	*
Male	854	3.66^{a} ±0.13	36.85^{a} ±0.14	38.26^{a} ±0.12	41.81^{a} ±0.13	609	15.34±0.19	49.65^{a} ±0.40	48.57^{a} ±0.34	57.74^{a} ±0.37
Female	787	3.49^{b} ±0.12	35.10^{b} ±0.12	36.44^{b} ±0.13	40.65^{b} ±0.13	698	15.21±0.22	47.44^{b} ±0.32	45.71^{b} ±0.27	56.61^{b} ±0.30

*=P<0.05, **= P<0.01 and NS= non-significant

Means under each class in the same column with different superscripts differ significantly from each other

REFERENCES

1. Ahmed M., Singh C.V., Sharma R.K. and Arora A.L. 2004. Genetic estimates of growth and wool yield in Avikalin sheep. Indian J. Small Ruminants, **10** (2): 156-158.
2. Harvey, W. R. 1990. Least Squares analysis of data with unequal subclass number,ARS, USA.
3. Kandalkar, Y. B. 2007. Genetic studies on Deccani sheep. Ph. D. thesis submitted to MPKV, Rahuri .
4. Kramer, C.Y. 1957. Extension of multiple range tests to group correlated adjusted mean. Biometrics, **13**: 13-20.
5. Suivkumar, T. and Thiagarajan, M.1999. Growth rate and growth prediction in Madras Red lambs and Tellicherry kids. Cheiron, **28** (5):140-147.
6. Tomar,A.K.S., Mehta B.S. and Singh G. 2000. Genetic and non-genetic factors affecting growth in Bharat Merino Sheep. Indian J. Anim. Sci., **70** (6): 647-648.
7. Waghmode,P.S., Sawane, M.P., Pawar V.D. and Ingavale, M.V. 2008. Effect of non-genetic factors on growth performance of Madgyal sheep. Indian J. Small Ruminants, **14** (1): 123-130.

★ ★ ★