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BIOMETRICS AND BREED CHARACTERISTICS OF *MADRAS RED* SHEEP

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ABSTRACT

The habitat and distribution of Madras Red sheep were studied by the survey in Northern districts of Tamil Nadu. Data on physical traits and body weights were recorded in Madras Red sheep of varied age groups in both the sexes from farmer's flocks. The study revealed that the breed was distributed in Chennai, Kancheepuram, Tiruvellore, Villupuram and adjoining areas of Villupuram, Vellore and Cuddalore and Thiruvannamalai districts of Tamil Nadu and some of the areas from Chennai to Nellore. They were medium sized, well built, hairy type of sheep. The colour generally varied from light dark red/ brown/fan. The pooled mean body weights of lambs at birth, 3, 6, 9 and 12 months of age were 2.60±0.02, 11.50±0.12, 15.82±0.18, 18.92±0.34 and 22.95±0.60 kg, respectively. In adults, the body weights of males and females were 35.20±0.32, 23.12±0.14 kg, respectively while the dressing percentage was 49 %.

Keywords: Breed characteristics, Madras Red, Sheep

India has vast genetic resources of sheep as reflected from the availability of 40 breeds. Considering the geographical and agro climatic conditions, the sheep raising tracts of India can be divided into four regions. The present study was carried out to assess the performance of Madras Red breed of sheep under farm and field conditions to assess the economic traits by recording body measurements at different ages in the villages in and around Kattupakkam, Singaperumal Roil and other villages of Chengalpattu district.

MATERIALS AND METHODS

The present study with respect of biometrics, breed characteristics and conformation was undertaken involving 337 animals (81 males and 256 females) of Madras Red sheep maintained at Livestock Research Station, Kattupakkam, Chengalpattu district. All the measurements of farm bred sheep were taken with a standard measuring tape and the basis was in accordance with those prescribed in bulletin No.27 of Indian Council of Agricultural Research (1960). The live body weights and the body measurements of each animal at the field villages were recorded as per Haribhaskar (1996).

RESULTS AND DISUSSION

Madras Red breed of sheep were medium sized, well built, hairy type with tucked up bellies, light and long feet with clean bony limbs and pouncing quick gait, flat sides and short tail. The body was covered with short hairs and the colour generally varied from light to dark red/brown/tan. These sheep had a characteristic couple of pendulous lobules as tassels known in Tamil as "Manies" or "Manigals" (Cecilwood, 1928).

Rams had strong, corrugated horns with varied twists. Ewes were generally polled but few ewes had rudimentary scurs. White markings or patches on the forehead, inner aspect of the thigh, abdomen, upper and lower limbs, the sides of the body, back and tail were seen in both the sexes. The head was carried high with majesty and a slight Roman nose. This breed of sheep was alert, active, strong, long and lean bodied animal with a straight top line. The eyes were full, prominent, bright and alert. Distinct grooves were seen near the inner canthi of eyes. The hooves were predominantly black and/or black with sparse white markings. Head was carried high with a majesty and a slight Roman nose between eyes tapering towards the muzzle. The face was medium long covered with light to dark red/brown/tan coloured hairs. Irregular white markings or patches were seen on the fore head. The horns of male were strong, angular at the base and deeply corrugated with varied twists with or without curl. The ewes were generally polled, while few ewes had rudimentary scurs. The morphological description of the breed was as under:

1. Ears: Medium, long and drooping, thick and soft with shaft, light to dark red/brown/tan coloured hairs,

2. Eyes: Full, prominent, bright and alert. Distinct grooves were seen near the inner canthi,
3. Nostrils: Comma shaped or oblong, wide, thick and red/brown/tan coloured and symmetrical,
4. Mouth and lips: Flesh coloured with frequent black spots or dots. Muzzle was medium in size and tapered with light to dark red/brown/tan colour,
5. Neck: Strong, medium broad at the base and well set into the shoulders,
6. Brisket: Well developed and prominent,
7. Shoulders: Strong and well set and the top was in level with the back,
8. Height at withers: It was generally few cm more than the length of the body with a mean of 68 cm,
9. Body: Body colour was predominantly brown and the intensity varied from light to dark red/brown/tan. Hardy, strong and well proportioned frame with a broad and deep chest and straight "top line ",
10. Back and loin: Long and level. The ribs were well sprung,
11. Girth: Abdominal girth was always broader than the heart girth and pelvic girth,
12. Hind quarters: Long and deep with the inside of thigh deep and medium,
13. Tail: Short and thin,
14. Legs and feet: Strong, long, lean and clean limbs with quick pouncing gait. The hooves were predominantly black and/or black with sparse white markings,
15. Belly: Tucked up,
16. Testes: Ovoid, full and prominent,
17. Udder: Medium in size and demarcated well from the body with well defined teats,
18. Skin: Fine, soft and covered with light to dark red/brown/tan hairs.

The flock structure indicated an average flock strength of about 85 animals (range: 9 to 315, mainly a composite group of animals of different farmers). The lambing % was 93 (Range 75 to 98; n= 260) while litter size at birth was mostly single and rarely twins were born twining percent was 1.06 (Range 0.78 -1.33; n= 661). The survivability of the flock was reasonably high in all the age group of the animals (Table 1) indicating that the breed was quite adaptable to the prevailing agro-climatic conditions.

Table 1. Survivability of the animals in different age group.

Months	%	Range (%)
0-3	89	80-96
3-6	97	85-98
6-12	99	86-100
Adults	98	96-100

Selective pure breeding was adopted. Selection was based primarily on body size and live weight at 3, 6, 9, 12 and 18 months of age. Pre and post weaning average daily gain (g) were also the selection criteria along with the live weight at the respective age groups. The average body weight of the genotype at different age is given Table 2.

The pooled mean live body weight at 3 months was 8.21±0.15 kg the mean live weights of male and female lambs were 8.36±0.22 and 8.05±0.22 kg, respectively. The difference between sexes were however not significant. The overall mean body measurements (cm) were: ear length 11.66 ±0.11, tail length 6.70 ±0.09, height at wither 48.77±0.33, chest girth 47.15±0.43, length from point of elbow to pin bone 35.92 ±0.53 and length from poll to base of the tail 58.39 ±0.71.

The pooled mean live body weight from 3- 6 months was 12.79± 0.11 kg. The mean body weights of male and female lambs were 12.79±0.17 and 12.78±0.16 kg, respectively. The differences between sexes in this age group were also not significant. The overall mean body measurements (cm) were: ear length 12.28 ±0.12, tail length 7.93±0.08, height at withers 55.05±0.31, chest girth 57.57±0.30, body girth: 62.52 ±0.36, flank girth 57.75±0.39, length from point of elbow to pin bone 42.48±0.09 and length from poll to base of the tail 71.18±0.41. At 6 months of age the pooled mean live body weight was 18.20±0.16 kg. The mean body weights of male and female were lambs were similar and 18.27±0.36 and 18.16±0.18 kg respectively. The overall mean body measurements (cm) were: ear length 12.72 ±0.13, tail length 8.22±0.10, height at withers 61.05±0.38, chest girth 64.40±0.29, body girth 69.22 ±0.38, flank girth 73.31±0.39, length from point of elbow to pin bone 47.44 ±0.35 and length from poll to base of the tail 80.27±0.56.

Table 2. Body weight (kg) of different age group of the animals.

	Mean± S.E. (kg)	Range (kg)	Number of observations
Birth	2.60 ±0.02	2.40- 2.85	262
3	11.50±0.12	9.50 -13.50	247
6	15.82±0.18	12.72 -18.62	232
9	18.92±0.34	15.75 -21.80	217
12	22.95±0.60	19.80 -25.60	208
Adult male	35.20±0.32	31.80 -42.24	81
Adult female	23.12±0.14	21.32 –30.62	256

Table 3. Physical characteristics of Madras Red breed of full mouth sheep (cm)

Sl.No	Physical characteristics	Ram				Ewe			
		Mean	Range	S.E.	C.V. (%)	Mean	Range	S.E.	C.V. (%)
I.	Head: Face a. Length	23.44	10.50-27.00	0.23	8.83	23.08	19.50-26.00	0.19	13.17
	b. Width I. above eyes	19.05	17.00-20.50	0.15	7.09	17.85	15.50-19.00	0.15	13.45
	II. between inner canthi of eyes	10.45	9.50-12.50	0.10	8.61	9.40	8.00-11.15	0.08	13.62
	c. Girth	19.50	17.50-23.50	0.25	11.54	18.00	16.00-21.50	0.15	13.33
	Ears: (a) Left Length	13.25	10.00-15.00	0.25	16.98	12.05	10.00-15.00	0.12	15.93
	Width	6.35	5.00-8.00	0.10	14.17	6.15	5.50-8.50	0.06	15.61
	(b) Right Length	13.10	10.00-15.00	0.20	13.74	11.90	10.00-14.00	0.10	13.45
	Width	6.10	5.50-8.00	0.12	17.70	6.10	5.50-8.50	0.05	13.11
	Diameter of the grooves in front of the eyes	1.75	1.50-2.00	0.02	10.29	1.70	1.15-200	0.02	18.82
II	Neck. a. Length	36.08	32.00-42.00	0.75	18.71	32.90	25.00-41.00	0.40	19.45
	b. Girth	34.18	25.00-40.00	0.58	15.27	30.35	25.00-41	0.25	13.18
III	Length of the animal from poll to base of the tail	95.50	90.50-102.00	0.90	8.48	89.50	84.00-98.00	0.80	14.30
IV	Body i. Length (from point of shoulder to pin bone)	63.83	58.50-68.82	1.04	14.66	59.84	53.70-65.74	0.44	11.76
	ii. Girth								
	a. Heart	81.80	72.82-87.50	0.87	9.57	71.17	65.07-78.24	0.29	6.52
	b. Abdominal	87.26	77.24-94.15	0.85	8.77	77.04	71.14-85.12	0.49	10.18
	c. Pelvic	78.93	69.32-94.15	1.05	11.97	68.10	61.40-75.10	0.25	5.87
V	Tail i. Length	9.42	7.84-11.28	0.67	6.40	7.82	5.80-9.98	0.08	16.37
	ii. Thickness								
	a. Base	7.20	5.50-9.88	0.14	17.50	6.40	5.50-7.30	0.06	15.00
	b. Body	5.18	4.48-6.76	0.12	20.84	5.28	4.48-6.08	0.05	15.15
	c. Tip	3.55	2.75-4.35	0.07	17.75	3.65	2.85-4.45	0.04	17.53
VI.	Height								
	i. At withers	73.54	66.64-81.40	0.52	6.36	63.92	57.82-69.92	0.21	5.26
	ii. At hook bone	70.43	64.15-78.55	0.49	6.26	60.54	54.14-66.44	0.29	7.66

	iii. At hip joint	65.85	59.90-71.85	0.66	9.02	56.85	50.80-62.85	0.24	6.75
VII.	Length between the hook bone and hip joint	15.94	14.10-19.54	0.30	16.94	14.84	13.00-15.68	0.12	12.94
VIII	Width at hook bone	20.73	19.84-23.40	0.29	12.59	19.87	18.74-21.10	0.14	11.27
IX	Width-pelvis At hip joint level	22.80	20.40-24.40	0.30	11.84	21.74	20.34-23.14	0.20	8.28
X	Hight at the point of elbow from the ground level	54.53	48.70-60.36	0.44	7.26	51.15	47.00-55.60	0.25	4.40
XI	Measurement of bone below knee	24.86	23.16-26.00	0.34	12.31	24.86	23.10.26.20	0.34	12.31
XII	Fore mid shank circumference	6.75-7.73	0.06	7.58	6.62	6.25-9.20	0.12	16.31	

(Number of observations: Males-81, Females-256)

The pooled mean live body weight of two teeth was 24.78±0.21 kg. Mean weights of males and females were 28.27±0.71 and 21.29±0.22 kg, respectively. The differences between sexes were significant. The overall mean body measurements (cm) were: ear length: 13.88±0.93, tail length 9.01±0.13 height at withers 67.83±0.30, chest girth 72.99±0.29, body girth 79.08±0.34, flank girth 71.02±0.34, length from point of elbow to pin bone 52.96±0.35 and length from poll to base of the tail 85.31±0.54. All body measurements between sexes were significant except ear length.

The pooled mean live body weight of 4 teeth animals was 25.28±0.19 kg. Average weights of males and females were 28.00±0.72 and 25.56±0.19 kg, respectively: the differences between sexes were significant. The overall mean body measurements (cm) were; ear length 13.60±0.10, tail length 8.58±0.09, height at withers 68.41±0.23, chest girth 74.01±0.21, body girth 79.56±0.26, flank girth 73.70±0.28, length from point of elbow to pin bone 52.88±0.26 and length from poll to base of the tail 88.06±0.39. All body measurements between sexes were significant except ear and tail length.

The pooled mean live body weight of 6 teeth animals was 28.52±0.17 kg. Average weights of males and females were 33.01±0.74 and 24.02±0.17 kg, respectively. The overall mean body measurements (cm) at 6 teeth were: ear length 13.60±0.08, tail length 8.84-0.08, height at withers 69.88±0.32, chest girth 74.48±0.20, body girth 83.86±0.38, flank girth 76.66±0.28, length from point of elbow to pin bone 56.97±0.19 and length from poll to base of the tail 89.91±0.81. All these body measurements between sexes were significant except ear and tail length.

The pooled mean live body weight of 8 teeth was 28.76±0.14 kg. Average weights of males and females were 33.16±1.51 and 24.36±0.14 kg, respectively. Body weight difference between sexes were significant. The overall mean body measurements (cm) were: ear length 14.03±0.10, tail length 9.20±0.07, height at withers 72.21±0.81, chest girth 72.50±0.26, body girth 82.01±0.23, flank girth 74.77±0.47 , length from point of elbow to pin bone 58.76±0.19 and length from poll to base of the tail 82.16±0.41. Body measurements between sexes were significant with respect to height at withers, chest, body girth and length from point of elbow to pin bone.

Mean dressing percentage on pre-slaughter live weight basis was 49.00 based on 180 observations.

It is concluded that Madras Red breed of sheep were hardy animals which thrived well on poor pasture with good reproductive ability and disease resistance.

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