

Breed Descriptor of Sheep

National Bureau of Animal Genetic Resources
Karnal-132001 (Haryana)

Bellary Sheep

Accession No. INDIA_SHEEP_0800_BELLARY_14019

1. GENERAL INFORMATION

1. Breed name Bellary
2. Breed name synonyms Nil
3. Background for such a name/origin The name is derived from the distribution area of this breed
4. Strains (or within breed types) Nil
5. Native tract of distribution

State	District
Karnataka	Bellari and Davangere districts and adjoining areas of Haveri and Chitradurga districts
6. Estimated population
 - a. Year of estimation 2003
 - b. Population 1.5 million
 - c. Source/reference Based on Livestock census (2003) and distribution area of the breed
7. a. Community responsible for developing the breed Farmers
 - b. Description of community Farmers, nomads (Farmers/nomads/isolated tribals)
8. Flock size 143 (Depends upon season)

Composition (%)	
Ewes	74.1
Rams	3.5
Young	22.4
9. Utility of the breed

Mutton	Yes
Wool	Yes
Manure	Yes
Milk	Home consumption
Pelt	No
Skin	Yes (after death or slaughter of the animal)

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any) The coat colour comprises various combinations of black and white to complete black. Most of the animals are black with patches of white all over the body including head, thorax, abdomen, belly and legs. The

2. Head profile (straight/convex/slightly convex)
3. Ears (erect/pendulous/horizontal)
4. Wattles (present/absent)
5. Horns
 - a. Number 2
 - b. Shape Thick at the base, corrugated & curved in rams with pointed tips
 - c. Orientation Backward, outward and downward
 - d. Size (small<15/medium 15-25 / large >25 cm) Large in rams (average length: 28.3±0.75 cm) Small in ewes (average length: 9.4±0.51 cm)
6. Coat
 - a. Type (hair/wool) Hair
 - b. Staple Length (12 month fleece) Medium to long (short <5/medium 5 10/ long >10 cm)
 - c. Lustre (lustrous/non lustrous) Non-lustrous
 - d. Crimp / curl (straight/ low crimp = < 4 / high crimp = > 4/cm) No crimp
7. Fineness (fibre diameter) Coarse (fine <21 /medium 22 26/ coarse >26 micrometers)

Wool cover (covered/bare)	
Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent) Absent
9. Tail

Type	Thin
Shape	Straight
Length (short/medium/ long)	Short; 12.5±0.13 and 11.2±0.06 cm in rams and ewes respectively.

proportion of complete white animals is very low
Straight to slightly convex

Tubular and medium in size.

Ear length: Rams - 13.3±0.29 cm

Ewes - 13.2±0.17 cm

Present in about 80% of the animals

About 89% of rams are horned, Only ~ 9.5% ewes horned, remaining polled

Thick at the base, corrugated & curved in rams with pointed tips

Backward, outward and downward

Large in rams (average length: 28.3±0.75 cm) Small in ewes (average length: 9.4±0.51 cm)

Medium to long

Non-lustrous

No crimp

Coarse

Bare

Bare

Bare

Bare

Absent

Thin

Straight

Short; 12.5±0.13 and 11.2±0.06 cm in rams and ewes respectively.

III. PERFORMANCE**1. Body weight (estimated)**

Weight at	Average (kg)	
	Male	Female
Birth	2.1	2.0
3 months	14.1	13.4
6 months	19.0	17.7
One year	25.7	23.3
Adult weight	42.8±0.61 (Range:24-65)	31.8±0.22 (Range:16-50)

2. Body measurements (cm)

Measurements	Rams		Ewes	
	Average	Range	Average	Range
Chest-girth	82.5±0.42	67-90	76.1±0.17	62-89
Length	70.2±0.38	59-84	65.6±0.14	55-75
Height at withers	74.5±0.32	65-87	68.9±0.13	59-78
Paunch girth	80.1±0.47	65-95	74.2±0.23	61-91

3. Dairy performance

Daily milk yield	300-400 ml per ewe per day during peak months of lactation. Some of the lactating ewes are milked for home consumption.
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4. Reproduction

Trait	Average/Range
Age at first breeding in rams (months)	15-18
Breeding life of rams (months)	36-48
Age at first lambing (months)	18-24
Lambing rate (%)	80
Lambing interval (days)	425-455
Litter size	Single
Twinning	Rare
Lifetime lamb production	5-7 lambs

5. Wool production

Greasy fleece weight (g)	200 – 400 per annum in two clips
Fibre diameter (μ)	59.03±1.16
Fleece colour	Black and white

6. Any other information specific to the breed

Disposal of male lambs	At 2-4 months of age
Income	From sale of male lambs, old ewes and old rams From sheep droppings A little income from sale of wool

Source:

- Jain A., Kulkarni V.S., Govindaiah M.G., Sadana D.K., Aswathnarayan T., Pandey A.K., Kumar D., Sharma R. and Singh G. 2005. Sheep genetic Resources of India: Bellary. Monograph - National Bureau of Animal Genetic Resources.
- Acharya, R.M. 1982. Sheep and goat breeds of India. FAO Animal Production and Health Paper, 30, FAO, Rome, Italy

Gurez Sheep**Accession No.** INDIA_SHEEP__0700_GUREZ_14004**1. GENERAL INFORMATION**

1. Breed name	Gurez	
2. Breed name synonyms	Nil	
3. Background for such a name/origin	The name is derived from the home tract "Gurez" Subdivision.	
4. Strains (or within breed types)	Nil	
5. Native tract of distribution	State Jammu & Kashmir	District Baramulla
6. Estimated population		
a. Year of estimation	1999-2004	
b. Population	4 475	
c. Source/reference	Sheep Genetic Resources of India: Gurez Monograph No. 49, NBAGR, Karnal.	
7. a. Community responsible for developing the breed	Dardi tribe	
b. Description of community (Farmers/nomads/isolated tribals)	Farmers and landless labourers.	
8. Utility of the breed		
Mutton	Excellent mutton breed	
Wool	Carpet wool	
Manure	No	
Milk	Gurez is not a typical dairy type sheep breed, however has good potential for milk production. The shepherds use sheep milk when on summer camp.	
Pelt	No	
Skin	No	

II. PHYSICAL CHARACTERS

	Male	Female
1. Colour		
Distinctive colour	White 53.85%	44.68%
markings	Brown 30.76%	42.55%
	Black 15.38%	12.76%
2. Head profile (straight/convex/slightly convex)	Medium sized. The forehead is slightly convex in both males and females.	
3. Ears (erect/pendulous/horizontal)	Medium sized, thin, pointed and horizontal	
4. Wattles (present/absent)	Absent	
5. Horns	Males are generally horned (84.60%) whereas Females are generally polled (82.98%).	
Size (Small < 15/ medium 15-25/ large > 25 cm)	Large in males (average size 28.40cm) and medium in females (average size 15.10 cm)	
6. Coat		
a. Type (hair/wool)	Wool	
b. Staple length (12 month fleece) (short <5/medium	Long	

5 10/long >10 cm)	
c. Lustre (lustrous/non lustrous)	Generally non-lustrous, however, some sheep have good lustrous wool.
d. Crimp / curl (straight/ low crimp = < 4 /high crimp = > 4/cm)	Low crimp
7. Fineness (fibre diameter) (fine<21 /medium 22 26/ coarse>26 micrometers)	Medium to coarse
Wool cover (covered/ bare)	Body is mostly well covered with fleece
Head	Covered
Face	Covered with chalky hairs
Belly	Not completely covered
Legs	Covered with chalky hairs
8. Beard (present/absent)	Absent
9. Tail	
Type	Thin
Shape	Straight
Length (short/medium/ long)	Medium

III. PERFORMANCE

1. Body weight (kg)

Weight at	Average (kg)	
	Male	Female
Birth	2.4±0.28	2.4±0.18
Weaning / 3 months	6.7±0.08	6.4±0.07
6 months	16.7±0.18	16.6±0.13
One year	20.5±0.79	20.0±0.23
Weight at first lambing	-	31.5±1.76

2. Body measurements (cm)

Measurements	Average	
	Rams	Ewes
Length	70±2.21	71±0.69
Height at withers	63±1.07	63.3±0.50
Chest-girth	79.6±1.96	82.7±00.81

3. Carcass characters

Measurements	Average	
	Male	Female
Age at slaughter (months)	18-24	> 72
Weight at slaughter (kg)	35.3±3.20	40.6±0.55
Carcass weight (kg)	19.5±1.25	21.7±1.45
Dressing percentage	55	53

4. Dairy performance

Trait	Average
Daily milk yield (g)	181.1±8.87

5. Reproduction

Trait	Average/Range
Age at first mating in rams (months)	18-24
Age at first mating in ewes (months)	18-30
Age at first lambing(months)	24-30
Lambing interval (days)	365
Litter size	1.04
Lifetime lamb production	6-7

6. Wool production

Greasy fleece weight (kg)	0.8 to 1 per year
Clean fleece weight (kg)	0.650-0.850
Staple length (cm)	Male: 10.5±0.35, Female: 12.2±0.30
Fibre diameter (μ)	Male: 25.2±1.79, Female: 25.9±0.32
Fleece colour	White

7. Any other information specific to the breed

- Gurez is an excellent mutton and fine carpet wool breed of northern temperate region of India.
- Multiple horns detected in some animals of both the sexes in Gurez breed.

Source:

- Sheep Genetic Resources of India: Gurez. Monograph No. 49, NBAGR, Karnal.

Hassan Sheep

Accession No. INDIA_SHEEP_0800_HASSAN_14022

1. GENERAL INFORMATION

1. Breed name	Hassan	
2. Breed name synonyms	Nil	
3. Background for such a name/origin	The name is derived from Hassan district, the habitat of the breed.	
4. Strains (or within breed types)	Nil	
5. Native tract of distribution	State Karnataka	District Hassan
6. Estimated population		
a. Year of estimation	1997	
b. Population	0.196 million	
c. Source/reference	Based on Livestock census (1997) and distribution area of the breed.	
7. a. Community responsible for developing the breed	Farmers	
b. Description of community (Farmers/nomads/ isolated tribals)	Farmers	
8. Flock size	34 (Depends upon season)	
Composition (%)		
Ewes	67.6	
Rams	8.8	
Young	23.5	
9. Utility of the breed		
Mutton	Yes	

Wool	Yes
Manure	Yes
Milk	No
Pelt	No
Skin	Yes (after death or slaughter of the animal)

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any)	White with light brown or black spots on head and other body parts
2. Head profile (straight/convex/slightly convex)	Straight
3. Ears (erect/pendulous/horizontal)	Semi-drooping. Ear length: 14.1.0±0.09 cm
4. Wattles (present/absent)	Present
5. Horns	Females are usually polled, about 30-40% of the males are horned and remaining polled
a. Number	2
b. Shape	Curved
c. Orientation	Backward, outward and downward
d. Size (small<15/medium 15-25 / large >25 cm)	Medium to small
6. Coat	
a. Type (hair/wool)	Hair
b. Staple Length (12 month fleece) (short <5/medium 5 10/long >10 cm)	Medium
c. Lustre (lustrous/non lustrous)	Non-lustrous
d. Crimp / curl (straight/low crimp = < 4 /high crimp = > 4/cm)	No crimp
7. Fineness (fibre diameter) (fine <21 /medium 22 26/ coarse >26 micrometers)	Coarse
Wool cover (covered/bare)	
Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent)	Absent
9. Tail	
Type	Thin
Shape	Straight
Length (short/medium/long)	Short; 10.6±0.11 cm

III. PERFORMANCE

1. Body weight (estimated)

Weight at	Average (kg)	
	Male	Female
Birth	2.39	2.21
3 months	13.1	12.0
6 months	17.1	15.6
One year	22.2	20.2
Adult weight	32.8±0.85 (Range:19-46)	28.3±0.34 (Range:19-43)

2. Body measurements (cm)

Measurements	Rams		Ewes	
	Average	Range	Average	Range
Chest-girth	75.3±0.71	64-86	72.0±0.36	58-89
Length	64.3±0.64	51-73	62.0±0.21	50-69
Height at withers	64.4±0.61	55-78	60.8±0.23	51-72

3. Reproduction

Trait	Average/Range
Lambing rate (%)	64
Lambing interval (days)	456
Litter size	Single
Twinning	Rare
Lifetime lamb production	4-5 lambs

4. Wool production

Greasy fleece weight (g)	300 per annum in two clips
Fleece colour	White or mix of white and brown/black

5. Any other information specific to the breed

Disposal of male lambs	At 10-12 months of age
Income	From sale of male lambs and spent animals
	From sheep droppings
	A little income from sale of wool

Source:

Jain A., Govindaiah M.G., Sadana D.K., Kulkarni V.S., Aswathnarayan T., Pandey A.K., Sharma R., Kumar D and Ahlawat S.P.S. (2006). Sheep genetic Resources of India: Hassan. Monograph 34 - National Bureau of Animal Genetic Resources.

Karnah Sheep

Accession No. INDIA_SHEEP__0700_KARNAH_14005

1. GENERAL INFORMATION

1. Breed name	Karnah
2. Breed name synonyms	Nil
3. Background for such a name/origin	The name is derived from the home tract

4. Strains (or within breed types)	“Karnah” valley Kashmir Merino (Karnah X Staveropol Merino)
5. Native tract of distribution	State District Jammu & Kupwara Kashmir
6. Estimated population	
a. Year of estimation	2004
b. Population	4269
c. Source/reference	Sheep Genetic Resources; Karnah Monograph No. 50, NBAGR, Karnal
7. a. Community responsible for developing the breed	
b. Description of community (Farmers/ nomads/isolated tribals)	Farmers
8. Flock size	25-100 and 5 to 6 rams per village
9. Utility of the breed	
Mutton	Major share comes from sale of lambs for mutton
Wool	Apparel Wool
Manure	Yes
Milk	Karnah is not a dairy animal but in case of death of lamb, milk is obtained from the ewe for domestic consumption
Pelt	No
Skin	No

II. PHYSICAL CHARACTERS

1. Colour	Rams: 100% white
Distinctive colour markings	Ewes: 91.72% white, 4.03% brown and 4.23% black
2. Head profile (straight/ convex/slightly convex)	Medium sized, slightly convex in both males and females
3. Ears (erect/pendulous/ horizontal)	Pendulous and medium sized
4. Wattles (present/absent)	Absent
5. Horns	
a. Number	94% Rams have large curved horns. All females are polled
b. Shape	Curved
c. Orientation	Horns take a backward turn and then forward and upward with pointed tips
d. Size (small<15/ medium 15-25 / large >25 cm)	Large
6. Coat	
a. Type (hair/wool)	Wool
b. Staple Length (12 month fleece) (short <5/medium 5 10/long >10 cm)	Long
c. Lustre (lustrous/ non lustrous)	Non-lustrous
d. Crimp / curl (straight/	Crimp

low crimp = < 4 / high crimp = > 4/cm)	
7. Fineness	Medium (22 to 25 micrometers)
(fine <21 /medium 22 26/ coarse >26 micrometers)	
Wool cover (covered/bare)	
Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent)	Absent
9. Tail	
Type	Thin
Shape	Straight
Length (short/medium/ long)	Medium

III. PERFORMANCE

1. Body weight (kg)

Weight at	Male		Female	
	Average	Range	Average	Range
Birth weight	2.8±0.02	2.3-3.3	2.7±0.02	2.3-3.1
Weaning / 3 months	7.6±0.06	5.9-9.2	7.8±0.07	6.5-10
One year	21.3±0.79	15-26	20.4±0.23	14-25
Weight at first lambling	-		31.5±1.76	22-37

2. Body measurements (cm)

Measurements	Average	
	Male	Female
Length	74.5±3.5	71.2±0.77
Height at withers	63.5±1.69	62.5±0.55
Chest-girth	82.3±0.69	77.1±0.76

3. Carcass characters

	Male	Female
Age at slaughter (months)	12-24	48-72
Weight at slaughter (kg)	29.5±1.45	37.6±1.50
Carcass weight (kg)	-	16.4±1.27
Dressing percentage	-	54.9±1.50

4. Dairy performance

Trait	Average
Daily milk 7 th day	110.1±9.50 (60-200)
yield (g) 52 nd day	255.5±15.20 (120-400)
Fat %	4.20±0.69
Protein %	4.46±0.74
Total Solids %	14.56±1.06



Bellary-RAM



Bellary-EWE



Gurez-Ram



Gurez-ewe



Hassan-Ram



Hassan-EWE



Karnah-Ram



Karnah-EWE

5. Reproduction

Trait	Average	Range
Age at first mating in rams (months)	20.0±1.15	16-24
Age at first oestrus in ewes (months)	19.0±1.12	18-24
Age at first lambing (months)	25.0±1.5	24-36
Lambing interval (days)	365	320-400
Litter size	Single (1.04)	
Lifetime lamb production		6-7

6. Wool production

Greasy fleece weight (kg)	1 to 1.5 per year
Clean fleece weight (kg)	0.650-1.250
Staple length (cm)	12-15
Fibre diameter (μ)	22-25 μ (The wool is crimping but has no medullation and kemp)
Fleece colour	White

7. Any other information specific to the breed:

1. Karnah is an important sheep breed of the region that yields white fleece of long wool fibres usable both under hand spinning and by machine.
2. The breed has unique ability to walk long distances in hilly tract.

Source:

- Monograph No. 50, pp 1-28, 2007, NBAGR, Karnal.

Kilakarsal Sheep

Accession No. INDIA_SHEEP_1800_KILAKARSAL_14024

1. GENERAL INFORMATION

1. Breed name **Kilakarsal**
2. Breed name synonyms Kilakaruva, Ramnad Karuvai, Adikarisal
3. Background for such a name/origin In Tamil, 'Kila/Adi' means bottom, "Karisal/Karuvai" means black colour. As the ventral part of the sheep is black in colour, the Tamil names of Kilakarsal, Kilakaruva or Adikarisal are used. The place

4. Strains (or within breed types)

5. Native tract of distribution

6. Estimated population

- a. Year of estimation
- b. Population

c. Source/reference

- a. Community responsible for developing the breed
- b. Description of community (Farmers/nomads/isolated tribals)

8. Flock size

- a. Average size
- b. Composition (%)
- c. Ewes
- d. Rams
- e. Lambs

9. Utility of the breed

10. Any other information

of origin of the breed was erstwhile Ramnad district (now Ramanathapuram district, parts of Thoothukudi/Tirunelveli and Virudhunagar districts)

Nil

State	District
Tamil Nadu	Tirunelveli and Thoothukudi

2006	2011
357	1325 (652 ewes, 40 rams, 265 female progeny in field, 122 in nucleus flock, 246 in State farm unit)

Survey report (2006). Annual report (2011) of ICAR NBAGR scheme on In situ conservation of Kilakarsal sheep breed

Konar caste (BC community)

Sheep farmers adopting nomadic grazing during summer months

14.25±11.21

90.65

2.10

6.80

Meat and manure

The breed is known since Sethur Maharaja Rule; This type of sheep has been described as Karuvi adu during early 1900's

in local songs of nomadic sheep grazing people of Manur block of Tirunelveli district. However, this breed with distinct characters has been described as Keezhakaraisal by Ganeshkale and Rathinasabapathy (1973).

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any) Dark tan coat dorsally, black colour ventrally – under belly and inner side of legs. Black colour noticed above eyelids and either side of the lower jaw
2. Head profile (straight/convex/slightly convex) Slightly convex, medium in size
3. Ears (erect/pendulous/horizontal) Leaf like, semi pendulous and medium in size
Ear length:
Rams - 11.33±0.65 cm
Ewes - 12.39±0.27 cm
4. Wattles (present/absent) Wattles present in a few females. Two wattles are present with 4 - 5 cm in length
5. Horns Always present in males; females are mostly polled; small horns noticed in a few females
 - a. Number Two
 - b. Shape Well developed, flat, twisted
 - c. Orientation Extending horizontally and laterally
 - d. Size (small<15/medium 15-25 / large >25 cm) Medium to large; 13 -32 cm long
6. Coat
 - a. Type (hair/wool) Hairy
 - b. Staple Length (12 month fleece) Short ; Rams have long hairs along the ventral surface of neck and posterior hind quarters
 - c. Lustre (lustrous/non lustrous) Lustrous in adults
7. Beard (present/absent) Absent
8. Tail
 - Type Erect
 - Shape Thin
 - Length (short/medium/long) Short to medium in length; 7.70±0.34 and 8.12±0.14 cm in rams and ewes respectively

III. PERFORMANCE

1. Body weight (kg)

Weight at	Male			Female		
	Average	Range	N	Average	Range	N
Birth	2.89	2.60–3.45	79	2.65	2.35–3.10	87
3 months	8.73	7.45–10.30	75	8.12	6.65–9.45	84
6 months	13.23	11.90–15.35	64	12.83	10.15–14.25	72
One year	21.90	19.30–23.50	36	18.21	16.75–21.25	65
First lambing	-	-	-	22.68	16.10–28.60	55
Adult weight	24.75	21.40–32.75	24	21.94	18.55–24.85	165

2. Body measurements (cm)

Measurements	Male			Female		
	Average	Range	N	Average	Range	N
Chest girth	75.28	64.30–82.40	24	69.54	59.00–76.60	165
Length	56.48	52.20–61.60	24	55.41	49.20–59.80	165
Height at withers	69.79	64.50–73.80	24	68.37	60.30–71.50	165

3. Dairy performance: Nil

4. Reproduction

Traits	Average	Range	N
Age at first mating in males (months)	25.10	19–30	18
Age at first mating in females (months)	18.18	10–25	77
Age at first oestrus (months)	14.16	8.7–19.3	77
Oestrus cycle duration (days)	16.78	14–20	77
Age at first lambing (months)	23.32	15–30	77
Gestation period (days)	151.31	146–156	77
Lambing interval (days)	318.84	168–578	77
Litter size	1.00	–	77

Source:

· Tamilnadu Veterinary and Animal Sciences University, Chennai – 600 051

Madras Red Sheep

Accession No. INDIA_SHEEP_1800_MADRASRED_14025

I. GENERAL DESCRIPTION

1. Breed name **Madras Red**
2. Synonyms Chennai Sigappu
3. Background for such a name / origin The native tract for Madras Red sheep is the districts adjacent to Madras and the skin colour is red. So the name originated as Madras Red Kattupakkam Red
4. Strains (or within breed types)
5. Native tract of distribution

State	District
Tamil Nadu	Chennai, Kancheepuram, Villupuram, Tiruvallur and parts of Cuddalore and Thiruvannamalai districts
6. Estimated population
 - a. Year of estimation 2007
 - b. Population 11.5 lakh
 - c. Source / Reference 18th Livestock and Poultry Census, Department of Animal Husbandry, Dairying & Fisheries, GOI
7. a. Communities responsible for Naicker and Pillai are the two communities responsible for

developing the breed

the development of the breed in the native tract of Kancheepuram and Thiruvallur districts

b. Description of community (Farmers/nomads/isolated/tribals)

The Pillai community consists of traditional farmers doing sheep farming generation after generation. Most of them own medium sized flocks and do agriculture and sheep rearing. Both the communities belong to most-backward classes. Very few sheep farmers belong to scheduled caste.

8. Flock size
Composition(%)

20-50

Ewes

76

Rams

2

Lambs

22

9. Utility of the breed

Meat

10. Any other information

The sheep farming forms a major source of livelihood for the farmers of this area because of the increased demand for meat and low initial investments when compared to large animals. Even though, the Madras Red sheep are generally maintained on grazing alone, their meat yield is good as compared to that of other sheep breeds of the country

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any)

Red. Intensity varies from tan to dark brown

Some have white markings at the forehead, inner aspect of thigh and lower abdomen

2. Head profile (straight/ slightly convex/convex)

Straight (97.2%) and slightly convex (2.8%)

3. Ears (erect/pendulous/horizontal)

Pendulous

Ear length: 12-13 cm

4. Wattles (present/absent)

Present in both male and females

5. Horns

a. Number

Two

b. Colour

Grey

c. Shape

Curved

d. Orientation

Inward and outwards

e. Size (small<15/medium 15-25 / large >25 cm)

Rams - Medium (15-25 cm)

Ewes - Small (below 15 cm)

6. Coat type (hair/wool)

Hairy type and never shorn

7. Beard (present/absent)

Absent

8. Tail

a. Type

Medium

b. Length (short/medium/ long)

Medium - 7-9 cm

III. PERFORMANCE

1. Body weight (kg)

Weight at	Male		Female	
	Average	N	Average	N
Birth	2.86±0.006	1518	2.85±0.005	1550
Weaning/ 3 months	11.38±0.13	1469	11.36±0.11	1485
6 months	15.47±0.15	1199	15.45±0.14	1197
1 year	23.56±0.08	432	22.33±0.15	976
Adult weight	26.33±0.39	361	23.23±0.04	7510

2. Body measurements (cm)

Weight at	Average	
	Male (N = 361)	Female (N = 7510)
Chest-girth	71.60±0.60	72.36±0.05
Body length	78.11±0.60	77.82±0.06
Height at withers	63.13±0.57	66.82±0.05

3. Carcass characters

	Male			Female		
	Average	Range	N	Average	Range	N
Age at slaughter (days)	180	170-190	183	180	170-190	33
Weight at slaughter (kg)	17.04±0.21	14.3-21.5		16.50±0.36	12.9-19.4	
Carcass weight (kg)	8.23±0.11	6.8-11.0		8.11±0.32	6.1-9.8	
Dressing %	48.25±0.13	44.6-52.3		48.92±0.55	44.5-53.3	

4. Dairy performance: Nil

5. Reproduction

	Average	Range	N
Age at first mating in females (months)	13	11-15	1202
Age at first lambing (months)	18	16-21	1182
Lambing interval (days)	243.2	213-274	1441
Gestation length (days)	149	145-154	1235
Litter size	1	-	1202
Lifetime lamb production	5	4-6	1230
Lambing rate (%)	84.56	82-88	3628

6. Wool production (true wool/ heterotypes/hair/kemps) : Nil

7. Pelt production: Nil

Source:

- Acharya, R.M. 1982. Sheep and goat breeds of India. Animal Production and Health Paper. No.30. FAO, Rome.
- Balasubramanyam D. Jaishankar S., Sivaselvam S.N. 2010. Performance of Madras red sheep under farmer's flocks. The



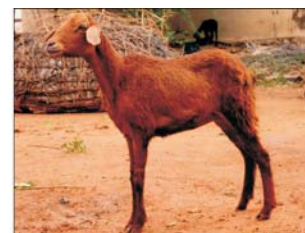
Kilakarsal-Ram



Kilakarsal-Ewe



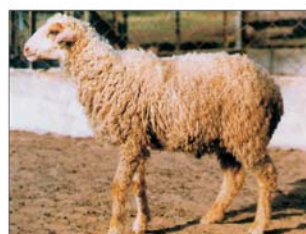
Madras Red-Ram



Madras Red-Ewe



Magra-Ram



Magra-Ewe



Mandya-Ram



Mandya-Ewe

Indian Journal Small Ruminants, 16 (2): 217-220

- Balasubramanyam, D. and Kumarasamy, P. 2011. Performance of Madras Red sheep in Kancheepuram District. Indian Journal of Fundamental and Applied Life Sciences, 1(2): 133-137.
- Sivakumar, T., Balasubramanyam D., Jawahar K., Thilak Pon, Gopi, H. and Jaishankar, S. 2009. Growth and reproductive performance of Madras Red sheep under field conditions. The Indian Journal of Small Ruminants, 15(2): 248-252.
- http://dahd.nic.in//LStockReport/AllIndia/PDF/TABLE5D_NM_00.pdf

Magra Sheep

Accession No. INDIA_SHEEP_1700_MAGRA_14011

1. GENERAL INFORMATION

- Breed name **Magra**
- Breed name synonyms Magreti, Bikaneri Chokhla, Raata chakriya (dark circle around the eyes); Chakri (circle around the eye); Boochie kan (small ears) and Desi
- Strains (or within breed types) Nil
- Native tract of distribution

State	District
Rajasthan	Udaipur, Chittaurgarh, Dungarpur and Banswara
- Estimated population
 - Year of estimation 2003
 - Population 0.2 million
 - Source/reference Based on Livestock census (2003) and distribution area of the breed.
- Community responsible for developing the breed Jat, Rajput, Naik
 - Description of community Farmers

(Farmers/nomads/
isolated tribals)

- Flock size

Average size	117
Composition (%)	
Ewes	55.6
Rams	4.3
Adult male	10.3
Young	29.8
- Utility of the breed

Mutton	Yes
Wool	Yes
Manure	Yes
Milk	No (for lambs only)
Pelt	No
Skin	Yes (after death or slaughter of the animal)

II. PHYSICAL CHARACTERS

- Colour (Distinctive colour markings, if any) White. Face is white with brown patches around the eyes-the characteristic of this breed
- Head profile (straight/convex/slightly convex) Straight
- Ears (erect/pendulous/horizontal) Ears are stumpy or small and tubular
Ear length: Rams-6.6±0.1 cm
Ewes-6.9±0.1 cm
- Wattles (present/absent) Absent
- Horns Both the sexes are polled
- Coat
 - Type (hair/wool) Wool
 - Staple Length (12 month fleece) (short <5/medium 5-10/long >10 cm) Medium
 - Lustre (lustrous/non lustrous) Lustrous
 - Crimp / curl (straight/

low crimp = < 4 / high crimp = > 4/cm)	
7. Fineness (fibre diameter)	Medium
(fine <21 /medium 22 26 coarse >26 micrometers)	
Wool cover (covered/bare)	
Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent)	Absent
9. Tail	
Type	Thin
Shape	Straight
Length (short/medium/ long)	Medium; 21.5±0.2 and 20.2±0.1 cm in rams and ewes respectively

III. PERFORMANCE

1. Body weight (estimated)

Weight at	Average (kg)	
	Male	Female
Birth	2.2	2.4
3 months	15.9	14.7
6 months	21.5	19.4
One year	29.1	25.6
Adult weight	36.8±0.5 (Range:25-52)	30.4±0.2 (Range:19-43)

2. Body measurements (cm)

Measurements	Rams		Ewes	
	Average	Range	Average	Range
Chest-girth	78.3±0.4	60-90	74.7±0.2	58-87
Length	65.3±0.3	54-76	61.7±0.2	50-70
Height at withers	66.1±0.3	55-76	62.8±0.1	55-70
Paunch girth	86.4±0.5	69-101	81.2±0.3	60-98

3. Dairy performance

Trait	Average
Daily milk yield (g)	250-500
Lactation length (days)	90-120

4. Reproduction

Trait	Average/Range
Age at first breeding in rams (months)	24
Breeding life of the rams (months)	24-60
Age at first lambing (months)	18-24
Lambing Rate (%)	70-80
Lambing interval (days)	456
Litter size	Single
Twinning (%)	1-2
Lifetime lamb production	4-7 lambs

5. Wool production

Greasy fleece weight (kg)	1.5 - 2.5 per annum in 3 clips
Fleece colour	White and lustrous

6. Any other information specific to the breed

Disposal of male lambs	6-18 months of age with estimated average body weights of 25 to 30 kg
Income	From sale of wool From sale of male lamb and spent animals From sheep droppings

Source:

- Final Report: Characterization and evaluation of Magra sheep breed of Rajasthan. National Bureau of Animal Genetic Resources, Karnal (Haryana).

Mandya Sheep

Accession No. INDIA_SHEEP_0800_MANDYA_14026

1. GENERAL INFORMATION

1. Breed name	Mandya
2. Breed name synonyms	Bandur, Bannur
3. Background for such a name/origin	The names are derived from the distribution area of this breed; Mandya is the name of the district whereas Bandur and Bannur are the villages from where Bandur strain is considered to have originated
4. Strains (or within breed types)	Nil
5. Native tract of distribution	State Karnataka District Mandya district and bordering area of Mysore and Bangalore rural districts
6. Estimated population	
a. Year of estimation	2003
b. Population	0.34 million
c. Source/reference	Livestock census, 2003 and based on distribution area of the breed.
7. a. Community responsible for developing the breed	-
b. Description of community (Farmers/nomads/isolated tribals)	Farmers
8. Flock size	
Average size	16 (Varies as per season)
Composition (%)	
Ewes	
Rams	68.8
Adult male	6.2
Young	25.0
9. Utility of the breed	
Mutton	Yes
Wool	Yes
Manure	Yes
Milk	No

Pelt	No
Skin	Yes (after death or slaughter of the animal)

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any)	The coat color is white with light brown face usually extending upto neck; some of the animals may be completely white
2. Head profile (straight/convex/slightly convex)	Straight to slightly conve.
3. Ears (erect/pendulous/horizontal)	Medium long in size and drooping. Ear length: 13.0±0.08 cm
4. Wattles (present/absent)	Present
5. Horns	Both the sexes are polled; males may rarely have scurs or small horns
6. Coat type (hair/cashmere/pashmina/mohair)	
a. Type (hair/wool)	Hair
b. Staple length (12 month fleece) (short <5/medium 5 10/long >10 cm)	Medium
c. Lustre (lustrous/non-lustrous)	Non-lustrous
d. Crimp / curl (straight/low crimp = < 4 /high crimp = > 4/cm)	No crimp
7. Fineness (fibre diameter) (fine < 21 /medium 22 26 coarse >26 micrometers)	Coarse
Wool cover (covered/bare)	
Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent)	Absent
9. Tail	
Type	Thin
Shape	Straight
Length (short/medium/long)	Short; 10.0±0.05 cm

III. PERFORMANCE

1. Body weight (estimated)

Weight at	Average (kg)	
	Male	Female
Birth	2.21	-
Weaning / 3 months	10.11	-
6 months	14.24	-
One year	22.13	-
Adult weight	36.8±1.08 (Range:19-60)	26.7±0.21 (Range:17-38)

2. Body measurements (cm)

Measurements	Rams		Ewes	
	Average	Range	Average	Range
Chest-girth	79.2±0.73	65-89	69.6±0.23	47-85
Length	68.3±0.51	57-76	60.6±0.17	51-72
Height at withers	62.3±0.60	52-72	54.6±0.20	44-72
Paunch girth	74.9±0.96	68-84	70.3±0.35	52-90

3. Carcass characters

Age at slaughter (days)	180
Weight at slaughter (kg)	17.08
Carcass weight (kg)	8.34
Dressing percentage	48

4. Reproduction

Trait	Average/Range
Age at first lambing(months)	32 months under organized farm conditions
Lambing Rate (%)	70
Lambing interval (days)	425-455
Litter size	Single
Twinning	Rare
Lifetime lamb production	6-7 lambs

5. Wool production

Greasy fleece weight (kg)	0.400 – 0.450 per annum in two clips
Fleece colour	White

6. Any other information specific to the breed

Disposal of male lambs	At 3-5 months of age
Income	From sale of male lamb, ewes, rams and spent animals From sheep droppings A little income from sale of wool

Source:

- Jain A. Sadana D.K., Govindaiah M.G., Kulkarni V.S., Aswathnarayan T., Pandey A.K., Kumar D, Sharma R. and Singh G. (2005). Sheep genetic Resources of India: Mandya. Monograph - National Bureau of Animal Genetic Resources.
- Reddy K.K. and Rai A.V. (1985). Performance of Mandya and its halfbreds with Dorset and Suffolk Livestock Advisor, 10(10): 1115.
- Reddy K.K. and Rai A.V. (1987). Factors affecting post weaning (6-12 months) body weights of Mandya, Nellore and their halfbreds with Dorset Horn and Suffolk breeds .Indian Veterinary Journal, 64 (8): 677-82.
- Reddy K.S. and Reddy K.K. (1985). Comparative study of carcass characteristics and offals in Nellore and Mandya sheep. Indian Veterinary Journal, 62(5): 421-24.

Nilgiri Sheep**Accession No.** INDIA_SHEEP_1800_NILGIRI_14029**I. GENERAL INFORMATION**

1. Breed name **Nilgiri**
2. Breed name synonyms -
3. Background for such a name/origin The name of breed is derived from the native tract of the breed "The Nilgiris" district of Tamil Nadu state
4. Strains (or within breed types) Nil
5. Native tract of distribution

State	District
Tamil Nadu	The Nilgiris
6. Estimated population

a. Year of estimation	1991	2011
b. Population	3588	1086 (166 males, 920 females)
- c. Source/reference 1991 - Final Report on "ICAR Network Project on Sheep Improvement, 1993, TANUVAS, Sheep Breeding Research Station, Sandynallah.
2011 - Survey conducted by the Sheep Breeding Research Station, Sandynallah
7. a. Community responsible for breed developing the breed In the formative years, the development was entirely an effort by the British Administrators and early British settlers at Ootacamund. The Badaga and Kanareese sheep breeders patronized the breed and improved to the present stage
- b. Description of community (Farmers/nomads/isolated tribals) —
8. Flock size

Average size	26
Composition (%)	
Ewes	69.87
Rams	4.71
Lambs	25.42
9. Utility of the breed The Nilagiri sheep is a woolly breed. The wool, however, has no economic value and the sheep are primarily reared for meat
10. Any other information Sheep development efforts started in Nilgiris around the year 1830 and continued through the next 100 -120 years, finally resulted in the development of Nilgiri breed of

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any) The coat colour is generally white. About 33.26% of the population showed brown to tan patches, black spots, dots or hairs in the regions of the body like face, tip of ears, lower lip and in lambs below the hock joints and knee joints
68.4% of Nilagiri sheep showed convex head profile and 23.2% showed slightly convex profile and 8.4% were of straight type
2. Head profile (straight/convex/slightly convex) 72% of animals had pendulous ears and 18.8% of animals showed horizontal disposition of ear. In 9.2% of animals, the ear was short and tubular.
3. Ears (erect/pendulous/horizontal) Generally absent. 5% of animals had two wattles and 1.4% had one
4. Wattles (present/absent) Absent. A small horny scur is present in males
5. Horns
6. Coat

a. Type (hair/wool)	Wool
b. Staple Length (12 month fleece) (short <5/medium 5 10/long >10 cm)	Medium
c. Lustre (lustrous/non lustrous)	Non lustrous
d. Crimp / curl (straight/low crimp = < 4 / high crimp = > 4/cm)	High crimp
7. Fineness (fibre diameter) Coarse
(fine <21 /medium 22 26/coarse >26 micrometers)
Wool cover (covered/bare)
Head Not normally covered
Face Not normally covered
Belly In 64.9 per cent of animals, the belly region is covered with wool.
Not normally covered
8. Beard (present/absent) Absent
9. Tail

Type	Thin
Shape	Slightly flattened dorso-ventrally and round laterally
Length (short/medium/long)	Medium

sheep around the year 1940. It is reported that the Nilgiri sheep has been evolved from the local sheep with an unknown level of inheritance from South Down, Cheviot and Tasmanian Merino

III. PERFORMANCE**1. Body weight (kg)**

Weight at	Males		Females	
	Average	Range	Average	Range
Birth	3.77	74	3.62	99
3 months	12.90	78	12.49	100
6 months	16.83	52	17.21	80
1 year	22.64	37	22.28	63
Adult	-		32.43±0.64	92

2. Body measurements (cm)

Measurements	Average	N
Chest-girth	87.73±1.05	92
Length	67.92±0.69	92
Height at withers	61.57±0.54	92

3. Wool production

Age	Wool yield (kg)	
	Average	N
Milk teeth	0.951±0.030	191
2 teeth	1.114±0.073	82
4 teeth	0.979±0.065	105
6 teeth	0.949±0.073	48
Full mouth	0.989±0.093	56

Source:

- Tamilnadu Veterinary and Animal Sciences University, Chennai – 600 051

Ramnad White Sheep

Accession No. INDIA_SHEEP_1800_RAMNADWHITE_14030

1. GENERAL INFORMATION

1. Breed name	Ramnad White	
2. Breed name synonyms	Kilakathai adu	
3. Background for such a name/origin	Derived from the name of its habitat, Ramnad (now known as Ramanathapuram) district and its white coat	
4. Strains (or within breed types)	Nil	
5. Native tract of distribution	State Tamil Nadu	District Ramanathapuram, Sivaganga and Pudukottai districts comprise the native tract. Also distributed in the parts of Thoothukkudi, Tirunelveli, Virudhunagar, Madurai, Dindigul, Tiruchirappalli,

Perambalur, Ariyalur, Thanjavur, Thiruvarur, Nagapattinam, Cuddalore, Villupuram and Thiruvannamalai districts as migratory flocks.

6. Estimated population
 - a. Year of estimation 2007
 - b. Population 15.4 lakh
 - c. Source/reference 18th Livestock Census, DAHD &F, GOI
7. a. Community responsible for developing the breed Konar (Yadhavas) and Pallar communities
 - b. Description of community (Farmers/nomads/isolated tribals) Sheep farmers adopting nomadic grazing during summer months
8. Flock size
 - Average size 82.0±9.24
 - a) Stationary flocks 10-30
 - b) Migratory
 - i) individual flocks 90
 - ii) composite flocks 200-600
 - Composition (%)
 - Ewes 72
 - Rams 2
 - Lambs 26
9. Utility of the breed Meat and Manure

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings, if any) The coat was predominantly white in colour. The predominance of black colour was on the ventral aspect of the body, in the region of inner canthi of eyes extending to poll, in the angle of mouth, lower lip, chin, throat, brisket, in the tips and border of the ears and in the medial and partly lateral aspects of fore limbs and hind limbs. Some animals have black colour only on extremities of one or all limbs. Few animals were completely white.
2. Head profile (straight/convex/slightly convex) Straight. Medium in length with medium to broad forehead
3. Ears (erect/pendulous/horizontal) Leaf like, medium sized and semi-pendulous
Ear length: Rams-12.79±0.28 cm
Ewes - 12.27±0.13 cm
4. Wattles (present/absent) Present in both sexes (5%)
5. Horns
Rams are horned and ewes are polled
 - a. Number Two



Nilgiri-Ram



Nilgiri-Ewe



Ramnad White-Ram



Ramnad White-Ewe



Rampur Bushair-Ram



Rampur Bushair-Ewe



Tibetan-Ram



Tibetan-Ewe

- b. Shape Spiral, thick and corrugated
 c. Orientation Backward and outward
 d. Size (small<15/medium 15-25 / large >25 cm) Medium to large (16 – 36 cm)
6. Coat
 a. Type (hair/wool) Hair
 b. Lustre (lustrous/non lustrous) Lustrous
7. Beard (present/absent) Absent
8. Tail
 Type Thin
 Shape Straight
 Length (short/medium/long) Short (13.81±0.34 and 12.92±0.30 cm in rams and ewes respectively)

III. PERFORMANCE

1. Body weight (kg)

Weight at	Male		Female	
	Average	N	Average	N
Birth	3.68±0.10	30	3.54±0.13	24
3 months	9.00±0.49	87	8.94±0.45	88
6 months	22.33±0.44	41	21.23±0.44	81
1 year	32.41±1.46	28	27.82±1.22	37
Adult weight	42.73±1.32	51	31.67±0.35	280

2. Body measurements (cm)

Measurement	Male		Female	
	Average	N	Average	N
Chest girth*	80.83±0.83	51	74.19±0.25	283
Body length*	72.48±1.03	50	65.96±0.34	282
Height at withers*	83.21±1.18	51	75.86±0.38	283

* Weighted average

3. Reproduction

Trait	Average
Age at first mating in females (months)	17.40±0.34
Age at first lambing (months)	23.60±0.31
Lambing per cent	81.12±0.69
Life time lamb production	5 to 6

Source:

- Tamilnadu Veterinary and Animal Sciences University, Chennai – 600 051
- T.Ravimurugan, N.Kumaravelu, P.Devendran and M.Chellapandian (2010). Population status, management and morphological characteristics of Ramnad White sheep, J. Livestock Biodiversity. Vol.2:42-44
- http://dahd.nic.in//LStockReport/AllIndia/PDF/TABLE5F_NM_00.pdf
- K N Raja, A Jain, G Singh, Luv Kumar, H K Yadav and R Arora. 2012. Ramnad White Sheep-Phenotypic and genetic characterization. *Indian Journal of Animal Sciences* (Accepted)

Rampur Bushair Sheep

Accession No.INDIA_SHEEP_0600_RAMPURBUSHAIR_14007

1. GENERAL INFORMATION

- | | | |
|--------------------------------------|---|--|
| 1. Breed name | Rampur Bushair | |
| 2. Breed name synonyms | Nil | |
| 3. Background for such a name/origin | The name is derived from its native tract i.e. Rampur sub-division of Shimla district | |
| 4. Strains (or within breed types) | Nil | |
| 5. Native tract of distribution | State
Himachal Pradesh | District
Shimla, Kinnaur and Lahaul Spiti |
| 6. Estimated population | | |
| a. Year of estimation | 2006 | |

b. Population	0.09 million
c. Source/reference	Network Project on AnGR, NBAGR, Karnal
7. a. Community responsible for developing the breed	
b. Description of community (Farmers/nomads/isolated tribals)	Schedule caste, schedule tribe and Buddhist
8. Flock size	
Average size	48
Composition (%)	
Ewes	50.0
Rams	4.2
Young	45.8
9. Utility of the breed	
Mutton	Yes
Wool	Yes
Manure	Yes
Milk	No
Pelt	Yes (lambs)
Skin	Yes (after death or slaughter of the animal)

II. PHYSICAL CHARACTERS

1. Colour (Distinctive colour markings)	The body is white with brown extremities including face, neck, belly and legs. About 21 % animals are black
2. Head profile (straight/convex/slightly convex)	Slightly convex
3. Ears (erect/pendulous/horizontal)	Flat, downwards Ear length: Rams-6.50±0.04 cm Ewes - 6.47±0.02 cm
4. Wattles (present/absent)	Absent
5. Horns	
a. Number	Two
b. Shape	Curved
c. Orientation	Backward, outward and downwards.
d. Size (small<15/medium 15-25 / large >25 cm)	Medium to large. Length: Rams - 20.57±0.33cm (range 3-39); Ewes - 15.37±0.12cm (range 2-34)
6. Coat type (hair/cashmere/pashmina/mohair)	
a. Type (hair/wool)	Wool
b. Staple Length (12 month fleece) (short <5/medium 5-10/long >10 cm)	Medium
c. Lustre (lustrous/non lustrous)	Non-lustrous
d. Crimp / curl (straight/low crimp = < 4 / high crimp = > 4/cm)	Low crimp
7. Fineness (fibre diameter) (fine < 21 /medium 22-26 coarse >26 micrometers)	Medium
Wool cover (covered/bare)	

Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent)	Absent
9. Tail	
Type	Thin
Shape	Straight
Length (short/medium/long)	Short; 12.17±0.07 and 11.77±0.04 cm in rams and ewes respectively

III. PERFORMANCE

1. Body Weight (kg)

Weight at	Average	
	Male	Female
Birth	3.1±0.16 (Range:1-4.5)	2.96±0.08 (Range:1-4)
1 – 3 months	7.86±0.31	7.29±0.24
6 months	14.31±0.62	13.19±0.38
One year	21.52±0.21	20.05±0.17
Adult weight	26.65±0.22 (Range:18-47)	25.69±0.08 (Range:16-44)

2. Body measurements (cm)

Measurements	Rams		Ewes	
	Average	Range	Average	Range
Chest-girth	71.09±0.30	48-89	70.78±0.13	48-87
Length	58.58±0.29	28-78	58.30±0.11	28-77
Height at withers	58.75±0.20	40-76	58.67±0.10	38-74
Paunch girth	77.75±0.39	55-96	76.55±0.19	53-96

3. Carcass characters

Trait	Male	Female
Age at slaughter (months)	Adult	Adult
Weight at slaughter (kg)	26.65±0.22	25.69±0.08
Carcass weight (kg)	13.21±0.18	12.37±0.25
Dressing percentage	49.6	48.2

4. Reproduction

Trait	Average	Range
Age at first breeding in rams (months)	19.13±0.07	12-27
Age at first lambing (months)	29.69±0.18	17-43
Lambing interval (days)	225±3.65	149-371
Litter size	Single	1-2
Twinning	Rare	
Lifetime lamb production	9.03±0.05 lambs	5-12

5. Wool production

Greasy fleece weight (kg)	0.250-0.550 per six monthly clip
Staple length (cm)	Males: 4.06±0.18, Females: 4.30±0.30
Fibre diameter (µ)	Males: 29.95±0.47, Females: 31.09±0.48
Medullation (%)	Males: 14.96±1.04, Females: 15.31±0.86
Fleece colour	White or mix of white and brown/black

6. Any other information specific to the breed

Income From sale of wool
From sale of male lambs and spent animals
From sheep droppings

Source:

- S. Katoch (2006). Final report: Survey & phenotypic characterization of Rampur Bushair sheep. Network project on AnGR.

Tibetan Sheep

Accession No. INDIA_SHEEP_2300_TIBETAN_14038

1. GENERAL INFORMATION

1. Breed name	Tibetan
2. Breed name synonyms	-
3. Background for such a name/origin	The name is derived from the name of its distribution area
4. Strains (or within breed types)	-
5. Native tract of distribution	Northern Sikkim and Kameng district of Arunachal Pradesh
6. Estimated population	
a. Year of estimation	2003
b. Population	5796 in North Sikkim
c. Source/reference	Govt. of Sikkim, 2007, Annual Report 2006-07, Department of Animal Husbandary
7. a. Community responsible for developing the breed	Bhotia (Lachenpa and Lachungpa), Bokpa, Tibetan Nomads of Tibetan origin, maintained under transhumance conditions
b. Description of community (Farmers/nomads/isolated tribals)	
8. Flock size	
Average size	50-250
Composition (%)	
Ewes	60
Rams	12
Lambs	28
9. Utility of the breed	
Mutton	Yes
Wool	Carpet Wool
Manure	Yes
Skin	Yes

II. PHYSICAL CHARACTERS

- Colour (Distinctive colour markings, if any) Mostly white with black or brown face, brown or

2. Head profile (straight/convex/slightly convex)	white spots are also observed on the body. Brown/ black wool on neck. Nose line is convex
3. Ears (erect/pendulous/horizontal)	Small, broad, drooping and pendulous. Length - 5.5-8.5 cm
4. Wattles (present/absent)	Absent
5. Horns	Rams are horned while ewes are polled
a. Number	Two
b. Shape	Spiral, upward, downward and upward with a sharp tip
c. Orientation	Spiral
d. Size (small<15/medium 15-25 / large >25 cm)	Medium
6. Coat	
a. Type (hair/wool)	Wool
b. Staple Length (12 month fleece) (short <5/medium 5 10/long >10 cm)	Medium
c. Lustre (lustrous/non lustrous)	Lustrous
7. Fineness (fibre diameter) (fine <21 /medium 22 26/ coarse >26 micrometers)	Fine to medium
Wool cover (covered/bare)	
Head	Bare
Face	Bare
Belly	Bare
Legs	Bare
8. Beard (present/absent)	Absent
9. Tail	
Shape	Straight
Length (short/medium/long)	Short
10. Any other information	Underside devoid of wool

III. PERFORMANCE

- Body weight (kg)

Weight at	Male			Female		
	Average	Range	N	Average	Range	N
Birth	2.75±0.75	2.25-3.2	20	2.25±0.95	2.0-2.8	18
3 months	4.25±2.10	3.75-5.2	22	4.15±1.80	3.5-4.9	18
6 months	8.65±3.70	7.50-9.2	25	8.25±1.30	7.2-9.5	22
1 year	23.70±3.50	20.50-26.8	25	21.00±1.20	20-23	28
Adult weight	29.50±2.80	25-37	34	25.70±1.50	23-29	65
2. Body measurements (cm)						
Measurements	Rams			Ewes		
	Average	Range	N	Average	Range	N
Chest girth	82.5±2.9	80-86	24	77.2±3.2	73-81	70
Length	71.5±3.4	67-76	24	66.2±2.9	62-70	70
Height at withers	65.5±2.8	62-69	24	62.7±1.5	-	70

3. Carcass characters

Trait	Male			Female		
	Average	Range	N	Average	Range	N
Dressing percentage	49±2.5	47-51	12	45±3.1	42-48	12

4. Reproduction

Trait	Average	Range	N
Age at first mating in males (months)	8.77±2.50	6.5-11	25
Age at first mating in females (months)	9.50±1.70	8-11	42
Age at first oestrus (months)	6.20±2.50	6-9	35
Age at first lambing (months)	14.00±1.50	13-16	35
Lambing interval (days)	350±66.88	275-395	35
Litter size	1.3±0.05	1-3	12
Life time lamb production	6.7±2.2	5-8	15

5. Wool production

Trait	Average	Range	N
Wool yield (kg)			
Greasy fleece weight (g)	757±224	300-900g	35
Clean fleece weight (g)	478±122	380-520	35
Staple length (cm)	7.5±0.18	6.8-8.5	35
Fibre diameter (μ)	22.5	-	-
Medullation %	4.4	-	-
Fleece colour	White with black or brown (18-20%)		
Pure fibers (%)		89.5±5.5	
Hetero fibers (%)		4.7±0.9	
Hairy fibers (%)		6.4±1.3	
Crimp (nos./ inch)		7.8±2.2	
Scouring yield (%)		85±3.9	
Wool wax (%)		3.9±2.2	
Burr (%)		6.5±0.18	

Source:

- Acharya, R. M. 1982. Sheep and goat breeds of India. FAO Animal production and Health Paper, 30. FAO, Rome, Italy pp. 1-190.
- Banerjee, S. 2009. Shift from transhumance and subtle livelihood patterns of the Bhotia community and its impact on Tibetan sheep population in Sikkim (India). World Applied Science Journal 7(12) 1540-1546.
- Banerjee, S. B-1/87, Kalyani, Nadia- 741235, WB