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Coimbatore sheep-overview of current status

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Abstract

Coimbatore sheep, locally known as *Kurumbai Adu* or *Coimbatore Kurumbai*, represent an important indigenous breed of Tamil Nadu that has historically contributed to the livelihoods of the Kurumba shepherd community. However, this breed has witnessed a significant population decline over the past decades, primarily due to genetic dilution, habitat shrinkage, and changing agricultural practices. The present study aims to document the current status, morphological features, production and reproductive performance, and conservation strategies for the Coimbatore sheep.

Data were collected from native tracts of Coimbatore district and related literature, focusing on flock management, phenotypic traits, and migratory patterns. Morphological observations revealed that the breed is medium-sized with a compact body, predominantly white with variable black or tan patches, and characterized by coarse carpet-grade wool of about 0.4 kg annual yield. Production performance indicated moderate growth, with adult males and females weighing approximately 25 kg and 20 kg, respectively. Reproductive traits such as 80.5% lambing rate, 7-month lambing interval, and 5% twinning rate underscore its adaptability under semi-arid pastoral systems.

Population data show a drastic reduction from 2.42 lakhs in 2006 to just 41,154 in 2013, raising concerns of breed extinction without urgent intervention. Conservation efforts must prioritize both *in-situ* and *ex-situ* strategies, including establishment of organized breeding farms, genetic characterization, semen banking, and community-based flock management. Promoting niche markets for native wool and meat, coupled with GI tagging and awareness programs, can revitalize interest among farmers. The study underscores the need for sustainable conservation and scientific management to preserve this valuable genetic resource for future livestock improvement programs.

Keywords: Genetic improvement, Tamil Nadu, Coimbatore sheep, Indigenous breeds, morphological characterization, population decline, conservation strategies, migratory pastoralism

Introduction

Small ruminants play a vital role in the Indian economy and provide livelihoods to nearly two-thirds of the rural population, particularly in regions where crop and dairy farming are not economically viable. As per the 20th Livestock Census (2019), the total sheep population in India stands at 74.26 million, marking a 14.13% increase over the previous census (2012). Sheep are primarily reared for wool and meat, with their skin and manure serving as additional income sources.

India is home to **45 recognized sheep breeds**, classified according to agro-climatic zones:

- **North-West Arid & Semi-Arid Region:** Carpet wool and mutton types
- **Southern Peninsular Region:** Meat type
- **Eastern Region:** Hairy type
- **Northern Temperate Region:** Apparel and superior carpet wool type

These breeds are well adapted to their native environments and contribute sustainably to local livelihoods.

Sheep Breeds of Tamil Nadu

The 45 breeds, 10 registered sheep breeds originate from Tamil Nadu, including:-

- Madras Red, Mecheri, Coimbatore, Nilagiri, Ramnad White, Vembur, Kilakaraisal, Chevadu, Trichy Black, and Kachaikatty Black.

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- These breeds are generally maintained in government and TANUVAS-run farms located in their respective native tracts. However, Coimbatore sheep, despite being an important breed, lack dedicated organized breeding farms and remain underexplored.

Breeding Tract of Coimbatore Sheep

Known locally as Kurumbai Adu or Coimbatore Kurumbai, the breed is associated with the Kurumba/Kuruba shepherd community, primarily in the Suler and Sultanpet blocks of Coimbatore district. Key villages include:

- Appanaickanpatti, Kalangal, Pappampatti, Kurumbapalayam, Arasur, Pallapalayam, Peedampalli, Tippanur, Perur, among others (Raja *et al.*, 2008)^[3].

Migratory Nature of Flocks

The Coimbatore sheep are migratory, often moving across regions such as:

- Palakkad (Kerala), Bhavani, Gobichettipalayam, Sathyamangalam forests (Karnataka border), and the

Palani foothills.

Many flocks remain migratory year-round, covering nearly 1,500 km annually (Jeyakumar and Murali, 2024)^[1].

Morphological Features

- Medium-sized with a compact body
- White with variable black/tan patches, mainly on head and neck
- Some are completely black, white, or tan (Devendran *et al.*, 2009)^[4].
- Fleece extends from the head to shoulders/chest.

Weight & Size: Rams: ~25 kg; Ewes: ~20 kg; height: Rams ~66 cm, Ewes ~60 cm

Wool: Greasy fleece weight: ~0.40 kg/year; scoured yield ~81 %; staple length ~5.5 cm; fiber diameter ~46 µm - coarse carpet-wool grade.



Fig 1: Map showing the native breeding tract of Coimbatore sheep across Suler and Sultanpet blocks of Coimbatore district, Tamil Nadu



Fig 2: Morphological features of Coimbatore sheep depicting white coat with black/tan patches and medium compact body.



Fig 3: Migratory routes of Coimbatore sheep covering Coimbatore-Palakkad-Bhavani-Sathyamangalam-Palani regions



Fig 4: Population trend of Coimbatore sheep (2006-2013) showing the decline in numbers based on ICAR-NBAGR survey data.

Population Dynamics

The Coimbatore sheep population has seen a drastic decline:

- 2006: 2,42,000
- 2013: 41,154 (ICAR-NBAGR Breed Survey)

The male-to-female ratio of 1:36 indicates a severe shortage of breeding rams, raising concerns over inbreeding and crossbreeding with nearby Mecheri sheep due to flock migration.

Production traits of Coimbatore Sheep

SL. No	Production traits	Male(Kgs)	Female (Kgs)
1.	Lamb Birth weight	2.7±0.2 (18)	2.3±0.1 (15)
2.	Body weight at 3 months	13.2±0.3 (42)	12.8±0.4 (32)
3.	Body weight at 6 months	16.2±0.2 (24)	14.5±0.3 (28)
4.	Body weight at 12months	23.4±0.1 (10)	18.5±0.3 (32)
5.	Body weight at >12 months	32.3±0.4 (19)	23.4±0.3 (24)
6.	Wool Production: 100 to 1000 grams annually (Approximately)		

Reproduction traits of Coimbatore Sheep

SL. No	Reproduction traits	Male	Female
1.	Age at sexual maturity	12 Months	10-12 months
2.	Age at first lambing	-	15-17 months
3.	Lambing percentage	-	80.5 percentage
4.	Lambing interval	-	7 months
5.	Twinning percentage	-	5 percentage

Reasons for decline

- **Crossbreeding:** Erosion of pure genetic stock due to preference for exotic crossbreeds.
- **Decline in Grazing Land:** Rapid urbanization and deforestation reduce common grazing resources.
- **Low Economic Returns:** Indigenous breeds yield less meat/wool, prompting farmers to shift to goats or commercial sheep.
- **Changing Farming Practices:** Modern monocropping and mechanization reduce the role of sheep in farm systems.

Conservation Strategies

In-situ Conservation

- Promote community-based breeding programs in Coimbatore and nearby districts.
- Form breed societies or cooperatives to maintain pure lines.
- Designate conservation zones with legal grazing rights.

Ex-situ Conservation

- Establish flocks in state livestock farms and TANUVAS research stations.
- Create a semen/embryo bank of elite rams and ewes.

Genetic Improvement & Characterization

- Perform DNA-based profiling to identify pure Coimbatore sheep.
- Implement selective breeding to enhance desirable traits.

Marketing & Value Addition

- Develop a niche market for native wool/meat.
- Pursue GI tagging to promote and protect breed identity.

Capacity Building & Awareness

- Conduct training on scientific breeding, disease control, and value addition.
- Organize breed fairs, awareness camps, and youth engagement programs in the native tract.

Conclusion

The Coimbatore sheep, an indigenous breed of Tamil Nadu, holds significant importance for the rural economy and ecological sustainability of its native tract. Despite its adaptability, hardy nature, and moderate productivity, the breed is facing a severe decline due to uncontrolled crossbreeding, loss of grazing land, and lack of organized conservation programs. Immediate interventions through in-situ and ex-situ conservation, genetic improvement, and

market-linked value addition are essential to restore population stability. Strengthening community participation, documentation of genetic traits, and awareness creation among farmers will ensure the sustainable preservation and economic utilization of this valuable native genetic resource.

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