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Genetic resources for goats and sheep in India

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Abstract

Indian agriculture depends significantly on small ruminants, such as goats and sheep, which are found in all agro-ecological zones. India is home to 74.26 million sheep and 148.88 million goats, most of which are raised by small and marginal farmers. Due to their ability to survive in severe environmental circumstances and with few input resources, they significantly contribute to the rural economy. There are a lot of unremarkable animals as well as 45 and 39 registered breeds of sheep and goats, respectively. Breed purity is being diluted in the field due to interbreeding. Therefore, it is necessary for various nations to establish appropriate breeding policies in order to reinforce the genetic makeup and save goats and sheep. Therefore, it is necessary for various nations to create appropriate breeding policies in order to strengthen the genetic makeup and save goats and sheep.

Keywords: Depends, breeding, nations

Introduction

Small ruminants are valuable livestock that are mostly connected to India's rural population and are crucial to the keeper's livelihood. They are raised by more than 70% of India's tiny, marginal, and landless farmers. Compared to other livestock species, small ruminant rearing is quite advantageous for farmers because these animals are typically raised on zero or minimal input systems. They are extremely helpful in arid and semi-arid regions where growing crops is a risky business and are crucial to the livelihood system and nutritional security. India is a rich storehouse of genetic resources for both sheep and goats with 45 registered breeds of sheep and 39 registered breeds of goats (Fig. 1). Natural selection and selective breeding have allowed certain breeds to evolve in order to adapt to particular agro-ecological environments. The native sheep and goat breeds in India vary greatly in terms of adaptability, productivity, feed usage, illness resistance, etc. According to the 20th Livestock Census, 2019 there are around 223.14 million goats and sheep in the nation. Despite a high rate of killing and ingrained prejudice, the numbers of both animals have increased over the previous few decades. The primary issues that pastoral communities face include shrinking grazing areas, a shortage of veterinary health services, disputes with agriculturalists, a lack of education, etc.

Goat Genetic Resources

In accordance to the 20th Livestock Census-2019, the estimated population of livestock in the nation, distributed among several states and Union Territories, is 536.76 million. Next only to cattle (36.04%) in terms of population contribution, goats make up 27.73% of all livestock. According to the Livestock Census of 2019, there are 148.88 million Indian goats, 10.14% more than there were in the Livestock Census of 2012. With 20.84 million goats, Rajasthan has the largest population among the states, followed by West Bengal and Uttar Pradesh. The rise in goat populations across the nation is evidence of their popularity and usefulness, as they are extremely tolerant to a variety of climatic conditions, have a small generation interval, are economically significant, and require little input resources.

India is a good source of goat genetic resources and is having 34 recognized breeds of goats (Table 1) and a sizable non-descript population. Eight goat breeds *Viz.*, the Beetal, Gohilwadi, Jakhrana, Jamunapari, Kahmi, Mehsana, Surti, and Zalawadi—are dairy types and are capable of producing more than 150 kg of milk on average each lactation out of a total of 39 varieties. Almost all of the breeds in the nation (31/39) are primarily used for the production of meat.

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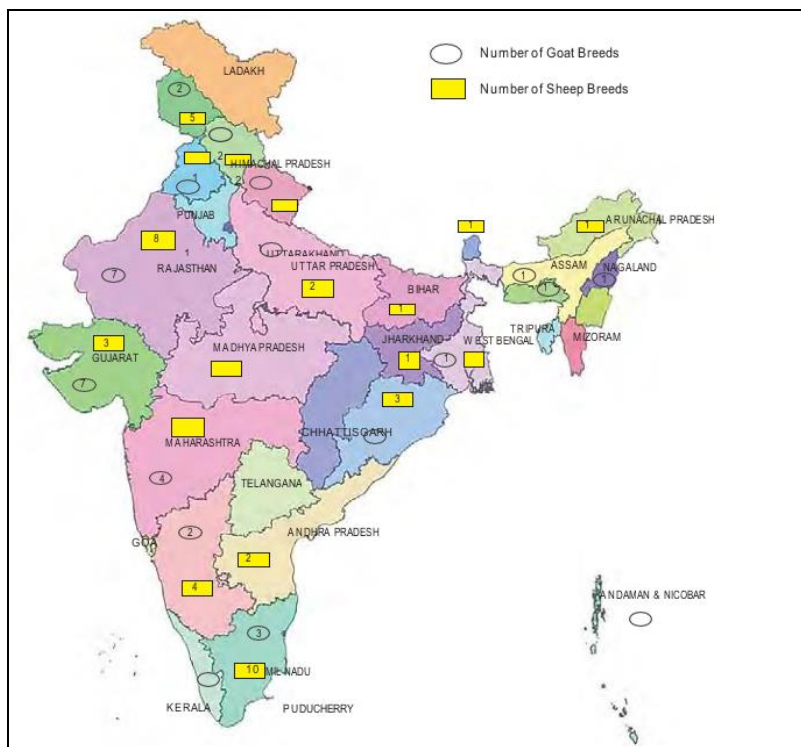


Fig 1: Breeds of Goats and Sheep in India and Their Geographic Distribution

Table 1: Information about the various breeds, their distribution and usefulness accession number among recognized Indian goat breeds

S.No.	Breed	Distribution	Utility
1.	Andamani	Andaman & Nicobar	Meat
2.	Anjori	Chhattisgarh	Meat
3.	Assam Hill	Assam and Meghalaya	Meat
4.	Attapady Black	Kerala	Meat
5.	Barbari	Uttar Pradesh and Rajasthan	Milk, Meat
6.	Beetal	Punjab	Milk, Meat
7.	Berari	Maharashtra	Meat
8.	Bhakarwali	Jammu and Kashmir	Meat, Milk, Hair
9.	Bidri	Karnataka	Meat
10.	Black Bengal	West Bengal	Meat, Skin
11.	Changthangi	Jammu and Kashmir	Hair (Pashmina), Meat
12.	Chegu	Himachal Pradesh	Hair (Pashmina), Meat, Pack
13.	Gaddi	Himachal Pradesh	Hair (Pashmina), Meat
14.	Ganjam	Orissa	Meat, Milk
15.	Gohilwadi	Gujarat	Meat, Milk
16.	Gujari	Rajasthan	Meat, Milk
17.	Jakhrana	Rajasthan	Meat, Milk
18.	Jamunapari	Uttar Pradesh	Meat, Milk
19.	Kahmi	Gujarat	Meat, Milk
20.	KanniAdu	Tamilnadu	Meat
21.	Karauli	Rajasthan	Meat, Milk
22.	Kodi Adu	Tamil Nadu	Meat, Milk
23.	Konkan Kanyal	Maharashtra	Meat
24.	Kutchi	Gujarat	Meat, Milk
25.	Malabari	Kerala	Meat, Milk
26.	Marwari	Rajasthan	Meat, Milk
27.	Mehsana	Gujarat	Meat, Milk
28.	Nandidurga	Karnataka	Meat
29.	Osmanabadi	Maharashtra	Meat
30.	Pantja	Uttarakhand and Uttar Pradesh	Meat, Milk
31.	Rohilkhandi	Uttar Pradesh	Meat, Milk
32.	Salem Black	Tamil Nadu	Meat, Skin, Manure
33.	Sangamneri	Maharashtra	Meat, Milk
34.	Sirohi	Rajasthan and Gujarat	Meat, Milk
35.	Sojat	Rajasthan	Meat, Milk
36.	Sumi-Ne	Nagaland	Fibre
37.	Surti	Gujarat	Meat, Milk
38.	Teressa	Andaman & Nicobar	Meat
39.	Zalawadi	Gujarat	Meat, Milk

The dressing percentage of different breeds varies from 43 to 58.4%. There are just two breeds that produce pashmina: Changthangi and Chegu. Regarding the two key attributes of pashmina hair fiber diameter and staple length the pashmina produced by Changthangi goats is superior to that of Chegu goats. Almost half of the goat breeds in the nation are early breeders, indicating that they reach sexual maturity and have their first kidding beforehand reaching the age of 18 months old.

Sheep Genetic resources

In India, there are 74.26 million sheep, which makes them a significant contribution to livestock species. Sheep in especially are marginalized by society, landless labourers and they provide a considerable deal of effective income and employment to a big number of rural poor people. The sheep economy delivers protection for keepers during times of hunger and drought while additionally guaranteeing family labour and self-employment under complicated frameworks. Sheep's population grew by 14.1% in 2019 compared to the 2012 census, emphasizing the species' significance in the current state of animal husbandry. India has been bestowed with a rich diversity of native sheep, which are useful for many purposes including wool, meat, milk, skin, and manure. These sheep additionally contribute significantly to the rural economy, particularly in the dry, semi-arid, and hilly regions

of the country. Having 45 registered native breeds, produce 100% of their wool together with roughly 7-8% of meat (Table 2). Approximately 70 per cent of the nation's total raw wool production is carpet grade, 20% is coarse grade, and 10% is apparel grade. The dry and semi-arid regions of western India, the Deccan Plateau, and the western Himalayas are home to the majority of the sheep population. Six states viz, Andhra Pradesh, Rajasthan, Karnataka, Tamil Nadu, Jammu & Kashmir, and Maharashtra are habitat to almost 60% of the nation's sheep.

Each and every one of the 45 notable certified sheep breeds is well suited to a particular habitat in each of the nation's many agro climatic zones. Sheep have also been classified according to their main products, which are: a) wool for apparel b) wool for carpets c) meat and carpet wool and d) meat varieties. Sheep breeds are further classified into four agro-ecological areas according to their geographic presence.

a) Southern Peninsular Region

The vast majority of sheep inhabit this region, which is semiarid in the central peninsula and humid and hot around the coast. It encompasses various regions in the middle of the country as well as the states of Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala. This region produces meat primarily from breeds with coarser wool.

Table 2: Information about the various breeds, their distribution and usefulness accession number among recognized Indian Sheep breeds

S. No.	Breed	Distribution	Utility
1.	Balangir	Orissa	Meat, Carpet Wool
2.	Bellary	Karnataka	Wool, Meat
3.	Bhakarwal	Jammu and Kashmir	Coarse carpet wool
4.	Bonpala	Sikkim	Meat, Wool
5.	Changthangi	Jammu and Kashmir	Meat, Wool
6.	Chevaadu	Tamilnadu	Meat, skin, manure
7.	Chokla	Rajasthan	Fine carpet quality fleece
8.	Chottnagpuri	Jharkhand	Meat, wool
9.	Coimbatore	Tamilnadu	Meat, wool
10.	Deccani	Andhra Pradesh, Maharashtra	Meat
11.	Gaddi	Himachal Pradesh	Meat, wool
12.	Ganjam	Orissa	Meat, wool
13.	Garole	West Bengal	Meat
14.	Gurez	Jammu and Kashmir	Milk
15.	Hassan	Karnataka	Meat, wool
16.	Jaisalmeri	Rajasthan	Meat, wool
17.	Jalauni	UP and MP	Meat, wool
18.	Kajali	Punjab	Wool, Meat
19.	Karnah	Jammu and Kashmir	Meat, wool
20.	Katchaikatty Black	Tamilnadu	Ram fighting, hair, meat
21.	Kendrapada	Odisha	Meat, prolificacy
22.	Kenguri	Karnataka	Meat
23.	Kilakarsal	Tamilnadu	Meat
24.	Macherla	Macherla	Meat
25.	Madras Red	Tamilnadu	Meat
26.	Magra	Rajasthan	Meat, wool
27.	Malpura	Rajasthan	Meat, wool
28.	Mandya	Karnataka	Meat (Excellent quality)
29.	Marwari	Rajasthan and Gujarat	Meat, wool
30.	Mecheri	Tamilnadu	Skin (finest quality), meat
31.	Muzzafarnagri	UP and Uttarakhand	Meat, wool
32.	Nali	Rajasthan	Carpet Wool
33.	Nellore	Andhra Pradesh	Meat
34.	Nilgiri	Tamilnadu	Apparel Wool
35.	Panchali	Gujarat	Milk, meat, manure, wool
36.	Patanwadi	Gujarat	Meat, wool
37.	Poonchi	Jammu and Kashmir	Wool
38.	Pugal	Rajasthan	Meat, wool

39.	Ramnad White	Tamilnadu	Meat
40.	Rampur Bushair	Himachal Pradesh	Pelt, Meat, Wool
41.	Shahbadi	Bihar	Meat, wool
42.	Sonadi	Rajasthan	Meat, wool
43.	Tibetan	Arunachal Pradesh	Meat, wool
44.	Tiruchi Black	Tamilnadu	Meat
45.	Vembur	Tamilnadu	Meat

b) North Western arid and semi-arid region

This region, which includes the states of Punjab, Haryana, Rajasthan, Gujarat, the plains of Uttar Pradesh, and Madhya Pradesh, has the second-highest population of sheep. These sheep breeds are known for its carpet wool.

c) North Temperate Region

This geographic region embraces the hilly parts of Uttarakhand, Jammu and Kashmir, and Himachal Pradesh. This region is mostly inhabited by sheep breeds used for wool and apparel.

d) Eastern region

With the exception of a few sub-temperate areas in the eastern states, this region is usually hot and humid and covers the following list of states: Meghalaya, Arunachal Pradesh, Mizoram, Manipur, Tripura, Nagaland, Sikkim, Bihar, Jharkhand, West Bengal, Orissa, Assam, and Sikkim. This region's breeds are mostly of the meat/wool type.

Expectations for the Future and Action Priorities

In India, tiny and marginal landholders as well as landless rural residents greatly benefit from the rearing of small ruminants. Additionally, they have a major impact on the millions of resource poor rural households' families by guaranteeing food and nutritional security. Even while there is a vast collection of sheep and goat breeds, there is a sizable non-descript population of these animals, which makes it necessary to quickly begin characterizing them. The preservation of native breeds should be encouraged and breeding policies for the propagation and preservation of small ruminants by various governments should be established. To improve and popularize goats and sheep in the field, it is necessary to involve stakeholders in addressing issues such as diminishing grazing resources, lack of veterinary health services, conflicts with agriculturalists, organized marketing systems, availability of superior breeding bucks/rams, etc.

Conclusion

Small ruminants play a crucial role in India's rural economy, supporting over 70% of tiny, marginal, and landless farmers. They thrive in minimal input systems, making them advantageous in arid and semi-arid regions where crop cultivation is challenging. India boasts a rich diversity with 45 sheep and 39 goat breeds, adapted through natural selection and selective breeding to various agro-ecological environments. Despite challenges like shrinking grazing lands and limited veterinary services, their populations have grown, reflecting their resilience and economic significance. Sustainable conservation efforts and policy support are essential to safeguarding these genetic resources and enhancing the livelihoods they sustain across rural India.

References

1. BAHS. Basic Animal Husbandry Statistics. Government of India. Ministry of Fisheries, Animal Husbandry and

Dairying. Department of Animal Husbandry and Dairying, Krishi Bhawan, New Delhi, 2020.

2. ICAR-NBAGR Animal Genetic Resources of India (AGRI-IS). ICAR-National Bureau of Animal Genetic Resources.
3. Rajeev AKA, Narula HK, Dixit SP, Reena A, Dinesh KY, Ganguly I. Goat and Sheep Genetic Resources of India. Indian Journal of Plant Genetics Resources. 2022;35(3):237-241.

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