



Original Article



Milking the Benefits: Exploring the Vital Role of Goat Milk in India's Health and Economy

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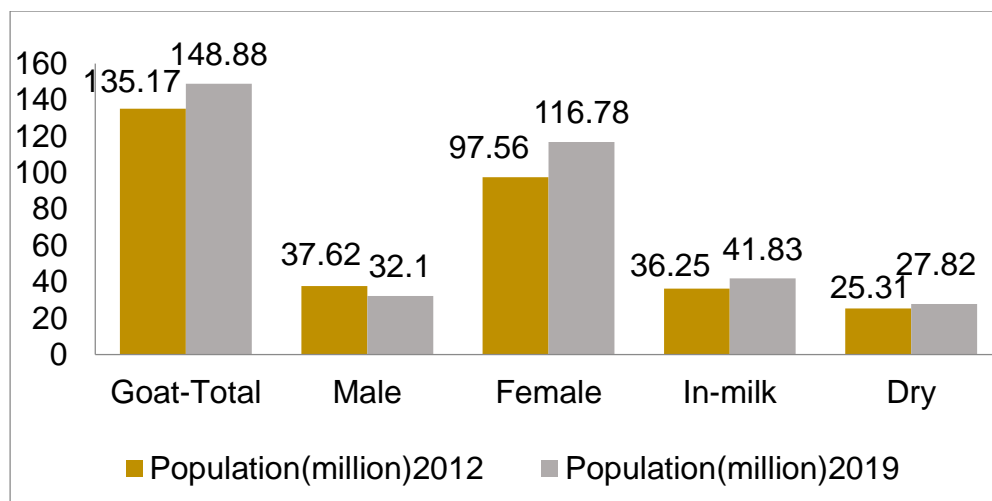
INTRODUCTION

The goat was earliest ruminant domesticated around 9000-7000 BC. The goat is a hollow-horned ruminant belonging to the order Artiodactyla, family Bovidae and genera *Capra*. The goat is a versatile animal, also known as the poor man's cow because it largely contributes to small and marginal farmers' economies. Goat farming supports the national economy and socio-economic growth of small farmers as well as landless laborers. Goats play an important role in income generation, capital storage, employment generation, and improving household nutrition. Goat rearing is easier to manage, requires low space, and also can handled by women and children due to their small size.

Overview of Goats

Total population in the World (billion)	1.09
Total Population in India (million)	148.88
Total increment (%)	10.14
Total contribution (%)	27.8
India's rank in goat population	2 nd
India's rank in global goat milk production	1 st
India's rank in global goat meat production	2 nd

(BAHS-2023)



(20th Livestock Census,2019)

Goat Milk Production in the World

The most organized market for goat milk is found in Europe, especially in France. Europe contributes 15% of total goat milk with only 5% of the population. Total global goat milk production was estimated at 20.6 million tonnes (2020). During the past decade, Asia has seen the largest increase in goat milk production (28%), followed by Africa (15%), America (5%), and Europe (4%) (2007-2017). The top countries in goat milk production are- India, Bangladesh, Sudan, and Pakistan.

Goat milk production in India

Total goat milk production in India is 7.59 million tonnes in 2023 and contributes 3.3 % of the country's total milk production. 9.04 % growth in goat milk production from 2022 (6.6 MT). *Jamunapari* is the most popular breed for commercial goat farming in India.

Composition of Goat milk

S. No	Composition (%)	Goat	Sheep	Cow	Human
1.	Fat	3.8	7.9	3.6	4
2.	Solid-not-fat	8.9	12	9	8.9
3.	Total solids	12.7	19.9	12.6	12.5
4.	Lactose	4.1	4.9	4.7	6.9
5.	Protein	3.4	6.2	3.2	1.2
6.	Casein	2.4	4.2	2.6	0.4
7.	Albumin, globulin	0.6	1	0.6	0.7
8.	Non-protein nitrogen	0.4	0.8	0.2	0.5
9.	Calories per 100ml	70	105	69	68

Properties of Goat Milk

1. Goat milk has a greater proportion of small fat globules than cow milk thus better digestibility due to the availability of greater relative surface area of fat globules for the digestion by lipases.
2. Goat milk is a valuable source of amino acids and has a higher amount of NPN, an excellent source of Potassium and vitamin A.
3. Goat milk has a significant role in the infant diet due to its easier digestibility than cow milk.
4. Less allergic- Allergy to cow milk is a common problem with a prevalence rate of 2.5% among children during 1st three years of life.
5. Goat milk has also helped treat malabsorption syndrome. (Mack,1952).
6. The anti-cancer properties of the medium-chain fatty acids on human colorectal, skin, and mammary gland cancer cells (Narayanan *et al.*,2015).
7. Goat milk can be recommended as a dietary supplement in individuals with inflammatory and allergic conditions.
8. Goat milk plays a key role in almost all biological reactions and exerts antioxidant and anti-inflammation effects in the body.
9. Raw goat milk helps in healing a lot of diseases. It is used to improve platelet count in the blood during Dengue and other viral diseases.
10. Goat milk can help reduce cholesterol levels in the arteries and gallbladder.

Approaches

India is the largest producer of goat milk in the world. For dairy goat farming necessary to follow various approaches-

1. **Breed improvement-** India has a total of 39 goat breeds, selection within milk-producing goat breeds is considered significant to improve their milk production. Goat breeds with good milk production such as Jamunapari, Beetal, Jhakrana, and Surti can be used as improver breeds for upgrading non-descript goats for milk production. To improve the meat, milk, and fiber production of Indian goat breeds, the All India Coordinated Research Project (AICRP) on goat improvement was initiated in the 4th five-year plan through crossbreeding of native breeds with Indian breeds or high-yielding exotic breeds.
2. **Nutrition and feeding-** lactating goat feed should contain 3 to 4% fat to promote milk fat synthesis. During early lactation, higher protein content is required for microbial protein synthesis. Dairy goats can require higher dry matter for readily available nutrients for the synthesis of milk. Good quality hay (15-20% protein) or green fodder along with a concentrate mixture (14-16% protein) is found adequate.

3. **Development of market-**India is the largest goat milk producer, but milk production and collection are more unstructured. The demand for goat milk is low because of a lack of consumer awareness about its nutritional and medicinal properties. The marketing of goat milk in India based on fat and solid-not-fat received low prices. It should be promoted as a functional food with several therapeutic and medicinal values and a separation pricing system.
4. **Dairy cooperatives-**to boost the goat milk sector, there is a need to start the collection of goat milk through a well-established network of village-level milk cooperative societies in the country. This will help in increasing the interest of farmers in goat milk production. **Examples-** Ahmednagar District Goat Rearing and Processing Cooperative Federation in Maharashtra and Goat Village in Kerala.

CONCLUSION

Goats are one of the dependable sources of income and provide nutritional support to tribal area people. Scientific and technological research in breeding, management, nutrition, and disease control should continue to increase the economic benefit of goat production. Governments can set supportive mechanisms for producers and also make rules and policies to enhance the standard level of raising goats.

REFERENCES

- Verma, A. K., & Rajkumar, V. (2021). Production, processing, and marketing of goat milk in India: Reality and scope. *Indian Journal of Small Ruminants (The)*, 27(2), 152-159.
- 20th Livestock Census 2019. Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Government of India, New Delhi. BAHS, 2022-23. Basic Animal Husbandry Statistical-2022-23. Department of Animal Husbandry and Dairying. Government of India, New Delhi.
- FAO, 2020. FAOSTAT, In: <http://www.fao.org>.
- Mack, P. B. (1952). A preliminary nutrition study of the value of goat milk in the diet of children. American Goat Society. *Year Book, 1953*, 112-132.
- Narayanan, A., Ananda Baskaran, S., Amalaradjou, M. A. R., & Venkitanarayanan, K. (2015). Anticarcinogenic properties of medium chain fatty acids on human colorectal, skin and breast cancer cells in vitro. *International journal of molecular sciences*, 16(3), 5014-5027.