



## Goat Milk: A Nutritional Powerhouse for Better Health

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Goats requires less space, water and feed compared to cows and goat farming provides livelihood opportunities for rural communities worldwide. Goats are important component of livestock industry having adaptability to harsh climates which make them suitable for landless and marginal farmers. The contribution of goats in supplying milk and milk products is high and it has significant role in rural economy and health. Goat milk contains higher amount of Ca, Mg and P than cow and human milk. Medium Chain Triglycerides (MCT) which are more in goat milk have been recognized as unique lipid with unique health benefits. The soft curd of goat milk may be an advantage for adult humans suffering from gastrointestinal disturbances and ulcers. Goat milk is recommended for infants, old and convalescent people. The consumer acceptance of goat milk and its products is reported to be excellent. Goat cheese production in India is coming up in a big way which will prove to be a boon to Indian cheese industry.

### Benefits of goat milk consumption:

Most of the Goat milk produced goes for direct human consumption. Rest is used in production of cheese, milk powder, and other products. Consumption of goat milk or the processed products has lots of advantages, as proved scientifically. It is the rich source of protein, calcium, fats, vitamins, iron, and other essential nutrients as compared to cattle milk. It helps to improve platelet count in the blood during dengue and other viral diseases. Since the milk is rich in calcium content, it has a role to play in strengthening of bones and teeth. For a growing baby, it is one of the best sources of energy.

**Table 1.** Nutritional table of minerals in Goat milk. Adapted from: USDA, 2017.

Name	Amount	Unit
Calcium, Ca	134	mg
Iron, Fe	0.05	mg
Magnesium, Mg	14	mg
Phosphorus, P	111	mg
Potassium, K	204	mg
Sodium, Na	50	mg
Zinc, Zn	0.3	mg

### Why choose goat milk over cow milk

On nutrition terms goats' milk is considered almost same as cows' milk but it differentiates in having certain physical properties, influential for human digestibility and health. Many people who face symptoms like eczema; asthma, gas related trouble, constipation or digestive discomfort consuming cows' milk can prefer goats'

milk since consumption of goat milk reduces these problems to a great extent. Scientific studies also reveal that goat milk causes less inflammation in the stomach unlike the cow's milk. The milk is healthy for the heart and lowers chances of acquiring heart diseases like heart attack and atherosclerosis. There is good percentage of proteins available in goat milk, essential for promoting growth and development. The milk also has essential vitamins, minerals and higher amounts of potassium, iron and vitamin A, than cows' milk therefore, it is highly nutritious for an entire family.

**Table 2.** General nutritional table of Goat milk. Adapted from: USDA, 2017.

Name	Amount	Unit
Water	87.03	g
Energy	69	kcal
Protein	3.56	g
Total lipid (Fat)	4.14	g
Fiber, total dietary	0	g
Sugars	4.45	g
Fatty acids, total saturated	2.667	g
Fatty acids, total monounsaturated	1.109	g
Fatty acids, total polyunsaturated	0.149	g
Cholesterol	11	mg

### Bright demand prospects for goat milk

Rise in Internet usage has enhanced consumer awareness regarding importance of goat milk in recent years, and there are more number health conscious people in the country – be it young or old. Since digestibility is better and essential elements are available in sufficient percentage, demand for goat milk is increasing year after year. As compared with cow milk, consumers of the present world seem quite interested towards better, healthier alternatives such as camel milk, goat milk or donkey milk. Reports say that in next few years, products such as goat milk ghee will be attracting more number of users. There is renewed focus on healthy living, and customer spending habits are also changing. Therefore, demand potential for goat milk or its products, is bound to improve in years to come.

### Medicinal properties of goat milk

- Goat milk contains higher amount of calcium, magnesium and phosphors than cow and human milk.
- Medium chain triglycerides (MCT) and proteins which are more in goat milk have been recognized as unique lipid and protein with unique health benefits.
- The goat milk is naturally homogenized. It forms a soft curd when compared to cow milk and hence helps in easy digestion and absorption. The soft curd of goat milk may be an advantage for adult humans suffering from gastrointestinal disturbances and ulcers.
- It is reported that the bioavailability of Zn is enhanced by goat milk in comparison to cow milk. Moreover, goat milk is also used as therapy against different problems including gastrointestinal disturbances, vomiting, colic, diarrhea, constipation and respiratory problems.
- It also has medicinal value for human being and is healthy alternative to cow's milk that may be more easily digested than regular cow's milk, especially to children and those who have sensitive stomachs to other animals' milk.

- Goat milk might have beneficial effects on malabsorption disorders and inflammatory bowel diseases.
- Fermented goat milk may reduce the risk of cardiovascular disease by antioxidant anti-atherogenic effects.
- The milk allergy problem common in infants fed with cow milk is rarely encountered when replaced with goat milk and it plays an important role in the formulation of infant formula. This is a proof of the medicinal property of goat milk. The symptoms like gastrointestinal disturbances, vomiting, colic, diarrhoea, constipation and respiratory problems can be eliminated when goat milk is fed to the infants.
- goat milk has higher concentration of medium chain fatty acids which play an important role in imparting to minimize cholesterol deposition in the arteries, aid in dissolving cholesterol and gallstones and significantly contribute to normal growth of infants.
- It differs from cow or human milk in higher digestibility, distinct alkalinity, higher buffering capacity, and certain therapeutic values in medicine and human nutrition. It is also a substitute for those who suffer from cow milk allergy.
- Fat globules are smaller and probably one of the reasons for easy digestion of this milk. There are also differences in the fatty acid profile as goat milk has higher percentage of short and medium-chain (C6–C14) fatty acids.

**Others:**

- It may act as antioxidant
- It might act as an anti-inflammatory
- It may act as anti-mucosal
- It may boost the immunity
- It might act as anticancer
- It might act as prebiotics
- It may act as anti-microbial

**1. Potential uses of goat milk for heart**

Goat milk might contain antioxidants that may inhibit low-density lipoprotein (LDL) which is also called bad cholesterol. Goat milk contains medium chain triglyceride (MCT), monosaturated fatty acids (MUFA), and polyunsaturated fatty acids (PUFA), which might be beneficial for heart-related diseases. It may have low levels of cholesterol when compared to cow milk and a balanced fatty acid profile. The presence of all these compounds may prevent heart diseases like heart attack, atherosclerosis, and stroke. If you have serious heart problems consult the doctor and take proper medication. Do not self-medicate.

**2. Potential uses of goat milk for boosting immunity**

Selenium is one of the key nutrients that is involved in the proper functioning of the immune system. This nutrient is present in cow milk in small amounts and more amount of selenium is present in goat milk. Therefore, goat milk may act as an immunity booster and might help in protecting a person from diseases.

**3. Potential uses of goat milk as a prebiotic**

Goat milk contains a high level of oligosaccharides (carbohydrates) derived from lactose which act as a prebiotic. Prebiotics in the stomach may improve the health of the digestive system. They promote bifidobacterial (good bacteria) in the intestine, which may benefit other activities such as stimulating immunity, preventing infection, fighting against cancer, lowering cholesterol, and improving lactose maldigestion.

**4. Potential uses of goat milk for cancer**

Goat milk contains high levels of conjugated linoleic acid (CLA) which has been reported that it may have anticancer properties in animal models and human cancer cells. The CLA mechanism to inhibit cancer growth is not yet understood fully and more research is required.

However, the antioxidant effect and another related mechanism of fermented goat milk might benefit cancer. Do not self-medicate. Cancer is a serious condition and must be properly diagnosed and treated by a doctor.

#### 5. Potential uses of goat milk for bone

In naturopathic medicine, cows are called calcium animals and goats are referred to as bio-organic sodium animals. This bio-organic sodium is a crucial element that may maintain joint movement. Goat milk may provide 35% of the daily calcium needed in a cup. At the same time, a cup of goat milk may provide 20% of the daily needs of vitamin B2. It also contains phosphorus and high level of vitamin B12 and potassium.

### Conclusion

Globally, goat milk is less produced compared to cow milk. However, it plays a fundamental role in the economy of millions of people in developing countries due to the great adaptability of goats to difficult environments. In addition to that, knowing the great amount of properties and benefits that goat milk brings to human health allows increasing its consumption. It is one of the most complete foods that exist in the world and its production should be enhanced.

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