

Anti-diarrhoeal

Childhood diarrhoea is a significant problem in many developing countries and *E. coli* is the main causative agent. Transgenic goats have been developed which produce human lysozyme in their milk.

The animal fed with transgenic goat milk have demonstrated recovery from *E. coli* infection faster.

Therefore, consumption of goat milk having lysozyme expected to accelerate recovery from bacterial-induced diarrhoea in breastfeeding children.

Amelioration of malabsorption syndrome

The supplementation of goat milk in infants suffering from malabsorption syndrome significantly improved the intestinal fat absorption rate.

In laboratory animal with induced ferropernic anaemia goat milk improved Fe bioavailability than bovine milk, and increased the Fe deposition in target organs.

There are beneficial effects on the nutritive utilization of protein, Mg, Ca, P, Zn and Se in rats with resection of the distal small intestine.

“There are myths and ignorance among consumers about goat milk. To popularize goat milk and expand its consumer base it is needed to create awareness about the exclusive healthier attributes goat milk has been gifted and to clear existing prejudice.”



Authors

Arun K. Verma, V. Rajkumar, T.P. Singh

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Director, ICAR-CIRG, Makhdoom

Contact us:

**Goat Products Technology Laboratory,
ANM&PT Division,
ICAR-Central Institute for Research on
Goats, Makhdoom, Farah, Mathura – 281122
CIRG Helpline: 0565-2763320**

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Goat Milk: Healthier attributes



Goats are significant milk providers and their contributions is being duly recognized. Recently, the nutritional as well as healthier constituents of the goat milk have been prominently rediscovered. This has led to the acceptance of goat milk as a functional food and the drastic enhancement in its acceptability among consumers. It can also be visualized through a significant jump in the goat population as well as goat milk production than the other milk-producing animals.

The paradigm shift in the food labelling pattern have enabled consumers to ascertain the superiority of dairy products based on composition. Like milk from other species, goat milk also provides good quality animal protein, healthier fat and fatty acids, lactose, minerals, and vitamins to the consumers. Additionally, there are certain exclusive features the goat milk possesses making it more attractive and healthier.

Better digestibility, low allergenicity, anti-cancerous, anti-inflammatory, anti-diarrhoeal properties and improvement in malabsorption syndrome are distinct attributes present in goat milk.

Easy digestibility and less allergenic

The significance of goat milk in the infant diet is very much appreciated on account of its easier digestibility and less allergenicity than cow milk. The absence of agglutinin combined with the presence of higher short and medium-chain fatty acids prevents the fat globules from clustering, making it easier to digest. Goat milk is known to form a finer curd than cow milk following acidification, which mimics the conditions in the stomach, suggesting its rapid digestibility.

Parameters	Goat milk	Cow milk
Water (%)	87.0	87.2
Fat (%)	4.25	3.70
Protein (%)	3.52	3.50
Lactose (%)	4.27	4.90
Vitamin A (IU)	2074	1500
Vitamin B1 (mg/l)	0.68	0.44
Vitamin B2 (mg/l)	2.10	1.75
Vitamin B5 (mg/l)	2.70	0.94
Vitamin B12 (mg/l)	0.0006	0.043
Folic acid (µg/l)	6	50
Calcium (%)	0.19	0.18
Phosphorus (%)	0.27	0.23
Na (mg/100ml)	41	58
Zn (mg/100ml)	0.56	0.53
K (mg/100ml)	182	152
Selenium (µg/100ml)	1.33	0.96

- *Goat milk contains significantly higher amount of healthier medium chain triglycerides, vitamin A, vitamin B₁, vitamin B₂, vitamin B₅, Ca, P, Zn, K and Se than cow milk.*
- *Goat milk has 13% more Ca, 25% more vitamin A, 134% more K, 3 times more niacin, 4 times higher Cu and 27% more antioxidant selenium than cow milk.*



The low levels of α_s -casein in goat milk and a higher proportion of β -casein indicate that the goat milk casein profile is much closer to human milk than that of cow milk. The relative absence of α_s -casein has been suggested to contribute to enhanced digestion of β -lactoglobulin.

Cow milk allergy is considered a common problem with a prevalence of 2.5% among children during the first 3 years of life. Its treatment with goat milk resolves 30 to 40% of the problem cases, and in one particular instance, 49 of 55 treated children received the benefit. The low allergenicity in goat milk is probably due to the absence or lower presence of α_s -casein.

Anti-cancerous

Goat milk is rich in medium-chain triglycerides – caproic, caprylic, and capric acids. These fatty acids have exhibited anti-cancerous properties on human colorectal, skin, and mammary gland cancer cells. The treatment with these medium-chain triglycerides reduced cancer cell viability by 70% to 90%. The molecular study has also supported this finding.

Anti-inflammatory

The presence of own microbiota in goat milk may normalize the human intestinal microflora with a cascade of protective effects at intestinal mucosal sites, including triggering of intestinal T regulatory cells. Thus, goat milk is recommended as a dietary supplement in individuals with inflammatory and allergic conditions, including elderly people.