



Research Article

## GAU DUGDHA (COW MILK) - ITS NUTRITIONAL AND THERAPEUTIC VALUE

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Received June 05, 2016; Accepted June 29, 2016; Published July 12, 2016;

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**Cite This Article:** Ganeriwala, B., Gudagnatti, K., Bolmal, U.(2016). Gau dugdha (Cow Milk) - Its Nutritional and Therapeutic value. International Journal of Pharmacy & Bio-Sciences, 3(1).1-7

### ABSTRACT

Milk has very important and unique nutritional as well as therapeutic value. Milk is useful in all age groups, even in young age it is considered as a balance diet. Its therapeutic range is as broad as its nutritional value. Ayurveda has mentioned therapeutic value of dugdha in detail according to the color, age, habitat and food pattern of the cow which is not found in any other texts. Here some efforts are given to collect all facts about cow's milk.

**KEY WORDS:** Gau dugdha, balance diet, nutritional, therapeutic value.

### INTRODUCTION

Milk is one of the animal origin dravya which is important for persons of all age as a dietary supplement. The milk is white fluid essence of drugs and cereals, which enter into the food of the aforesaid milk- giving animals, and is therefore the best of all nutritive substances (literally life-giving). It is guru, madhur, pichhila (slimy), sita, snigdha, slakshna (emollient), sara and mridu. Hence it proves congenial to all sentient animals and since milk is kindred in its nature to-the essential principles of life and, its use may be unreservedly recommended to all, and is not forbidden in diseases due to the deranged action of vayu or pittam, or in ailments affecting the Mansa roga (mind), or the vascular system of man. Its beneficial and curative effect is witnessed in cases of jirna jwara, kasa, swasa sosa and kshya, gulma (abdominal glands), unmada, udar roga, murchha, bhrama, udara roga, trisna, hridya roga, mutra roga, pandu, grahani, arsa, shula, atisara, pravahika, yoni roga, garbha srava, raktapitta. It is

beneficial in both healthy and diseased person. Ayurveda has mentioned categorically many uses of cow's milk according to the basis of ritu, desha, kala & bala of the individual. It has similar properties to that of Ojas and acts as Rasayana, Bala vardhaka, Hridha, Medhya, Ayusya, Jivaniya and Punstva krida. Milk is used in preparations of many Ayurvedic medicines & it is also used as anupaan in many formulations [1].

Milk contains numerous nutrients and it makes a significant contribution in meeting the body's needs for calcium, magnesium, selenium, riboflavin, vitamin B12 and pantothenic acid (vitamin B5). However, milk does not contain enough iron and folate to meet the needs of growing infant, and the low iron content is one of the reason animals milk is not recommended for infants younger than 12 months old. Cow milk contains more protein and minerals, especially calcium and phosphorus, than human milk. This is because a young calf grows faster than a child and hence has higher nutritive demands on average. A calf takes only 10 weeks to double its birth weight, compared with 20 weeks for a human baby. The

protein in cows milk is of high-quality (defined as protein that supports maximal growth), containing a good balance of all the essential amino acids, including lysine. Many human diets are deficient in certain essential amino acids. For example, wheat and maize-based diets contain only 57

percent and 58 percent of required levels of lysine, and cassava-based diets are deficient in leucine, valine and isoleucine, containing only 79 percent of required levels. [2]

**Table 01:** Showing Synonyms of Godugda

Dhanvantari nighantu [3]	Kshiri, Payasa, Swadu, Rasayana, Samasraya, Soumya, Prastravana, Stanya, Balasatmya, Jivita.
Kaiyadeva nighantu [4]	Kshiri, Soumya, Prastravana, Dhari, Satmya, Paya, Jivana.
Raja nighantu [5]	Kshiri, Stanya, Paya, Piyusha, Udtasya, Dughdha, Amrta.
Saligram nighantu [6]	Kshiri, Dughdha, Stanya, Paya, Piyusha, Balajivana.
Madanapal nighantu [7]	Kshiri, Soumya, Prastravana, Paya, Dughdha, Balajivana.
Saraswati nighantu [8]	Kshiri, Amrta, Dugdhi, Jivana, Atmajivaniyam, Piyusha.

**Vernacular name**

Hindi – dudha [5]

Marathi – dudha [5]

Gujarati – dudha [5]

Bengali – dudha [5]

Kannada – halu [5]

Telagu – palu [5]

Pharasi – shire [5, 6]

Arabi – juvana [5]

English – milk [5, 6, 8]

Latin – lactus [5, 6]

Sanskrita – dugdha [6, 10] , kshira, paya, stanya, balajivana [10]

**Gana (varga)**

- Suvanadi varga [3]
- Drava varga [4, 8]
- Kshiradi varga [5, 9, 11]
- Dugdha varga [6, 10, 12]
- Paniyadi varga [7]
- Bhakti varga [8]

**Pharmacodynamic**

- Rasa:** Madhura [3, 6, 7, 10, 13, 15, 17] Kasaya [13]
- Guna:** Guru [3, 4, 6, 7, 10, 13, 14, 17] Snigdha [3, 4, 5, 6, 7, 10, 13, 14, 17]  
Abhisya [3, 14], Laghu [8], Sandra Pichhila [13]

In Ayurveda, descriptions are available regarding the qualities of the milk of cows of various colours. This is shown in Table No. 02.

**Table 02:** Showing Therapeutic properties of Gau dugdha based on colour of cow

Sl no	Colour of cow	Therapeutic properties
1	Black Cow's milk	Vata nashaka [4, 6, 10], tridosas nasaka [17]
2	White Cow's milk	Kapha Vardhaka [4, 6, 7, 10]
3	Yellow Cow's milk	Vata Pitta nashak [4, 6, 10, 17]
4	Red Cow's milk	Vatahara [6, 10, 17]

**Desha visesha cow's milk guna [10]**

- i. Jangal desha : Dugdha less guru( less sneha yukta).
- ii. Anupa desha : Dugdha moderate guru.
- iii. Parvata desha : Dugdha most guru.

**Ahaara visesha guna of cow's milk [10, 17]**

- i. Cow eating grain with husk: Milk of that cow is Guru, kapha karaka, bala dayaka, vriya vardhaka and is best for healthy person.
- ii. Cow eating husk, grass, and cotton seeds: Milk of that cow is beneficial for diseased person.

**Guna of Dharosna dugdha (freshly milked)**

Balya [7, 10], laghu [7, 10], sita [7, 10], similar to nector [10], dipan [7, 10], tridosha nasaka [7, 10] ,prakupita vayu samaka, pusti karaka, pandu and kamala nasaka. It increases oja in debilitated person. It cures daha & jatharagni related diseases. [17]



**Guna of dughd with different additives.**

**Khanda sarkara yukta dughda:** Kapha karaka and vata nasaka[10]

**Sita (misri) yukta dughda:** Sukra janana and tridosha nasaka. ,[10, 17]

**Guda yukta dughda:** Mutra krichha nasaka, pitta and kapha vardhak. [10, 17]

**Table 03:** Showing guna of cow milk in Boiled and Unboiled state

Boiled/Unboiled	Guna
Unboiled	Pathya (only cow milk)[17], guru[9], abhisyadi [9]
Just boiled	Kapha vata nasaka [17], laghu [9]
Cooled after boiling	Pitta nasaka [9, 17]
Boiled with ½ amounts of water till added water is vaporised.	Laghu and hitakar compared to unboiled dughdha [17]

**Table 04:** Showing Samaya visesa (time of consumption) guna of dughda.

Time	Guna
1. Day	Virya vardhaka, brihana, dipan [10, 17] and balya [17]
2. Afternoon	Balya,[10,17] kapha pitta nasaka, [10] agni vardhaka, ruchikar, mutrakrichha and asmari nasaka [17]
3. Night	Pathya, subsides many diseases and beneficial for eyes. [10, 17]

**Table 05:** Showing Karma of Gau dugdha

Sl.no	Book	Karma
1	Dhanvantari N [3]	Rasayana, Balavadhaka, Hridha, Medhya, Ayusya, Jivaniya, Punstva krida
2	Kaiyadeva N [4]	Rasayana, Hridha, Ayusha, Jivaniya, Bahala, Sristi Sinamutra, Pichhila, Stanya vardhaka, Mridu, Snehana, Dahasamaka, Visa nasaka, Sukra janaka, Agni dipana, Slakshna, Oja vardhaka.
3	Raja N [5]	Ruchyu ,Virya vridhi,Vataghna, Pittaghna, Pathya
4	Saligram N [6]	Rasayana, ,Balavadhaka, , Hridha, Medhya, Punstva krida, Jivaniya, Bahala, Stanya vardhaka, Dahasamaka, Sukra janaka, Oja vardhaka, Pathya, Ruchyu ,Virya vridhi,Vajikarana, Sandhi karta, Sitala, Vanyama,
5	Madanapal N [7]	Rasayana, Jivaniya, Bahala, Stanya vardhaka, Sitala
6	Saraswati N [8]	Rasayana, Jivaniya, Stanya vardhaka, Vajikarana
7	Sodhala N [9]	Rasayana, Jivaniya, Stanya vardhaka, Medhya, Pathya, Vrisya varnyama, Kshata-kshinata, Sara
8	Bhavaprakasha [10]	Stanya vardhaka, Sital, Dosha-dhatu-mala srota kledakar.
9	Kasayapa samhita [13]	Rasayana, Medhya, Ayusya, Vrisya, Brinhana. Jivaniya, Balavadhaka
10	Bhela samhita [16]	Balavadhaka, Jivaniya, Vajikarana
11	Astanga S [11]	Rasayana, Medhya, Jivaniya, Stanya vardhaka, Varnyama
12	Yogaratanakar [17]	Rasayana, brinhana, stanya vardhaka, balya, Jivaniya.

**Table 06:** Showing Rogagnata of Godugdha

SI No	Text book	Roga
1	KaiyadevaN [4]	Raktapitta,atitrishana, Atikshuda, Mutrakrichha, Manas roga, Purisha granthi, Gulma, Arsha, Vasti roga, Hrida roga, Jirna jwara, Swasa, Kasa, Sopha, Pandu, Pravahika, Jirna grahani, Atisara, Murchha, Mada, Bhrama, Yakshma, Unmada, Mukha sosha, Shula, Amlapitta, Srama, Klama, Udavarta, Garbhasrava, Yoniroga, Sukravikara,Vata rakta.
2	Saligram N [6]	Atitrishana, Atikshuda, Manas roga, Purisha granthi, Gulma, Arsha, Vasti roga, Hridya roga, Jirna jwara, Pandu, , Jirna grahani, Atisara, Murchha, Bhrama, Mukha roga, Shula, srama, Udavarta, Garbhasrava, Yoniroga, Visha vinahsaka.
3	Sodhala N [9]	Raktapitta, Atitrishana, Atikshuda, Mutrakrichha, Jirna jwara, Swasa, Kasa, Mada, Shrama, Alakshami.
4	Astanga sangraha [11]	Raktapitta, Atitrishana, Atikshuda, Mutrakrichha, Jirna jwara, Swasa, Kasa, Mada, Bhrama, Srama, Alakshami, Kshata.
5	Yogaratanakar [17]	Jwara, Atisara, Shula, Grahani, Pandu, Kshaya, Arsha, Sotha, Mandagni, Aruchi, Praseka, Pratishyaya, Krimi, Bhagandar, Udavarta, Visuchika.

\*N – Nighantu

**Indication:** Jirna jwara, mansika roga, sosa, murchha, bhrama, grahani, pandu, daha, trisana, hridaroga, shula, udavarta, gulma, vastiroga, arsa, raktapitta, atisara, yoniroga, srama, glani, garbhasrava. It is also indicated after vaman, virecan and vasti procedures [10, 17]

**Contraindication:** Nava jwara, mandagni, ama dosha, kustha, shula, kapha dosha, kasa, atisara, krimi dosha. [10, 17]



**Additives which are contraindicated with milk.**

Milk should not be taken with lavana, asava, arista, mugda, koshtaki (turai), kanda phala etc. [17]

**Nindaniya dugdha:** Vivarna, virasa, sour, durgandha yukta, granthi yukta dugdha. If this type of dugdh is consumed it produces kustha roga etc. [10]

**Table 07:** Items best suitable with milk in different Vargas [17]

	Friendly dravyas	Unfriendly dravyas
In general	Sahakar phala (mango), gostani (munaka), madhu, navanita, ghrita, sringabera, pippali, maricha, sita, saindhava lavana yukta prithuka (chirava), patola, sunthi, abhaya, and all madhur varga dravyas.	Matsya, mamsa, guda, mudga, mulaka, pinayaka, taila, sarsapa, kapittha, jambu, jambira, panasa, matulanga, fruit of vansa, karira, badara, kadali, amla dadima, and all others amla fruits.

**Modern view [18]**

Cow’s milk is an opaque fluid in which fat is present as an emulsion; protein and some minerals in colloidal suspension and lactose together with some mineral and soluble protein in true solution. The yellowish white colour of the milk is due to suspended fat globules.

Milk is little more viscous than water, its taste is sweet and bland, and odour is faint and characteristic. Cow’s milk possesses all the elements necessary for the growth and nutrition of various tissues of our body. As the calcium in the milk is readily absorbable, it is a most valuable food for the formation of bone. The ratios in which the calcium and phosphorus present in the milk made it ideal for their proper absorption and assimilation and consequently for Bone formation along with Vit D. Chemical and physiological constituents of Cow’s milk composition/100 ml. are shown in Table 08.

**Table 08:** Showing modern parameter of Milk [19]

Sl.No.	Parameters	Values
1	Specific gravity	1.032
2	pH	6.6-6.8
3	Titration Acids	0.12-0.15%
4	Fat	4.14 %
5	Total solids	13.39%
6	Solids Not Fat(S.N.F.)	9.25%
7	Lactose	4.96%
8	Ash	0.71%

## CONCLUSION

Cow's milk is very useful product for mankind. If it is used according to the method of consumption mentioned in Ayurveda, its beneficiary effect can be increased. If the physician suggests milk consumption in proper way success of treatment is expected more. Milk subsides Vata and Pitta dosas by its guna. Milk is having identical properties of Ojas, so it promotes Ojas. In short, Cow's milk acts as Rasayana, Tarpaka, Jivaniya, Hradya and Buddhi prabodhaka.

## SCOPE FOR RESEARCH

The composition of milk is affected by various factors like stage of lactation, differences of breed, number of calving's, seasonal variations, its age, health and feeding pattern. It makes difficult to compare the compositional data between studies. In order to publish such type of studies it should include information on the above factors and analytical methods used. Animal feed strategies and genetic improvement methods to be used to modify milk composition, for example to tailor the milk fat composition according to specific needs.

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