

Buffalo Milk vs. Cow Milk: Difference and Health Benefits of Both

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ARTICLE ID: 16

Introduction

Milk is defined as the whole, fresh, clean lacteal secretion obtained by the complete milking of one or more healthy milch animals, excluding that obtained within 15 days before and 3 days after calving or such periods as may be necessary to render the milk practically colostrums free and containing the minimum prescribed percentage of milk fats and S-N-F. In technical aspect milk is defined as the lacteal secretion obtained by milking a healthy animal 72 hours after calving.

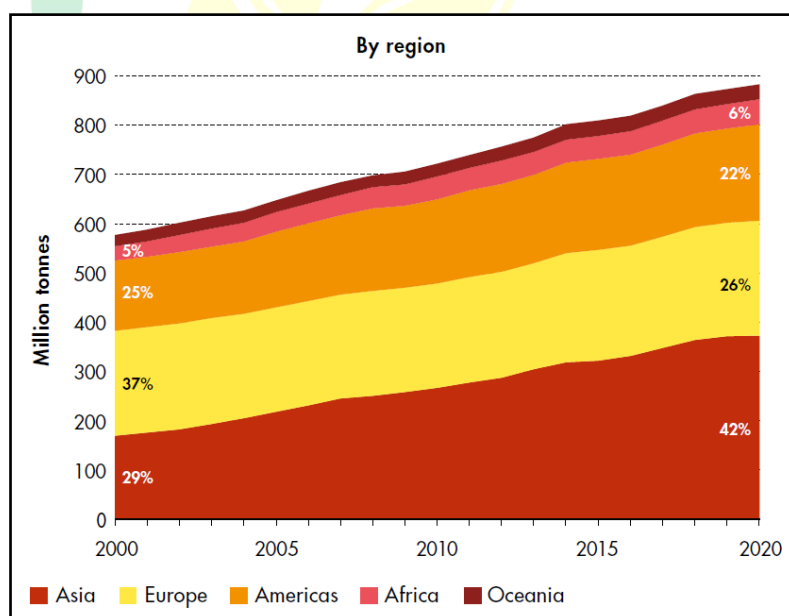


Figure 1. World production of Milk

World milk production rose by 53 percent to 887 million tones in 2020, an increase of 307 million tones compared with 2000 (see Figure 1). Asia was the largest milk-producing region in 2020 with a 42 percent share of the total, ahead of Europe (26 percent), the Americas (22 percent), Africa (6 percent) and Oceania (3 percent). In particular, milk

production in Asia went up 120 percent between 2000 and 2020, from 170 million tones to 374 million tones mostly due to the increase in India (104 million tones), which was the largest producer with a 21 percent share of the global total in 2020. With an 11 percent share, the United States of America was the second largest producer; the other main producers (Pakistan, China, Brazil, Germany, the Russian Federation and France) each accounted for 3 to 7 percent of the global production. The combined share of the top three milk producers was 39 percent of the total, the same as in 2019 (see Figure 2).

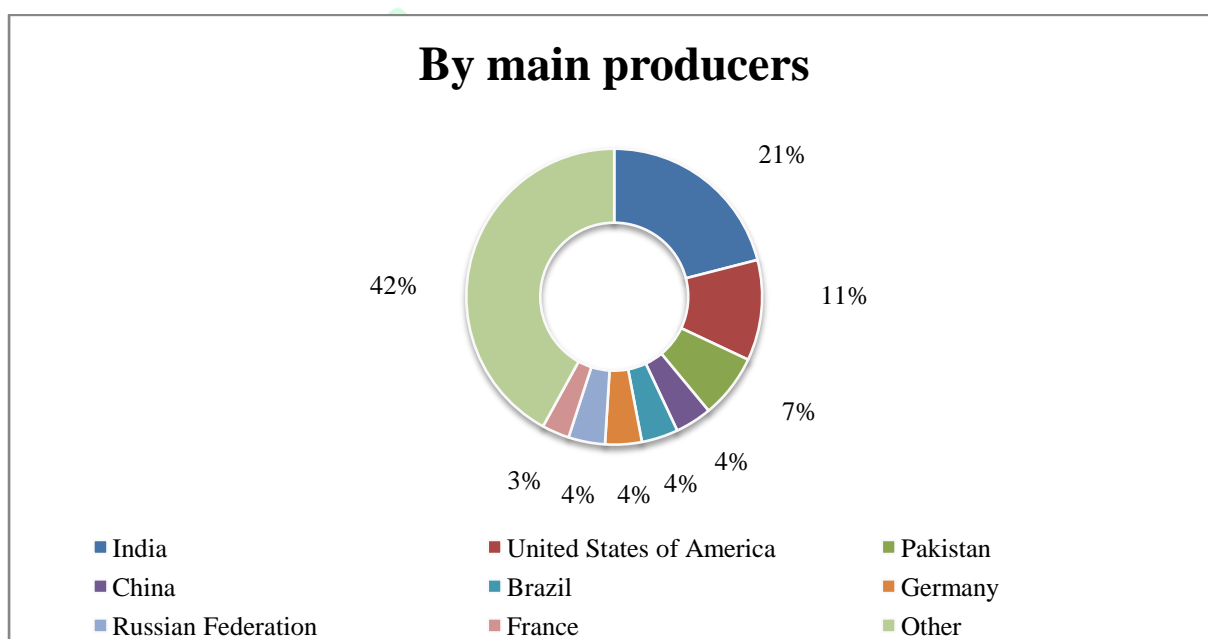


Figure 2. Milk production by top 8 milk producers

Note: Percentages on the figure indicate the shares in the total; they may not tally due to rounding. Source: (FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: FAO. Rome. Cited October 2022. <https://www.fao.org/faostat/en/#data/QCL> <https://doi.org/10.4060/cc2211en-fig1>)

Buffalo milk vs. cow's milk

Both buffalo and cow's milk are highly nutritious and provide a great amount of vitamins and minerals, but buffalo milk packs more nutrients and calories per serving.



Table 1. Comparison of nutritional value between 1 cup (244 ml) of buffalo and whole cow's milk

Particular	Buffalo milk	Whole cow's milk
Calories	237	149
Water	83%	88%
Carbs	12 grams	12 grams
Protein	9 grams	8 grams
Fat	17 grams	8 grams
Lactose	13 grams	11 grams
Calcium	32% of the (DV)	21% of the (DV)

1.1 Where as DV is Daily Value

Buffalo milk has more protein, fat, and lactose than whole cow's milk. Consuming milk with higher protein content increases your feelings of fullness. This may help reduce food intake throughout the day, thus helping you lose weight and body fat. On the other hand, if you want to reduce your fat intake or have mild lactose intolerance, opting for cow's milk may be better.

Benefits of drinking buffalo milk

According to studies, there may be a variety of health advantages of drinking buffalo milk.

- **Support bone health:** - Buffalo milk provides high amounts of calcium, a mineral needed for bone development. It's also a source of casein-derived peptides that may promote bone health and reduce your risk of osteoporosis, a disease characterized by bone weakening and increased risk of fractures. Casein is a major protein found in milk, comprising about 89% of buffalo milk's total protein content.
- **Provide antioxidant activity;** - Like other dairy products, buffalo milk has antioxidant properties due to its vitamins, minerals, and bioactive compounds. Antioxidants are molecules that fight free radicals, a group of compounds with harmful effects on your body that have been linked to certain diseases. One test-tube study determined that the total antioxidant capacity of buffalo milk ranged between 56–58%, compared with 40–42% for cow's milk. Buffalo milk's higher antioxidant ability was credited to its

higher monounsaturated fatty acid (MUFA) content. Similarly, another study found that buffalo milk fat provides small amounts of phenolic compounds and fat-soluble vitamins, including vitamins A and E, all of which have potent antioxidant properties.

- **Improve heart health:-** Beta-lactoglobulin and potassium in buffalo milk may help reduce high blood pressure. Beta-lactoglobulin is a primary whey protein and an important source of bioactive compounds associated with health benefits. One test-tube study found beta-lactoglobulin in buffalo milk to inhibit the angiotensin-converting enzyme — an enzyme that increases blood pressure by tightening blood vessels — thus reducing blood pressure levels. What's more, potassium is a key mineral involved in blood pressure control, and buffalo milk boasts a high potassium content, providing 9% of the DV per 8-ounce (244-ml) serving.

Lastly, since buffalo milk is lower in water but higher in fat, it has a thicker texture that's suitable in the production of fat-based dairy products like butter, ghee, cheese, and ice cream.

However, cow milk more preferred due to following reasons:

- The fat and protein of cow milk are more easily digestible than those of buffalo milk.
- The cow milk has also got greater amount of vitamins and minerals.
- Buffalo milk is injurious to the development of children and only cow milk is useful to them (in the absence of mother's milk. The buffalo milk is rich in fat, which children can't digest. Because of indigestion they suffer from diarrhea. The fats in cow milk and buffalo milk differ from each other in their digestive properties. The percentage of volatile and soluble acids is greater in cow ghee, and consequently it is more easily digested.
- Cow milk, being easily digestible, is more beneficial to patients than buffalo milk.
- Cow milk is useful for intellectual growth of children.

As you can see from above chart buffalo milk has less water content and hence thicker than cow milk. It has also got higher protein and calcium and less cholesterol than cow milk. However, its high degree of fat and calories makes it less attractive. So, if you drink buffalo milk you really need to work out. Probably this is the reason why people who work hard in the farm preferred buffalo milk over cow milk.

Table 2. Overall Comparison of Buffalo Milk and Cow

S.No.	Buffalo Milk	Cow Milk
1.	Milk good for adults	Milk good for infant and adults
2.	Milk is thick and white	Milk is thin and golden yellow
3.	Milk is not easily digestible	Milk is very easily digestible
4.	Milk has less cholesterol	Milk has more cholesterol
5.	Milk has more fat and calories	Milk has less fat and fewer calories
6.	100 calories are derived for 100g buffalo's milk	70 calories are derived for 100 g buffalo's milk
7.	Milk has less water	Milk has more water
8.	Milk has more protein	Milk has little less protein
9.	Milk has slightly more carbohydrates	Milk has slightly less carbohydrates.
10.	Milk has more saturated fatty acid, mono unsaturated fatty acid and poly unsaturated fatty acid	Milk has less saturated fatty acid, mono unsaturated fatty acid and poly unsaturated fatty acid
11.	Milk has more calcium, iron, phosphorus etc.	Milk has less calcium, iron, phosphorus etc.
12.	Milk has more Vitamin A	Milk has fewer Vitamin A but good in Vitamin E
13.	Probably milk has less sulphur	Probably milk has more sulphur - good for active brain
14.	Top three producers are India, Pakistan and China	Top three producers are Finland, Sweden and Ireland
15.	A good buffalo gives 10 litres milk per day	A good cow gives 20 litres milk per day
16.	Raw milk contains more pathogenic micro organisms	Raw milk contains less pathogenic micro organisms
17.	Milk has lesser iodine	Milk has more iodine
18.	Milk is good for weight gain	Milk is good for weight loss
19.	Milk has less sodium, potassium and	Milk has more sodium, potassium and

	chloride	chloride
20.	Milk has high level of anti oxidants, tocopherol	Milk has little less level of anti oxidants, tocopherol
21.	Milk is good for people eczema, psoriasis, lactose intolerant people and irritable bowel syndrome	Milk is not good for people eczema, psoriasis, lactose intolerant people and irritable bowel syndrome
22.	Buffalo ghee is less prone to hydrolytic rancidity	Cow ghee is more prone to hydrolytic rancidity
23.	Milk has more calcium to phosphorus ratio	Milk has little less calcium to phosphorus ratio
24.	Buffalo are found in hot wet areas	Cows are found in cold wet areas
25.	The emulsifying capacity of milk is much better	The emulsifying capacity of milk is not better
26.	Ghee has good grainy texture	Ghee has not good grainy texture
27.	Milk has higher level of various bio protective factors e.g immunoglobins, lactoferrin, lysozyme, lactoperoxidase,etc.	Milk has lower level of various bio protective factors e.g immunoglobins, lactoferrin, lysozyme, lactoperoxidase,etc.
28.	Milk is not good for thyroid	Milk is good for thyroid
29.	Milk has high per oxidaze activity	Milk has low per oxidaze activity
30.	Buffalo has more natural immunity against diseases	Cow has less natural immunity against diseases
31.	Buffalo in human care are placid and patient so easy to control	Cows in human care are not so placid and patients so difficult to control

Summary

Buffalo milk has a higher fat, protein, lactose, vitamin, and mineral content than cow's milk. It's also whiter and has a thicker consistency, which makes it perfect for the production of fat-based dairy products. Buffalo milk is rich in bioactive compounds that may promote bone, heart health and protect your body from oxidative stress. There is no major difference in the nutritional value of buffalo and cow milk. Buffalo's milk is a good for healthy bones, dental health, cardiovascular health and weight gain. Cow's milk is beneficial



for healthy bones, dental health, and obesity reduction in children, protection for thyroid and protection of heart. So, the choice is yours.

