

Who moved my milk?

The world's largest milk-consuming nation is having a crisis of faith with dairy. Can new techniques of production and high-end alternatives make the glass appear half-full?

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Photo: Priyanka Parashar/Mint

The day after a violent dust storm in early May, two of the four cowsheds at the 4S Foods farm near Rewari, Haryana, are missing a roof. There are some 80 cows here, all of the high-yielding Holstein Friesian breed, housed in sheds spread over 5 acres of the 70-acre farm, and they look quite unperturbed, munching on fodder freshly churned in a cattle-feed mixer. Each cow has a blue tag around the neck, which monitors an astonishing range of parameters round the clock: rumination, digestion,

stress, heat stress, panting index, overall health index. Giant fans and sprinklers keep them cool in the dry northern summer. About 1,600 litres of milk in sanitized glass bottles is carted in vans every day to various parts of the National Capital Region (NCR) before dawn. The tag line of the dairy: *swach shudh sampurna sehat* (clean pure complete health).

Their sales have increased ninefold since 2015.

Started in 2013 by brothers Gajjender Singh Yadav and Gaurav Yadav, on ancestral land near the village where they grew up, the farm is undergoing an overhaul—new cowsheds are being set up, along with an imported, automated milking parlour and a bottling plant.

They have also implemented processes that have increased the average yield from cross-breed cows to 10.75 litres per day from 4-5 litres, well above the national average of 7 litres (according to 2014-15 data from Community.data.gov.in). How have they managed that? “By working on the cows’ comfort, eating pattern and digestive graphs,” says Gajjender, who displays an unwavering affection for his herd.

It’s a pretty remarkable departure from the consulting role at a French firm in Delhi—unrelated to dairy— that he gave up to run 4S Foods. He travelled the world, picking up tricks of the trade he feels Indian dairy farmers lack. The turning point came a few years ago. He noticed that consumers were tired of the increasing reports of adulteration in milk sold in the market. With disposable incomes rising, they were ready to spend to get more from the milk sitting in their refrigerator.

The naysayers

Boutique dairy farms like 4S Foods are working briskly to satisfy the growing appetite for the “farm to home” fad.

Yet, though milk and milk products form a big part of most Indians’ diets, there is also a growing awareness that the beverage might not have the health benefits that the foot-tapping *doodh, doodh, doodh, doodh* TV jingle of the 1990s so confidently claimed.

Operation Flood, or the White Revolution of 1970, took India to great heights of dairy production. It is now the largest producer of milk and milk products in the world. But research, such as a 2012 study published in *The Journal Of Nutrition*, links the consumption of milk to chronic

digestive issues, bone disease, cardiovascular ailments and cancer. Some health experts now argue that cutting out dairy could yield better medical reports.

Various studies even link acne with dairy, says Harshna Bijlani of The AgeLess Clinic, Mumbai, though none have reached a definitive conclusion. “In my clinical experience, I’ve seen a vast improvement in the skin condition of patients who cut out dairy,” she says. “If you’ve been suffering from acne, be it whiteheads, blackheads, pus acne, cysts, patchy redness, acne rosacea, or just greasy dull skin, and can’t seem to understand the reason, or if you’re suffering from a hormonal imbalance, try cutting out dairy. You should start seeing results in a month, maximum by three months.”

Nandita Shah, the founder of SHARAN, an Auroville-based organization that works to prevent and reverse lifestyle diseases through a wholefood plant-based diet, says that today we’re confronted with a range of hormonal problems— diabetes, hypothyroid, polycystic ovary syndrome, infertility, menopausal issues, breast cancer, prostate cancer, ovarian cancer.

“In a healthy body, hormones are orchestrated by the pituitary gland,” she says. “But now we take in a whole lot of hormones through milk. No matter which milk you consume, it contains hormones. It’s a secretion of female mammals. This upsets our own hormonal balance, causing all these diseases.” She cites the 2005 best-selling book *The China Study* by T. Colin Campbell as the ultimate resource to understand why a plant-based diet—including, of course, abandoning consumption of all dairy—is the only way to remain healthy.

So it should not come as a surprise that dairies offering what they call purer milk are beginning to come up on the outskirts of cities at a time when some consumers are exploring other types of milk—like goat’s milk—or moving away from dairy and dairy products altogether.

Some experts, in fact, suggest getting your IgE (immunoglobulin E) levels checked through a simple blood test. “If it’s higher than 100, chances are you’re reacting badly to milk,” says cardiologist Jaswant Patil of the Deep Ganga Clinic in Mumbai. “Other than the link to cancer due to overstimulation of hormones because of oestrogen and oxytocin, there’s another study (done at Uppsala University in Sweden on milk and mortality, published in the peer-reviewed medical journal *The BMJ* in

2014) that proves women who consume large quantities of milk suffer from more bone diseases. It is also important to do a food intolerance and food allergy test to check whether you should be consuming any dairy at all.”

So is the fuss around dairy just another health scare that will run its course? The argument over milk and its benefits—and potential pitfalls—isn’t entirely new, and the title of American journalist Mark Kurlansky’s latest book, *Milk! A 10,000-year-old Food Fracas* (Bloomsbury), says it all. “But each new scandal adds a layer to what is the most controversial food in world history, even more than sugar and salt,” Kurlansky says over the phone, a few weeks before the release of his book. He is even more strident in the book: “Beyond all the modern debates about hormones, antibiotics, genetic modification, and chemicals is a fundamental question that after ten thousand years has still not been answered. That is, if a dairy did everything right and its milk was perfect, would it be good for you? After all, adults drinking milk is not natural. Neither, for that matter, is babies drinking anything but their mothers’ milk. The 60 percent of the world that is lactose-intolerant are made the way nature intended humans to be.”

Dairy nation

Lactose intolerance may not be a modern phenomenon, as is often claimed. A significant genomic analysis published in 2015 in the journal *Nature* found that 90% of Bronze-age Eurasians were lactose intolerant. Tolerance to lactose developed only about 4,000 years after these communities began to domesticate animals, once they started milking them to make cheese and yogurt, which breaks down the lactose in the milk. The study also offers the explanation that the Yamnaya, nomadic pastoralists from the Steppe who lived between 5,000-3,000 years ago, first developed the lactose-tolerance mutation that allowed adults to drink cow’s milk, passing it on, through inter-breeding, to European and Asian populations.

But does that mean all Indians can digest animal milk? Three in four people are intolerant to dairy products, researchers at the Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, found in 2015. Further, 82% of south Indians are unable to efficiently digest milk, while 66% up north face the same problem, developing headaches, coughs, colds or asthma, skin issues, bloating, irritable bowels, depression or low iron levels. The ability to digest milk decreases as we grow older—

negative impacts show up more significantly after the age of 30. These health problems are associated with both cow and buffalo milk. Even Amul started selling lactose-free milk in 2015.

But where does that leave the Indian diet, which is so reliant on milk? It's hard to imagine a day without dairy—from masala *chai*, *kheer*, *ghee* and *paneer*, the *desi* love for dairy is legendary.

This is one reason why goat's milk is rising in popularity—it's easier to digest. Once hailed by Mahatma Gandhi for its health properties, Ayurvedic practitioners today prescribe it in small quantities to patients with some very serious conditions: Alzheimer's, and even those recovering from cancer or dengue. "It is the only naturally homogenized milk which suits those who are lactose intolerant as well," says Ajay Singh, the owner of Delhi-based goat milk dairy Courtyard Farms. "It's better for digestion and is non-mucous forming." Singh is a former corporate professional who travelled across Rajasthan to learn how to rear goats.

Courtyard Farms also supplies goat's cheese and *kefir*, a fermented milk drink which is becoming popular as a probiotic product. His customers include doctors, industrialists and expatriates, who pay Rs250-490 a litre for goat's milk. Singh explains that this milk is generally home-delivered by the company in smaller quantities, say, 250-500ml at a time.

Health experts seem to be becoming increasingly vocal in acknowledging that animal milk, in particular cow and buffalo milk, may not be the right food for us. "Instinctually, every infant knows this, and when it is first given cow's milk, it refuses it," says Shah. "That's why mothers add sugar and cocoa and run after their children with a glass of milk. We have been conditioned to believe that milk is the perfect food. It is, but only for the calf."

Nidhi Nahata, a Bengaluru-based health coach who specializes in plant-based diets, attended one of SHARAN's health retreats in Gokarna two years ago owing to struggles with cholesterol. She says a dairy-free diet put her own health back on track, eased her son's chronic asthma and her husband's acidity. She set up the JustBe café in Bengaluru a year ago to put this plant-based diet into practice. The café serves nut milk and nut cheese, and specials include brown rice buttermilk and dairy-free *malai kulfi*. She holds regular workshops on how to make seed-based milk and other dairy-free treats.



The 4S Foods farm in Mohanpur village in Bawal, Haryana.

Alternatives for parents

When it comes to desserts, beverages, or products such as *ghee* and *paneer*, it's clear that any alternatives to dairy in Indian cuisine will take a long time to seep into the national consciousness. Celebrity Mumbai macrobiotic nutritionist and chef Shonali Sabherwal, who works on the diets of clients recovering from cancer, acid reflux, inflammatory conditions, digestive issues and migraines, recognizes this reality all too well. "I only take on clients who are willing to give up dairy as part of the recovery process," she says, suggesting alternatives such as pumpkin seed milk, almond milk, nut milk, silken tofu and cashew milk. "In my workshops, people get fired up the moment I talk dairy, because dairy is comfort food. But is it good for even kids? My answer is no. By offering them (animal) milk, we set them up for bronchial problems."

Sabherwal says the dairy products we get today are not the same as what our grandparents, who often had access to the milk of cows raised at home or in the neighbourhood, consumed. Pasteurization and homogenization kill the good properties of milk, she claims, while the casein and acidic PH balance of milk does no favours to the human body.

A number of people I spoke to say they cut down on dairy when they realized it made them feel bloated and uncomfortable. "When I reduced

my tea intake to one cup a day, I saw an improvement in my colon issues and energy levels,” says Patil. Some switched to “organic milk”, which seemed to help. After conversations with a number of young parents for this story, I learnt that many of them are beginning to limit the amount of dairy given to children to allow iron absorption in the body.

Jaishree Chauhan, a mother of two based in Delhi, experimented with goat and camel milk for her four-year-old son, when he refused to drink cow’s milk. But then she did some research. “I personally don’t drink milk and I don’t understand this obsession with milk in our culture. So even with my two-year-old daughter, I discourage milk, though she loves it.” She has since shifted focus to other forms of calcium: “I add spinach and broccoli to *ragi* cutlets, give him green *saag* regularly and I also add ground sesame seeds and *ragi* to his daily *rotis*.”

For other parents, however, dealing with a deep-set dairy culture is more of a struggle. Ashita Khanna, who divides time between Houston and Gurugram says that in India particularly, it is very hard to provide for her seven-year-old son’s severe allergy to dairy. It isn’t as simple as switching to soy, coconut or hemp milk. “If someone visiting us consumes dairy and so much as touches him with a finger, he reacts badly: His neck swells up, he’s unable to breathe, he needs immediate medical attention,” Khanna says. “We tried moving back to India when he was three months old and it was a nightmare to explain to doctors the seriousness of the condition. Socially, too, it was a big struggle, with not much awareness about dairy allergies and the chances of cross-contamination high.” Khanna now runs a social media group called Kids with Food Allergies, and Karmic Foods, a bakery specializing in dairy and nut-free treats.

Mumbai-based entrepreneur Sneha Poojary has been vegan for about a decade and watched as the trend started becoming mainstream. It prompted her to start a vegan pet food company, Aistra, with her husband Vasant. “I see a ripple effect,” she says. “People have realized being dairy-free or vegan isn’t for the privileged only. There are cheaper substitutes for everyone.” She recommends White Cub dairy-free ice cream to anyone who thinks giving up milk products means sacrificing the ultimate sweet treat.





Products from 4S Foods. Photo: Priyanka Parashar/Mint

Milky ethics

The question of ethical, sustainable living also plays a role in the move away from dairy. “Milk is produced much better in small operations, but that doesn’t fit our needs,” says Kurlansky. “If you do everything right, the product will be much more expensive. But then what are poor people supposed to have? This is the big food problem today.” Indeed, global demand outweighs the amount of milk that can be produced in an environmentally friendly manner. This argument has been explored in documentaries such as *Cowspiracy* (2014), which explains why the world’s biggest environmental organizations are looking the other way though pollution from animal agriculture is cause for concern. More recently, *The Milk System* (2017), a German documentary, delineates the crushing pressure on dairy farmers to increase milk yields.

Modern-day farm owners like the Yadavs hope to solve this problem, at least for those who can afford it. The last year has seen a dramatic rise in dairy farm start-ups, led not by traditional farmers but by Indian Institute of Technology or Indian Institute of Management graduates and corporate professionals with an entrepreneurial streak. “Entrepreneurs look at it as a good business opportunity, while many are drawn to it as a ‘noble profession’, to provide pure milk and go back to their roots, to leave some legacy,” says dairy consultant Kuldeep Sharma, who started a dairy entrepreneurship development programme (a three to six-day course) in Noida, Uttar Pradesh, a few years ago, when he noticed increasing interest. He helped set up dairy farms like Binsar Farms, Whyte Farms and Nutrifarm in the NCR. Such boutique operations are

usually located on the outskirts of cities such as Delhi, Mumbai, Pune, Chennai and Bengaluru, where land is easily available, at times in partnership with a cluster of neighbouring dairy farms.

The high price tag of Rs70-100 per litre comes with a promise that the milk is free of artificial growth hormones given to cows. The herd is treated to classical music from time to time, bred on home-grown fodder and regularly left free to graze. Don't believe it? A farm visit is more than welcome if you are willing to spare a day.

“Every drop of Sarda Farms milk is 100% pure, antibiotic-free and hormone-free,” says Jaidev Mishra of Sarda Farm, which supplies milk, yogurt and *ghee* in Nashik and Mumbai. In December, the Food Safety and Standards Authority of India released a new set of regulations governing the production and quality of organic foods. When this becomes law it will become easier, and safer, for the consumer to decide between available brands.

In recent years, another trend in the milk industry pertains to the presence of a protein called beta-casein. While this matter is still very controversial, and no conclusive studies have been published, some milk producers, such as the New Zealand-based a2 Milk Company, claim A2 milk is easier to digest. There are dairy producers in India who also make the same claim, hoping the demand for A2 milk reaches these shores.

The jury is still out on milk and milk products, with as many people willing to swear by milk as those who want it banished from our lives entirely. As the ground shifts constantly beneath our feet, it's important to figure out what the best route for you and your family is. Kurlansky sums up, telling me that the issue around dairy is not very different from the fuss around salt. “A high salt diet is bad for some people. Similarly, for some, milk could be healthy.”





A goat being milked on Courtyard Farms. Photo: Priyanka Parashar/Mint

Get your goat

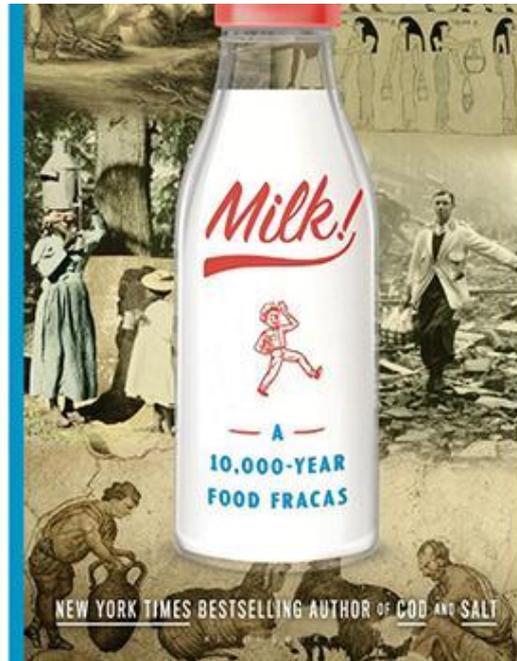
How the renewed interest in goat milk might wean consumers off traditional dairy

Goat farms have become trendy, with a swelling, niche clientele in urban circles. What explains this? “Goat’s milk was called *niroga doodh*. My elders used to say those who drank goat’s milk never had any illness,” says Ajay Singh of Courtyard Farms, a goat’s milk dairy in Delhi. It appears this ancient wisdom is again finding takers.

Though the strong smell of goat milk doesn’t appeal to everyone, new-age farmers say this can be countered by keeping the male and female goats apart. Goat milk yield stands at about 4% of the total milk production in the country, according to government data. But it scores over cow and buffalo milk, believe experts, because it is naturally homogenized and can be digested quickly (in about 20 minutes compared to about 2 hours for cow/buffalo milk), as its fat globules contain a higher proportion of short- and medium-chain fatty acids.

So it is recommended particularly for young children and the elderly. It also contains less lactose, fewer allergens, and has more calcium. Some Ayurvedic practitioners claim it can aid cancer recovery, as well as treat dengue, though there has been no major study to support this. Other than Courtyard Farms in Delhi, Delicious Goat Milk, Vistara Farms and Yashodavana Goat Farm, in Bengaluru, are some of the other suppliers of goat milk and products such as *ghee*, ice cream, yogurt, cheese, powder—even soaps.





Milk! a 10,000-year food fracas

Mark Kurlansky says being able to drink milk is an aberrant condition

One great misconception about milk is that people who cannot drink it have something wrong with them. In truth, the aberrant condition is being able to drink milk. Milk drinkers are mostly of European extraction, and as we are living in a Eurocentric world, we tend to think of consuming dairy products as a normal thing to do—something that is forgone in some regions only because of a malady known as lactose intolerance. But lactose intolerance is the natural condition of all mammals. Humans are the only mammals that consume milk past weaning, apparently in defiance of a basic rule of nature. In nature, the babies of most mammals nurse only until they are ready for food, and then a gene steps in to shut down the ability to digest milk. Lactose, a sugar in milk, is digestible only when lactase, a genetically controlled enzyme, is present in the intestines. Almost everyone is born with lactase. Without it, a baby could not breastfeed. But as most babies get older, a gene cuts the production of lactase and they can no longer consume milk.

But something went wrong with Europeans—as well as Middle Easterners, North Africans, and people from the Indian subcontinent. They lack the gene and so continue to produce lactase and consume milk into adulthood.

The gene travels in blood-related tribes and family groups. So though most black Africans are lactose-intolerant, the Masai, who are cattle

herders, are not. Those who are intolerant tend not to have dairy in their culture. But in societies that do adopt a dairy culture, such as the Masai or Indians in Asia, the ability to digest milk remains. The early Europeans had dairy cultures and so were lactose-tolerant, though this was truer in the north, where short growing seasons necessitated a supplemental food source. However, being lactose-tolerant certainly is not entirely a question of climate, because the original Americans—occupying two continents stretching from Patagonia to Alaska and including just about every imaginable climate—were lactose-intolerant. *Excerpted with permission from Mark Kurlansky's 'Milk!' (Bloomsbury, 2018).*

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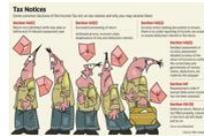
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