# BRIDGING FOOD SYSTEM GAPS AND ENSURING ACCESS TO SAFE MILK IN BANGLADESH: THE ROLE OF UHT TECHNOLOGY

*The Daily Star organised an online discussion titled "Bridging food system gaps and ensuring access to safe milk in Bangladesh: The role of UHT technology" on October 14, 2020. Here we publish a summary of the discussion.*

**Muhammad Zahidul Islam**, *Moderator of the session*

Even though Bangladesh is self-sufficient in food production, there remains a debate on whether proper nutrition is being ensured. Many surveys show that almost half the school-going students in the country are underweight or stunting. These are significant risks that can be attributed to malnutrition. This discussion will focus on how proper nutrition can be ensured, with the consumption of dairy products being a major factor.

**Syed Muntasir Ridwan**, *Country Coordinator, Scaling Up Nutrition (SUN) Business Network (SBN), Global Alliance for Improved Nutrition (GAIN)*

Bangladesh has made significant improvements in nutrition in the last two decades. However, there are vast numbers of deficiencies in micronutrients such as Vitamin A, Vitamin D, and zinc. A significant cause for these complications is our diet. We usually consume carbohydrate-loaded diets with low amounts of vegetables, milk, and fish.

From a public health nutrition perspective, milk is vital because it is rich in Vitamin D and calcium. Milk contains micronutrients which are crucial for boosting the immune system; hence, milk consumption is critical during the COVID-19 period. The government had even proposed distributing gift packages, including milk products.

One reason for milk consumption being low is the unavailability of cheaper milk packages. If milk could be sold as 10 taka packets, then low-income individuals would be able to afford it. Milk dispensing machines could be installed, which can lower milk wastage and also keep milk chilled to avoid it becoming spoiled. Increasing convenience and affordability will help raise milk consumption.

A mass awareness campaign is required to debunk misconceptions that the public has about milk. Babies may have milk allergies, but, within six months, their stomachs will become accustomed to milk. Milk should be introduced in the National School Meal Policy to develop the habit of milk consumption in primary schoolchildren. Parents will then also be motivated to purchase more milk for their children.

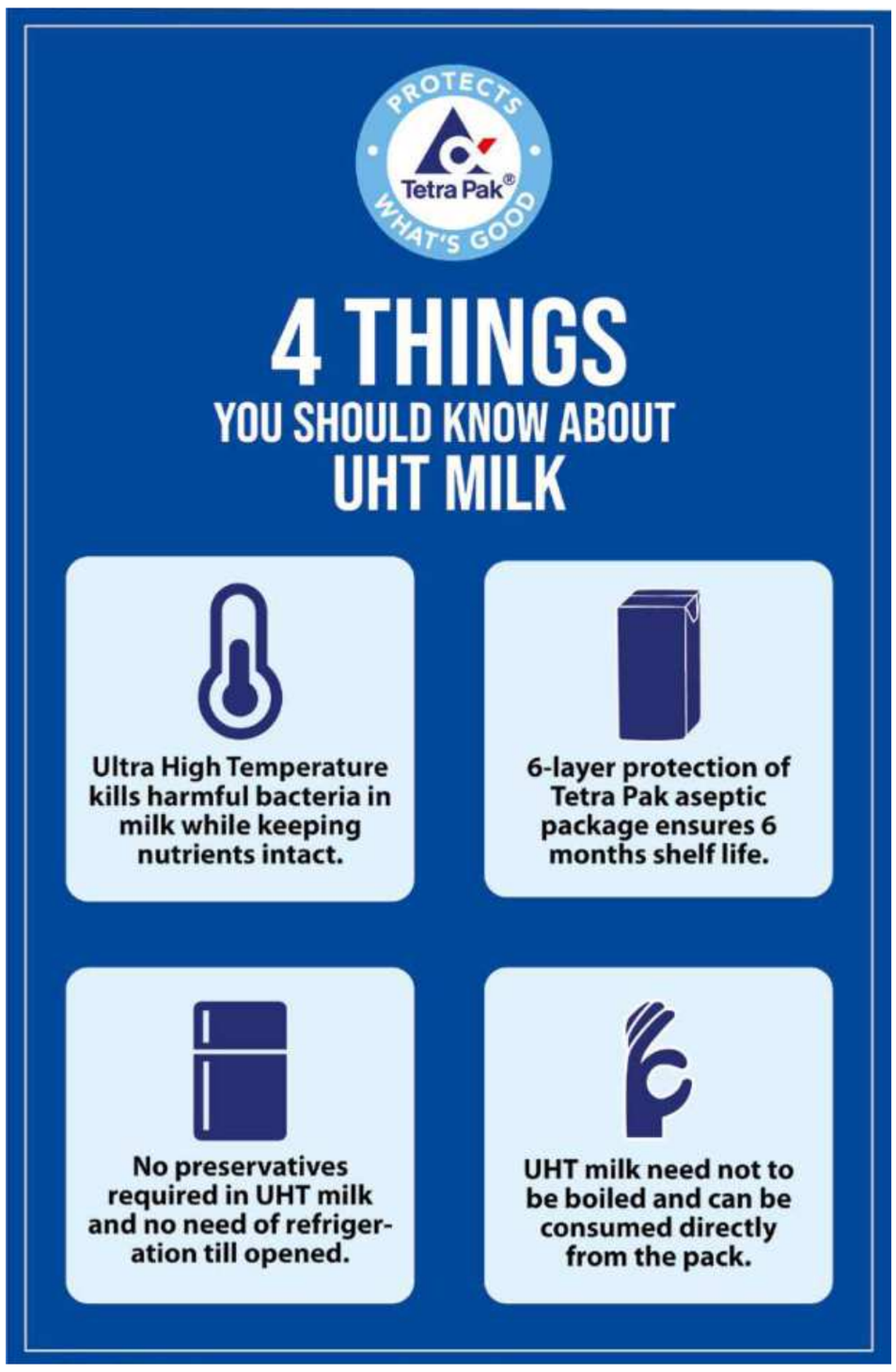
UHT technology can be considered the gold standard for safety when it comes to milk processing. Pasteurisation only ensures a primary level of safety. Apart from the safety factor, UHT technology also ensures the highest retention of the nutritional quality of milk. The biggest benefit of UHT technology is that the packaging allows the consumers to trace where the product comes from.

**Farzana Ahmed**, *Nutrition Consultant, AK Complex*

The hygiene level of milk found in the open markets is always questionable. If a person only drinks milk from their own cowshed and maintains hygiene themselves, that is a different case. If an area has a dairy farm where the milk is adequately cleaned before selling, the local people can buy from there and consume it without any risk of nutritional issues.

Ultra-high-temperature processing (UHT) milk is much better in quality when sold in bulk at the market. Since milk is a perishable good, it can become spoiled during transportation. Spoiled milk can cause diarrhoea. Therefore, UHT processing is an excellent way to ensure that milk reaches consumers in a safe, high-quality state. UHT milk is also beneficial for our health.

However, once UHT milk packs are opened, they need to be refrigerated. Thus, this kind of milk is a feasible option only for people who own refrigerators. In medical training, we are always told to prefer local food. Therefore, consuming milk sourced locally is safer. Locally produced UHT milk will be better for health compared to imported UHT milk, in either liquid or powder form.




If the market for UHT milk is stimulated, production will increase. If this packaged milk could be sent across the country, it would be good for both the economy and the consumers. Employment would increase as well.

Adults (aged over 18) should drink one glass of milk daily and pregnant women must drink two glasses of milk daily. Pre-school children should drink two glasses of milk per day. Children aged between nine and 18 should consume three servings of a milk supplement. Following these guidelines will boost immunity and can also play a role in preventing COVID-19 infection.

**Eleash Mridha**, *Managing Director, Pran Group*

As per the World Health Organization (WHO) recommendation, an adult should consume 220 ml of milk per day. However, the average consumption in Bangladesh is only 50 ml.

The overall milk production in Bangladesh is low compared to other countries. Due to a lack of proper market chain, the milk that is produced here cannot be distributed equally all over the country. Farmers do not receive a fair price for their milk often due to their lack of market access. Since milk is a highly perishable product, it becomes spoiled if it is not chilled within three hours.

In Bangladesh, 60 lakh to one crore litres of milk are produced per day. If we had an integrated market trend that allowed areas with high milk production market access, production would increase manifold. Due to a lack of relevant knowledge of farmers, huge amounts of milk get spoiled or have to be converted to different by-products. Ten percent of the total milk produced is being wasted every day. Milk processing and distribution networks need to be synchronised with milk collection to overcome this wastage.

Pasteurised milk has a low shelf-life of seven days, and it is also not 100 percent germ-free. If we review our supply chain, we can see that it can take us hours to transport the product to different areas. All retail outlets do not have access to electricity and therefore cannot run refrigerators. Thus, the distribution of pasteurised milk in Bangladesh is a big challenge.

UHT milk is consumed by the majority of people in developed countries. It comes in aseptic packaging, which is completely safe, and there is no scope for adulteration of the product. UHT milk is most convenient since it can be consumed anywhere at any time without needing further boiling or cooking.

There should be policy support to make UHT technology easily accessible. Import of aseptic packaging should be made duty-free. New entrepreneurs in the milk industry could be given tax benefits and easy financing options. During high milk production seasons, some of the milk can be converted to powder form or processed into aseptic packaging to prevent milk wastage.

UHT technology is the safest packaging procedure. We need to educate our consumers regarding this technology and clear up their current concerns. Many tend to assume that since this milk has a long shelf life, it must contain some sort of preservative. Along with being the latest technology in terms of packaging, UHT technology is also the most convenient one.

**Dr Md Harun-Or-Rashid**, *Deputy General Manager (DGM), Milk Collection and Producer Services, BRAC Dairy and Food Project*

There is a massive gap between demand and supply of milk in the country. This is a big challenge for the industry. There is a seasonal impact on milk production. Currently, milk production has fallen due to marginal farmers being unable to provide sufficient food to the cattle. The market demand has increased during this time, so there is a shortage in supply. In the upcoming season, known as the flushing period, production will rise, but market consumption will decrease.

Milk consumption in Bangladesh is relatively low. The nutritional requirements of school-going children can be fulfilled by increasing milk consumption through awareness building.

An adequate amount of powder milk is imported in Bangladesh since there is a demand for it. However, if this was done in a planned way, production could be increased, and imports could be cut down. Increasing milk consumption through fixed strategies will help decrease wastage.

When milk production increases due to the seasonal impact, we are unable to collect all the milk because of how the market system is set up. Market demands for milk decrease during that time due to more consumption of other milk products. Powder milk production costs are not covered through sales because large amounts of powder milk are imported. Their production costs are lower than local companies. So, even though it is possible to collect the milk and process it locally, it is challenging to market the product without incurring financial losses.

UHT is a world standard technology. Raising consumer awareness about this technology is necessary not just through us but also through the government, along with the media, dairy experts and nutritionists. From our part, we try to impart the knowledge through various channels such as the electronic media but our reach is quite limited.

**Md Mosleh Uddin**, *PhD, COO, Dairy, Akij Food & Beverage Ltd*

There are a large number of low-yielding cows in Bangladesh. We are developing cows with higher yield through cross-breeding. However, we could use other selection methods to provide farmers with the best fit cows. If they can sell the milk they produce with these cows, both the farmers and the factories will incur fewer losses. Sometimes, when production is very high, processors are unable to buy all the milk, and some milk goes to waste. Powder milk, UHT milk, and aseptic milk are good options for milk preservation or processing. Milk by-products can be created as well.

Recently, due to flooding, there is less feed for cattle, so milk production has fallen. There is now a milk supply crisis in every industry. During the dry season, there will be more grass for cattle to graze, and milk production will increase to a point where there will be too much supply compared to the demand. This lack of coordination should be addressed by the government district-wise, so that farmers have market access. This can also be done through public-private partnership.

## RECOMMENDATIONS

- Increase the consumption of nationally produced milk packaged with UHT technology to reduce expenses and dependency on imports, as well as help improve our rural economy
- Support the farmers by providing government subsidies or loans at a low interest rate
- Increase consumer awareness on UHT technology with the help of the government, media, dairy experts, and nutritionists
- Increase the tax imposed on imported powdered milk
- Ensure successful implementation of the Livestock and Dairy Development project
- Monitor milk transportation as the quality may be hampered if not handled properly
- Install milk chilling centres in areas of high milk production

If milk chilling centres can be established in areas where there is milk production, the farmers will gain market access and will be able to increase production. The tax on imported powder milk should be increased to discourage imports. Low-quality powder milk, such as whey powder, should not be imported and instead, produced locally.

Our country's milk processors collect milk mainly from Pabna and Sirajganj. This is why we face both lean and flush periods. This can be overcome by focusing more on areas like Jashore, where there is less flooding and more grass available. Milk processors use both powder form and UHT to preserve milk. But the market demand and the capabilities of the powder and UHT plants in the country are not sufficient.

Pasteurised milk has a shelf life of seven days while UHT milk has a shelf life of six months. UHT technology has helped us increase the shelf life, but we are unable to change consumer perception. The consumers always opt for the milk with the latest manufacturing date. As a result, when milk production increases and the farmers are unable to sell all their products, they protest by throwing away their produce.

To overcome the current crisis in milk production, we must start by increasing our milk production capacity and then extending this market towards the rest of the country. Many areas of the country have not developed milk production yet due to a lack of marketing facilities. Government assistance can help reduce this gap and help ensure an even milk production and supply throughout the year along with an increased customer base.

Keeping the nutrition needs of children in mind, we are also introducing flavoured milk to encourage more children to drink milk. Milk is essential for a child's mental and physical development. The school feeding programme initiated by the government should be further extended to benefit them.

Our biggest challenge lies in the high cost of manufacture of powdered milk in the country. The government can impose taxes on imported powdered milk, which can be found at a lower cost, to attract people towards local produce.

During January to June, farmers experience an increase in milk yield, and they are faced with the challenge of selling all their produce without spoiling them. This is challenging for the milk processing companies as well. Then, from July to December, floods demolish the yield and again, it becomes challenging to meet the market demands. The government needs to look into this imbalance.

**Dr Md Abdul Alim**, *Member, Bangladesh Food Safety Authority (BFSA)*

Milk is considered to be an ideal food since it contains all the required nutrients except vitamin C. Regular milk consumption is advised for people of all ages. This can aid in multiple ailments starting with boosting the immune system, easing joint pain, and so on. For people with lactose intolerance, yoghurts or curds can be an alternative to milk consumption.

Packaging is an essential factor for ensuring the nutritional efficacy and safety of a product. Milk is a highly perishable item and as a result, without proper packaging, we cannot preserve milk.

Milk wastage is a prevalent issue especially in areas such as the North Bengal where there is high production of milk by the farmers. The issue seems to lie with the milk processing organisations. These organisations need to adopt a more systematic approach in milk collection to reduce wastage. Both the government and the private sector need to come together to address this issue.

Another issue lies with the transportation of milk. Pasteurised milk is transported in cooling vans but the temperature there is not always maintained strictly. Hence, BFSA has advised the usage of data loggers so that we can monitor the temperature inside these vans throughout the day. Even the supermarkets selling milk products should maintain the necessary temperatures to preserve quality.

Pasteurisation is done right after milk collection to kill all the pathogenic microorganisms. Hence, milk can be preserved for about a week after this process. But since not all microorganisms are killed by this process, pasteurisation can be considered to only be a temporary preservation measure. UHT technology, on the other hand, applies an ultra-high temperature to the milk for a very short time. This allows the milk to be preserved for longer periods by killing a greater amount of the existing microorganisms in the milk with negligible effects on the nutritional quality of the milk.