

The case for shelf-stable milk in schools

White Paper



The image shows a young boy with dark hair, wearing a dark blue polo shirt and a blue lanyard with a clear ID badge. He is holding a small, rectangular shelf-stable milk carton with a straw in his mouth. The carton is blue and white with a recycling symbol. The background is a blurred school cafeteria with blue tables and other students.

Nutrition Facts	
Total Fat	0g
Saturated Fat	0g
Trans Fat	0g
Total Sugars	2g
Dietary Fiber	0g
Total Sugars	Includes 11g Added Sugars
Protein 8g	
Vitamin D	2.5mcg 10%
Calcium	300mg 25%
Iron	0.5mg 3%
Potassium	420mg 8%
Vitamin A	150mcg 15%
INGREDIENTS: Skim Milk, Sugar, Cocoa (Processed with Alkali), Carrageenan, Salt, Vitamin A Palmitate, Vitamin D3.	
CONTAINS: Milk	

Executive summary

Milk is an essential part of a nutritious school meal. While chilled, pasteurized milk is most often associated with our memories of school lunches from childhood, today shelf-stable milk offers unparalleled benefits to school nutrition professionals as they face new challenges.

Chilled milk can present challenges for schools — deliveries can be frequent, inconsistent and sometimes arrive short coded. Schools have to manage plastic crates and leaking cartons. And it can be hard to get just the right quantity of milk heading into a calendar break. In some areas of the U.S., local dairies that supply chilled school milk are closing their doors, leaving schools without an alternative provider.

Shelf-stable milk offers schools a convenient, efficient way to receive, store and distribute milk to students. Because of its long shelf life in ambient temperatures, it can alleviate logistics and storage headaches, and make it easier to provide milk around calendar breaks.

Surveys and pilot studies of shelf-stable milk in schools have shown that students and staff are receptive to the product, and school districts can realize efficiencies and cost savings by switching from chilled to shelf-stable milk.


What is shelf-stable milk?

Shelf-stable milk offers the same nutrition benefits as chilled milk. When processed at an ultra-high temperature (UHT) for a few seconds, and then rapidly cooled to room temperature, bacteria is eliminated while retaining the milk's natural nutrients.

When UHT processing is combined with aseptic carton packaging, the fluid milk product can be stored at an ambient temperature for up to one year without the need for additives or preservatives.



Watch this video to learn more about how shelf-stable milk is made.


12% **increase in milk consumption**

During a recent shelf-stable school milk pilot in Dallas, Texas, milk consumption rose by 12% in the participating schools, and decreased by 2.4% in the rest of the district during that same period.

Shelf-stable milk: it's kid approved!

Kids like the taste of shelf-stable milk! Modern UHT treatment has very little impact on the taste and color of the milk. This is accomplished by limiting the amount of time the milk is heated, and then rapidly cooling to room temperature.

UHT milk is widely sold in the U.S. A recent survey of chilled dairy stock keeping units (SKUs) at grocery stores revealed that about 36% of them had undergone UHT treatment, including products that were packaged and transported as chilled, extended shelf-life milk¹.

Additionally, many popular restaurants and coffee shops serve single-portion cartons of shelf-stable milk oriented toward children — consumers just may not realize they're drinking milk processed with UHT technology and packaged in aseptic cartons. These restaurants store the milk at room temperature and chill it before serving.



The case for shelf-stable milk in schools

Dairy milk remains one of the most efficient — and natural — ways to deliver quality nutrition to children. However, the procurement, management and distribution of dairy milk is a time- and resource-intensive process for schools. And in the face of today's challenging market, complete with supply chain issues and rising labor costs, schools are feeling the pinch.



Challenge: Need for small quantities of lactose-free milk

An estimated 30 to 50 million Americans are lactose intolerant², and lactose-free dairy products are an ideal substitute for those with an intolerance³. This means that, while many school districts have a demand for lactose-free milk, it may not be high enough to justify a large minimum order quantity that will expire before it can all be used.

Solution:

By purchasing shelf-stable, lactose-free milk, schools can easily keep a supply on hand that can be stored at ambient temperatures for up to one year. This same solution can work for any other customized milk needs.

Challenge: Availability and deliveries

Reliability of deliveries and the frequency of those deliveries are top considerations when choosing a school milk provider⁴. For schools in areas where local dairies have closed their doors, these challenges become even more acute⁵.

Solution:

Because of shelf-stable milk's long shelf life, it can be distributed to a wide geographic area, meaning schools have more options. The longer shelf life also means that schools can receive fewer deliveries and still have the needed supply of milk on hand.

Challenge: Waste due to calendar breaks and leakers

Short shelf life is among the top challenges schools face related to chilled milk. When calendar breaks loom near, that means long periods of time with no meals served and no milk needed. Figuring out exactly how much milk is needed so it doesn't spoil over that break is a challenge that can lead to milk going bad before it can be served, or a dwindling supply of milk near the break.

Another cause of milk waste in schools is leakers. According to a survey⁶ of school nutrition professionals, respondents said leakers were the second biggest challenge they face with milk.

Solution:

Shelf-stable milk is well positioned to solve these waste challenges. With a shelf life of up to one year, it can easily be stocked up before a calendar break and still be ready to serve later. And because of how shelf-stable cartons are assembled and their secondary packaging, losses from leakers is greatly reduced.

For schools that send backpacks of food home with students over the weekend or breaks, utilizing shelf-stable milk means students can continue to have access to safe, nutritious milk at home.

Emergency preparedness



Having a stockpile of shelf-stable milk in storage can help prevent “lost milk days” due to supply chain disruptions or natural disasters. Even if the power goes out, shelf-stable milk will still be safe to serve. And because it does not require constant refrigeration, shelf-stable milk is well suited to be distributed on the go.



Challenge: Refrigerator space

Whether districts use a central warehouse or have deliveries going directly to schools, refrigerator space can be at a premium.

Solution:

Shelf-stable cartons can be stored at ambient temperatures and then chilled 24 hours before serving. This means less crowding in refrigerators and more room for other products.



28.5% decrease per student per meal

Estimated greenhouse gas emissions savings by switching to shelf-stable milk

Sustainability and shelf-stable milk

Shelf-stable milk cartons are recyclable in the same stream as chilled cartons, and can become paper products, building materials and more. They don't need to be chilled during transportation or in storage, which reduces energy needs. And their longer shelf life helps reduce food waste.

A study conducted by the National Institutes of Health (NIH) found that changing to shelf-stable dairy would reduce milk-associated greenhouse gas emissions by 28.5% per student per meal, which equates to driving 248 million fewer miles annually. This study looked at the whole lifecycle of shelf-stable dairy, including production, packaging and end-of-life, and illustrates the efficiencies that can be found through shelf-stable milk⁷.

Dallas pilot program yields positive results

A pilot study of aseptic milk was conducted in the Dallas Independent School District (ISD) in the second semester of the 2021-2022 school year. Nine schools began serving shelf-stable milk in aseptic cartons instead of chilled milk cartons.

Results

Schools in the pilot program showed increases in milk purchases, milk consumption and meal purchases, along with a decrease in milk waste.

	Milk purchases	Milk waste	Milk consumption	Meal purchases
Nine pilot schools	+3.6%	-5%	+12%	+9%
Rest of Dallas ISD	-2.4%	No change	-2.4%	+1%
Pilot schools vs. rest of Dallas ISD	+6 points	-5 points	+14.4 points	+8 points

Additional Findings

- No “lost milk days” from supply chain issues
- Fewer invoices translated to administrative cost savings
- Students favored or were indifferent to the taste of shelf-stable milk
- When fully rolled out, fewer deliveries through self-distribution resulted in cost savings



Other pilots yield similar results

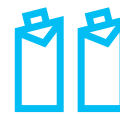
Dallas ISD is just one example of school districts testing shelf-stable milk. Schools in Utah and Colorado have conducted similar studies in the past with similar results, and they continue to serve shelf-stable milk today.



It's time to try shelf-stable milk

Schools face many challenges day in and day out to provide nutritious meals to students with limited resources, and milk is a vital part of that nutrition. By leveraging the benefits of shelf-stable milk, including longer shelf life and reliability, schools can alleviate some of the headaches caused by chilled milk and ensure student access to the nutritional benefits of milk at school and at home.

Aside from Dallas ISD, other districts have also piloted shelf-stable milk and consistently reported favorable results. In fact, a school district in Colorado that conducted a pilot continues to serve shelf-stable milk seven years later, and another school district in Utah is in year five.



Explore how shelf-stable school milk can work for you:
tetrapak.com/en-us/schoolmilk



References

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