

Shield against raw material volatility and improve productivity

## How we helped protect chocolate milk quality against cocoa price volatility

### Opportunity

Rising cocoa costs and tightening global supply are putting chocolate milk formulations under real financial pressure. Manufacturers need solutions that reduce cocoa usage without the sensory trade-offs — maintaining the flavour intensity, colour, texture, and overall sensory performance that define this category.

### Customer Challenge

Reducing alkalized cocoa is technically demanding. It typically results in lighter colour, weaker chocolate flavour intensity, and a noticeable drop in mouthfeel — changes that consumers detect quickly. The brief was clear: achieve a 30% reduction in cocoa content without compromising sensory performance or consumer preference.

### Solution

We developed a targeted functional system designed to rebuild the flavour and appearance lost when alkalized cocoa is reduced. Applied to a standard chocolate milk formulation, the system delivered a 30% cocoa reduction while maintaining comparable viscosity, mouthfeel, colour, and chocolate flavour — preserving the full sensory experience consumers expect.

### Differentiation

Our validated solution delivered meaningful cost savings through cocoa reduction (by 30%) while minimising reformulation risk, matching the sensory attributes that make a quality chocolate milk. The result was a commercially ready formulation that gave the customer confidence to move forward without consumer-facing trade-offs.

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1- Indicative potentials only, as cocoa prices are highly variable. Estimate calculated with a standard formula cost of USD 24.74 per 100 gallons chocolate milk, compared to USD 19.54 per 100 gallons in the reformulated version.

2- 30 panelists, significant difference at the 95% confidence level. No significant overall difference was found between the Test and Control samples. Method: Balanced Triangle Test, N=29

**TATE & LYLE**

### Formulation Cost Reduction

**From:**  
Volatile raw material  
Impact on taste,  
colour and texture

**To:**  
Volatility-proof  
formulation  
  
Consumer-accepted  
taste profile

### Shielded against volatility

**30%**

Cocoa reduction



### Target taste profile

Mouthfeel, chocolate flavour, viscosity at parity. Reformulated product not significantly different from control<sup>2</sup>



### Lower associated costs of Reformulation

Speed, accuracy and performance with our functional system.



### Potential cost reduction<sup>1</sup>

**-21%**



## Elevating perceived value

### How we enabled reduced-sugar, reduced-fat **frozen desserts (ice cream)** without compromising mouthfeel

#### Opportunity

Demand for better-for-you, cleaner-label ice cream continues to grow — but consumers expect both — great taste and better nutrition in equal measure. Reducing sugar and fat introduces a demanding set of formulation challenges: iciness, weak structure, poor meltdown, and loss of creaminess. Getting the balance right represents one of the category's most significant reformulation opportunities.

#### Customer Challenge

A customer aimed to launch healthier frozen desserts that could genuinely compete on taste and texture. Reducing fat and sugar created multiple simultaneous challenges — iciness, poor meltdown stability, reduced creaminess, shrinking and unstable air cells, and mix instability when traditional stabilisers were removed. The solution also needed to be cleaner-label, cost-efficient, and built on a reliable supply chain.

#### Solution

We developed a cleaner-label system combining PROMITOR® Soluble Fibre and NUTRAVA® Citrus Fibre to rebuild texture and sensory quality in reduced-sugar and reduced-fat ice cream. The system delivered smoother, creamier mouthfeel, improved meltdown resistance, and a more stable mix with reduced phase separation — achieving up to 50% fat reduction and 25% sugar reduction while maintaining a shorter, simpler ingredient list with recognisable ingredients.

#### Differentiation

We addressed the full complexity of better-for-you reformulation in a single, validated system. PROMITOR® and NUTRAVA® work together to deliver meaningful nutrition improvements — using clean-label, upcycled ingredients that perform consistently across hardpack, bars, and soft-serve formats, and remain stable through heat and storage. The result is a scalable, reliable platform that helps manufacturers bring healthier ice cream to market without asking consumers to compromise on the experience they love.

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## The value you get

TATE & LYLE

**From:**  
high fat and sugar,  
reliance on additives

**To:**  
better-for-you clean  
label ice cream with no  
compromise on taste

#### Better-for-you

**-50%** (fat)

**-25%** (sugar)



#### Cleaner Label

Replacing additives as guar, locust bean and other gums or cellulosics with clean label fibres



#### Target taste profile

Attributes enhanced:  
Smooth  
Softer



**Deliver tastier, healthier  
formulations**

**Better-for-you  
Solutions  
Up to 30% cost reduction**



## Shield against raw material volatility and improve productivity How we enabled stable, structured, low-fat **whipped cream** without compromising indulgence

### Opportunity

Consumer interest in lower-fat, more natural desserts is growing — but the sensory experience remains just as important as the nutritional one. Reducing fat in whipping cream weakens whipping speed, firmness, foam stability, and freeze-thaw performance simultaneously. Getting all of these right in a low-fat format represents a significant and commercially relevant reformulation opportunity.

### Customer Challenge

Reducing fat in whipping cream creates a demanding set of simultaneous challenges — slower whipping, lower overrun, foam collapse, shrinkage, reduced mouthcoating, and serum separation. Manufacturers need to solve all of these at once while delivering a solution that is cost-efficient, scalable, and built on a cleaner-label ingredient list.

### Solution

We developed a cleaner-label stabilisation system combining CLARIA® Everlast starch and GENULACTA® Carrageenan to rebuild the body, firmness, and sensory performance that fat reduction takes away. The system restored whipping speed, shape retention, foam stability, mouthcoating, and creaminess — performing consistently across retail and food-service formats where freeze-thaw resilience, hold time, and stability are critical. The result is a dependable, scalable system across whipped toppings, bakery, and ready-to-use desserts.

### Differentiation

Our integrated system restores full-fat performance in resilient low-fat formats — providing firmness, density, and elevated eating appeal across applications. Beyond the formulation, our approach streamlines development, unlocks meaningful cost efficiencies, and reduces reliance on high-fat recipes. The result is a dependable, scalable solution that supports healthier, tastier low-fat cream products without asking consumers to compromise on the experience they expect.

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## The value you get

### Whipped products

Optimal air  
incorporation and  
robust foam stability

Acceptable cost with  
improved mouthfeel  
experiences

### Fat reduction

Up to 35%



### Engineered precision for winning mouthfeel and texture

Performance Longer foam shelf  
life Emulsion stability Lower Cost  
in Use



### Cost savings:

**-10%**



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## How we elevated **processed cheese** quality while reducing costs

### Opportunity

Processed cheese manufacturers face a demanding balancing act: delivering affordable, consistent, high-quality products while navigating volatile milk-fat costs and rising consumer expectations across meltability, stretch, hardness, shredability, and creamy texture. As demand grows for healthier, convenient, and versatile formats, the need for reliable, high-performance systems that maintain quality at an accessible cost continues to grow.

### Customer Challenge

An ASEAN manufacturer was facing rising milk-fat prices, slow gelation, and an inconsistent supply base — making it increasingly difficult to achieve consistent cheese performance. Variable hardness and meltability, longer aging cycles, and delayed speed-to-market were all putting pressure on the business. The brief was clear: protect sensory and visual quality while bringing costs and timelines under control.

### Solution

We developed cost-effective, high-performance systems for block and pizza cheese, powered by THINGUM® starch and GENULACTA® Carrageenan. The system strengthens functionality, accelerates gelation, and improves overall processability — enabling faster manufacturing, shorter aging cycles, and meaningful cost efficiencies without compromising the structure and consistency the customer needed.

### Differentiation

We brought both technical expertise and genuine flexibility to the challenge. Our ready-to-use formulas and customisable systems helped the manufacturer move faster and tailor solutions to regional processing needs — restoring structure, meltability, stretchability, and shredability even under reduced milk-fat conditions. The result is a scalable, reliable approach across block and pizza formats that delivers high, consistent quality at an accessible cost.

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## Processed cheese

Improved  
Shredability

Optimised  
Stretchability

### Adding value to block and pizza cheese

Faster gelation Consistent hardness Enhanced meltability Ease of processing



Reduced Aging Time  
Cost Savings:

**-10% Avg**

