

Mucci Farms: Designing Waste Out of the System



Company Overview

Mucci Farms is a large-scale greenhouse grower, packer, and marketer with operations across Canada and the United States. With more than 700 acres of owned greenhouse production and an extended network of grower partners, the company produces tomatoes, peppers, cucumbers, strawberries, and leafy greens for North American markets.

Operating across growing, packing, and distribution gives Mucci Farms direct visibility into where food loss occurs—and where it can be prevented.

Over time, the company has embedded food loss and waste (FLW) reduction into its broader sustainability strategy, alongside climate, packaging, and supply chain initiatives.

Like many greenhouse producers, Mucci Farms operates within a system where product rejection is often driven by commercial specifications rather than food quality. Even small deviations in size, shape, or shelf life can redirect product away from primary retail channels.



Mucci Farms integrates growing, packing, and distribution operations to reduce food loss before it occurs.

At the same time, the highly perishable nature of greenhouse produce means timing is critical. Without rapid secondary pathways, edible food can quickly become waste.

Where Loss Occurs

Farms & Packing Operations

Main Drivers

 Cosmetic specifications exceeding regulatory standards; Retailer-specific requirements and variability; Perishability and shelf-life limitations; Limited standardized measurement of FLW across operations

Solutions

 Regrade facilities at all packing sites'; Secondary markets for off-grade produce; Donation and redistribution partnerships; Shelf-life extension trials and crop innovation

Key Partners

 Food banks and wholesalers; Waste Connections (organics processing)

Produce Types

 Tomatoes, peppers, cucumbers, strawberries, lettuce

Measurement

 Operational tracking; <0.7% reported food waste

Social / Environmental Impact

 Reduced waste to landfill; increased food access; improved system efficiency

UN SDGs

-  2 – Zero Hunger
-  12 – Responsible Consumption and Production
-  13 – Climate Action

Key Insight: At scale, food loss reduction is an exercise in value optimization. Success depends on maximizing routing options, decision speed, and marginal value recovery across multiple economic endpoints.

The Solution: Building Recovery into Operations

At Mucci Farms, the approach to FLW is grounded in a simple principle: if the product is still edible, it retains value. The company has operationalized this belief through a combination of infrastructure, partnerships, and innovation—ensuring surplus product remains within the food system wherever possible.

“When recovery is built into the system, waste becomes the exception—not the outcome.”

Regrading as a First Line of Defense

All packing facilities are equipped with regrade capabilities, allowing product that falls outside primary specifications to be redirected in real time. Rather than being treated as waste, these products are assessed for alternative pathways—extending their lifecycle within the food system. This approach significantly reduces loss at the packing stage and ensures that “off-grade” becomes a routing decision, not an endpoint.

Investing in Shelf-Life Innovation

Recognizing that time is one of the biggest drivers of waste, Mucci Farms is actively testing shelf-life extension technologies. This includes trials with food-life extenders for berries and ongoing investments in breeding and production innovations aimed at improving durability, disease resistance, and overall product resilience. These efforts help reduce loss not just at the farm level, but across the entire supply chain.



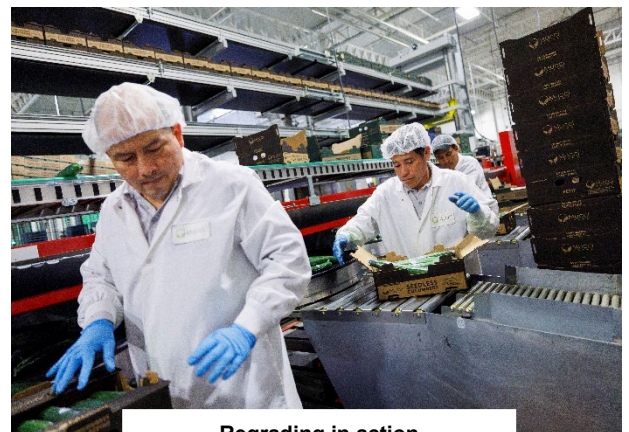
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Creating Markets for Imperfect Produce

Mucci Farms has built strong relationships with wholesalers and secondary buyers who can absorb “number two” product: produce that is safe and edible but does not meet retail standards.

These channels provide an economic return, even if reduced, helping offset losses while keeping food in circulation.

In many cases, recovering even a fraction of value (10–20%) is preferable to disposal—both financially and environmentally.



Regrading in action

Scaling Donation Pathways

In parallel, Mucci Farms has established structured donation programs, particularly in the United States through Feeding America, where over half a million pounds of produce have been redistributed.

In Canada, partnerships with food banks and redistribution networks provide additional outlets for surplus, especially for product nearing the end of its commercial shelf life.

Employee engagement also plays a role: internal programs allow staff to take home edible, graded-out produce, ensuring even smaller volumes are not lost.



Structured donation partnerships help keep surplus food within the food system while supporting community food access.

From Constraint to Capability

What sets Mucci Farms apart is not a single innovation, but a consistent approach to integrating food recovery into how the business operates every day.

Rather than relying on ad hoc solutions, the company has built repeatable pathways that allow surplus to move efficiently through the system—whether through secondary markets, donation channels, or resource recovery.

As food recovery systems across North America continue to evolve, this model points to what's possible when operational design, partnerships, and innovation align.

Mucci Farms' experience highlights a broader industry reality: much of what is labeled as “waste” is the result of system constraints—not product quality.

Retail specifications, inconsistent standards, and limited alternative markets all contribute to food leaving the primary supply chain prematurely.

By building flexibility into operations, Mucci Farms has demonstrated that these constraints can be managed—and in many cases, turned into opportunities.

Impact

- <0.7% food waste across operations
- Over 500,000 lbs of produce redistributed through structured food recovery partnerships
- **84%** of organic waste diverted to biofuel/fertilizer
- 100% of facilities equipped with regrade capability

Turning Waste into Resource

For the small percentage of product that cannot be recovered for human consumption, Mucci Farms works with organics processors to ensure it is not sent to landfill.

Through partnerships such as Waste Connections, approximately **84%** of organic waste is converted into biofuel and fertilizer, closing the loop and contributing to broader environmental goals.

Model Insight: Efficiency at Scale



Mucci Farms approaches food loss as an economic design problem rather than a quality failure. Reported waste levels below 0.7% reflect not the elimination of surplus, but the ability to manage it cost-effectively through structured operational choices.



Economic performance is generated through integration across growing, packing, and distribution, where decisions are made to preserve marginal value rather than default to write-offs. The system prioritizes recovery of any positive value—however partial—over disposal, shifting loss from a binary outcome to a spectrum of return.



Regrading at the packing stage acts as a value triage point. Product that fails to meet retail specifications is reassigned immediately to alternative channels, minimizing holding time and reducing the risk of full depreciation. Real-time routing lowers the probability that surplus transitions into zero-value waste.



Secondary markets serve as demand buffers. Wholesale and foodservice buyers absorb off-spec product at lower price points, converting potential losses into incremental revenue that offsets production and handling costs. Recovering even a fraction of product value is economically preferable to disposal, particularly at scale.



Donation pathways further extend the value curve for product nearing the end of its commercial shelf life. Partnerships with Canadian food banks and redistribution networks reduce disposal costs and support broader social objectives, improving overall system efficiency.



Shelf life is managed as an economic variable. Investments in trials and production improvements extend the *window* during which routing decisions remain viable, increasing optionality and lowering the expected cost of surplus across the system.



For residual material that cannot be recovered for human consumption, diversion from landfill limits negative value outcomes. Converting approximately 85% of organic waste into biofuel and fertilizer contains disposal costs while aligning with environmental performance targets.



The result is a layered economic system where surplus is anticipated and absorbed through predefined pathways. *Financial* loss occurs only when all routing options are exhausted—not when product first deviates from retail specifications.

The Takeaway for Industry: Design Matters

For greenhouse and fresh produce operations, reducing food loss is less about growing differently—and more about routing differently.

A few key lessons emerge:

- **Regrading is critical.** The ability to assess and redirect product in real time prevents loss at the source.
- **Secondary markets are essential.** Even low-value outlets create economic and environmental returns.
- **Donation works best when structured.** Reliable partnerships enable consistent redistribution at scale.
- **Shelf life is leverage.** Extending product viability expands the window for recovery.

For more information:

Guy Cameron, Senior Director of Business and Product Development, Mucci Farms

Guy.Cameron@CoxFarms.com