PrimePro®
Shelf Life Extension Packaging

Fresh produce waste:
A value chain perspective

Agenda

1. Scope of the problem
2. Causes of the problem
3. Proposed solution
4. Next steps

Produce Waste is a Serious Problem

In the US, 9.3 billion lbs. of fresh produce was thrown away at the retail level. This waste cost $8.9 billion and amounted to 12% of the US fresh fruit supply and 10% of the fresh vegetable supply.

In Canada, 32% of fresh food waste happens during distribution and retail.

In the UK, 4.5% of all strawberries, 7% of all apples,10% of all avocadoes, 3% of all tomatoes, and 3% of all broccoli in the food supply ended up as waste during distribution and retailing.

Where Waste Happens

32% of food waste in Canada occurs during distribution, storage and retail. A globalized supply chain means produce travels thousands of kilometres to reach retail markets. Waste occurs at each step of the chain.

Packhouse

Transport

Distribution centre

Retail store

Two Types of Waste

	Indirect waste	Direct waste
Occurs:	Supply chain from a grocery retailer in ● Packing ● Transport ● Distribution	At a grocery retailer in the ● DC ● Backroom ● Retail floor
Cost incurred by:	Suppliers	The grocery retailer
Cost passed on to:	1. Retailers 2. Consumer	1. Consumer

Direct Waste Cost of Grocery Retailers

Cost of direct fresh produce waste of a grocery retailer

AVG Annual produce sales of a grocery retailer		$3.5 billion
Estimated percentage of produce wasted at store level	5 %	$175 million

Even a small reduction in fresh produce waste can generate large savings

Savings by reducing fresh produce waste by 1 per cent	1%	$1.75 million
Savings by reducing fresh produce waste by 5 per cent	5 %	$8.75 million

Where Direct Waste Happens

Grocery retailers waste approximately $175 million of fresh produce. A few commodities make up the majority of the waste.

	Bell pepper	Broccoli	Cherry	Leafy greens	Mango	Strawberry	Tomato on the vine
A grocery retailers annual sales	$165 million	$57 million	$70 million	$160 million	$25 million	$130 million	$50 million
Waste factor	10%	3%	3%	3%	3%	5%	3%
Annual waste in dollars	$16 million	$1.7 million	$2.1 million	$4.8 million	$750,000	$6.5 million	$1.5 million

Reducing waste benefits the value chain

Sustainability	• Greenhouse gas emissions • Disposal costs • Wasted inputs - Fuel, chemicals, water, hydro
Consumers	• Less waste at consumer level • Increased fresh produce consumption • Save money
Local food	• Improved local food quality • Make local food more cost-competitive
Growers	• Increased efficiency • Cost savings
Retail	• Operating cash flow savings • Increased customer loyalty • Leadership position

Key cause of fresh produce waste

A key factor in produce waste is damage caused by ethylene gas. Ethylene is a plant hormone that triggers and speeds the process of ripening and decay.

	Bell pepper	Broccoli	Cherry	Leafy greens	Papaya	Strawberry	Tomato on the vine
Sensitivity to ethylene	Medium	High	Medium	High	High	Medium	High

Negative effects of ethylene include: Increased respiration, water loss, yellowing or spotting, production of more ethylene, accelerated ageing, ripening and decay, flavour and aroma changes, loss of leaves and flowers, toughening.

Preventing Damage from Ethylene

Research organizations have identified ethylene control as a key technology to reduce fresh produce waste.

The technology to protect fresh produce from ethylene exists today. Best practices include:

Target highest-waste commodities	Apply it consistently to the produce types with the highest waste rates.
Cover entire supply chain	Apply it from "Field to Fork" through the entire supply chain process.
Cover all geographies & seasons	Apply it on loads coming from all growing regions during all growing seasons.

Benefits Available

By applying ethylene control technology consistently, a grocery retailer can achieve meaningful benefits:

Capture the value from reduced produce waste	Cost savings
Provide higher-quality produce to customers	Competitive advantage
Reduce waste costs and tonnage	Cost savings
Enhance leadership position in social responsibility	Reputation / brand enhancement

PrimePro® shelf life extension packaging

PrimePro® carton liners protecting cartons of Washington State pears

PrimePro® packaging is proven to remove ethylene gas.

The technology takes the form of a carton liner, pallet cover, sheet or retail bag.

PrimePro® adds less than $0.30 to the cost of a carton of produce (18 kg).

Current customers include: Better Produce , Chelan Fresh, Pure Flavour

Proposed Solution

Chain stores looking to reduce their fresh produce waste can:

1. Pick 10 - 12 types of produce with high waste costs.
2. Require suppliers of those types of produce to use PrimePro® shelf life extension packaging technology on all loads to a grocery retailer.
3. Track waste levels at:
   - Shipment level (rejected arrivals)
   - Retail store level (discards at store level)
4. Calculate the indirect and direct cost savings earned by the project.

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Thank you for your time