



BLUEBERRIES

THE CHALLENGES OF TRANSPORTING BLUEBERRIES

Blueberries are a very valuable and sensitive commodity, and while in storage are subject to gray mold (*Botrytis*), Rhizopus rot, ripe rot (*Anthraco*se), as well as the detrimental effects of ethylene. In addition, because blueberries are particularly susceptible to shriveling, humidity in storage must be kept high, which often leads to increased mold growth. Estimates for post-harvest losses run as high as 10%–30% annually.



To maintain fruit quality during transport, gas-injection controlled atmosphere (CA) technologies have typically been employed. CA methods slow respiration, but they do little to prevent decay. If sweating occurs, CA can actually promote decay. In addition, the logistics of scheduling the gas injection and finding leak-proof reefers can be challenging. These shortcomings—combined with extended time to market and consumer demands for safe, chemical-free perishables—have prompted the industry to seek alternatives for maintaining fruit quality when leveraging ocean transportation.

THE VALUE OF PURFRESH TRANSPORT

Consistently outperforming alternatives in side-by-side comparisons, Purfresh Transport™ promotes higher-quality arrivals by maintaining freshness and extending the shelf life of fresh produce during ocean transport. Purfresh delivers where traditional atmosphere management systems and antimicrobials fall short by providing the unparalleled combination of superior ripening control with 100% residue-free decay prevention and enhanced food safety. The industry's only ozone-based, active atmosphere management solution, Purfresh Transport constantly monitors and dynamically manages the environment inside the reefer container throughout the voyage—providing the ability to ship even highly sensitive fruits and vegetables long distances. With Purfresh Transport, the value is clear:

- Prolonging shelf life increases value for the consignee as well as the retailer.
- Minimizing waste increases returns and reduces claims processing costs.
- Maintaining freshness over longer distances enables importers/exporters to utilize ocean transport to reach and develop new markets.

BENEFITS

- Maintains freshness
- Extends shelf life
- Outperforms CA and MA
- Minimizes waste and repack
- Reduces claims processing
- Helps reach and develop new markets

FEATURES

- 100% residue-free decay control
 - Kills surface and airborne microorganisms
 - Stops nesting of decay
 - Shuts down mold sporulation
- Controls ripening by consuming and regulating ethylene
 - Reduces shrivel
 - Maintains firmness
- Does not impact natural characteristics of produce
- USDA and FDA approved
- Certified organic

Importer/Exporter Value Calculator

Traditional CA Value

Ripening Control \$1,600

Total Value: \$1,600

Purfresh Transport Value

Ripening Control \$1,600
 Reduced Waste 3,546
 Avoided Claims Processing 300
 Reduced Grade Degradation 3,014
 Reduced Repack 591
 Increased Marketability 788

Total Value: \$9,839

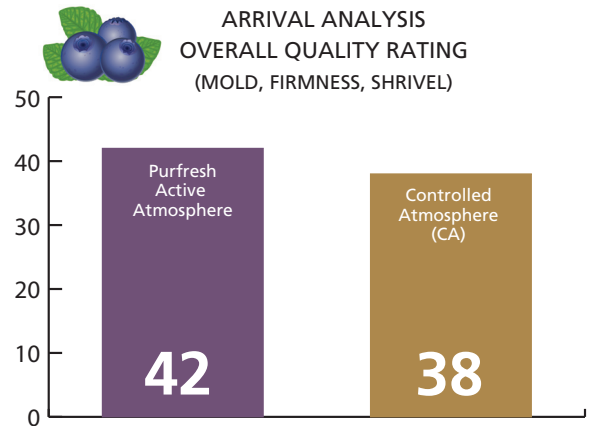
Value = \$9,839
per shipment of blueberries

Assumptions: Container value of \$94,560; 75% reduction in typical seasonal averages for waste, grade degradation, and repack; 50% reduction in claims; 10% average increase in marketability.



HOW DOES IT WORK?

Purfresh Transport—scientifically engineered as an active atmosphere management system—is the only solution proven effective to control ripening and reduce decay without the use of chemicals. Its patented technology uses powerful ozone molecules to kill molds, yeasts, and bacteria in the air and on surfaces by up to 99%, as well as to consume and regulate ethylene levels. After doing its work, ozone immediately reverts to pure oxygen, leaving the product’s taste, texture, and smell characteristics in their natural state. To optimize the container’s atmosphere throughout the voyage, Purfresh Transport intelligently reacts to changes in the organic load of the cargo (such as microbial load, VOCs, and ethylene levels) and changes in the environmental conditions (such as temperature). Unmatched in the industry, Purfresh Transport delivers what no other solution can—a chemical-free approach to extending shelf life, minimizing waste, and maintaining the quality of fresh produce during long-range transport.



Source: Commercial Side-By-Side Blueberry Comparison (Chile to England), 2009.

PURFRESH TRANSPORT—COMPARE THE VALUE

	PURFRESH TRANSPORT	OTHER APPROACHES
REDUCES DECAY/KILLS BACTERIA, YEASTS, & MOLDS	Yes	No
CONTROLS RIPENING	Yes	Yes
KILLS MICROBIAL POPULATIONS TO ENHANCE FOOD SAFETY	Yes	No
DISINFECTS CONTAINER (MICROBES & ODOR)	Yes	No
CONTAINER AVAILABILITY	Works with new and old containers	Require leakproof containers, which have limited availability

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