purfresh® Transport

GRAPES

THE CHALLENGES OF TRANSPORTING GRAPES

During transport, grapes are highly susceptible to decay, particularly grey mold (*Botrytis cinerea*), from airborne and surface microorganisms that are often present in high-humidity storage environments. To control the rate of decay while grapes are in storage, it is a common commercial practice to fumigate the berries with high levels of SO_2 and to store them with SO_2 pads for long-distance transport.

In the past few years, the use of SO_2 has come under increased scrutiny because of its effect as an allergen and its negative effect on berry quality. Also on the rise are consumer pressures to reduce the use and residue of chemicals on fresh produce. This intense scrutiny has challenged importers and exporters around the globe to seek out alternative ways to protect produce quality while reducing chemical usage.

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 conventional and organic produce during ocean transport. Engineered as an active cargo protection system, Purfresh delivers where traditional atmosphere management systems and antimicrobials fall short by actively monitoring and managing the environment inside the reefer container throughout the voyage. Offering the unparalleled combination of superior ripening control with 100% residue-free decay prevention and enhanced food safety, Purfresh Transport is an ideal solution for shipping decay-prone or ethylene-sensitive produce. With Purfresh Transport, the value adds up quickly:

- 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 the use of ocean transport to reach and develop new markets.

HIGHLIGHTS

Maintains post-harvest freshness, taste, and smell

Extends shelf life

Controls *Botrytis*
- Kills surface and airborne microorganisms
- Stops nesting
- Shuts down sporulation
- Leaves no residue

Maintains stem quality and green color

Eliminates use of SO_2 pads

Oxidizes airborne and surface bacteria and viruses

USDA and FDA approved

Certified organic

Meets directives to reduce chemical residues

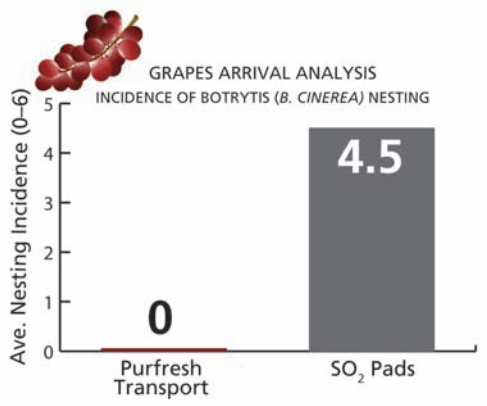
Enhances food safety

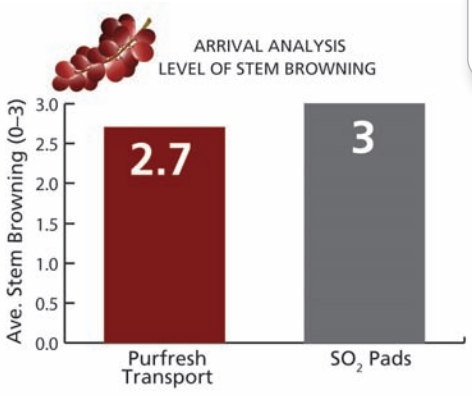
Available on-trip monitoring

The Value Adds Up

Eliminated SO_2 Pads
Reduced Waste
Increased Shelf Life
Avoided Claims Processing
Reduced Grade Degradation
\+ Reduced Repack
Increased Marketability

INCREASED VALUE $$





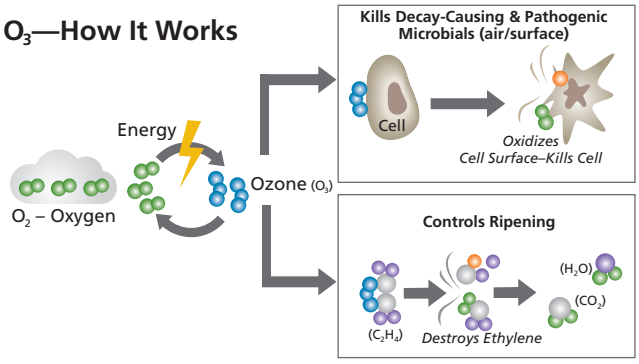
Source: Laboratory experiment with Red Flame seedless grapes to compare ozone storage treatment (Purfresh Transport) with slow-release sulphur dioxide pads. Stem browning, weight loss, and effectiveness in inhibiting Botrytis cinerea *were assessed. Both test groups were pretreated with SO_2 fumigation and stored in identical refrigerated conditions for 46 days. December 2008.*

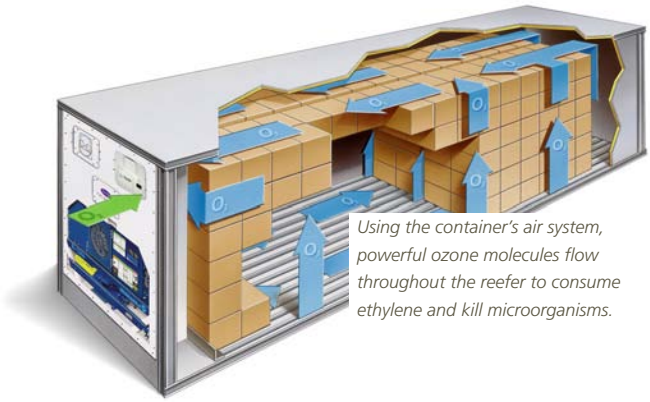
purfresh®
Purify, Protect, Preserve.

HOW DOES IT WORK?

Purfresh Transport—scientifically engineered as an active cargo protection system—is the only solution proven effective to control ripening, reduce decay, and enhance food safety without the use of chemicals. Its patent-pending technology uses an active form of oxygen—commonly referred to as ozone—to kill molds, yeasts, bacteria, and viruses in the air and on surfaces, as well as to consume and regulate ethylene levels. Certified organic and approved by the USDA and FDA, ozone acts as a powerful, residue-free disinfectant that immediately reverts back to oxygen, leaving the product's taste, texture, and smell characteristics in their natural state.

To maximize efficacy, the Purfresh technology easily integrates with the container's refrigeration unit to precisely control and evenly distribute the ozone molecules throughout the cargo. In addition, the system actively monitors and adjusts the ozone levels throughout the voyage based on changes in the condition of the cargo or the atmosphere. Proven and cost-effective, 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 ocean transport.





Using the container's air system, powerful ozone molecules flow throughout the reefer to consume ethylene and kill microorganisms.

COMPARE THE VALUE FOR GRAPES

	PURFRESH TRANSPORT	SO_2 PADS
REDUCES DECAY / KILLS BACTERIA, YEASTS, & MOLDS	Yes	Yes
ZERO RESIDUE ON FRUIT	Yes	Allergen
NO IMPACT ON TASTE	Yes	Flavors impacted by SO_2
CONTINUOUS TREATMENT THROUGHOUT VOYAGE	Yes	Single- or dual-release pads apply restricted dose for limited time period
ZERO IMPACT ON ENVIRONMENT	Yes	Post-voyage disposal of pads
CERTIFIED FOR USE ON ORGANICS	Yes	No

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