TECHNICAL BULLETIN | **HEAT STRESS**

Protecting Fruit Quality During Heat Stress Events

Support Your Crop During Extreme Conditions with Parka®

Rising temperatures and more frequent heat events are putting pressure on fruit production across the Pacific Northwest. Heat stress can disrupt growth, development and yield potential – especially in high value crops like apples, cherries, blueberries, grapes and pears.

While early symptoms of heat stress may not always be visible, the damage starts at the cellular level. High temperatures and intense solar radiation destabilize membranes, interfere with critical plant physiological processes and reduce the plant's ability to photosynthesize efficiently. The result?

- Compromised fruit quality and finish
- Increased sunburn and oxidative damage
- Reduced water-use efficiency and nutrient movement
- Long-term impacts on tree health and productivity

Protecting plant health during periods of extreme heat is essential to maintaining yield, quality and overall orchard performance – both this season and next.

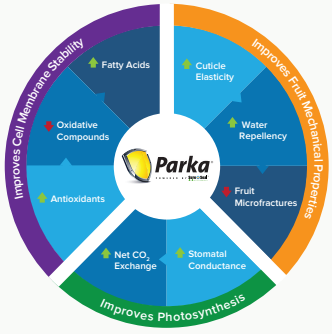
Parka's® Mode of Action Strengthens Natural Defenses

The plant cuticle is the first line of defense against environmental stressors like sun and heat. When compromised, fruit is more vulnerable to sunburn, russeting, cracking and other disorders that negatively impact fruit quality and reduce marketable yield.

Parka is formulated to supplement the plant's natural cuticle on both fruit and foliage, helping crops withstand and recover from heat stress. By reinforcing this protective barrier, Parka's mode of action helps plants maintain internal processes, regulate water loss and protect fruit finish.

KEY FEATURES AND BENEFITS:

- Increased plant tolerance to environmental extremes
- Enhanced photosynthesis
- Improved overall tree health
- Increased marketable yields the following season
- Minimized heat-related cosmetic defects to reduce culls



Protecting Against Heat Stress

Mode 1: Fruit Mechanical Properties

Parka enhances the existing plant cuticle by sealing microfractures and forming a barrier to protect against unwanted moisture loss and sun-related damage.

Mode 2: Cell Membrane Stability

By minimizing production of oxidative compounds and stimulating antioxidant production, Parka helps plants convert solar energy into photosynthesis, reducing tissue damage from excess light.

Mode 3: Energy Conversion

Parka supports optimal photosynthetic activity with improved stomatal conductance and CO^2 exchange, allowing the plant to better utilize solar radiation.

Don't Let Heat Stress Limit Your Crop's Potential

Extreme heat can compromise fruit quality and crop performance. Parka offers a proactive, proven approach to mitigating abiotic stress and supporting plant resilience – resulting in improved fruit quality, better packouts and more consistent returns.

For best results, apply Parka prior to or at the onset of forecasted heat events. Reapply as needed based on crop growth and environmental conditions. Consult your Cultiva representative for application specifics by crop.

Parka® POWERED BY SureSeal™

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cultiva®

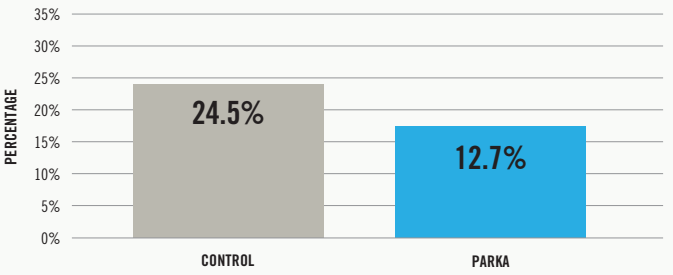
Parka on Apples Sunburn Reduction

Washington, USA

Variety: Fuji, Gala, Honeycrisp
Rate: 0.5 - 1 gal./ac

Applications: Petal fall, +14-21 days
(4 - 7 applications total)

AVERAGE SUNBURN ON APPLES



48% LESS SUNBURN WITH PARKA

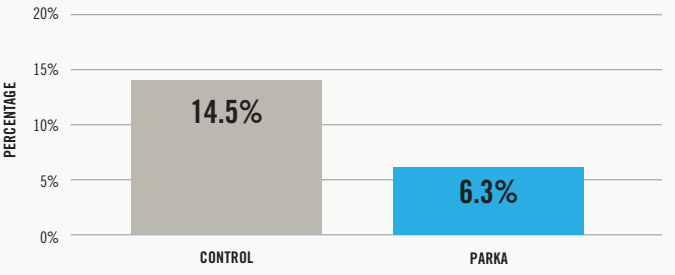
Parka on Apples Fruit Finish Improvement

Washington, USA

Variety: Fuji
Rate: 1% V/V

Applications: Petal fall, +21 days
(5 applications total)

RUSSET ON FUJI APPLES



56% LESS RUSSET WITH PARKA

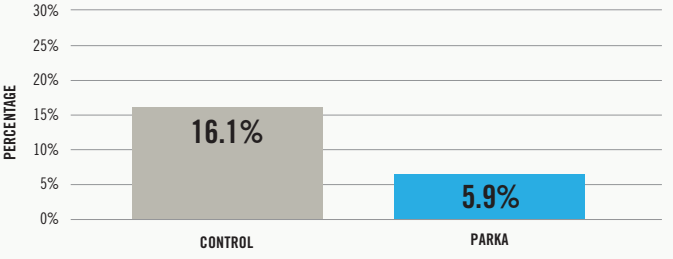
Parka on Cherries Doubling and Spurs Reduction

California, USA; Oregon, USA; Chile

Variety: Early Robin, Brooks, Tulare, Coral, Santina
Rate: 0.5 -1 gal./ac

Applications: Post-harvest
(2 - 3 applications)

DOUBLES ON CHERRIES



63% LESS DOUBLING WITH PARKA

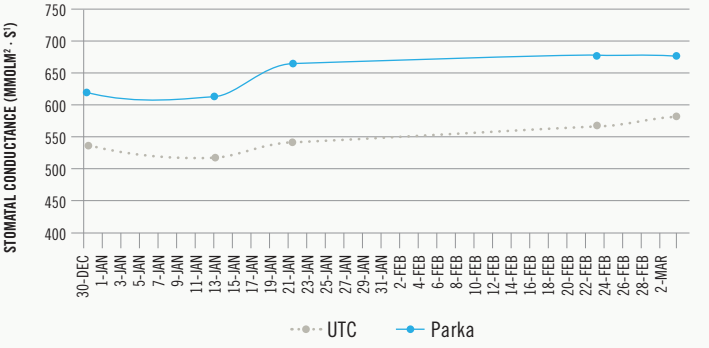
Plant Stress Indicators with Parka

Chile

Variety: Santina
Rate: 0.5 gal./ac

Applications: 3 Post-harvest applications

STOMATAL CONDUCTANCE POST-HARVEST ON CHERRIES



Applications and Use

Application: For best results, complete coverage of the crop is required. Avoid excessive runoff. Do not apply when temperatures are above 90 F. If temperatures are expected to exceed this threshold, evening applications are recommended.

Compatibility: Parka is compatible with most crop protection products, provided application coincides with the conditions on each label. Do not tank mix or overlap Parka applications within 5 days of CAPTAN®. If using micronized or dusting sulfur, do not apply Parka within 3 days of a sulfur application. If using Lime Sulfur wait 7 days before applying Parka. Prior to tank mixing with any Emulsifiable Concentrate (EC) or oil based materials, conduct a jar test to determine compatibility. Do not tank mix with surfactants, stickers or pinolene based materials. Parka should be the last product added to the tank. For best results, finished spray solution pH should be between 5 and 7.

To learn more, visit Cultiva.com, reach out to your local Cultiva representative or contact a retailer.

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