



**RAYNOX** <sup>®</sup>

*A Clear  
Solution  
to Sunburn*

***Reduce your cullage and  
increase your profits***

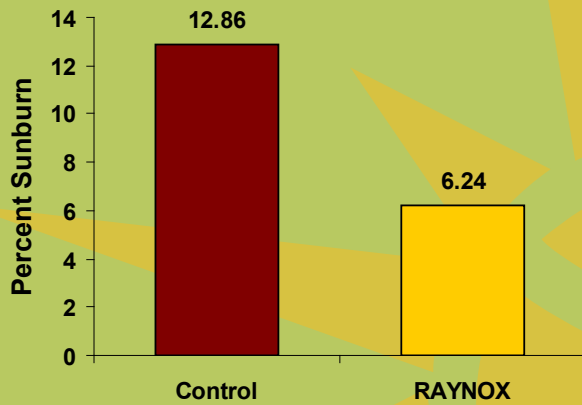
# RAYNOX Development and Testing

RAYNOX was developed at Washington State University and extensively tested in collaboration with Washington Tree Fruit Research Commission and other research institutions worldwide.

## RAYNOX Reduces Sunburn by 50% on Average

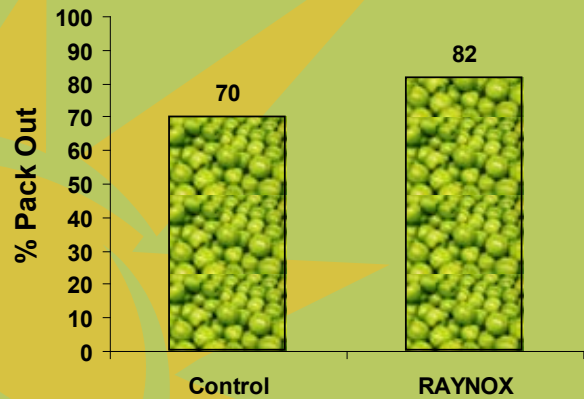
## RAYNOX Significantly Increases the Percentage of Premium Fruit

Effect of RAYNOX  
Gala Sunburn Test - 2000



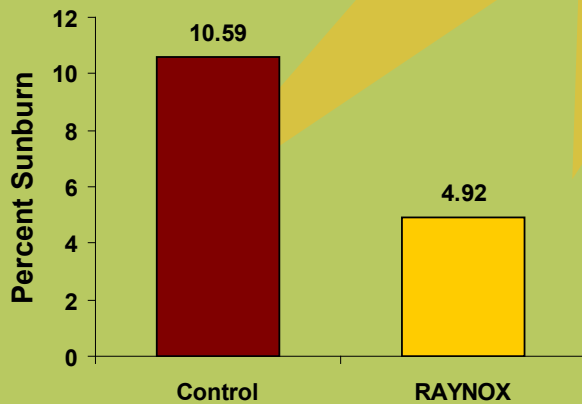
Source: WSU Tree Fruit Research & Extension Center

Commercial Pack Out Evaluation  
Granny Smith - 2004



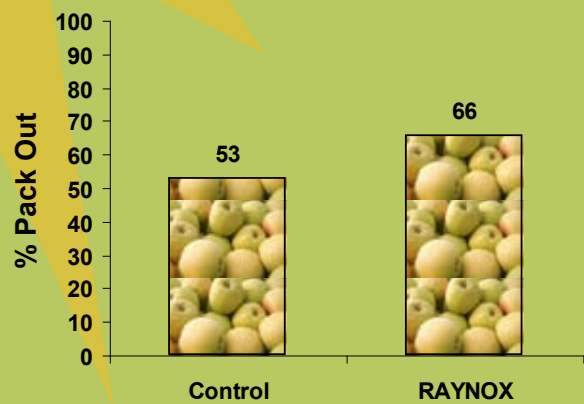
Source: Pace International in cooperation with Washington State Growers

Effect of RAYNOX  
Fuji Sunburn Test - 2000



Source: WSU Tree Fruit Research & Extension Center

Commercial Pack Out Evaluation  
Golden Delicious - 2005



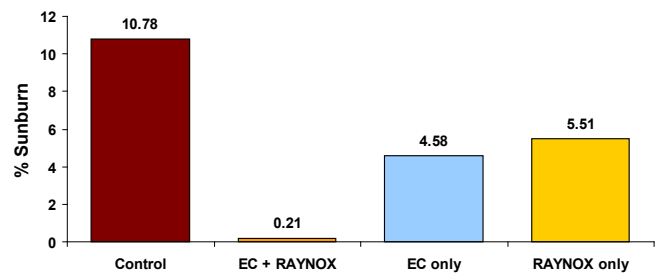
Source: Pace International in cooperation with Mexico Growers

## Optimum Sunburn Protection

RAYNOX has proven to significantly enhance the efficacy of Evaporative Cooling systems, providing growers the Optimum Sunburn Protection Program.

*Test results show the combined use of EC plus RAYNOX reduced sunburn by 97%, compared to 58% and 47% reductions for each system alone.*

Effect of RAYNOX & EC on Sunburn - 2003



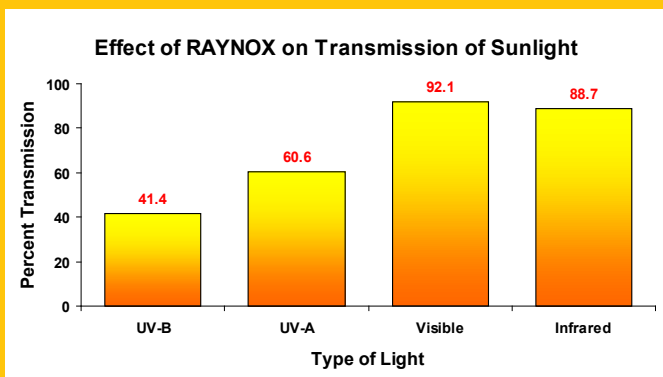
Source: WSU Tree Fruit Research & Extension Center

## Sunburn in Apples

Sunburn is usually the major source of cullage in packhouses (8-12% on average). Every year, millions of dollars worth of fruit is lost due to sunburn damage. Sunburn browning is the most common type of sunburn in apples, and is caused by high fruit surface temperature and exposure to solar radiation.

### How Does RAYNOX Effectively Prevent Sunburn?

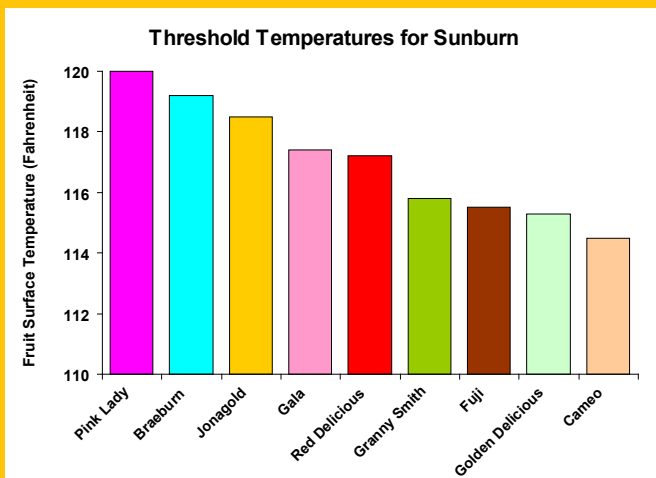
- RAYNOX is a clear film that filters part of UV, visible and infrared light.
- RAYNOX reduces fruit surface temperature and the amount of UV and visible light reaching its surface.
- RAYNOX lowers the “stress load” in the fruit, reducing the generation of oxidative molecules resulting in fewer sunburn symptoms.



Source: WSU Tree Fruit Research & Extension Center

### Be Aware of Fruit Surface Temperature

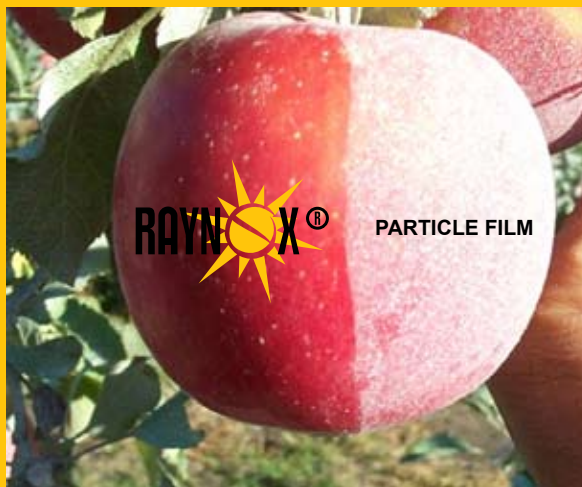
- Temperature thresholds to induce sunburn browning vary between 114°F and 120°F (Fruit Surface Temperature) for an hour for most apple varieties.
- Fruit surface temperature can be up to 30°F higher than air temperature.



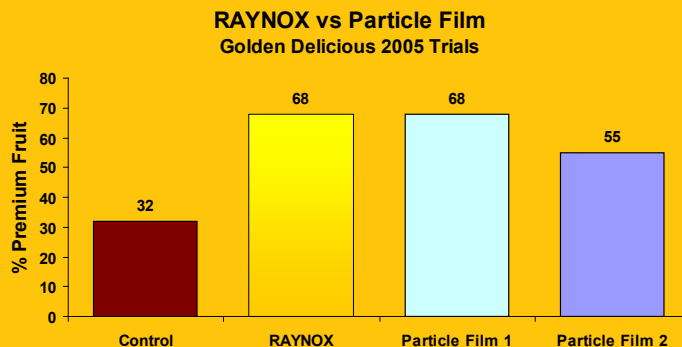
Source: WSU Tree Fruit Research & Extension Center

## RAYNOX vs “Particle Film” Products

Independent testing conducted by the Washington Tree Fruit Research Commission in 2005 shows that even under very extreme sunburn conditions, RAYNOX performs as good as or better than any particle films available in the market.



- RAYNOX does not leave a visible residue, allowing growers to color pick their fruit.
- RAYNOX does not cause irritation to nasal passages or skin.
- RAYNOX does not have negative effects on beneficial insects
- RAYNOX does not encourage “mite flare-ups”.
- RAYNOX does not wash off easily or require re-application after an occurrence of rain.
- RAYNOX does not leave residue in dump tanks that call for special disposal.
- RAYNOX can also be used in conjunction with Evaporative Cooling (EC) systems to enhance their effectiveness.



Source: Washington Tree Fruit Research Commission.



**Innovative solutions  
that enhance, protect,  
and preserve fruit and  
vegetable quality.**

RAYNOX® is a registered trademark of FruitGard, LLC.  
For more information, contact your local Distributor or your Pace Representative

 **Pace**International<sup>LLC</sup>

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