**Green Ring**

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**What is Green Ring (GR)?**

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**Symptoms**

[Image of affected citrus fruit]

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**Green Ring Info. To Date**

- Became a significant problem Fall 1998.
- Primarily found on drenched, east-coast citrus.
- Cultivars Affected:
  - ‘Fallglo’ & ‘Sunburst’ tangerines
  - ‘Navel’ & ‘Hamlin’ oranges
  - Red & White grapefruit
  - Lemons?
**Green Ring Info. To Date**
- GR symptoms usually develop between the drench and packing.
- Most drenched fruit did not develop GR.
- Reports of GR occurred between early Oct. and late Nov.
  - Developmental factors likely involved.

**Green Ring Info. To Date**
- GR developed on fruit from a variety of drenchers (both truck and bin).
- GR fruit have not yet been reported on Imazalil-drenched fruit.
  - Fewer loads were drenched with Imazalil than with TBZ; Possibly none were GR susceptible.
- Drying fruit before degreening reported to reduce incidence of GR.

**Leod Ring Susceptility vs. Size**

**Postharvest Tests**
- Fruit from susceptible blocks tested.
- Drenched with one of seven different solutions.
- Degreened for 48 or 72 hrs. (5 ppm ethylene, 85 °F, 92% RH).
- Washed, waxed (unless stated) and stored at 70 °F.

**Pre-harvest Factors Affecting Green Ring**
- Very little know. Could include any of a number of chemicals and/or weather-related events including:
  - Preharvest chemicals, excessive rain and/or poor drainage, a large proportion of “off bloom” fruit, or warm, dry winter and fall weather.
- Reports surfaced in Dec. suggesting that preharvest sulfur sprays may play a role.
Pre-harvest Factors Affecting Green Ring

- A test was conducted in January spraying whole Star Ruby grapefruit trees with either:
  - water (control)
  - sulfur (15 lb/acre)
  - benlate (2 lb/acre)
  - sulfur + benlate
- Fruit were harvested 7 d later, drenched, degreened for ~52 hours (5 ppm ethylene at 85 °F, 95% RH) and stored at 70 °F.
- No GR developed in any of the treatments.

Summary

- GR symptoms could be reproduced on susceptible fruit using combinations of different drench chemicals.
- Smaller fruit are more susceptible.
- Preharvest factors have not yet been identified.

Steps to Reduce GR?

- If GR susceptible fruit are discovered, stop drenching.
  - Take other precautions for decay control.
- Dry drench solution on fruit surface before degreening.
- Maintain degreening room between 90-95% RH.

Thank You!