Insect Management in Melons
A Research Update

Oberon®
A new IGR-like compound from Bayer Crop Sciences.
Inhibits lipid biosynthesis.
Foliar contact activity against whiteflies and mites.
Highly effective on nymphs and pupal stage.
Harmless to pollinators.
Excellent IRM tool.
Reduced-risk status pending

Oberon - Residual Efficacy

- Oberon (7.0 and 8.5 oz)
- Courier (Applaud)
- Danitol/Thiodan
- 2 sprays vs 1 spray

Oberon - Residual Efficacy

SLWF Large Nymph Densities
![Graph showing Oberon's efficacy over time vs untreated and other treatments]

Oberon - Residual Efficacy

SLWF Eclosed Pupae Densities
![Graph showing Oberon's efficacy over time vs untreated and other treatments]
**Combination of IGRs and Admire**

- Admire - 16 oz
- Admire - 8 oz + Oberon + Courier
- Courier, Calypso

**Oberon Efficacy Against WF**

- Oberon, a new novel IGR, provided good residual control of whiteflies – both alone and in combination with Admire – comparable to Courier (Applaud) in spring melons.

- New Mode of Action may provide growers with:
  - alternative to Admire
  - rotational partner for:
    - Courier
    - Capture or Danitol + endosulfan

**IGR - Courier® (Applaud®)**

- Chitin synthesis inhibitor
- Vapor and Contact activity
- Only effective against nymphs
- Spray Timing is critical
- 21-28 day residual efficacy

**Cabbage Looper Control**

- A single application on Sep 11
- Whole plant samples 10 plants / Rep
- 3 and 8 DAT
Palumbo, John C. 06/04/03. The 9th Annual Melon Field Day, Maricopa Agricultural Center, Maricopa, AZ
ELISA—Enzyme-Linked Immuno-Sorbent Assay

- Microtiter plate assay
  - 12-well strips
  - 8 strips per plate (96 samples)
- 3-step procedure (with wash steps in between)
  - Add samples to pre-coated wells
  - Add conjugated antibody into wells with sample; incubate 1 h
  - Add substrate; incubate 1 h
- Quantifiable based on color intensity of enzyme/substrate reaction (read with spectrophotometer)

Completed reaction for 48 samples (4 strips x 12 wells)

Measurement of Admire and Platinum in Melons

- Temporal (Residual) - 15 d intervals following planting and side dress applications
- Spatial (Within-plant Distribution)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>At plant (rate/acre)</th>
<th>Side-dress (rate/acre)</th>
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<tbody>
<tr>
<td>Admire</td>
<td>16 oz</td>
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</tbody>
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Mean Titers of Admire in Melon Leaves October 15, 2002

N = 8

Measurement of Admire and Platinum in Melons

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- Spatial (Within-plant Distribution)
Acknowledgements

- California Melon Research Board
- Gowan Seed Company
- Bayer Crop Protection
- Syngenta Crop Protection
- Dow AgriSciences
- DuPont Agricultural Products
- Valent USA Corporation
- FMC Corporation
- Nichino America Inc

http://ag.arizona.edu/crops