Foliar Sprays and Liner Soaks
Joyce Latimer, VaTech

APPLICATION METHODS:
FOLIAR SPRAYS AND LINER SOAKS

1:00 to 1:25 Eastern

PGR University

Foliar Sprays
- Most often used, economics, ease of use
- Volume critical for soil active PGRs
- Uniformity of crop depends on uniformity of application
- Efficacy affected by environmental conditions and plant status

Soil Active = Volume is Critical!
- Increased volume increases PGR effect

Application Uniformity
- Apply evenly to the area not to plants
- Use a constant volume – monitor equipment
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### Why Use Multiple Applications?
- Reduce risk of overdose
- Easier to adapt to variable growing conditions or market
- More grower control
- Watering-in is the ultimate in growth control through multiple applications

**Multiple Applications - Sumagic**

- Overdosed with 45 ppm, 4 WAT

**Multiple Applications – Topflor**

- 4 WAT, multiple applications of lower rates

**Topflor Foliar Spray**

- Saturation at higher rates

**Sumagic foliar spray**

- Linear growth response to increasing rate
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### Linear Responses

- **Salvia 'Indigo Spires' at 2 WAT**

<table>
<thead>
<tr>
<th>Control</th>
<th>15 ppm</th>
<th>30 ppm</th>
<th>45 ppm</th>
<th>60 ppm</th>
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- Sumagic gave moderate control at 45 to 60 ppm
- Growth control persisted through 4 WAT

### Sumagic - How long do you want control?

- **Aloea rosea 'Watchman' at 4 WAT**

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### Other Spray Application Notes

- Addition of surfactant may be necessary for plants with waxy leaves
  - Check PGR label
- Spray applications have the most potential to delay flowering when applied late in crop
- Multiple applications may be required
- Uniformity of application produces uniform response
- Volume is an application tool

### Sprecnes – High Volume Sprays

- Hybrid of spray and drench
- Soil ACTIVE PGRs
- Apply 2 to 4 times the recommended spray volume
- Use rates between spray and drench (one-half to one-quarter the spray rate)
- Can be more effective than foliar spray

### Notes on PGR Volume – Soil ACTIVE PGRs

- Volume depends on application method
- Volume is critical to control
  - Uniformity of application and response
- Volume is a application tool
  - Increasing volume increases the dosage
  - Increasing volume increases root zone availability

### Environmental Conditions

- Status of plant at time of application
  - Water status
  - Temperature
  - Turgid, unstressed plant absorbs better
- Time of day as affects plant stress
- To reduce phyto apply PGRs to unstressed plants under moderate temperatures
**Liner Soaks – Soil Active PGRs**
- Early control of vigorous crops
- Flexibility of treatment (REI)
- Goal is to provide baseline control of vigorous crops
- Make additional treatments later if necessary

**Liner Soaks**
- Dip root ball in PGR solution
- Plugs ready for irrigation = “dry” plug
- Time not critical – 30 sec to 2 min
  - Be consistent
- Plant immediately or hold them
- No loss of effectiveness of dip solution
- Less potential to delay flowering compared to overhead drench

**Liner Soak – Bonzi**
- Goal is to provide baseline control of vigorous crops
- Make additional treatments later if necessary

**Liner Soaks – Piccolo 10 XC**
PGR University

Liner Soaks – Piccolo 10 XC

- Concise liner soaks on plugs; 6 WAT
- "Dry" plugs, 2 min

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Liner Soaks – Piccolo 10 XC

- Foliar sprays, 6 WAT, no significant effect

Liner Soaks – Piccolo 10 XC

- Reduced pruning up to 12 weeks
- Crops less responsive to spray applications

Liner Soaks – Concise

- Foliar sprays, 6 WAT, no significant effect

Liner Soaks – Concise
**PGR University**

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### Liner Soaks – Concise

**Miscanthus sinensis 'Gracillimus'**

12 WAT

- Concise liner dips on hard to control crops
- “Dry” plugs, 2 min., 12 WAT

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### Liner Soaks – Piccolo 10 XC

**Gaura 'Pink Fountain'**

6 WAT

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### Spray vs. Liner Soak – Concise

**Rudbeckia ‘Goldsturm’**

Liner Soak 6 WAT

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### Application variations

10 ppm Sumagic

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### Cultivar differences

**Delphinium elatum ‘Blue Bird’ at 4 WAT**

**Delphinium ‘Black Knight’ at 4 WAT**

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**SUMMARY**

- Spray 4 WAT
- Liner Soak 6 WAT

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**Piccolo foliar sprays**

Control 100 ppm
Read Rate Warnings

- Growth retardant rates vary with area of the country
- Note where rates come from
- Higher rates are used in the South
- Northern rates are one-half to one-quarter those used in the South

Rates and Resources

- Fine Americas PGR guides
- Inserts in GrowerTalks
- 2015 Annuals just released
- 2014 Perennials available
- Download the pdf from e-GRO

http://e-gro.org/research.php