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1:00 to 1:25 Eastern


**APPLICATION METHODS:
FOLIAR SPRAYS AND LINER SOAKS**

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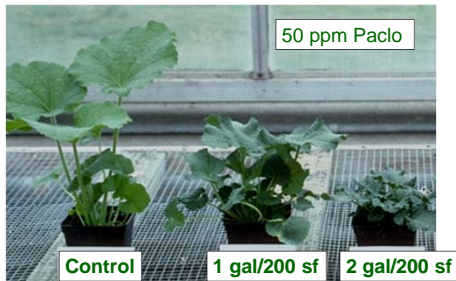




Foliar Sprays

- 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



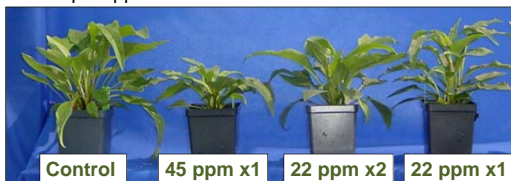
Application Uniformity = Uniform Crop!



- Apply evenly to the area not to plants
- Use a constant volume – monitor equipment

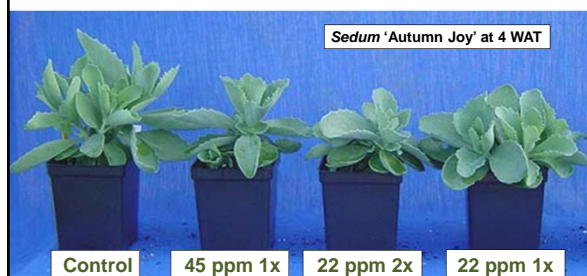
Why Use Multiple Applications?

- 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



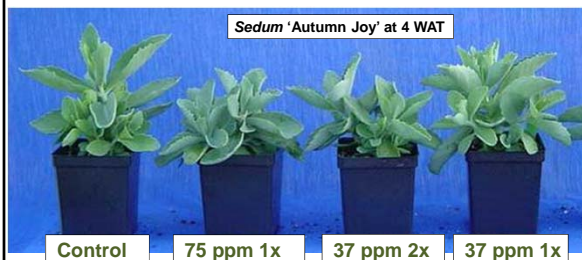
Topflor on *Echinacea* 'Ruby Star', 4 WAT

Multiple Applications - Sumagic



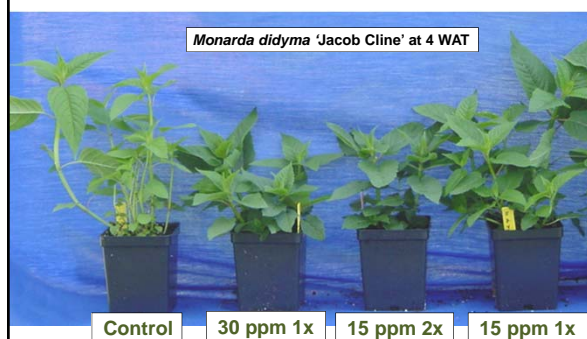
- Overdosed with 45 ppm, 4 WAT

Multiple Applications – Topflor

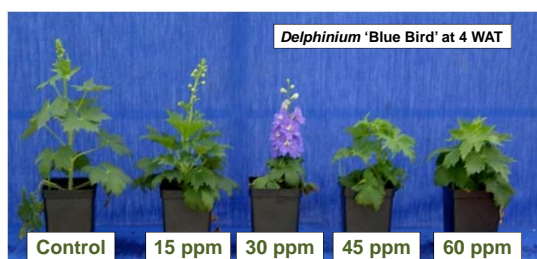


- 4 WAT, multiple applications of lower rates

Multiple Applications – Sumagic

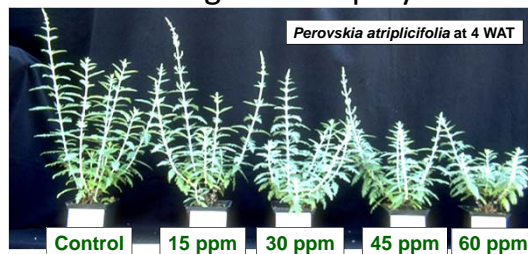


Topflor Foliar Spray



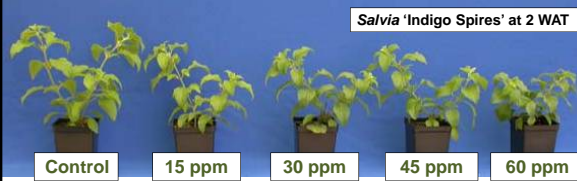
- Saturation at higher rates

Sumagic foliar spray



- Linear growth response to increasing rate

Linear Responses




Salvia 'Indigo Spires' at 2 WAT

Control 15 ppm 30 ppm 45 ppm 60 ppm

- Sumagic gave moderate control at 45 to 60 ppm
- Growth control persisted through 4 WAT

Sumagic - How long do you want control?



Alcea rosea 'Watchman' at 4 WAT

6 WAT

Control 15 ppm 30 ppm 45 ppm 60 ppm

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

Sprencches – 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 an 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

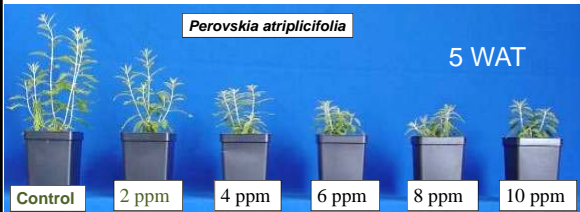
- Early control of vigorous crops
- Flexibility of treatment (REI)
- Goal is to provide baseline control of vigorous crops
- Make additional treatments later if necessary



Liner Soaks

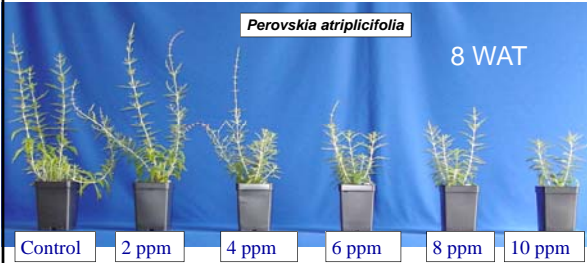
- Dip root ball in PGR solution
- Plugs ready for irrigation = “dry” plug
- Time not critical – 30 sec to 2 min
 - Be consistent
- Plant immediately or hold them
- No loss of effectiveness of dip solution
- Less potential to delay flowering compared to overhead drench

Liner Soak – Bonzi

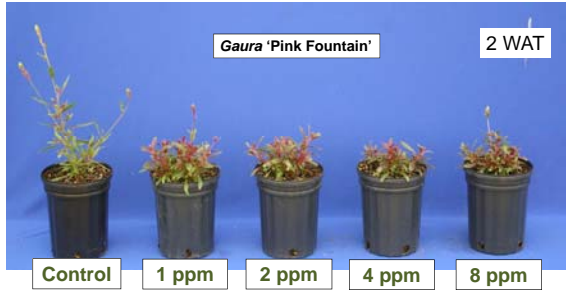


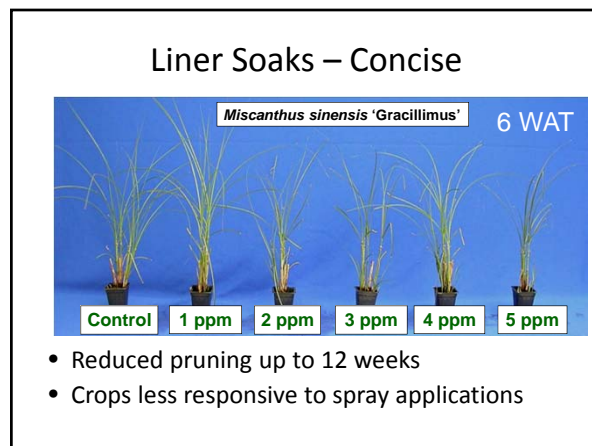
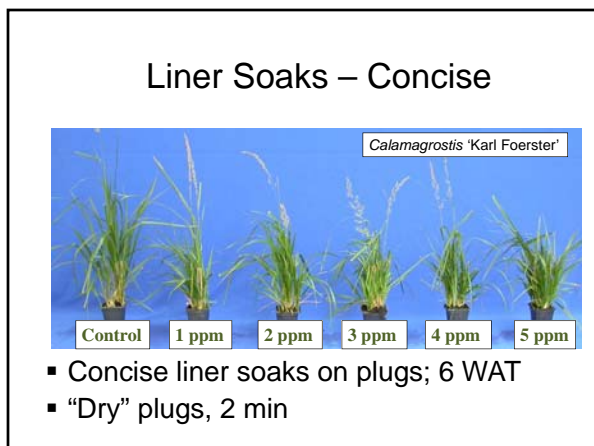
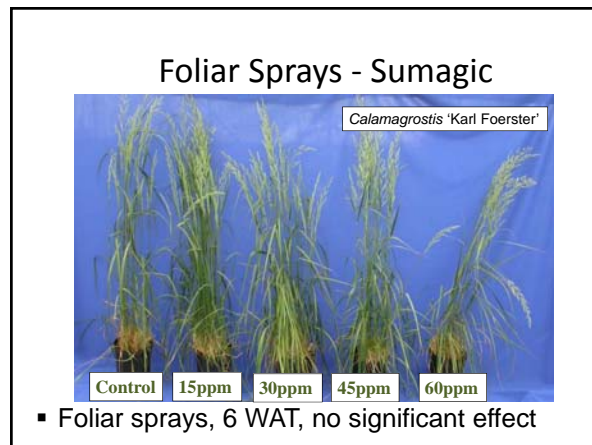
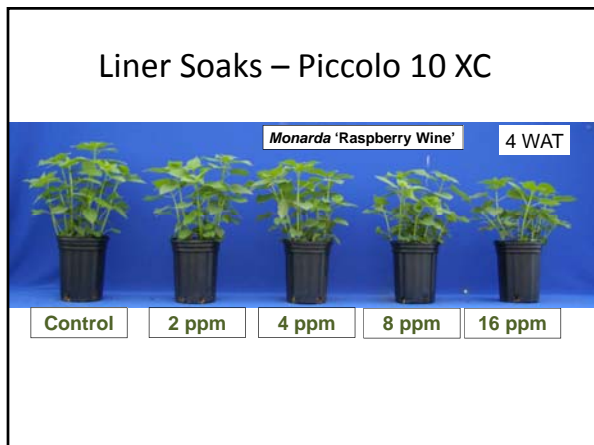
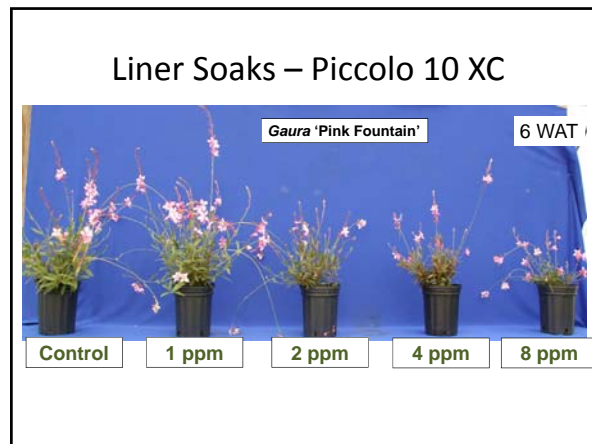
- Goal is to provide baseline control of vigorous crops
- Make additional treatments later if necessary

Liner Soak – Bonzi



Liner Soaks – Piccolo 10 XC





Liner Soaks – Concise

Miscanthus sinensis 'Gracillimus' 12 WAT

Control 1 ppm 2 ppm 3 ppm 4 ppm 5 ppm

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

Liner Soaks – Piccolo 10 XC

Gaura 'Pink Fountain'

4 WAT

6 WAT

Control 1 ppm 2 ppm 4 ppm 8 ppm

Spray vs. Liner Soak – Concise

Rudbeckia 'Goldsturm'

Spray 4 WAT

Control 15 ppm 30 ppm 45 ppm 60 ppm

Liner Soak 6 WAT

Control 1 ppm 2 ppm 3 ppm 4 ppm 5 ppm

3 SUMMARY

Application variations

10 ppm Sumagic 10 ppm Sumagic

Cultivar differences

Delphinium elatum 'Blue Bird' at 4 WAT

Control 30 ppm 60 ppm

Delphinium 'Black Knight' at 4 WAT

Control 100 ppm

Piccolo foliar sprays

PGR University

Foliar Sprays and Liner Soaks

Joyce Latimer, VaTech

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>

