

VIRGINIA TECH



Evaluating Piccolo 10 XC Liner Dips on Herbaceous Perennials (PP96)

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Floriculture



Objectives

- Evaluate plant response to Piccolo 10 XC applied as a liner dip prior to potting.

Plant Materials

□ Sensitive:

- *Gaura lindheimeri* 'Pink Fountain'
- *Veronica longifolia* 'Pink Panther'
- *Coreopsis* 'Sweet Dreams'

□ Not so sensitive:

- *Penstemon* 'Laura'
- *Monarda didyma* 'Raspberry Wine'

Plant Culture

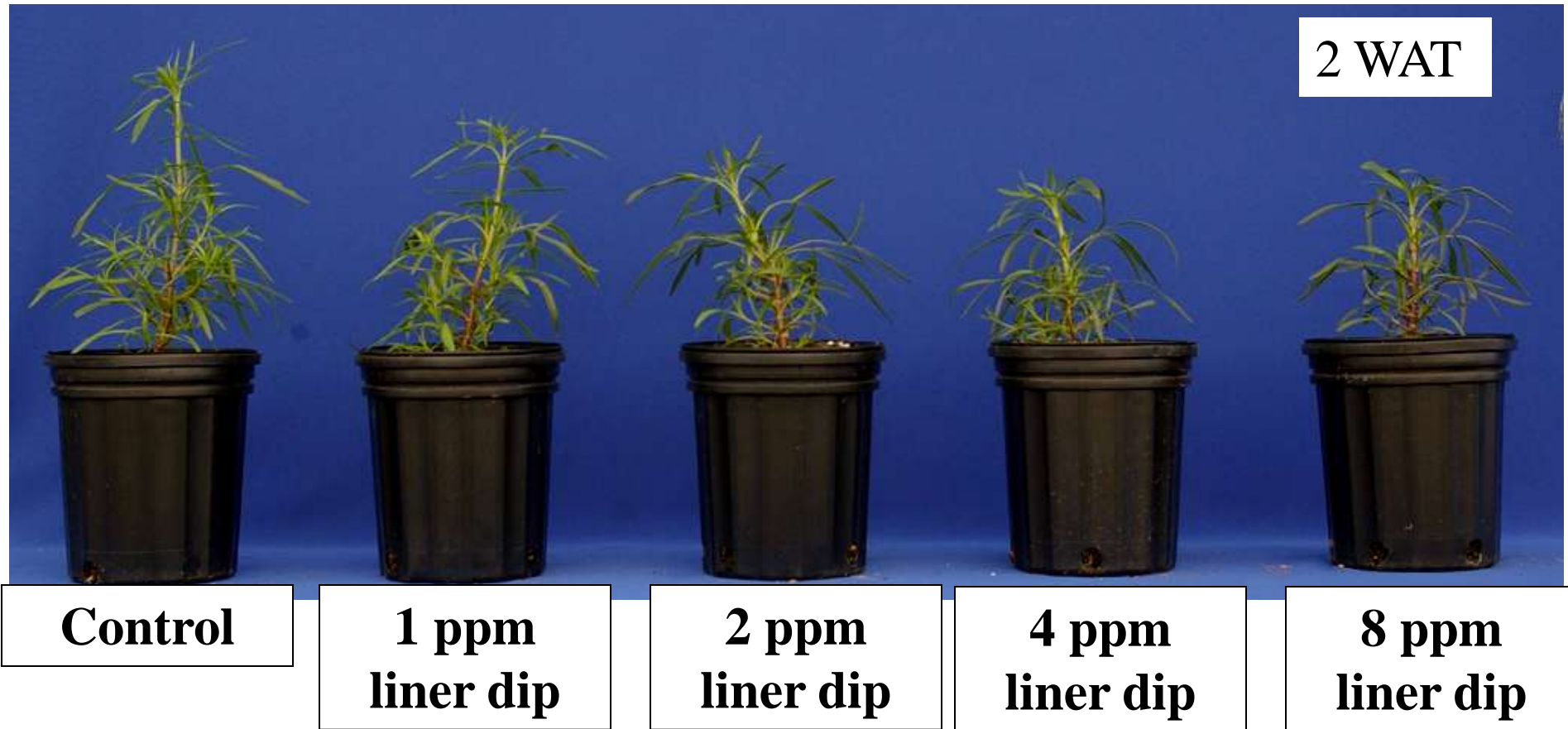
- Plugs (72s) donated by Aris Horticulture
- Planted in 3.4-liter trade gallon pots filled with Fafard 52 (peat/pine bark medium); CLF at 200 ppm N
- Treatments applied to plugs as a 2 minute liner dip the day before potting; plugs were actively growing
- Data collected: plant height and width, per cent plants flowering, and days to flower.



Treatments and Rates

- Piccolo 10 XC (4% paclobutrazol) liner dips
 - Rates to sensitive crops
 - 0, 1, 2, 4, or 8 ppm
 - Rates for not so sensitive crops
 - 0, 2, 4, 8, or 16 ppm

Piccolo 10 XC: *Coreopsis* 'Sweet Dreams'



- Quadratic reductions in height and width with increasing rate

Piccolo 10 XC: *Coreopsis* ‘Sweet Dreams’



Control

**1 ppm
liner dip**

**2 ppm
liner dip**

**4 ppm
liner dip**

**8 ppm
liner dip**

- Height NS; width quadratic reduction with increasing rate

Piccolo 10 XC: *Coreopsis* ‘Sweet Dreams’

6 WAT



Control

**1 ppm
liner dip**

**2 ppm
liner dip**

**4 ppm
liner dip**

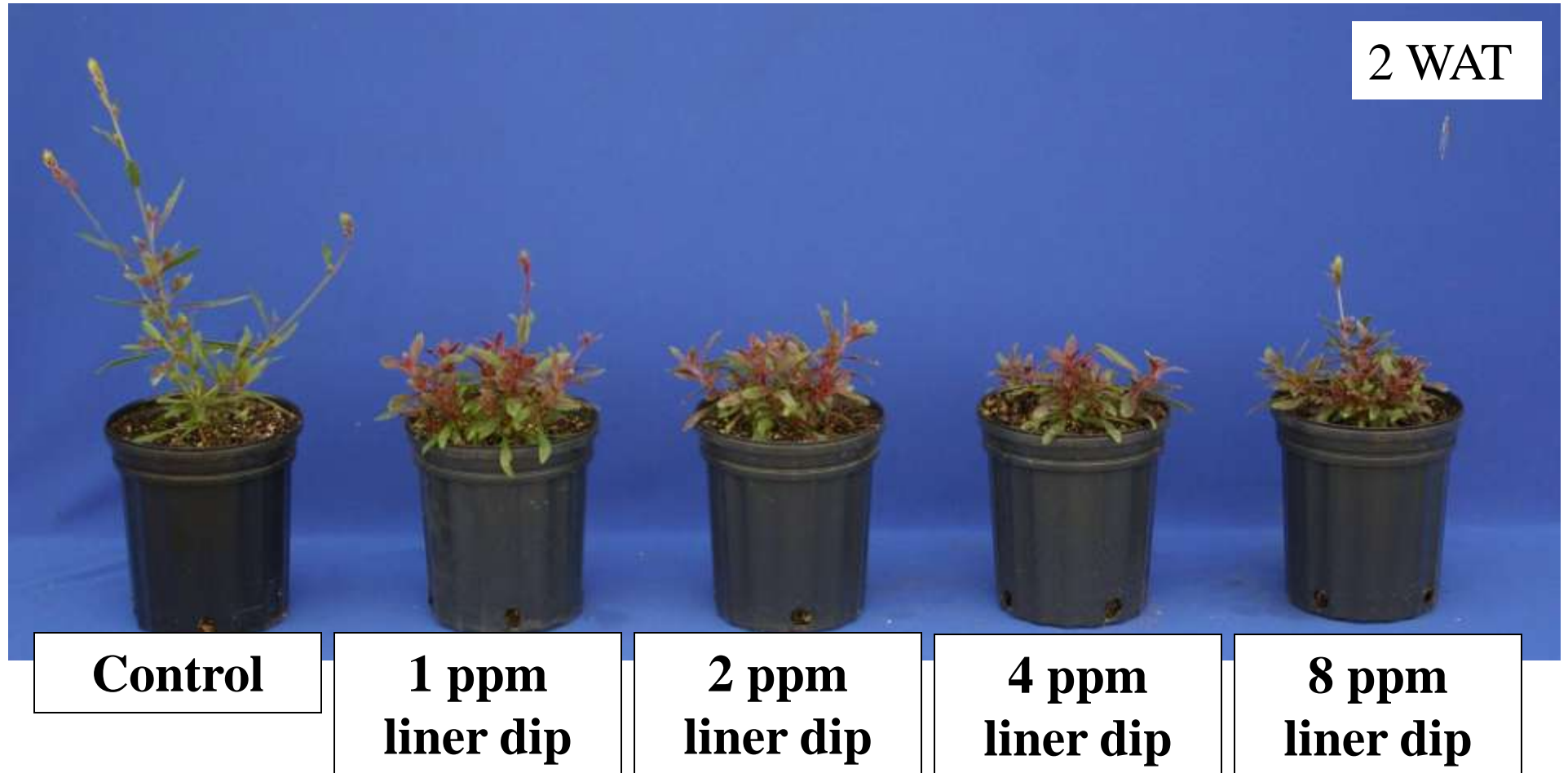
**8 ppm
liner dip**

- Height and width, NS
- No treatment effect on days to flower.

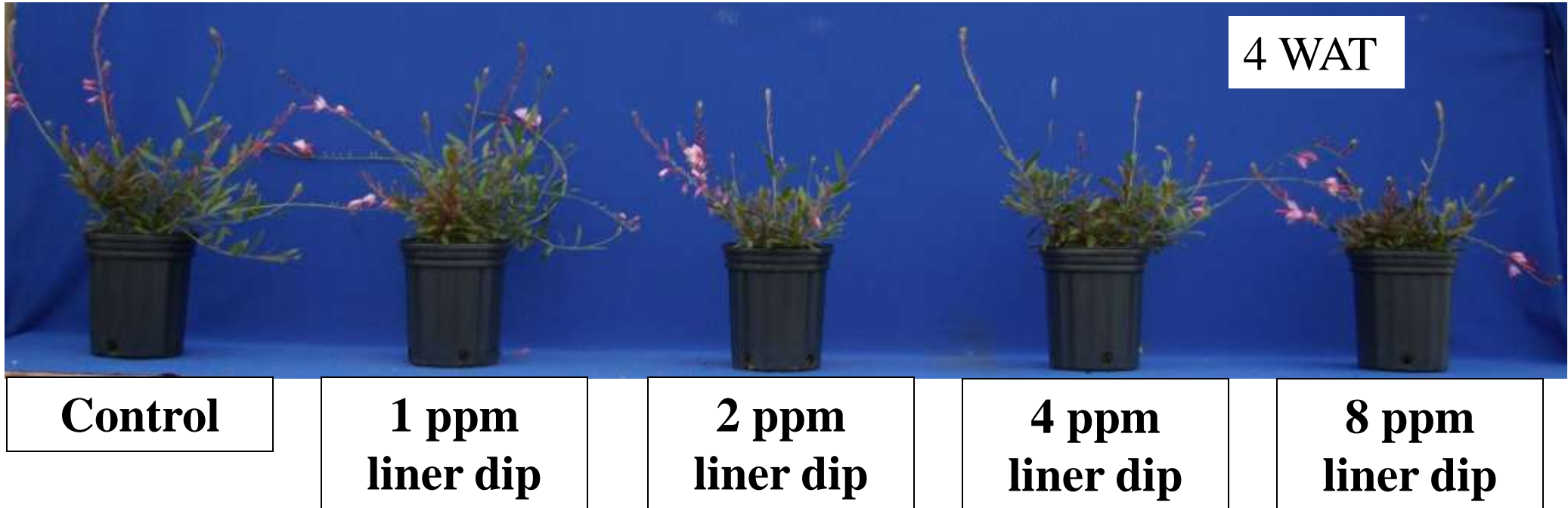
Results – *Coreopsis* ‘Sweet Dreams’

- At 2 WAT there was a quadratic reduction in height and a linear reduction in width with increasing liner dip rates of Piccolo 10 XC
- At 4 WAT, height was no longer significant but width was reduced quadratically with increasing rate
- No significant growth effects at 6 WAT
- Liner dips rates >8 ppm will be necessary to provide longer control or recommend follow-up spray applications
- Flowering time was not affected by treatment

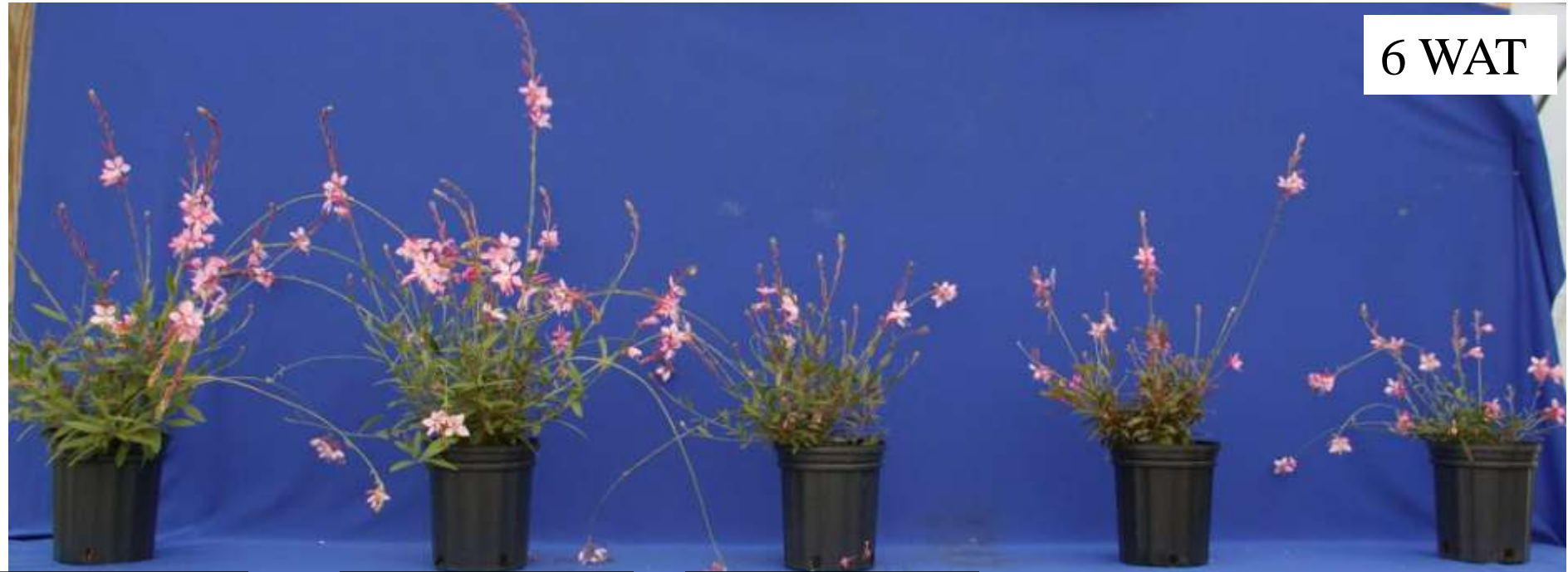
Piccolo 10 XC: *Gaura* 'Pink Fountain'



Piccolo 10 XC: *Gaura* 'Pink Fountain'



Piccolo 10 XC: *Gaura* 'Pink Fountain'



6 WAT

Control

**1 ppm
liner dip**

**2 ppm
liner dip**

**4 ppm
liner dip**

**8 ppm
liner dip**

Results – *Gaura* ‘Pink Fountain’

- Piccolo 10 XC
- *Gaura* growth showed a quadratic reduction in plant and flower height with increasing liner dip rates throughout the study.
- Plants treated with the 2 and 4 ppm liner dips had a more upright habit than the untreated plants
- *Gaura* plants treated with 2 to 4 ppm liner dips were compact with excellent appearance.
- The 8 ppm liner dips resulted in excessive growth reductions.

Piccolo 10 XC: *Monarda* 'Raspberry Wine'



Control

**2 ppm
liner dip**

**4 ppm
liner dip**

**8 ppm
liner dip**

**16 ppm
liner dip**

Piccolo 10 XC: *Monarda* 'Raspberry Wine'

4 WAT



Control

**2 ppm
liner dip**

**4 ppm
liner dip**

**8 ppm
liner dip**

**16 ppm
liner dip**

Piccolo 10 XC: *Monarda* 'Raspberry Wine'

6 WAT



Control

**2 ppm
liner dip**

**4 ppm
liner dip**

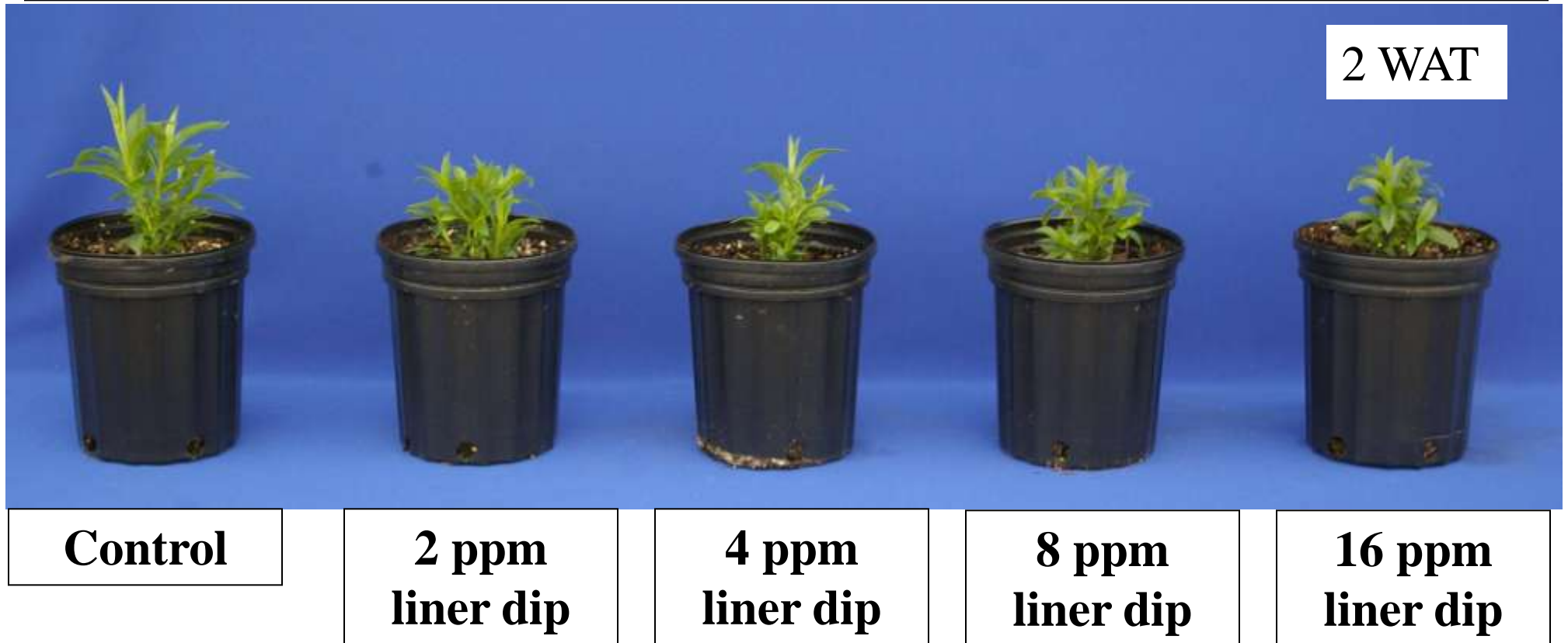
**8 ppm
liner dip**

**16 ppm
liner dip**

Results – *Monarda* ‘Raspberry Wine’

- Piccolo 10 XC
- Liner dips had a moderate effect on plant height with linear reductions of 20 to 31% with increasing rates at 2 WAT and reductions only with the higher rates (quadratic response) at 4 WAT
- Height control through 4 WAT was acceptable with the 16 ppm liner dip; holding plants longer would require a higher initial liner dip rate or subsequent spray applications.

Piccolo 10 XC: *Penstemon* 'Laura'



Piccolo 10 XC: *Penstemon* 'Laura'



4 WAT

Control

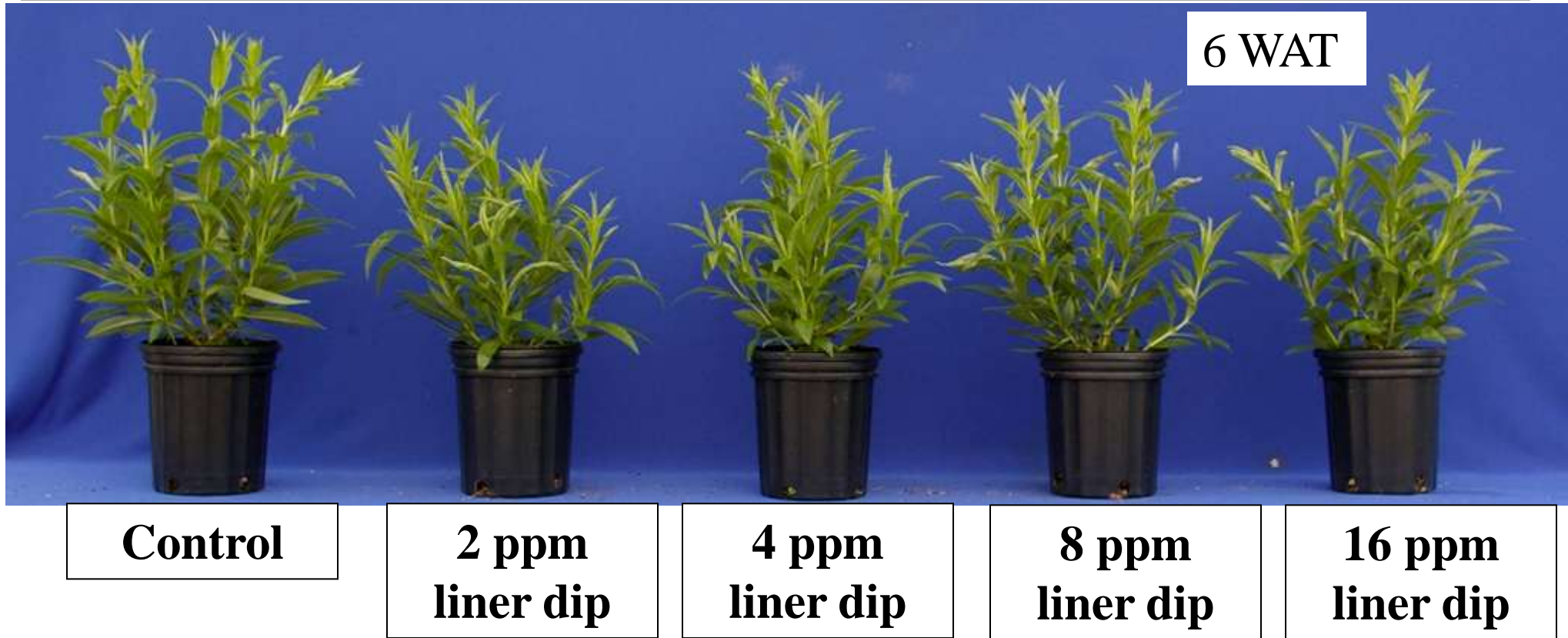
**2 ppm
liner dip**

**4 ppm
liner dip**

**8 ppm
liner dip**

**16 ppm
liner dip**

Piccolo 10 XC: *Penstemon* 'Laura'



Piccolo 10 XC: *Penstemon* 'Laura'



8 WAT

Control

**2 ppm
liner dip**

**4 ppm
liner dip**

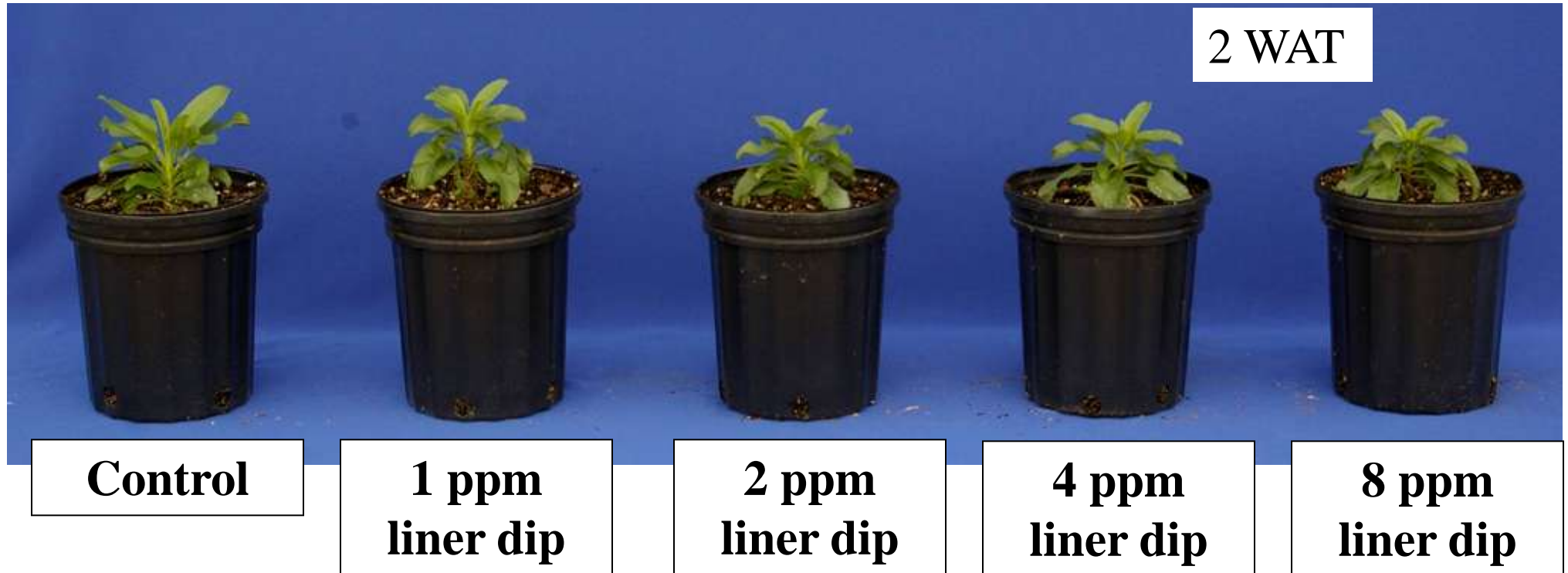
**8 ppm
liner dip**

**16 ppm
liner dip**

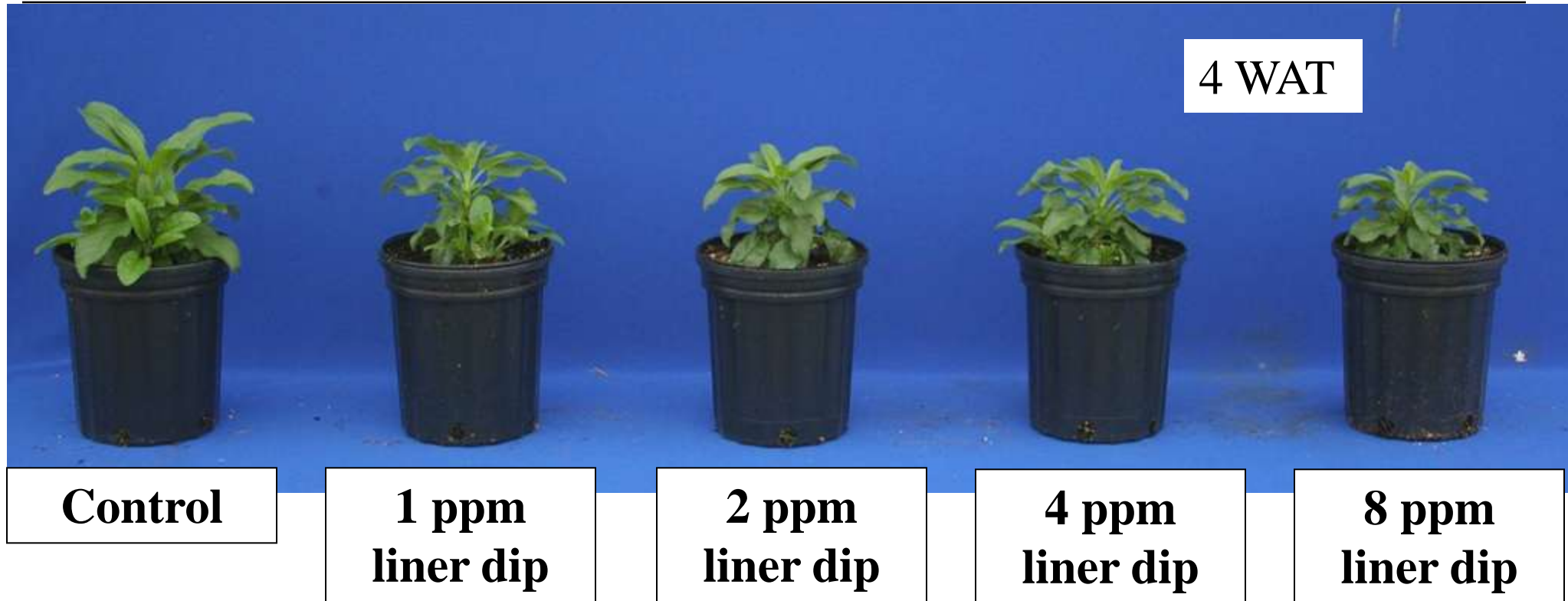
Results – *Penstemon* ‘Laura’

- Piccolo 10 XC
- Moderately responsive to the liner dips with quadratic reductions of 25 to 37% in plant height at 2 WAT but less than 20% reductions at 4 or 6 WAT
- Plant width was somewhat more responsive with up to 29% reductions at 2 WAT and 27% reductions at 4 WAT.
- There were no significant differences in plants at 8 WAT.
- Appearance of plants treated with 16 ppm liner dips was excellent and provided the baseline control that we promote with the use of liner dips

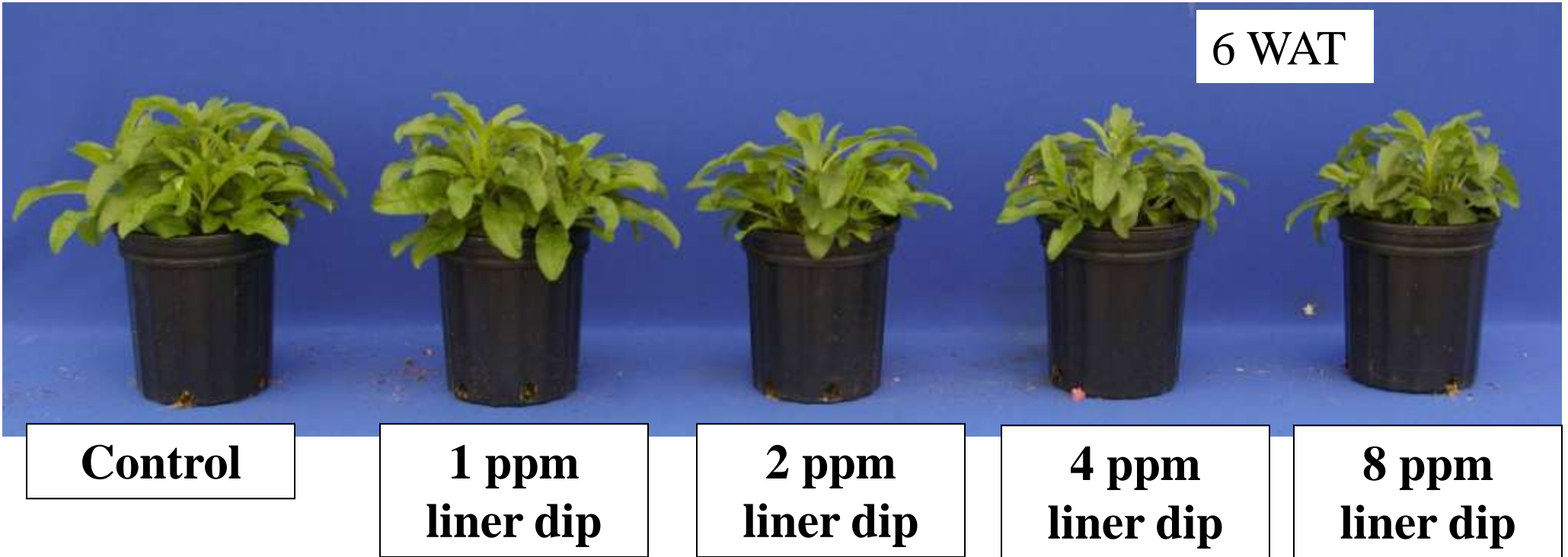
Piccolo 10 XC: *Veronica* 'Pink Panther'



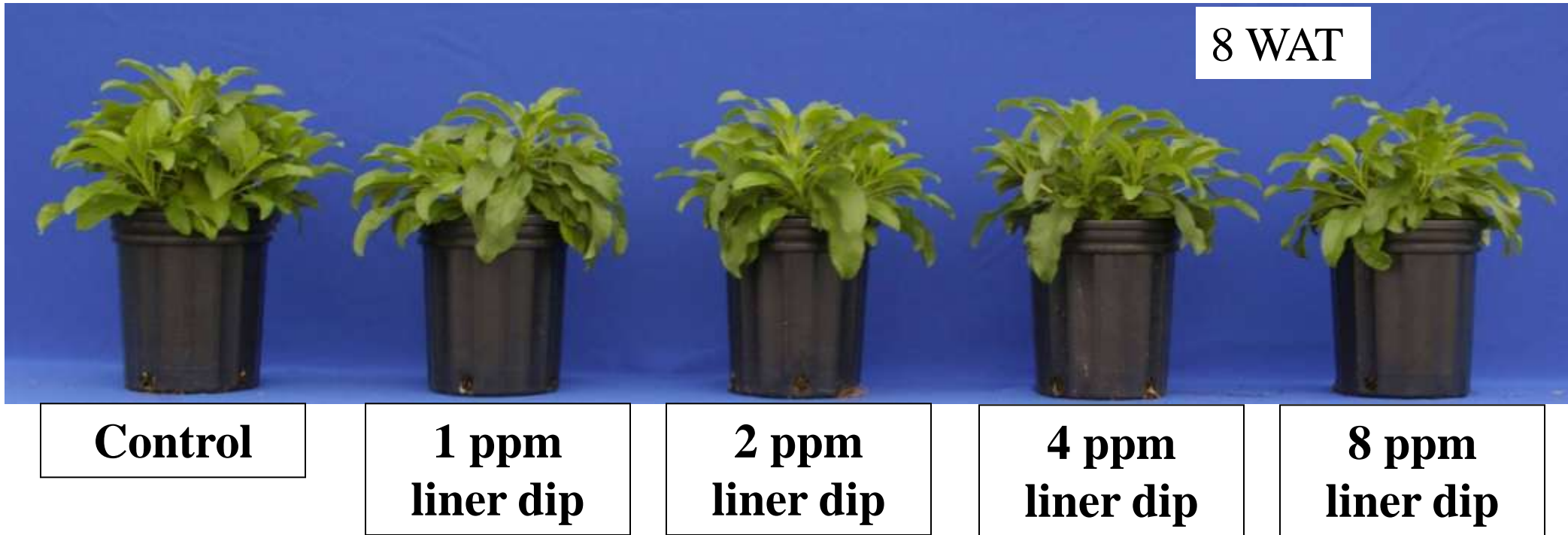
Piccolo 10 XC: *Veronica* 'Pink Panther'



Piccolo 10 XC: *Veronica* 'Pink Panther'



Piccolo 10 XC: *Veronica* 'Pink Panther'



Piccolo 10 XC: *Veronica* 'Pink Panther'

8 WAT



Control

**1 ppm
liner dip**

**2 ppm
liner dip**

**4 ppm
liner dip**

**8 ppm
liner dip**

Results – *Veronica* ‘Pink Panther’

- Piccolo 10 XC
- Plant height and width were responsive to Piccolo 10 XC with quadratic reductions with increasing rates through 8 WAT
- Plant appearance was excellent.
- Plugs were not vernalized. Therefore, the plants did not flower.
- Recommend 2 to 4 ppm liner dips for this crop.

Summary – Piccolo 10 XC Liner Dips

- All of the crops were responsive to the Piccolo 10 XC liner dips.
- Recommended liner dip rates:
 - *Coreopsis* ‘Sweet Dreams’: 10 to 12 ppm
 - *Gaura* ‘Pink Fountain’: 2 to 4 ppm
 - *Monarda* ‘Raspberry Wine’: 16 ppm (through 4 WAT)
 - *Penstemon* ‘Laura’: 16 ppm
 - *Veronica* ‘Pink Panther’: 2 to 4 ppm



Summary – Piccolo 10 XC Liner Dips

- Piccolo 10 XC liner dip rates will vary with crops as do the spray or drench rates but 2 to 4 ppm are good starting points for crops responsive to Piccolo spray applications with recommendations up to 16 ppm for less responsive crops.

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<http://www.hort.vt.edu/floriculture/>

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