

Advanced PGR Use – Annuals

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dummen
group

Objectives of presentation

- ▶ Present and discuss some annual plant responses to growth regulators
 - ▶ Rooting
 - ▶ Branching

Poor rooting – check the following

- ▶ Adequate aeration in the media
- ▶ Adequate light
- ▶ Used hormone?

Campanula Birch Hybrid stick 38 photo 42 with no roots low aeration

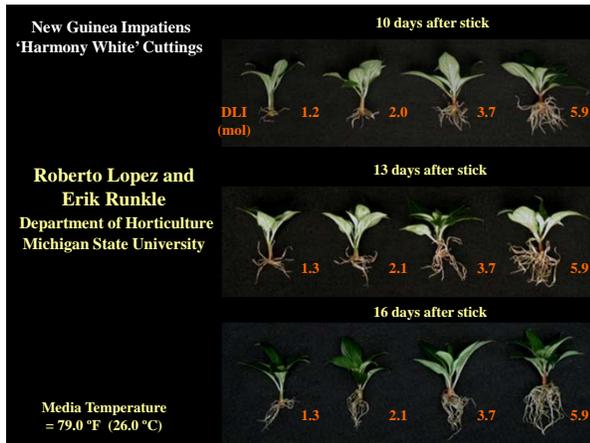
Campanula Birch Hybrid roots 8 days after sticking in high porosity media

Petunia Tiny Tunia 'Violet Ice' Cuttings after:

Days after stick	1.3	1.9	3.4	4.3	DLI (mol)
8					
12					
16					

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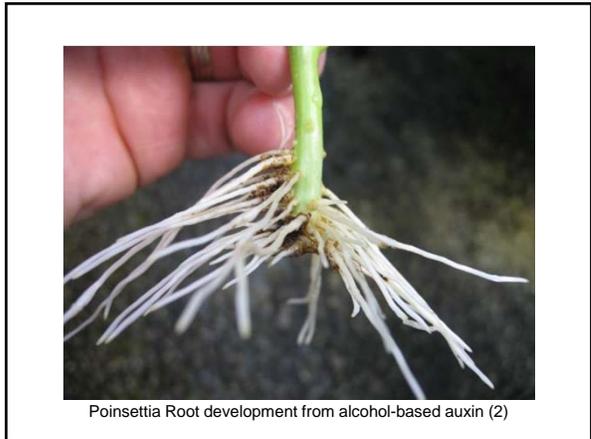
Media Temperature = 77 °F (25 °C)



What about rooting hormones?

Dipping cutting base in hormone

- ▶ Very effective method at promoting uniform rooting.
- ▶ Powders are generally safe to use but it is difficult to deliver the same amount of hormone to each cutting.
- ▶ Liquids can be very uniform in delivery but when not used carefully, result in shoot distortion



**Impact of KIBA and Pageant
application volumes on rooting of
poinsettia**

**10 Days After Stick
0.8 gallons/100 sq ft 100 ppm KIBA +
4 oz per 100 gallons Pageant**



**10 Days After Stick
6.3 gallons/100 sq ft 100 ppm KIBA +
4 oz per 100 gallons Pageant**



**10 Days After Stick
6.3 gallons/100 sq ft 100 ppm KIBA +
4 oz per 100 gallons Pageant**



**14 Days After Stick
0.8 gallons/100 sq ft 100 ppm KIBA +
4 oz per 100 gallons Pageant**



**14 Days After Stick
3.1 gallons/100 sq ft 100 ppm KIBA +
4 oz per 100 gallons Pageant**



14 Days After Stick
6.3 gallons/100 sq ft 100 ppm KIBA +
4 oz per 100 gallons Pageant



For at least some species, rooting
response is a function of application
volume

With KIBA sprays, expect at least
some leaf curl after sticking.

This curling goes away after a few
days as long as the KIBA
concentration is not too high.



Poinsettia Viking Red stick 24 photo 24 some leaf curl from 100 ppm KIBA application (2)

Tank mixes to promote
branching on compact plants

Daminozide and Etephon

Daminozide

- ▶ Sold as B-Nine and Dazide
- ▶ Commonly applied on a wide range of plant species for control of height
- ▶ Typical application rates are 2,500 ppm to 5,000 ppm
- ▶ Excellent growth retardant for bedding plants as it is effective for a limited time period after application after which the plant grows out of the growth regulation.

Ethephon

- ▶ Sold in products such as Florel, Collate, and Verve to the greenhouse grower
- ▶ Absorbed by the plant and degrades to ethylene, phosphate, and chloride.
- ▶ Most typically used to promote vegetative growth by aborting flowers on many crops such as zonal geraniums, Petunia, Double Impatiens, and Garden mums.
- ▶ It is also effective at controlling stem elongation and leaf size on plants like poinsettia.

Tank mix of Daminozide and ethephon to promote compact well branched liners

- ▶ First observed this tank mix application at Battlefield Farms – application made by Patty Loosigian and Maury Mairs.



Tank mix of Daminozide and ethephon to promote compact well branched liners

- ▶ First observed this tank mix application at Battlefield Farms – application made by Maury Mairs and Patty Loosigian.
- ▶ B-Nine at 2,500 ppm and Florel at 500 ppm
- ▶ In my opinion, an amazing height and branching response.



Verbena Lanai Upright Bright Rose stick 4 photo 7 with 500 ppm Florel and 2500 ppm B-Nine application

Tank mix of Daminozide and ethephon

- ▶ Since the application to Verbena, applications have been made to many species with positive branching responses.



Lobelia Sahara White 11 for 16 photo 16 with B-Nine Florel wk 13 and 15



Lobelia Sahara White 11 for 16 photo 16 with B-Nine Florel wk 13 and 15



Calibrachoa Noa Blue Legend 11 for 16 photo 16 with B-Nine and Florel applied wk 13 and 15



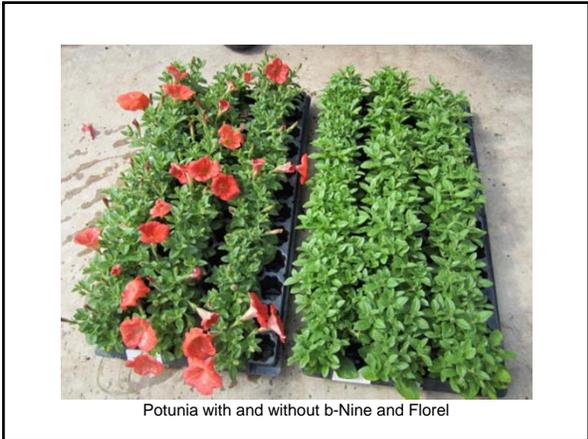
Calibrachoa with B-Nine and Florel looking good



Lantana with B-Nine and Florel right, control left



Lantana New Gold Control left B-Nine and Florel right wk 22 photo wk 25





Petunia 50 6 for 13 photo 4 looking great from B-Nine and Florel



Angelonia Archangel with B-Nine and Florel week 15, tp 17, photo 21



Lophospermum great branching from B-Nine and Florel right control left

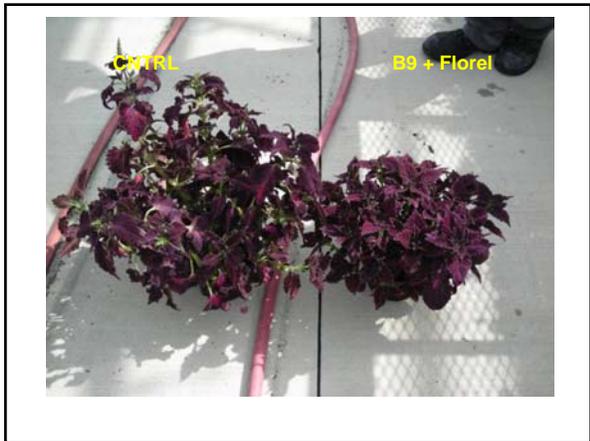


Lophospermum great branching from B-Nine and Florel

Trial Overview Photos from Tom Costamagna

- ▶ All plants were grown in either an 8" pot or 10" hanging basket.
- ▶ Plants were rooted and allowed to flower.
- ▶ After first flush all plants received a hard pinch / leveling.
- ▶ One week after an application of B9 (2500ppm) + Florel (500ppm) was made.

- ▶ Plugs planted 5/14/11
- ▶ Plants hard pinched leveled 6/24/11
- ▶ B9+Florel application made 7/1/11
- ▶ Photos taken 8/2/11



B-Nine and Florel application timing

- ▶ First application when plants have rooted to edge of the liner.
- ▶ If desired, a second application can be made two weeks later.
- ▶ Transplant a week later
- ▶ For lantana, one application once cuttings root and a second about two weeks after transplant works well.

**Another option
Florel and Configure**

Configure

- ▶ N-(phenylmethyl)-1H-purine-6-amine
- ▶ A synthetic cytokinin
- ▶ Cytokinins are a class of plant growth substances that promote cell division
- ▶ Configure has historically been used primarily to increase pad and flower set on Thanksgiving cacti and promote lateral shoot in Hosta and Echinace.
- ▶ Positive reactions on several plants have been observed when Configure is combined with Florel



Pansy Cool Wave White with 500 Florel and 100 configure left, none right



Pansy Cool Wave Yellow with 100 ppm configure and 500 ppm Florel left



Pansy Cool Wave Yellow 23 29 for 35 photo 32 with 500 ppm Florel and 100 ppm Configure 1 and 3 weeks after transplant



Pansy Cool Wave with Configure and Florel vs none



Petunia Rhythm and Blues after Florel and Configure



Osteospermum unpinched with Florel and Configure application



Coleus sprayed with Florel and Configure 300 100 11 days earlier left and control right



Osteospermum Voltage Yellow no Configure



Osteospermum Voltage Yellow Florel and Configure March 14 photo April 3



Dianthus Olivia with Florel 300 ppm and configure 150 ppm on right



Echinacea branching from Florel and Configure on right, control on left



Gaillardia Goblin with branching promoted from Florel and Configure



Gaillardia Goblin Configure and Florel in seed plug. No Additional PGRS

Configure and Florel application comments and timing

- ▶ Experience is still rather limited but positive responses have been observed on some plants
- ▶ Only use for trials until you have positive experiences
- ▶ Expect chlorosis after application that will disappear over time.
- ▶ Florel rates are in the 350 to 500 ppm range and Configure in the 100 to 150 ppm range.
- ▶ Apply after roots have developed from sticking or seeding or transplanting of liners or plugs.

Thank you

dümmen
group

