

Impact of various PGRs on shelf life of herbaceous ornamentals grown in pots. **Final**

Ornamental Protocol Number: 08-013

Objective: Determine whether certain PGR materials increase the shelf-life of certain flowering, potted ornamentals

Experimental Design: Phytotoxicity Screen

Replicates: For phytotoxicity screen, a minimum of 3 plants per rate per cultivar.

Treatments: ABA, BA, Exilis Plus, Maxcel, and Provide (or Novagib). See products list below for contact information.

Application Instructions: Apply heavy foliar sprays (srenches) using 2 – 3 quarts solution per 100 sq ft. Use 5, 10, 50, 100 ppm to screen for phytotoxicity with each product except ABA. For ABA spray and srench application use 250, 500, 1,000 ppm S-ABA + Capsil adjuvant at 0.05% and a spray volume of 2-3 quarts per 100 square feet. For drenching and flood application use 125, 250, 500 ppm applied as an overhead drench or flood bench/floor treatment at a volume that is 5-10% of the pot volume. The primary label suggestions for ABA are expected to be 250 ppm for drenching and 500 ppm for spraying.

Target Plant Species: Geranium and NG impatiens.

Use Site: Greenhouse/Field Container

Evaluations: Phytotoxicity (with 0 being no phytotoxicity and 10 being plant death). Please include photos of examples of untreated plants and any treated plants exhibiting responses to treatments.

If different application methods or evaluations are made, please clearly specify differences in final report and explain how they enhanced results.

Experimental Design: Herbaceous Storage

Plot Size: Must be adequate to reflect actual use conditions.

Replicates: For storage test, a minimum of 6 plants per rate per cultivar.

Application Instructions: Time foliar spray applications to when each plant in the experiment has developed buds and at least open inflorescence, but do not wait until the majority of plants have more than three open inflorescences. Apply heavy foliar sprays (srenches) using 2 – 3 quarts solution per 100 sq ft. Maintain plants in greenhouse for 1 - 2 days. Split plants into two sets. The first will be shipped to a cooperating researcher. The other set will be placed under simulated shipping and retail storage conditions: place plants in boxes and keep in darkness for 48 hours to simulate shipping (for geraniums, please have the temperature be 20°C during this time); then place plants into conditions with 20°C 12 hours of fluorescent light watering as necessary. Evaluations will be made prior to simulated shipping, immediately after, and 7, 14, and 21 days after simulated shipping or until suitable relevant data cannot be collected, but no longer than 21 days. For the ABA treatment and the untreated, a second set of plants will undergo the same conditions as above, but will not be watered after a single irrigation upon opening the boxes after shipping. This set of plants will also be evaluated for wilting.

Treatments List:

Active Ingredient	Shipping & Storage	Wilt Assessment
BA	Actual Shipping	No
	Simulated Shipping	No
BA + GA	Actual Shipping	No
	Simulated Shipping	No
GA	Actual Shipping	No
	Simulated Shipping	No
TDZ	Actual Shipping	No
	Simulated Shipping	No
ABA	Actual Shipping	No
	Simulated Shipping	No
	Actual Shipping	YES
	Simulated Shipping	YES

Untreated	Actual Shipping	No
	Simulated Shipping	No
	Actual Shipping	YES
	Simulated Shipping	YES

Target Plant Species: Geranium, NG impatiens.

Use Site: Greenhouse/Field Container

Evaluations: Flower number, visual quality on a scale of 0 to 10 (with 0 being unsaleable and 10 being highly attractive), and phytotoxicity (with 0 being no phytotoxicity and 10 being plant death). Please include photos of examples of untreated plants and any treated plants exhibiting responses to treatments.

If different application methods or evaluations are made, please clearly specify differences in final report and explain how they enhanced results.

Recordkeeping: Keep detailed records of weather conditions including temperature and precipitation, soil-type or soil-less media, application equipment, application volume per acre, irrigation, pot/liner size, plant height & width, and plant growth stage at application and data collection dates. Because plants will be kept under fluorescent lights during part of the experiment, please measure light levels under these lights immediately after the simulated shipping period and include these readings in the final report.

Reports:

Reports submitted on the standard IR-4 Ornamental Horticulture Research Report Form are preferred. However, reports in other formats are acceptable as long as those reports are amended with detailed experimental design and materials and methods, along with raw data, recordkeeping information, and any pictures.

A report submitted electronically is preferred but not required. If the report is provided electronically, the basic report can be sent in MS Word or WordPerfect, the recordkeeping information as pdf or other electronic documents, and the raw data in MS Excel or other suitable program such as ARM.

Please direct questions to: Cristi Palmer, IR-4 HQ, Rutgers University, 681 US Hwy 1 S, North Brunswick, NJ 08902-3390, Phone 732-932-9575 x629, palmer@aesop.rutgers.edu **OR** Ely Vea, 308 Aston Forest Lane, Crownsville, MD 21032, Phone & FAX#: 410-923-4880, E-mail: evvea@comcast.net.

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Revised By: CLP

Products List

Product	Priority Level	Crops	Rate(s)	Special Instructions	Contact Information to obtain materials and any needed adjuvants
ABA	A	Geranium & NG Impatiens	To be chosen after initial phytotoxicity screen.		Valent, Craig Campbell,
BA + GA	A	Geranium & NG Impatiens	To be chosen after initial phytotoxicity screen.	Single application when each plant has at least one open flower or inflorescence	Fascination, Valent, Joe Chamberlin, 770-985-0303, jcham@valent.com
					Fresco, Fine Americas, Kevin Forney, 661-588-7137, kevinf@fine-americas.com
BA	B	Geranium & NG Impatiens	To be chosen after initial phytotoxicity screen.	Single application when each plant has at least one open flower or inflorescence	Exilis Plus, Fine Americas, Kevin Forney, 661-588-7137, kevinf@fine-americas.com
					MaxCel, Valent, Joe Chamberlin, 770-985-0303, jcham@valent.com
GA 4&7	B	Geranium & NG Impatiens	To be chosen after initial phytotoxicity screen.	Single application when each plant has at least one open flower or inflorescence	ProVide, Valent, Joe Chamberlin, 770-985-0303, jcham@valent.com
					NovaGib, Fine Americas, Kevin Forney, 661-588-7137, kevinf@fine-americas.com
TDZ	C	Geranium & NG Impatiens	To be chosen after initial phytotoxicity screen.		Bayer Environmental Science, Don Myers, don.myers@bayercropscience.com
Untreated					