BALLTECH ON DEMAND™

Ball Seed®

TECH TRAINING:
PLANT GROWTH REGULATORS—BENZYLADENINE (BA)

Benzyladenine (BA) is the active ingredient in plant growth regulators (PGRs) like Configure. It is a synthetic cytokinin used to promote branching and improve canopy structure in many ornamental crops. When used properly, it can serve as a "chemical pinch"—reducing labor costs and the risk of disease spread associated with manual pinching. However, results can be unpredictable among different species and cultivars and may not yield the same quality as a manual pinch. Spray considerations (including application timing, rate and uniformity) are critical to success and also affect the risk of phytotoxicity.

Tip 1: Know How to Use BA

- BA promotes lateral branching at axillary buds. Buds *must be present* at the time of application to yield increased branching. The result is more compact plants with improved canopy structure.
- BA promotes or enhances flowering in crops like Christmas cactus.
- BA promotes offset formation in crops like hens and chicks.

Fig 1. Non-pinched liner (left) with a more upright growth habit compared to a liner treated with BA (right).

Tip 2: Focus on Optimizing Applications

- Apply when leaves can stay wet (e.g. morning, low light, high humidity) to improve absorption.
- Apply after transplant—once plants are established and actively growing.
- Translocation is limited, so ensure sufficient and uniform canopy coverage.
    - Increasing pressure and spray volume help with canopy penetration.
    - 1 to 2 quarts per 100 sq. ft. is recommended.
- Slightly acidic to neutral spray solution pH (5.0–8.0) helps maintain efficacy.
- Recommended rates vary by species, so use the product label, Configure University Trial Results and *GrowerTalks* Annual and Perennial PGR Guides to determine rates.
    - If no rate recommendations are available, start with low rates (50–100 ppm).

Tip 3: Understand the Risks *and* Trial

- Overapplication or poor timing can lead to leaf spotting, distortion, cupping, chlorosis or reduced rooting.
    - Multiple lower rate applications may increase efficacy, while limiting phytotoxicity.
- Some species like pansies, petunia and zinnia are more sensitive to BA applications, so trial prior to widespread applications.
    - ***Always read and follow the label to ensure products are compatible with your intended application and crop.***

Fig 2. BA phytotoxicity on mums.

DEEPER DIVE: THE WHY

What is benzyladenine? Benzyladenine (BA) is a synthetic cytokinin that disrupts apical dominance, stimulating lateral bud break and improving branching. Commercially available as Configure, BA is applied as a foliar spray used to promote lateral branching and, in some species, enhance flowering. Uniform spray coverage and thorough canopy penetration are essential for effective results since BA has limited translocation within the plant.

BA Uses: Many herbaceous perennials, including *Echinacea* and *Hosta*, have demonstrated strong responses to BA sprays with two- to 10-fold increases in branching compared to non-treated plants. Research on numerous annuals and perennials has documented improved branching without phytotoxicity with proper use. However, response to BA is highly dependent on the species and cultivar, so one variety may respond well while another may not. Some studies report that BA can delay flowering but ultimately increase flower number when applied early in the crop cycle. In certain crops, such as *Schlumbergera* (Christmas cactus), BA increases flower bud formation when applied at floral initiation. It can also boost offset production in crops like *Sempervivum* (hens and chicks). Check out the Fine Americas Configure Product Information and University Trial Results for an in-depth review of species-specific rates and responses.

Application: BA is most effective when applied to young, actively-growing plants that have developed multiple lateral buds. One application after transplant establishment is often sufficient, though two lower-rate sprays spaced two weeks apart can also work well. Applications can be made in the liner stage and again after transplant. Typical rates range from 200 to 600 ppm, but it's best to start conservatively (100–200 ppm) when using BA on new species or cultivars. Use adequate spray volume to reach the stems and axillary buds thoroughly. Maintain spray solution pH between 5.0 and 8.0 and apply within 24 hours of mixing.

Tank Mixing: University of Kentucky trials reported enhanced branching and improved control when BA was tank-mixed with indole-3-butyric acid (IBA) during propagation. Research from Virginia Tech also reported successful tank mixes of BA with gibberellic acid (GA) biosynthesis inhibitors such as paclobutrazol, while other studies reported success when combining BA with ethephon or daminozide. However, while these tank mixes can be effective, they do not provide truly synergistic effects.

Risks: Overapplication or use on sensitive varieties can lead to leaf spotting, chlorosis or distortion. Crops under stress from low fertility, drought or temperature extremes are less likely to respond well. To maximize uptake and minimize risk, apply early in the morning or under low light, high humidity conditions to extend leaf wetness. *Always read and follow the label to ensure products are compatible with your intended application and crop to prevent potential antagonisms or phytotoxicity*.

For more information, check out these additional resources:

GrowerTalks:* *2025-26 Plant Growth Regulator Guide for Annuals
GrowerTalks:* *2024-25 Growth Regulators for Containerized Herbaceous Perennial Plants
GrowerTalks:* *Branching Out with PGRs
Fine Americas:* *Configure Product Information and University Trial Results