# DRENCH GUIDE
## FOR ANNUALS AND PERENNIALS

Bonzi®
Ornamental growth regulator

syngenta®

## There are several considerations when planning Bonzi® plant growth regulator (PGR) drenches:

1. There are significant plant vigor differences between species. See Tables 1 and 2 for drench concentrations based on average daily temperature (ADT) in northern vs. southern locations.

2. Within a species, there can be significant plant vigor differences (i.e., calibrachoa, petunia, verbena, etc.). For example, FotoFinish® petunias require higher concentrations of Bonzi than FlashForward™ petunias. It is best to treat a small subset of the crop before treating the entire plot if you have concerns about specific crops.

3. Younger, smaller plants of the same species will be controlled differently than older, larger plants even though drench volume and pot size remains the same.

## TABLE 1. RECOMMENDED BONZI PGR DRENCH CONCENTRATIONS FOR SEED CROPS*

| Crop and Species | Northern Location = moderate to warm climate with the low concentration for cool climate (ADT > 65°F) | Southern Location = hot and humid climate (ADT > 75 to 80°F) |
|---|---|---|
| Bionic™, Tophat™ Begonia Interspecific | 0.25-0.5 ppm | 0.5 ppm |
| Bright Sparks™ Celosia | 0.5-1 ppm | 1-2 ppm |
| Bright and Early™ Ornamental Kale | 0.5-1 ppm | 1-2 ppm |
| Sparkler™ 2.0 Cleome | 1-2 ppm | 2-4 ppm |
| Mezmerize™ Coleus | 0.5-1 ppm | 1-2 ppm |
| Field of Dreams™ Ornamental Corn | 2-3 ppm | 4-5 ppm |
| Sriracha™ Cuphea | 0.5-1 ppm | 1-2 ppm |
| Diabunda® Dianthus | 0.5-1 ppm | 1-2 ppm |
| Big Kiss™, Frosty Kiss™, Kiss™, Gazoo™ Gazania | 0.5-1 ppm | 1-2 ppm |
| Xtreme™, Athena™ Impatiens | 0.125-0.25 ppm | 0.25-0.5 ppm |
| Accent™, Imara™ XDR Impatiens | 0.25-0.5 ppm | 0.5-1 ppm |
| Antigua™, Inca II™, Perfection™ African Marigold | 1-2 ppm | 2-3 ppm |
| Endurance™, Zenith™ Triploid Marigold | 0.5-1 ppm | 1-3 ppm |
| Magic™ Mimulus | 0.25-0.5 ppm | 0.5-1 ppm |
| Saratoga™, Perfume™ Nicotiana | 1-2 ppm | 2-3 ppm |
| Asti™ Osteospermum | 0.5-1 ppm | 1-2 ppm |
| Delta™ Pro Pansy | 0.25-0.5 ppm | 0.5-1 ppm |
| Colossus™, Select Pansy | 0.5-1 ppm | 1-2 ppm |
| Freefall™, Freefall XL Spreading Pansy | 0.5-1 ppm | 1-2 ppm |
| Arabesque® Penstemon | 0.5-1 ppm | 1-2 ppm |
| Beehive™ Pentas | 0.25-0.5 ppm | 0.5-1 ppm |
| Frost™, Tritunia™ Petunia Grandiflora | 1-2 ppm | 1-2 ppm |
| Damask™, Horizon™, Hurrah™, Prism™ Petunia Multiflora | 1-2 ppm | 1-2 ppm |
| FlashForward Petunia Spreading Milliflora | 0.5-1 ppm | 1-2 ppm |
| FotoFinish Petunia Spreading | 1-2 ppm | 2-3 ppm |
| Picobella™ Petunia Milliflora | 0.5-2 ppm | 1-2 ppm |
| Skybox™ Petunia Spreading Grandiflora | 1-2 ppm | 2-3 ppm |
| Mojave™ Salvia | 1-2 ppm | 2-3 ppm |
| Liberty™ Classic, Snaptastic™, Sweet Duet™ Snapdragon | 1-2 ppm | 2-3 ppm |
| Snaptini™ Snapdragon | 0.5-1 ppm | 1-2 ppm |
| Sunfinity® Yellow Dark Center, Yellow-Red Bicolor Sunflower | 2-3 ppm | 3-5 ppm |
| Obsession™ Cascade Verbena | 1-2 ppm | 2-4 ppm |
| Zydeco™ Zinnia | 0.25-0.5 ppm | 0.5-1 ppm |
| Magellan™ Zinnia | 0.25-0.5 ppm | 1-2 ppm |
| **Syngenta Perennials** | **Northern Location = moderate to warm climate with the low concentration for cool climate (ADT > 65°F)** | **Southern Location = hot and humid climate (ADT > 75 to 80°F)** |
| Excalibur™ Delphinium | 1-2 ppm | 2-4 ppm |
| Camelot™, Dottie™ Digitalis | 1-2 ppm | 2-4 ppm |
| Andiamo® Coreopsis | 1-2 ppm | 2-3 ppm |
| Violeta™ Purple XL Lavender | 1-2 ppm | 2-3 ppm |
| Barbarini® Dianthus | 2-3 ppm | 3-4 ppm |
| Prairie Splendor™, Blaze™ Echinacea | 1-2 ppm | 2-3 ppm |
| Surrender™ Sedum | 1-2 ppm | 2-3 ppm |

* Based on average daily temperature

## TABLE 2. RECOMMENDED BONZI PGR DRENCH CONCENTRATIONS FOR VEGETATIVE CROPS*

| Crop and Species | Northern Location = moderate to warm climate with the low concentration for cool climate (ADT > 65°F) | Southern Location = hot and humid climate (ADT > 75 to 80°F) |
|---|---|---|
| Carita™ and Carita Cascade Angelonia | 0.25-0.5 ppm | 0.5-1 ppm |
| Sassy® Argyranthemum | 1-2 ppm | 2-3 ppm |
| Calypso™ Bacopa | 0.5-1 ppm | 1 ppm |
| Brazen™, Mexican Gold™ Bidens | 0.5 ppm | 0.5-1 ppm |
| Callie® Calibrachoa | 1-3 ppm | 2-4 ppm |
| Cabrio™ Calibrachoa | 1 ppm | 1-2 ppm |
| Muehlenbeckia Coins | 1 ppm | 1-2 ppm |
| Goldii Lysimachia | 2-3 ppm | 3-4 ppm |
| Miss Mandy, Karma, Grandalia™, Sincerity™, Café Au Lait Dahlia | 2-3 ppm | 3-4 ppm |
| Dahlegria®, Happy Days™, Coffee Shop™ Dahlia | 2-3 ppm | 3-4 ppm |
| Darla® Diascia | 0.5-1 ppm | 1-1.5 ppm |
| Madinia®, Madinia Maximo Dipladenia | 0.5-1 ppm | 1-2 ppm |
| Madinia Petite Dipladenia | 0.5-1 ppm | 0.5-1 ppm |
| Mezoo™ Dorotheanthus | 0.5 ppm | 1-1.5 ppm |
| Euphoric™ Euphorbia | 0.5-1 ppm | 1-2 ppm |
| Vigorous geranium series (Calliope® Large, Calliope Medium, Calliope Cascade, Mantra™, Mojo™, Caldera™, Cascade, Blizzard™, vigorous Ivy League™ ivies, Rocky Mountain™, Americana®) Geranium | 0.1-0.2 ppm | 0.2-0.3 ppm |
| Scentropia™ Heliotrope | 0.5-1 ppm | 1-1.5 ppm |
| Silouette® Impatiens | 0.5-1 ppm | 1-1.5 ppm |
| Sidekick™ Ipomoea | 1-2 ppm | 2-3 ppm |
| Sunfinity® Double, Single Helianthus | 1-2 ppm | 2-3 ppm |
| Bandana®, Bandolero™, Bandolista™, Hot Blooded™ Lantana | 1.5-2 ppm | 2-3 ppm |
| Landscape Bandana Lantana | 2-3 ppm | 3-4 ppm |
| Spectra™, Sonic®, Super Sonic® New Guinea Impatiens | 0.5-1 ppm | 1-2 ppm |
| Techno® Lobelia | 1-1.5 ppm | 1.5-2 ppm |
| Tradewinds® Osteospermum | 2 ppm | 2-3 ppm |
| Phoenix™ Penstemon | 1.5-2 ppm | 2-3 ppm |
| Starcluster™ and Starcluster Cascade Pentas | 2-3 ppm | 3-4 ppm |
| Dekko™, Itsy™, Shortcake™, Painted Love™, Fun House™ Petunia | 1.5-2 ppm | 2-3 ppm |
| Sanguna® Petunia, Dekko Maxx™ Pink Petunia | 2-3 ppm | 3-4 ppm |
| Sanguna Patio Petunia | 1.5-2 ppm | 2-3 ppm |
| Talavera™ Coleus | 1.5-2 ppm | 2-3 ppm |
| Velocity™ Salvia | 0.5-1 ppm | 1-1.5 ppm |
| Fanatix® Scaevola | 0.5-1 ppm | 1-1.5 ppm |
| Lanai® Verbena | 2-3 ppm | 3-4 ppm |
| Lanai Compact, Lanai Upright Verbena | 1-2 ppm | 2-3 ppm |
| **Syngenta Perennials** | **Northern Location = moderate to warm climate with the low concentration for cool climate (ADT > 65°F)** | **Southern Location = hot and humid climate (ADT > 75 to 80°F)** |
| Barbican™, Sunrita® Gaillardia | 1-2 ppm | 3-4 ppm |
| Castello™ Coreopsis grandiflora | 1-2 ppm | 2-4 ppm |
| Aromatico™ or Vintro™ or Javelin™ Lavendula | 2-3 ppm | 3-5 ppm at visible bud |
| Desert Eve™ Achillea | 0.5-1 ppm | 2-3 ppm |
| Snowsurfer™ Forte, Snow Cone™ Forte, Mermaid Lavender Iberis | 2-3 ppm | 3-4 ppm |
| Western Star™ Leucanthemum | 2-3 ppm | 3-5 ppm |

* Based on average daily temperature

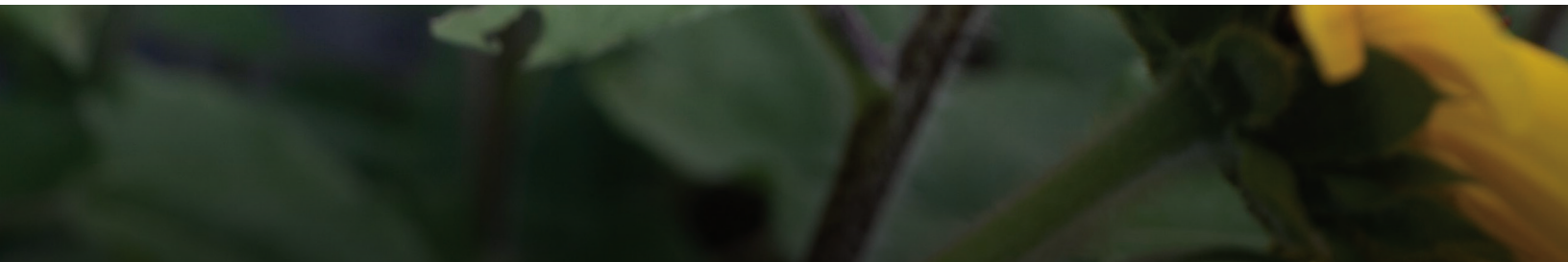
**A Bonzi drench is an excellent height management tool. Bonzi drenches should be applied three to four weeks before finishing to minimize undesired stem elongation.**

A Bonzi holding drench seven to 10 days before shipping to retail provides benefits of reduced water uptake, brighter flowers and improved foliar tone during the post-production retail stage. Stretches of cold, rainy weather or abnormally warm night temperatures are usually the conditions requiring application of a holding drench. Maintaining quality bedding plants past their scheduled finish date with a Bonzi holding drench may supplement an earlier drench if unfavorable weather results in delayed retail sales or causes undesirable stretch. **Holding drench concentrations are typically similar to the drench concentration used in early production.**

Bonzi drenches can also be applied several times at lesser concentrations during the later stages of the crop. These "toning" drenches are typically one half to one quarter the concentration of the holding drench and should be applied when growers want to manage growth week by week, rather than one strong dose to hold the crop. A toning drench is just enough to barely slow growth and cause slightly darker foliage. Because of the lower rate, the duration of effect will also be less with a toning drench.

**Lantana Bandana Pink, Rose and Red treated with Bonzi drenches**

2009 - Lang, Colorado

## Application Tips

In addition to the appropriate concentration, plants must be in the right stage of growth for height management. Bonzi should only be applied if the root system is healthy with active roots for proper absorption. Root conditions should be evaluated prior to application.

It is always important to water plants the day before application, so the drench is absorbed evenly. The growing medium should be moist (approximately level 3) before application, and moisture levels should be similar from pot to pot within the crop block. Under these conditions, the response will be more predictable with minimal channeling.

Uniform application is critical to achieving consistent results. Bonzi is actively absorbed by the roots, and the amount of active ingredient per pot is based on the concentration and the final volume applied. If more solution volume (active ingredient) is applied to some pots versus others, the practical effect is that a stronger control will occur in those pots with more solution volume, even if the concentration in parts per million (ppm) is the same.

### Table 3. PGR Solution Drench Volumes For Popular Container Sizes

| Container Size | Bonzi PGR Drench Volume (Fluid Ounces) |
|---|---|
| Azalea 4-inch | 1.2 fl. oz. |
| Azalea 4.5-inch | 2.4 fl. oz. |
| Azalea 6-inch | 4.0 fl. oz. |
| Azalea 8-inch | 7.7 fl. oz. |
| Azalea 10-inch | 15.6 fl. oz. |
| Basket 10-inch (4.5 L) | 13.6 fl. oz. |
| Basket 12-inch (6.5 L) | 19.7 fl. oz. |

*2018 - Syngenta*

*Untreated (left) and a Bonzi drench at 0.25 ppm (right) on Tophat begonia. The drench held the crop well with no impact on flower size. Tophat plants were treated at week three of a five-week production program.*

The volume of drench needed for each pot size to reach about 9.1% saturation of media volume is listed in Table 3. This saturation percentage is based on the current drench rate on the Bonzi label for a 6-inch pot. Since containers vary among manufacturers, the media volume holding capacity will be somewhat different. However, this table is a good reference for predicting the same PGR response for a particular pot size, variety and Bonzi concentration. For hanging baskets, some of the Bonzi drench solution might flow down onto the foliage, but try to direct the majority of the drench to the media. Bonzi concentrations for sub-irrigation applications can be reduced by 50% of overhead drench concentrations.

Applying Bonzi during the final stages of production will result in toned, darker green and more compact plants on the sales floor. Holding drenches can also reduce post-production water demand and create stronger plants that can better withstand careless handling or delayed sales. Accurate application technique requires practice.

To learn more, visit

**GreenCastOnline.com/Bonzi**

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