

Plant Growth Regulators

Excess growth is not desirable

- Blow over
- Watering becomes difficult
- Increased shipping costs
- Leggy low quality plants
- Damage during shipping
- Customer preference



Plant growth regulators (PGRs) are

- naturally occurring or synthetic compounds
- inhibit, retard or promote growth of plant or specific organs
- treated as pesticides
- Synthetic PGRs work by influencing Gibberellin biosynthesis pathway/ release of ethylene

Uses of PGRs

- **Control plant height**
- Stimulate lateral branching
- Promote flower initiation or early flowering
- Fruit ripening
- Rooting cuttings

Commonly used chemical growth retardants (CGRs)

Chemical	Product
Ancymidol	A-Rest (height control of plugs)
Chlormequat	Cycocel (height control of poinsettias/geraniums)
Daminozide	B-nine (height control, do not apply as drench)
Ethephon	Florel (flower bud abortion/promote vegetative growth)
Paclobutrazol	Bonzi (very popular, growth control)
Uniconazole	Sumagic (for perennials)
Benzyladenine	Configure (promote branching/flower set)
Gibberellin (GA3)	ProGibb (promote growth/used to overcome over application of growth retardants)
BA +GA(4+7)	Fascination (avoid leaf yellowing/drop, overcome effects of excess growth retardants)
Indole Acetic/Butyric Acid	Hormo-Root/RooTone (inducing roots)

Considerations for applying PGRs

Timing:

- Apply after sufficient plant growth has happened or rapid growth has started
- Earlier applications may stop growth completely
- Remember PGRs can't reduce already existing growth
- Timing based on physiological stage and not on chronological stage

Considerations for applying PGRs

Target:

- Drenches use large volume but lower concentration
- Foliar sprays should be uniform
- If dipping, use consistent soaking time, 10 sec
- Some PGRs are effective if applied to roots (ex: Bonzi)

Considerations for applying PGRs

Environment:

- Drenching may not be suitable in some substrates with bark media
- Morning applications when evaporation is low are best for sprays
- Plants should not be stressed at application
- Plants should not be watered too soon after application