



**DOVE**  
**ASSOCIATES**

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## PGR Rates

### 1. Bedding Plugs

Species	Family	1st stage			2nd stage			3rd stage			Comments
		B-Nine	Cycocel	Bonzi	B-Nine	Cycocel	Bonzi	B-Nine	Cycocel	Bonzi	
		ppm			ppm			ppm			
Ageratum	Asteraceae	2500			5000		4	5000		4	Only use one product if there is a choice
Alyssum	Brassicaceae							5000		4	If grown warm. Only use one product
Aster	Asteraceae	2500			5000		4	5000		4	Only use one product if there is a choice
Balsam		2500			5000		4	5000		4	Only use one product if there is a choice
Begonia (fibrous)	Begoniaceae		115			115			230		Only use one product if there is a choice
Begonia (tuberous)	Begoniaceae		46			46			92		Spray early and light
Browallia	Solanaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Calendula	Asteraceae	2500			5000		4	5000		4	Only use one product if there is a choice
Carnation	Caryophyllaceae			4			4			4	Only use one product if there is a choice
Celosia	Amaranthaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Cleome	Cleomaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Coleus	Laminaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Dahlia	Asteraceae	2500			2500			5000			
Dianthus	Caryophyllaceae			4			4			4	Only use one product if there is a choice
Flowering cabbage	Brassicaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Flowering kale	Brassicaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Gazania	Asteraceae			4			4			4	Only use one product if there is a choice
Hibiscus	Malvaceae		5000			1000				4	Only use one product if there is a choice
Impatiens	Balsaminaceae			4			4			4	Only use one product if there is a choice
Lobelia	Campanulaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Marigold (French)	Asteraceae									10	Only if necessary
Marigold (African)	Asteraceae									10	Only if necessary
Mimulus	Scrophulariaceae	2500			2500			2500			3rd spray may not be needed
Nemesia	Scrophulariaceae	2500			2500			2500			
Nicotiana	Solanaceae				2500			5000		4	Only use one product if there is a choice
Pansy	Violaceae	2500	1500+		2500	1500				2*	Only use one product if there is a choice
Petunia	Solanaceae	2500			5000		4	5000		4	Only use one product if there is a choice**
Salvia	Lamiaceae			4			4			4	Only use one product if there is a choice
Verbena	Verbenaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Vinca	Apocynaceae	2500	1500+		2500	1500		2500	1500		Use both products together
Zinnia	Asteraceae	5000		4	5000		4	5000		4	Only use one product if there is a choice
Helichrysum	Asteraceae	2500			5000		4	5000		4	Only use one product if there is a choice
Hypoestes	Acanthaceae	1500	1000		1500	1000		1500	1000		Only use one product if there is a choice
Phlox	Polemoniaceae	2500			5000		4	5000		4	Only use one product if there is a choice
Stocks	Caryophyllaceae	2500			5000		4	5000		4	Only use one product if there is a choice

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\* = Use 2ppm if grown at 16°C

\*\* = skip spray on red petunia at 1st stage

\*\*\* = Some colours do not need any treatment

## 2. Bedding Plants

Species	Family	Product	Type of application	Rate (ppm)
Ageratum	Asteraceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-45
		Cycocel	Spray	800-1500
Alyssum	Brassicaceae	Bonzi	Spray	40-60
Monarda	Lamiaceae	Bonzi	Spray	60-90
		Bonzi	Drench	1-4
Begonia	Begoniaceae	B-Nine	Spray	2500-5000
		Cycocel	Spray	800-1500
Calendula	Asteraceae	B-Nine	Spray	2500-5000
Celosia	Amaranthaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-45
		Cycocel	Spray	800-1500
Centaurea	Asteraceae	B-Nine	Spray	2500-5000
Cleome	Capparaceae	Cycocel	Spray	800-1500
Solenostemon (Coleus)	Lamiaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-30
		Cycocel	Spray	800-1500
Columbine	Ranunculaceae	Cycocel	Spray	800-1500
Cosmos	Asteraceae	B-Nine	Spray	2500-5000
Dahlia	Asteraceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-45
		Cycocel	Spray	800-1500
Delphinium	Ranunculaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	30-60
Dianthus	Caryophyllaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	20-60
		Cycocel	Spray	800-1500
Geranium (seeded)	Geraniaceae	Bonzi	Spray	10-30*
		Cycocel	Spray	800-1500**
Geranium (vegetatively propagated)	Geraniaceae	Bonzi	Spray	10-30*
		Cycocel	Spray	800-1500***
Gerbera	Asteraceae	B-Nine	Spray	2500-5000
Hypoestes	Acanthaceae	Cycocel	Spray	800-1500
Impatiens (seeded)	Balsaminaceae	Bonzi	Spray	10-45
		Bonzi	Spray	20-60****
Ornamental peppers (Capsicum)	Solanaceae	Cycocel	Spray	800-1500
Marigold (both types)	Asteraceae	B-Nine	Spray	2500-5000
Marigold (both types)	Asteraceae	Cycocel	Spray	800-1500
Marigold (African)	Asteraceae	Bonzi	Spray	30-60
Marigold (French)	Asteraceae	Bonzi	Spray	15-30
Nasturtium	Brassicaceae	Cycocel	Spray	800-1500
Pansy	Violaceae	Bonzi	Spray	5-15

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Species	Family	Product	Type of application	Rate (ppm)
Pentas	Rubiaceae	Cycocel	Spray	800-1500
Petunia	Solanaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-45
		Bonzi	Spray	20-60****
Salvia	Lamiaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	20-60
		Bonzi	Spray	20-60
		Cycocel	Spray	800-1500
Sedum	Crassulaceae	Cycocel	Spray	800-1500
Antirrhinum	Scrophulariaceae	Bonzi	Spray	30-90
Veronica	Scrophulariaceae	Bonzi	Spray	20-40
Sunflower (Helianthus spp.)	Asteraceae	Cycocel	Spray	800-1500
Verbena	Verbenaceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-30
		Cycocel	Spray	800-1500
Vinca	Apocynaceae	B-Nine	Spray	2500-5000
		Cycocel	Spray	800-1500
Zinnia	Asteraceae	B-Nine	Spray	2500-5000
		Bonzi	Spray	15-45
		Cycocel	Spray	800-1500
* = Very sensitive to Bonzi. Early application may cause stunting. Apply as flower stems start to stretch.				
** = Can also induce flowering. Apply after stems start to elongate several times.				
To promote early flowering, apply 1500ppm				
*** = Multiple applications may be requires. Apply after stems start to elongate.				
**** = On compost surface (may delay flowering)				

**B-Nine**

Excessive stem elongation can be prevented at 1-1.5inches of growth

Repeat applications if more stretching occurs

### 3. Bulbs

Species	Bonzi	ppm equivalent
Amaryllis	25mg/pot drench	200
Asiatic hybrid lillies	preplant soak for 1 minute	25-75
Caladium	0.25 to 2.0mg/pot drench	2-16
Dahlia	1-4mg drench	-
Freesia	preplant soak for 60 minutes	100-300
LA-hybrid lillies	preplant soak for 1 minute	50-200
Oriental hybrid lillies	preplant soak for 1 minute	100-300
Tulip	0.5 to 2.0 mg/pot drench	4-16
Zantedeschia	1-4 mg/pot drench	10-30

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#### 4. Autumn Bedding

Species	B-Nine	Cycocel	Bonzi	Comments
	ppm			
Garden Asters	2500-5000			1 to 2 applications as needed
Garden Chrysanthus	2500			1st application 2 weeks after pinching. If plants stretch, keep applying every two weeks.
				Discontinue applications after buds appear to avoid flower delay
Ornamental cabbage and kale	2500-5000			1 to 2 applications as needed. Higher rate for feathered varieties and lower rate for curly varieties.
			2-4mg/pot drench	1 application
Ornamental peppers			10-20	1 application. Use lower rates for less vigorous varieties. Apply 2 weeks after pinch
Ornamental vegetables	2500			1 application for less vigorous varieties and 2 for more robust varieties
Pansy	2500-5000			
	2500	1500		B-Nine+Cycocel tank mix
			5-20	

#### 5. Foliage Plants

Plant name	Family	Product	Method of application	Rate (ppm)	Degree of response
Aglaonema modestum	Araceae	B-Nine	Spray	1000-10,000	None
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
Alternanthera amoena	Amaranthaceae	B-Nine	Spray	945mg/ft <sup>2</sup>	Moderate
Aphelandra squarrosa	Acanthaceae	B-Nine	Spray	1000-10,000	None
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
Ardisia crispa	Mysinaceae	B-Nine	Spray	10,000	Slight
		Cycocel	Spray	3000	None
Cissus rhombifolia	Vitaceae	B-Nine	Spray	1000-10,000	None
		Bonzi	Spray	62.5-125	Slight
		Bonzi	Drench	0.75-4mg/six inch pot	Slight
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
Codiaeum variegatum	Euphorbiaceae	Bonzi	Spray	Dec-75	High
		Bonzi	Drench	0.05-0.4mg/6.5 inch pot	High
		Bonzi	Drench	0.5mg/six inch pot	Moderate
Cyanotis kewensis	Commelinaceae	B-Nine	Spray	10,000	Moderate
		Cycocel	Spray	3000	High
Dieffenbachia maculata	Araceae	B-Nine	Spray	1000-10,000	None
		Bonzi	Drench	0.5mg/six inch pot	Moderate
		Bonzi	Drench	0.06-0.25mg/six inch pot	Moderate
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
Dracaena marginata	Dracaenaceae	Bonzi	Drench	0.5mg/six inch pot	Slight
Epipremnum aureum	Araceae	B-Nine	Spray	1000-10,000	None
		B-Nine	Spray	10,000	High
		B-Nine	Spray	945mg/ft <sup>2</sup>	Slight
		Bonzi	Drench	0.5mg/six inch pot	Slight
		Cycocel	Spray	3000	Slight
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None

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Ficus elastica	Moraceae	Bonzi	Spray	62.5-125	Slight
		Bonzi	Drench	0.75-4.0mg/six inch pot	Slight
Ficus lyrata		Bonzi	Spray	10-200	Moderate
		Bonzi	Drench	0.75-4.0mg/six inch pot	High
Ficus retusa		B-Nine	Spray	1000-10,000	None
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
Hoya carnosa	Asclepiadaceae	Bonzi	Spray	62.5-125	Slight
		Bonzi	Drench	0.75-4.0mg/six inch pot	Slight
Nephrolepis exaltata	Oleandraceae	Bonzi	Drench	0.5mg/six inch pot	None
Peperomia crassifolia	Piperaceae	Cycocel	Drench	0.5-2.0mg/six inch pot	None
Peperomia metallica		Cycocel	Drench	0.5-2.0mg/six inch pot	Slight
Peperomia obtusifolia		B-Nine	Spray	1000-10,000	None
		Bonzi	Drench	0.5mg/six inch pot	Moderate
		Bonzi	Drench	0.06-0.25mg/six inch pot	Moderate
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
Philodendron scandens oxycardium	Araceae	B-Nine	Spray	10,000	Slight
		B-Nine	Spray	10,000	Moderate
		B-Nine	Spray	1000-10,000	None
		Bonzi	Drench	0.06-0.25mg/six inch pot	None
		Cycocel	Spray	500-3000	None
		Cycocel	Drench	500-3000	None
		Cycocel	Spray	3000	Slight
		Cycocel	Spray	3000	Slight
Pilea serpyllacea	Urticaceae	Cycocel	Drench	0.5-2.0mg/six inch pot	Moderate
Plectranthus australis	Lamiaceae	Bonzi	Drench	0.2-1.0mg/six inch pot	High
Plectranthus nummularius		Bonzi	Drench	0.5mg/six inch pot	High
Saxifraga stolonifera	Saxifragaceae	Bonzi	Drench	0.5mg/six inch pot	Moderate
Schefflera actinophylla	Araliaceae	B-Nine	Spray	10,000	None
		B-Nine	Spray	10,000	Slight
		B-Nine	Spray	945mg/ft <sup>2</sup>	Moderate
		Bonzi	Drench	0.06-0.25mg/ft <sup>2</sup>	None
		Bonzi	Spray	62.5-125	Slight
		Bonzi	Drench	0.75-4mg/six inch pot	Slight
		Bonzi	Drench	0.2-2mg/six inch pot	High
		Bonzi	Drench	0.5mg/six inch pot	Slight
		Cycocel	Spray	3000	Moderate
		Cycocel	Spray	3000	None
Sedum anglicum	Crassulaceae	Cycocel	Drench	0.5-2.0mg/six inch pot	Moderate
Syngonium podophyllum	Araceae	B-Nine	Spray	10,000	None
		B-Nine	Spray	10,000	Slight
		Bonzi	Drench	0.5mg/six inch pot	Slight
		Bonzi	Drench	0.1-1.0mg/six inch pot	Moderate
		Cycocel	Spray	0	None
		Cycocel	Spray	3000	Slight
Tradescantia pendula	Commelinaceae	B-Nine	Spray	945mg/ft <sup>2</sup>	Moderate
		Bonzi	Drench	0.5mg/six inch pot	High

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## 6. Herbaceous perennials

Plant name	Product	Rate (ppm)	No of applications	Comments
Achillea x 'Coronation Gold'	B-Nine	5000	4	Apply 10-14 day intervals
	Cycocel	4000*	1	
	Bonzi	30-40	1	
Achillea 'Moonshine'	B-Nine	5000*	2	
	Bonzi	<240	1	Very sensitive below this rate
Achillea 'Paprika'	B-Nine	5000	multiple	Apply 10-14 day intervals. May delay flowering
	B-Nine/Cycocel	5000/1500	1	
Achillea 'Summer Pastels'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	120	1	Or >30 for 4 applications
Agapanthus	Bonzi	>30	1	As a drench
Agastache 'Blue Fortune'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
Alcea rosea 'Powder Puff Mix and 'Chater's Double Mix'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	30-50	1	
	Bonzi	1.5	1	As a drench
Amsonia	Bonzi	30	1	
Aquilegia x hybrida 'McKana Hybrids'	B-Nine	5000		Multiple applications at 10-14 day intervals
	Bonzi	240*	1	
Artemesia	Bonzi	>30	1	As a drench
Asclepias tuberosa 'Royal Red'	B-Nine	5000	3-4	Apply at 10-14 day intervals
	Bonzi	30	4	
Aster x frikartii 'Monch'	B-Nine	5000	4	
	Bonzi	240*	1	
	Bonzi	30*	4	
Aster x frikartii 'Monarch'	Bonzi	12-16	1	As a drench
Astilbe x arendsii 'Bressingham Beauty'	B-Nine	5000	4	
	Bonzi	>30	4	
	Bonzi	30	1	As a drench
Baptisia	Bonzi	30	1	As a drench
Barleria cristata	B-Nine	5000	3	Apply at 10-14 day intervals
	Bonzi	>45	1	
Boltonia	Bonzi	>30	1	As a drench
Buddleja 'Pink Delight'	B-Nine	5000*	2	
	B-Nine/Cycocel	5000/1500*	1	
Buddleja 'Royal Red'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500*	1	
	Bonzi	>40	1	
	Bonzi	5	1	As a drench
Campanula carpatica 'Blue Chips'	B-Nine	5000	2-4	Apply at 10-14 day intervals
	Cycocel	<1500	4	Very sensitive. Reduce rate or frequency
	Bonzi	<30	4	Very sensitive. Reduce rate or frequency
Campanula persicifolia 'Blue'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	>30	4	
Canna x generalis 'Florence Vaughan'	B-Nine	7500*	1	
	Bonzi	66	1	
Canna x orchiodes	B-Nine	7500*	1	
	Bonzi	66-99	1	
Centaurea montana 'Violet'	B-Nine	5000	4	
	Bonzi	>30	4	
Chelone glabra	B-Nine	5000*	4	
	Bonzi	>30	4	
	Bonzi	30	1	As a drench

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Plant name	Product	Rate (ppm)	No of applications	Comments
Chrysanthemum coccineum 'James Kelway'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	>30	4	
	Bonzi	>30	4	As a drench
Chrysanthemum parthenium	Cycocel	750	1	
	Bonzi	<40	1	Very sensitive. Reduce rate or frequency
Coleus 'Solar Storm'	B-Nine	>5000	1	Apply at 10-14 day intervals
	B-Nine/Cycocel	2500/1500	1	
	Bonzi	>60	1	
	Bonzi	>30	1	As a drench
Coreopsis grandiflora 'Sunray' and 'Baby Sun'	B-Nine	5000	3	Apply 10-14 day intervals. May delay flowering
	Cycocel	1500*	3	
	B-Nine/Cycocel	>2500/1500	1	
	Bonzi	80-100	1	
	Bonzi	5-10	1	As a drench
	B-Nine/Bonzi	2500/20-40	1	May delay flowering
Coreopsis rosea	B-Nine	7500	1	
	Bonzi	100*	1	
	Bonzi	>4	1	As a drench
Coreopsis verticillata 'Moonbeam'	B-Nine	5000	2	Apply 10-14 day intervals. May delay flowering
	Cycocel	1500*	4	
	Bonzi	160*	1	
Cortaderia selloana	Bonzi	15	1	As a drench
Crocsmia	B-Nine	5000*	4	
Delphinium x elatum 'Magic Fountains'	B-Nine	5000*	3	
	Cycocel	1500*	3	
	Bonzi	<30	4	
	Bonzi	>30	1	As a drench
Digitalis purpurea 'Foxy'	B-Nine	5000*	4	
	B-Nine/Cycocel	5000/1500*	1	
	Bonzi	80-160	1	
	Bonzi	02-Apr	1	As a drench
Duranta repens	Bonzi	>100	1	
Echinacea purpurea 'Bravado'	B-Nine	5000		Multiple applications at 10-14 day intervals
	Cycocel	1500	5	Discoloured leaves
	Bonzi	>30	4	
	Bonzi	>30	1	As a drench
Eupatorium coelestinum	B-Nine	5000*	2	
	Bonzi	240*	1	
	Bonzi	8-10	1	As a drench
Gaillardia x grandiflora 'Burgundy'	B-Nine	5000	3	Apply at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	>30	4	
Gaillardia x grandiflora 'Goblin'	B-Nine	5000*	2	
	Bonzi	160*	1	
Gaura lindheimeri 'Corrie's Gold'	B-Nine	5000	2	Apply at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	80	1	
Gaura lindheimeri 'Siskiyou Pink'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	>30	4	
	Bonzi	>15	1	As a drench
Gaura lindheimeri 'Whirling Butterflies'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	Moderate control. May require further applications

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Plant name	Product	Rate (ppm)	No of applications	Comments
Gypsophila paniculata 'Double Snowflake'	B-Nine	5000*	4	
	Bonzi	>30	4	
Helenium autumnale	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	>30	4	
Heliopsis helianthoides 'Summer Sun'	B-Nine	<5000	2	Very sensitive to B-Nine. Apply at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	160*	1	
	Bonzi	30	1	As a drench
Heliotropium arborescens 'Fragrant Blue'	B-Nine	5000	3	Apply at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
Hemerocallis 'Halls Pink'	B-Nine	5000*	4	
	Bonzi	>30	4	
	Bonzi	>30	1	As a drench
Heuchera sanguinea 'Bressingham Hybrids'	B-Nine	5000*	4	
	Bonzi	>30	4	
Hibiscus moscheutos 'Disco Belle Mixed'	Cycocel	1000	4	Multiple applications necessary
Hypericum calycinum	B-Nine	5000*	2	
	B-Nine/Cycocel	5000/1500*	1	
	Bonzi	160*	1	
Iris x germanica	Bonzi	>160	1	
	Bonzi	>4	1	As a drench
Jacobinia (pink)	Bonzi	5-10	1	
	Bonzi	<1	1	As a drench
Jacobinia (red)	Bonzi	>200	1	
	Bonzi	>10	1	As a drench
Kniphofia uvaria 'Bressingham Comet'	B-Nine	5000*	2	
	Cycocel	4000*	1	
	B-Nine/Cycocel	5000/1500*	1	
	Bonzi	160*	1	
Lantana camara 'Confetti'	B-Nine	5000	3	Moderate control. May require further applications
	B-Nine/Cycocel	5000/1500*	1	
Lavandula angustifolia 'Munstead Dwarf'	B-Nine	5000	4	Apply at 10-14 day intervals
	Cycocel	1500*	3	
	Bonzi	>30	4	
Leucanthemum maximum 'Snow Lady'	Bonzi	>40	1	
Leucanthemum x superbum 'Alaska'	B-Nine	5000*	2	
	Cycocel	4000*	1	
	Bonzi	<40	1	
Leucanthemum x superbum 'Becky'	B-Nine	5000*	2	
	Cycocel	4000*	1	
	B-Nine/Cycocel	5000/1500*	1	
	Bonzi	100*	1	
Liatis spicata 'Floristan Violet'	Bonzi	160*	1	
Linum perenne 'Sapphire'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	>30	4	
Lobelia cardinalis	B-Nine	5000*	2	
	B-Nine/Cycocel	5000/4000*	1	
	Bonzi	60*	1	
Lobelia x speciosa 'Compliment Scarlet' and 'Queen Victoria'	B-Nine	5000	4	Apply at 10-14 day intervals
	Cycocel	1500	3	
	Bonzi	>30	1	Multiple applications necessary

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Plant name	Product	Rate (ppm)	No of applications	Comments
Malva alcea	B-Nine	5000*	2	
	Cycocel	750-1500	1	
	Bonzi	<40	1	Extremely sensitive to Bonzi
Monarda didyma 'Blue Stocking'	B-Nine	5000*	2	
	Cycocel	4000*	1	
	Bonzi	160*	1	
Monarda didyma 'Marshall's Delight'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
Monarda citriodora	Bonzi	60-100	1	
	Bonzi	>4	1	As a drench
Pachystachys lutea	Bonzi	200	1	
	Bonzi	>1 but<10	1	As a drench
Pentas lanceolata 'Orchid Illusion', 'Lavander', 'Red'	B-Nine	5000	3	O.I.' >sensitive to B-Nine, 'Red' less so
	B-Nine/Cycocel	1500/5000	1	
	Bonzi	>45	1	
	Bonzi	>16	1	As a drench
Perovskia atriplicifolia	B-Nine	5000		Delayed flowering. Apply 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	>30	4	
	Bonzi	>30	1	As a drench
Phlox paniculata 'Bright Eyes'	B-Nine	5000		Multiple applications at 10-14 day intervals
Phlox paniculata 'Blue Boy'	B-Nine	5000*	2	Apply at 10-14 day intervals
Phlox paniculata 'Charles Curtis'	Cycocel	4000*	1	Multiple applications required
	B-Nine/Cycocel	5000/4000*	1	
	Bonzi	160*	1	
Phlox paniculata 'David'	B-Nine	5000	2	Moderate control. Apply at 10-14 day intervals
	B-Nine/Cycocel	5000/1500*	1	
Phlox paniculata 'Joliet'	B-Nine	5000*	2	
	Bonzi	240*	1	
Phlox paniculata 'Eva Cullum'	B-Nine	5000*	4	
	Bonzi	>30	4	
Physostegia virginiana 'Summer Snow'	B-Nine	5000*	4	
	Cycocel	1500*	7	
	Bonzi	100*	1	plus 30* x 7
Platycodon grandiflorus 'Fuji White'	Bonzi	>50	1	
	Bonzi	>1.5	1	As a drench
Polemonium caeruleum	B-Nine	>2500	1	Apply at 10-14 day intervals
	B-Nine/Cycocel	2500/1500	1	
	Bonzi	>15	1	
	B-Nine/Bonzi	2500/15	1	
Pseuderanthemum lactifolia	B-Nine	>5000	2	
	B-Nine/Cycocel	2500/1500	1	
	Bonzi	>45	1	
Ratibida	Bonzi	>30	1	As a drench
Rudbeckia fulgida var. 'Goldsturm'	B-Nine	5000*	4	
	Cycocel	4000*	1	
	Bonzi	>160	1	plus <30 x 4
	Bonzi	>30	1	As a drench
Rudbeckia triloba	B-Nine	5000	2	Apply at 10-14 day intervals
	Cycocel	2000	1	No phytotoxicity, multiple applications required
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	160	1	Multiple applications required

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Plant name	Product	Rate (ppm)	No of applications	Comments
Salvia greggii	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	>6	1	As a drench
Salvia leucantha	B-Nine	5000	3	Apply at 10-14 day intervals
	Cycocel	2000	1	No phytotoxicity, multiple applications required
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	60	1	
Salvia x superba 'Bue Queen'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	>30	4	
	Bonzi	>30	1	As a drench
Saponaria ocymoides	Cycocel	4000*	1	
	Bonzi	160*	1	
Scabiosa caucasica 'Butterfly Blue'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500*	1	Multiple applications may be effective
Scabiosa caucasica 'House Hybrids'	B-Nine	5000*	2	
	Cycocel	4000*	1	
	B-Nine/Cycocel	5000/1500*	1	
	Bonzi	160*	1	
Sedum 'Autumn Joy'	B-Nine	5000	2	Moderate control. Apply at 10-14 day intervals
	Cycocel	4000*	1	
	B-Nine/Cycocel	5000/1500	1	Moderate control
	Bonzi	80	1	
	B-Nine/Bonzi	>2500/40	1	
Sedum spurium 'Dragon's Blood'	B-Nine	5000*	4	
	Bonzi	>30	4	
	Bonzi	30	1	As a drench
Solidago sphacelata 'Golden Fleece'	B-Nine	5000		Multiple applications at 10-14 day intervals
	Bonzi	80-100	1	
	Bonzi	>30	1	As a drench
x Solidaster luteus 'Tara'	B-Nine	>2500	1	
	B-Nine/Cycocel	>2500/1500	1	
	Bonzi	>40	1	
	B-Nine/Bonzi	>2500/40	1	
Stokesia laevis 'Klaus Jelitto'	B-Nine	5000	2	Apply at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	Moderate control. Apply at 10-14 day intervals
Stokesia laevis 'Purple Parasols'	B-Nine	5000		Multiple applications at 10-14 day intervals
	Cycocel	4000*	1	
	B-Nine/Cycocel	5000/2250	1	
	Bonzi	40-80	1	
Verbena bonariensis	B-Nine	5000		Multiple applications at 10-14 day intervals
	Cycocel	4000*	1	
	Bonzi	120-160	1	
Verbena canadensis 'Homestead Purple'	B-Nine	5000*	2	
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	>3	1	As a drench
Veronica alpina 'Goodness Grows'	B-Nine	5000		Multiple applications at 10-14 day intervals
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	<240	1	
Veronica peduncularis 'Georgia Blue'	B-Nine	>2500	1	Apply at 10-14 day intervals
	Bonzi	>15	1	
	B-Nine/Bonzi	2500/7.5	2	

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Plant name	Product	Rate (ppm)	No of applications	Comments
Veronica spicata 'Blue'	B-Nine	5000	4	Apply at 10-14 day intervals
	Bonzi	>30	4	
Veronica spicata 'Red Fox'	B-Nine	5000		Multiple applications at 10-14 day intervals
	Cycocel	4000*	1	
	B-Nine/Cycocel	5000/1500	2	
	Bonzi	<40	1	
Veronica x 'Sunny Border Blue'	B-Nine	5000	2	Apply at 10-14 day intervals
	Cycocel	750-1500	1	
	B-Nine/Cycocel	5000/1500	1	
	Bonzi	<40	1	Very sensitive to Bonzi. Test rates well below 40ppm
	Bonzi	>30	1	As a drench

\* = not responsive at this rate

Before applying any plant growth regulator, set up a trial area to understand each species response.

### References

Barrett et al., (2001), Tips on regulating growth of floriculture crops, OFA Services, Ohio, USA.

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**Summary of work carried out by the HDC (HNS 39b, annual report 1998): an examination of the use of plant growth regulators on liners of container grown nursery stock**

- Three products were looked at; B-Nine, B-Nine + New 5C Cycocel and Bonzi.
- There was little or no effect on influencing branch number at the plug stage or potting on into liners.
- A programme of soft pinches was essential to produce a good branch framework before the PGR application.
- The effect of PGRs on subsequent growth was disappointing – only the higher rate of Bonzi (25ml or 50ml/litre) producing any marked reduction in shoot length.
- Year 2 - rooted cuttings were pinched in the plug trays and PGRs applied after potting with 2 foliar sprays of each treatment given, the first applied as new shoot growth started, the second a fortnight later.
- Rates used were as follows; B-Nine (3ml, 6ml or 9ml/litre), B-Nine + New 5C Cycocel (6ml + 3ml/litre respectively) and Bonzi (1ml, 10ml, 25ml or 50ml/litre).

**Summary of results**

- The primary branch framework must be developed by appropriate pinching/trimming techniques.
- Two applications of PGRs post-potting achieved a marked effect in reducing growth.
- Stage of growth when PGRs applied is important, with their application needed as shoots start to extend. The crop needs to be as uniform as possible at the time of application for the most effective response.
- Use of PGRs was often accompanied by an increase in intensity of foliage colour
- The B-Nine and New 5C Cycocel produced a quick effect with Bonzi taking a few weeks to show through.
- Response to PGRs varied with species.

**B-Nine (6-9mls/litre)**

Berberis, Buddleja, Lavandula, Lonicera.

**Bonzi (25-50mls/litre)**

Ceanothus, Escallonia, Photinia, Viburnum.

Choisya and Pyracantha responded to both B-Nine and Bonzi.

All species responded to a tank mix of B-Nine + New 5C Cycocel although some of the growth checks were excessive so further work is being carried out.

**Further investigations identified from this work**

- PGRs and the effect on rooting of cuttings taken from treated plants.
- Persistence of the PGRs, particularly Bonzi, to ensure subsequent growth when potted on is not adversely affected.
- For the faster acting, less persistent PGRs an increased frequency of application of time at lower rates may be better with less risk of overdosing.

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