GROWTH REGULATORS TO CONTROL PLANT HEIGHT

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Each year growers rely on various growth regulators to tailor plant growth, height or quality. It is the purpose of this article to make recommendations to make the job easier and more successful.

Five factors should always be kept in mind when using growth regulators as sprays or drenches:

1. The number of plants and the cultivars to be treated. Know which growth regulators are registered or recommended for a specific plant.

2. The volume of spray or drench required for a given number of plants or area. The optimum volume of spray is 1/2 gallon per 100 square feet. Plants should be at relatively close spacing (but not crowded) in order to minimize spray wastage and make good use of bench space. When drenching, enough solution should be applied to thoroughly wet the soil in each pot. The recommended drench rate for different pot sizes is given below.

Pot Size	Solution Volume Per Pot
4 inch	3 oz.
5 inch	4 oz.
6 inch	6-8 oz.
8 inch	10-12 oz.

Up to one-third more solution may be needed depending on soil type, drainage, etc. Excessive dripping from the bottom should be avoided, especially when using A-Rest.

3. The concentration of spray or drench solution to be used. Most labels give directions concerning proper concentrations, and how to prepare solutions. When making up your growth regulators, remember that you can never reverse the injury caused by an accidental application of a "too strong" solution. Take special care to follow all label instructions closely.

4. Number of applications. Flexibility is the grower's insurance policy. Multiple half treatments may be needed to avoid phytotoxicity, especially in those cultivars which require heavier growth regulator applications to obtain proper response. Need for treatment may sometimes be eliminated due to a change of suppliers, weather conditions, new stock plants and different cultivars. Often, two 1/2 strength applications spaced one or two weeks apart are as effective as one full strength application. Acceptance of this procedure is entirely up to the individual grower. Remember, observe the crop, keep records and make adjustments in the program according to crop development.

5. Time of application. Sprays and drenches should be applied when they will be most effective without adversely affecting quality, flowering or flower number.

The following table gives recommendations for proper use of growth regulators.

USE OF GROWTH REGULATOR SUBSTANCES

Crop	*Suggested* Application	When to Apply	*Growth Regulators* Ancymidol (A-Rest .026%)	(1) SADH (B-Nine SP, 85%)	CCC (Cycocel 11.8%)	Phosphon I 10%
Easter Lily	Drench (8 oz. per 6" pot)	Stems 4-6" tall	(2) One pint in 16 gallons.			Pint in 12 gallons.
Seed Geranium	Spray (1/2 gal./100 ft.^{2}	2-4 true leaves (approx. 18 days after transplant)	(3) Three pints to one pint water.			
	Drench (3 3/4" pot)		One pint in 6 gals.		4 oz. per gallon H_2O	
Geranium Cutting	Spray (1/2 gal./100 ft.^{2})	New growth 1 1/2-2" long			(5) One pint to 10 gallons.	
Cut Mum	Spray (1/2 gal./100 ft.^{2})	4 weeks after shade initiation		(4) 0.25% solution		
Pot Mum	Drench (4-8 oz./6" pot)	Shoots 1-2" long	(3) One pint in 16 gallons.			1 tsp. in 6 quarts
	Spray (1/2 gal./100 ft.^{2})			(4) 0.25% solution		
Petunias	Spray (1/2 gal./100 ft.^{2} or 50 flats)	When plants are 1 1/2-2" in diameter		(5) 0.50% solution		
Poinsettias	Drench (6 oz. CCC or 8 oz. ancymidol per 6" pot)	(6) When roots are ready	One pint in 16 gal.		One pint to five gallons.	
	Spray (1/2 gal./100 ft.^{2})	(6) When growth is 1 1/2-2" long.	One pint to three pints.		(5) One pint to 10 gallons.	

(1) To prepare spray solutions of B-Nine SP use these measures:

Concentration:

0.15%--3 level teaspoons per gallon
0.25%--5 level teaspoons per gallon
0.50%--10 level teaspoons per gallon
(3 tsp. = 1 tbsp.) (100 tsp. = 1/2 lb.)

Or make a stock solution (5%) by dissolving 1/2 lb. B-Nine SP in 1 gallon water. Use 6.4 oz. per gallon to prepare 0.25% spray, 12.8 oz./gal. for 0.5%.

(2) This is enough solution to treat 250 6" pots at 0.50 milligrams A-Rest per pot.

(3) Will spray approximately 2200-2400 plants in 2 1/2 inch pots or Jiffy-7's in 100 sq. ft.

(4) Apply a second spray in 2 weeks if necessary, but in the case of chrysanthemums, no later than disbud time.

(5) Apply again every four weeks if necessary. Pay particular attention to blue cultivars.

(6) Do not apply later than October 15.

Before deciding to rely exclusively on chemical means to tailor your plant height and quality, consider the cost of these applications. The results you obtain should justify their use.