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SePRO Corporation c/o Pamela Noyes Jellinek, Schwartz and Connolly, Inc. 1525 Wilson Boulevard, Suite 600 Arlington, VA 22209

Gentlemen

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Subject Label Revisions A Rest Solution EPA Registration No 67690 2 Your Submission Dated December 6, 1996

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you

Make the labeling changes listed below before you release the product for shipment bearing the amended labeling

In the ingredient declaration align all the decimal points on the same margin

b In the Personal Protective Equipment (PPE) section delete

Coveralls (California Only) Chemical resistant gloves (California Only)

On page 18 of the Ancymidol Reregistration Eligibility Decision Document U S EPA states 'There are not special toxicological concerns about ancymidol that warrant the establishment of active-ingredient-based\_PPE requirements Therefore any PPE requirements will be established based on the acute toxicity of the end-use product ' According to Title 40 Code of Federal Regulations (CFR) § 156 212(e) since this product is in Toxicity Category IV for dermal toxicity skin irritation inhalation toxicity, and eye irritation the PPE requirements are long-sleeved shirt and long pants, shoes plus socks However since Cal/EPA, Department of Pesticide Regulation for purposes of state law, has specified these additional requirements you can market this product in the State of California with these statements

## **BEST AVAILABLE COPY**

2 Submit one (1) copy of your final printed labeling before you release the product for shipment

A stamped copy of the labeling is enclosed for your records

Sincerely yours,

Acting Product Manager (22) Fungicide Herbicide Branch Registration Division (7505C)

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) Enclosure

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(Base label): SePRO (logo) A-Rest\* Solution Under the Federal Insecticide, Fundicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 67690-2

1997

ACCEPTED with COMMENTS In EPA Letter Dated

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For height control in container-grown ornamentals, foliage plants and bedding plants

Active Ingredient:	· · · · · · · · · · · · · · · · · · ·
Active Ingredient: ancymidol: α-cyclopropyl-α-(p-methoxyphenyl)-5-pyrimidinemethanol	
Inert Ingredients	<u></u>
	1¢0.¢000%
Contains 1.00 gm of active ingredient per gallon.	1/

### Keep Out of Reach of Children

## CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements

Hazards to Humans and Domestic Animals

## CAUTION

Harmful if Swallowed. Avoid breathing spray mist and contact with eyes, skin or clothing.

## Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Coveralls (California Only)
- Chemical resistant gloves (California Only)

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### User Safety Recommendations

Users should:

· Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### **First Aid**

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6 - 8 heaping teaspoonfuls) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician. If in eyes: Flush eyes with plenty of water. Get medical attention if imitation develops. If on skin: Wash with plenty of soap and water. Get medical attention if irritation develops. If inhaled: Remove individual to fresh air. If breathing difficulty occurs, get medical attention.

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#### Environmental Hazards

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

#### **Directions for Use**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons either directly or indirectly through drift. Only protected workers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

#### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of Agricultural workers on farms, forest, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. it also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protection Equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coverails

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- Chemical-resistant gloves
- Shoes plus socks

Refer to label booklet for additional Directions for Use.

Notice: Read the entire label. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.

In case of emergency endangering health or the environment involving this product, call collect 317-580-8282.

EPA Reg. No. 67690-2

EPA Est. No. 37429-GA-2

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\*Trademark of SePRO Corporation SePRO Corporation • Carmel, IN 46032, U.S.A. Plant Growth Regulator

Net Contents 1 Quart

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(laminated booklet, cover):

## (logo) SePRO A-Rest\* Solution

#### For height control in container-grown ornamentals, foliage plants and bedding plants

Active Ingredient:		
ancymidol: α-cyclopropyl-α-(p-methoxyphenyl)-5-pyrimidinemethanol	0.0264%	
Inert Ingredients	<u>99.9736%</u>	
	100.0000%	

Contains 1.00 gm of active ingredient per gallon.

## Keep Out of Reach of Children

## CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to Inside of label booklet for additional Directions for Use.

Notice: Read the entire label. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.

In case of emergency endangering health or the environment involving this product, call collect 317-580-8282.

EPA Reg. No. 67690-2

EPA Est No. 37429-GA-2

3

\*Trademark of SePRO Corporation SePRO Corporation • Carmel, IN 46032, U.S.A.

Plant Growth Regulator

Net Contents 1 Quart

SRCS

(Page 1 through end of datapack) Keep Out of Reach of Children

## CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

#### **Precautionary Statements**

#### Hazards to Humans and Domestic Animals

## CAUTION

Harmful if Swallowed. Avoid breathing spray mist and contact with eyes, skin or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- · Long-sleeved shirt and long pants
- Shoes plus socks
- Coveralls (California Only)
- · Chemical resistant gloves (California Only)

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### User Safety Recommendations

Users should:

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Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

· Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### **First Aid**

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6 - 8 heaping teaspoonfuls) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician. If in eyes: Flush eyes with plenty of water. Get medical attention if irritation develops. If on skin: Wash with plenty of soap and water. Get medical attention if irritation develops. If inhaled: Remove individual to fresh air. If breathing difficulty occurs, get medical attention.

#### **Environmental Hazards**

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

#### Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls

Chemical-resistant gloves

Shoes plus socks

#### Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Storage: Avoid freezing. Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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## **GENERAL INFORMATION**

A-Rest Solution Plant Growth Regulator is for use on ornamental plants grown in containers in nurseries, greenhouses, shadehouses and interiorscapes. Use of A-Rest effectively reduces internode elongation, resulting in a more desirable compact plant. Growth regulation effects produced by A-Rest are the result of inhibition of gibberellin biosynthesis. When used as directed, A-Rest produces no phytotoxic effects.

## FACTORS AFFECTING PLANT RESPONSE TO A-REST

There are many factors that can affect a plant's response to A-Rest. They include proper application, environmental conditions, plant/container size and cultural practices. These factors can affect the amount of A-Rest that is required for the desired plant height.

**CULTURAL PRACTICES** may affect the plant's response to A-Rest. Plants which are grown at close spacing or in small pots and using high water and fertility levels may require an increase in the amount of A-Rest needed. The media in which the plants are grown can reduce the effectiveness of plant growth regulator drench applications. The effectiveness of an A-Rest drench application will be reduced in growing media that utilizes a high amount of pine bark.

DIFFERENT VARIETIES OR CULTIVARS within a given plant species may require a higher or lower rate of A-Rest. Varieties that are taller and more vigorous generally require more A-Rest than do the naturally short, less vigorous varieties. Growers should consult with plant and seed suppliers for vigor and other growth characteristics for newly released varieties.

TEMPERATURE can be the overriding factor in determining the amount of A-Rest needed. Stem elongation increases with increased temperatures. Growers in warm climates will need to use higher rates and/or more applications compared to those in cooler climates. The amount of A-Rest needed and the number of applications may also vary depending on the time of year, with higher rates and/or more applications needed during warmer months.

## **MIXING INSTRUCTIONS**

Be sure the sprayer is clean and not contaminated with any material. Fill the spray tank with half the required amount of water. Use the Dilution Table (Table 1) to determine the amount of A-Rest needed for the required concentration. Measure the desired volume accurately and add it to the tank. Fill tank with the remaining amount of required water. Agitate the mixture of A-Rest and water frequently to assure uniform distribution during application.

TABLE 1: A-RES	T DILUTION TA	BLE			
PPM	FL. OZ. PER	ML PER	PPM	FL. OZ. PER	ML PER
A-REST DESIRED	GÁLLÓN	GALLON	A-REST DESIRED	GALLON	GALLON
CONCENTRATION	SOLUTION	SOLUTION	CONCENTRATION	SOLUTION	SOLUTION
.5	.25	· 7 ·	16	7.8	234
1	0.5	14	17	8.2	246
2	1.0	29	18	8.7	261
3	1.5	43	19	9.2	276
4	1.9	. 57	20	. 9.7	287
5	2.4	72	25	12.1	359
6	2.9	87	26	12.6	378
7	3.4	102	30	14.5	430
8 .	3,9		33	16.0	480
9	4.4	132	35	17.0	510
10	4.8	143	40	19.4	573
· 11	5.3	159	50	24.2	717
12	5,8	174	65	31.5	932
13	6.3	189	66	32.0	960
14	6.8	204	100	48.5	1433
15	7.3	215	132	64.0	1892

## **APPLICATION TECHNIQUES**

Plants absorb A-Rest through both foliage and roots. A-Rest may be applied as a spray or as a drench to achieve the desired plant height control. Split or sequential applications under certain conditions allow greater treatment flexibility and may be desirable.

#### SPRAY APPLICATIONS

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A-Rest applied as a foliar spray is absorbed through plant foliage and is then translocated to the terminal where it reduces internode elongation. A-Rest reaching the growing media as runoff from foliar treatments or over-spray will result in additional growth regulation from root uptake.

When applying as a spray, the following should be noted:

- · Do not use wetting agents in combination with A-Rest as crop injury may occur.
- Avoid uneven application or over-application to prevent irregular or excessive growth control.
- · Use of the highest recommended application rates may cause a slight delay (two to five days) in flower development on some species.
- · Do not allow spray drift to contact non-target plants.

#### **BENCH AREA SPRAYS**

This method is generally used for plants in small containers or that are spaced closely. Dilute A-Rest to the required concentration using the spray preparation guidelines described in Table 1. Apply uniformly at a rate of 1 gallon of spray per 200 sq ft of bench area.

#### INDIVIDUAL PLANT SPRAYS

Mix the spray solution with the amount of A-Rest and water to achieve the desired concentration (ppm) in Table 1. Spray individual plant foliage to the point of runoff. Care should be taken to apply an equivalent amount of spray volume to plants of the same size and species or cultivar. Uniformity in plant response is generally more difficult with individual plant sprays than bench area sprays.

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#### SEQUENTIAL SPRAY APPLICATIONS

Using sequential applications may provide more uniform growth regulation. In general, sequential spray applications are to be applied using 50-100% of the lower recommended rate. Growers in cooler climates may have to use lower rates. With some species, for example chrysanthemums and azaleas, individual lateral shoots may outgrow other laterals causing non-uniform plant appearance. This results when individual laterals do not receive enough chemical when spray is applied. The use of sequential applications will help reduce this problem.

#### **DRENCH APPLICATIONS**

Drench treatments of A-Rest will provide treatment accuracy for consistently uniform results. A-Rest is readily absorbed by the roots and translocated to the terminals. Growing media should be moist, but not wet at the time of treatment. Best results are obtained when moisture content allows the drench treatment to become well distributed and retained entirely within the pot. This may be achieved by watering the plants the day before treating. Response may be variable if part of the treatment is lost to flow-through or if growing media is too dry to allow for even distribution of the treatment. Generally, a volume of 2 fl oz (60 ml) is required to treat a 4 inch pot or 4 fl oz (120 ml) for treatment of a 6 inch pot (Table 2). Dilute A-Rest to the required concentration using the method described in Table 1. When applying as a drench, the use of pine bark in potting soil mix may reduce the effectiveness of drench treatments.

Pot Diameter (Inches)	Drench Volume (fl. oz./pot)	Drench Volume (mls/pot)
4	2	. 60
5	3	90
6	4	120
8	10	300
10	25	750
12	40	1200

#### TABLE 2. DRENCH VOLUME GUIDELINES

NOTE: The recommended drench volumes were based on the soil capacity of a common 6-inch "azaleatype" pot. Extrapolating the recommendation for this type pot to smaller or larger containers may not be correct for the total drench volume, but should only be used as a guideline. The user must determine the appropriate rate and drench volume needed to achieve the desired result, based on both pot size and growing media used.

#### CHEMIGATION (Not for use in California)

Pesticide labels contain directions for use which are necessary for effecting the purpose for which the product is intended and to protect health and the environment. The following information is intended to decrease environmental risks of pesticide contamination of ground water and will decrease direct human exposure to pesticide treated irrigation water by providing appropriate directions for use.

Apply this product only through pressurized drench (flood), sprinkler, or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation systems.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact state Extension Service Specialists, equipment manufactures, or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

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A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

#### CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

- Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid form being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

#### PRESSURIZED DRENCH (FLOOD) SYSTEM

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to
  prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlocked to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump. (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

#### SPRINKLER (SPRAY) CHEMIGATION

- The system must contain a functional check valve, vacuum relief valve, and low pressure drain
   appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to
  prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent

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fluid from being withdrawn form the supply tank when the irrigation system is either automatically or manually shut down.

- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump, (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

#### DRIP (TRICKLE) CHEMIGATION

- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to
  prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump, (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

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#### GENERAL INFORMATION

Pesticide supply tanks are recommended for the application of these products. See label instructions for dilution use rates and timing of applications. Agitate prior to use.

Since the material is used in an injections proportioner the pesticide is to be applied continuously for the duration of the water application.

## DETERMINING OPTIMUM RATES

The amount of A-Rest required for an optimum growth response will vary among growers and will depend upon several factors: the final desired height, length of control desired, pot size, stage of growth, method of application, season and varietal response. Species-specific cultural practices such as watering, potting media, fertilization and temperature and light conditions will also affect the growth response to a given dosage. Therefore, growers should establish specific application rates based on small-scale treatments under actual use conditions and keep records as to plant species and variety sensitivity before A-Rest is applied to a large number of plants. The rates recommended on this label are rate ranges and should be used only as a guideline.

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For plant species listed on the label, the user should run initial trials using the lowest recommended rates. For plant species not specifically listed on the label, the user should run initial trials on a small number of plants using the guideline rates in Table 3.

The maximum rate which may be applied to any crop is 132 PPM.

#### TABLE 3: GENERAL GUIDELINE RATES BY PLANT TYPE

	Spray	Drench	
	Rate Range	Rate Range	
Plant Type	(PPM)	(PPM)	
Bedding Plants	6-66	1-2	
Bedding Plant Plugs	3-35	0.5 - 1	
Flowering/Foliage Plants			
(Annual or Perennial)			
Herbaceous species	20-50	1-2	
Woody species	50	2	
Bulb Crops	25-50	2	

## USE AND RATE RECOMMENDATIONS BY CROP

A-Rest is effective in controlling the height of most ornamental crops. The use and rate recommendations for the species that follow should act as a starting point in determining the best rate for your specific cultural and environmental growing conditions. Before you apply A-Rest to a large number of plants, be sure to read and understand the section titled **Determining Optimum Rates**.

#### <u>Azaleas</u>

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A-Rest is effective in controlling Azalea height, resulting in a more compact plant. <u>Spray</u>: Apply after plants have been trimmed. Prepare foliar spray according to directions in Table 1. Apply at a base rate of 26 PPM and thoroughly cover all foliage.

#### <u>Bedding Plants</u>

A-Rest is effective on a wide range of bedding plants for height control.

<u>Spray:</u> Dilute A-Rest according to directions in Table 1. See Table 4 for application rate guidelines for a variety of common bedding plants. For specific plants not identified on Table 4, a base rate of 15 PPM is recommended. Growers should establish specific application rates and timing based on small scale treatments under actual use conditions and keep records as to plant species and variety sensitivity. Apply spray solution uniformly over the treatment area at a rate of 1 gallon per 200 sq ft regardless of plant spacing. In general, applications may be made after the plants have initiated new growth after being transplanted.

<u>Drench</u>: Apply to uniformly moist potting media. Apply at a solution concentration of 1 to 4 PPM at the recommended volume per pot (See Table 2). Rates for a specific plant species variety and set of use conditions should be determined in small scale treatments prior to large scale applications. The user should determine optimum rates starting with a rate of 2 PPM in the Sunbelt Region and 1 PPM in the Northern Belt Region.

12

		IGE (PPM) GUIDELINES FOR SOME BEDDING PLANTS			
		After			
Plant	Plug	Transplant	Finished		
Ageratum	7 - 12	10 - 15	15 - 26		
Begonia	3 - 5	6 - 12	10 - 15		
Celosia	7 - 12	10 - 15	15 - 26		
China Aster	7 - 12	. 10 - 15	15 <i>-</i> 26		
Cleome	7 - 12	<sup></sup> 10 - 15 <sup></sup>	15 - 26		
Comflower	7 - 12	10 - 15	15 - 26		
Dahlia	7 - 12	10 - 15	15 - 26		
Dianthus	7 - 12	10 - 15	15 - 26		
Geranium	26 - 35	33 - 66	NR		
Marigold	13 - 20	18 - 26	_ 26 - 33		
Impatiens	10 - 20	20 - 26	26 - 44		
Pansy	3 - 7	8 - 10	11 - 15		
Petunia	10 - 15	15 - 20	15 - 26		
Portulace	7 - 12	10 - 15	15 - 26		
Salvia	10 - 15	15 - 20	15 - 26		
Snapdragon	10 - 15	15 - 20	15 - 26		
Vinca	5 - 10	8 – 13	13 - 18		
Zinna	7 - 12	10 - 15	15 - 26		

#### ABLE 4: SPRAY RATE RANGE (PPM) GUIDELINES FOR SOME BEDDING PLANTS

#### **Bedding Plant Plugs**

Foliar applications of A-Rest are effective in controlling the height and strengthening the stem of bedding plant plugs. The rate of A-Rest for bedding plant plugs will be much lower than the rate for a more mature bedding plant. The grower should determine the optimum rate for the species grown under their cultural and environmental conditions by running trials on a small number of plants. A recommended starting rate range is 5-10 PPM. Applications to bedding plant plugs should begin when the plants have reached the 1 to 2 true leaf stage.

#### **Bulb or Fibrous Root Crops**

A-Rest is very effective on most bulb crops. A-Rest is most effective when applied as a drench rather than a spray on most bulb crops. For bulbs species not listed, the grower should determine the optimum rate for the species grown under their cultural and environmental conditions by running trials on a small number of plants. A recommended starting rate for a drench application is 1-4 PPM, for sprays 50 PPM.

	Spray	Drench	
	Rate Range	Rate Range	
Plant	(PPM)	<u>(PPM)</u>	······
Easter Lily	30-132	2-4	
Dahlia	NR	2-4	
Tulip	NR	1-4	

#### TABLE 5: RATE RANGE GUIDELINES FOR SOME CROPS

NR=Not Recommended

#### Easter Lily

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<u>Spray:</u> Apply to plants 2 to 6 inches in height. A base rate of 50 PPM is recommended on Ace and Nellie White varieties. A rate of 50 to 132 PPM is recommended on the Japanese Georgia variety. A second application, if required, should be made two weeks after the first.

<u>Drench:</u> Apply to uniformly moist potting media. Plants may be treated from emergence to 12 inches in height. For optimum results, treat when plants are from 2 to 6 inches in height.

13

#### Dahlia

<u>Soil Drench:</u> Apply to uniformly moist potting media approximately 2 weeks after planting. Dahlia cultivars, *Siemen, Doornbosch* and *Honey* may not respond satisfactorily to an A-Rest treatment.

#### Tulip

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<u>Drench</u>: Apply to uniformly moist potting media from one week before to two days after forcing begins. The rate used should be established in small scale treatments according to the variety used and the final height desired for market.

For species not specifically listed, trials should be conducted using rates outlined in the section on DETERMING OPTIMUM RATES.

#### Chrysanthemums (Pot)

A-Rest is effective in controlling the height of potted Chrysanthemums as either a spray or a drench application.

<u>Spray:</u> A base rate of 25 PPM is recommended for sensitive varieties and 50 ppm for all others. Spray sensitive varieties when plants have reached the desired height. For less sensitive varieties, spray when the axillary shoots following the pinch are 2 1/2 to 3 inches long. If a second application is required, it should be made two weeks after the first.

<u>Drench:</u> Apply at a concentration of 2 to 4 PPM. For optimum results, apply to uniformly moist potting soil when plants are 2 to 6 inches in height (approximately two weeks following pinch).

#### Flowering Plants/Foliage Plants

A-Rest is effective when applied as a spray or drench on a wide variety of other flowering plants and foliage plants. In general, herbaceous species will require lower rates than woody species. Trials should be conducted using rates outlined in the section on DETERMINING OPTIMUM RATES. A recommended starting rate for a drench application is 1-4 PPM and for sprays 33 PPM.

#### TABLE 6: RATE RANGE GUIDELINES FOR SOME FLOWERING/FOLIAGE PLANTS

	Spray	Drench
	Rate Range	Rate Range
Plant	(PPM)	(PPM)
Alternanthera	25-132	2_4
Bleeding Heart	65-132	2-4
Clematis	25-132	2-4
Columbine	65-132	2-4
Delphinium	35-132	2-4
Dracaena	25-132	2-4
Fatshedera	65-132	2-4
Gerbera Daisy	25-132	2-4
Liatris	25-132	2-4
Monstera	25-132	2-4
Nephthytis, Green Gold	25-132	2-4
Nephthytis, Green	25-132	2-4
Philodendron	25-132	2-4
Pilea	25-132	2-4
Pothos	25-132	2-4
Purple Passion	25-132	2-4
Schefflera	25-132	2-4

#### **Bleeding Heart**

Bench Area Spray: Apply at 65 to 132 PPM when plants are well rooted and have 6-8 inches of new growth, but prior to initiation of flowering.

Drench: Apply to uniformly moist media about 3 weeks after planting at a concentration of 2 to 4 PPM.

#### Columbine (Aquilegia)

Bench Area Spray: Apply when plants are well rooted but prior to initiation of flowering.

#### Delphinium

Bench Area Spray: Apply when plants are well rooted but prior to initiation of flowering.

Drench: Apply to uniformly moist potting media.

#### Fatshedera

Spray: Apply when plants are well rooted and actively growing.

Drench: Apply to uniformly moist potting media.

#### Liatris

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Drench: Apply to uniformly moist potting media.

#### **Poinsettias**

<u>Drench</u>: Apply at a concentration of 0.5 to 2 PPM. Apply to uniformly moist potting media. Application timing may vary depending upon the variety, height goal desired and individual grower experience.

#### Application Timing

Early Applications: Treat plants at pinch to 4 weeks after pinch, or 8 to 12 weeks before finishing.

Late Applications: The timing of application should be based upon the height of the poinsettia in relation to height goal. If final plant height goal is 15 inches, then apply A-Rest when the plants are 12-13 inches in height. To ensure uniformity, any plants shorter than 12-13 inches should not be treated at that time.

Applications after the Start of Short Days: A-Rest may be applied as a drench very late in the crop cycle without adversely affecting the bract size or quality. The suggested trial rate is 1.0 ppm

<u>Woody Landscape Plants (Container grown in greenhouses and shadehouses)</u> A-Rest is effective in controlling the height on a wide variety of woody landscape plants using either spray or drench applications. Rate ranges for different species vary greatly. Trials should be conducted using rates outlined in the section on DETERMINING OPTIMUM RATES.

Some examples of woody landscape plants to which A-Rest may be applied are:

Azalea	·	-	Gardenia
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Holly

Hydrarigea

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