

400-69

10-30-2001

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# B-Nine®

CONTROLS HEIGHT, PROMOTES FLOWERING OF PLANTS



<b>ACCEPTED</b>
OCT 30 2001
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 400-69

### COMPOSITION

Active Ingredient: (% by weight)

daminozide [butanedioic acid mono (2,2-dimethylhydrazide)] ..... 85.0%

Inert Ingredients: ..... 15.0%

Total: ..... 100.0%

## KEEP OUT OF REACH OF CHILDREN DANGER • PELIGRO

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.)

Net Contents:

<b>FIRST AID</b>	
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN OR ON CLOTHING</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>NOTE TO PHYSICIAN</b>	
Probable mucosal damage may contraindicate the use of gastric lavage.	
<b>EMERGENCY ASSISTANCE:</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>UNIROYAL CHEMICAL EMERGENCY PHONE</b>	<b>203-723-3670</b>
<b>SAFETY DATA AND INFORMATION</b>	<b>203-573-3303</b>
<b>TRANSPORTATION EMERGENCY (CHEMTREC)</b>	<b>800-424-9300</b>

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CORROSIVE.** Causes irreversible eye damage. Do not get in eyes or on clothing. Harmful if absorbed through skin. Avoid contact with skin.

#### PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical resistance category selection chart.

**Applicators and Other Handlers (other than Mixers and Loaders) Must Wear:** coveralls over short-sleeved shirt and short pants; chemical-resistant gloves made out of any waterproof material; chemical-resistant footwear plus socks; protective eyewear; chemical-resistant headgear for overhead exposure; chemical-resistant apron when cleaning equipment.

**Mixers and Loaders Must Wear:** coveralls over short-sleeved shirt and short pants; chemical-resistant gloves made out of any waterproof material; chemical-resistant footwear plus socks; protective eyewear; chemical-resistant headgear; chemical-resistant apron; dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N, R, P or HE filter.

Uniroyal Chemical  
Company, Inc.  
Middlebury, CT 06749  
EPA REG. NO. 400-69  
EPA EST. NO.  
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Discard clothing and other absorbent materials that have been heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**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.

**ENVIRONMENTAL HAZARDS**

Do not contaminate water when disposing of equipment washwaters.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all label directions carefully before use.

Do not apply this product through any type of irrigation system.

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 24 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 over short-sleeved shirt and short pants; chemical-resistant gloves made out of any waterproof material; chemical-resistant footwear plus socks; protective eyewear; chemical resistant head-gear.

**GENERAL INFORMATION**

B-NINE is a plant growth regulator for use on container grown ornamental plants. When applied to the plant foliage B-NINE passes into the leaf, then moves within the plant to the growing points to reduce internode elongation. Treated plants will develop a shorter, more compact growth habit when compared to untreated plants.

FOR USE ONLY ON ORNAMENTALS GROWN IN COMMERCIAL OR RESEARCH GREENHOUSES, SHADEHOUSES AND NURSERIES. IN PRODUCTION AREAS NOT UNDER COVER, USE IS RESTRICTED TO CONTAINERIZED ORNAMENTALS<sup>1</sup>.

**MIXING INSTRUCTIONS**

Use the DILUTION TABLE below to determine the amount of B-NINE needed for the required concentration:

CONCENTRATION OF B-NINE DESIRED		VOLUME MEASURE* FOR ONE GALLON OF SOLUTION		WEIGHT MEASURE FOR ONE (1) GALLON OF SOLUTION	
%	PPM	Level Scoops	Level Teaspoons	Ounces (avoirdupois)	Grams
0.100	1,000	1/8	1 1/8	0.16	4.5
0.125	1,250	1	2	0.20	5.6
0.250	2,500	2	4	0.40	11.1
0.375	3,750	3	6	0.60	16.7
0.500	5,000	4	8	0.80	22.3
0.750	7,500	6	12	1.20	33.4

\* Approximate dosage only. Use weight measurements wherever possible.

Place the required amount of B-NINE into the spray tank. Then add the amount of water needed to make the desired concentration. Allow 3 to 5 minutes for B-NINE to dissolve in water, stirring occasionally. Once the B-NINE has dissolved in water, no additional agitation is required.

Solutions prepared from B-NINE should not be held for more than 24 hours.

Be sure to seal the unused portion of B-NINE in its original container as high humidity and moisture will cause it to harden.

Do not tank mix B-NINE with copper-containing products and do not apply B-NINE within 7 days either before or after application of such products, as burning of leaves may result.

Do not add additional wetting agent or mix with insecticides, fungicides or foliar fertilizers, as burning of leaves may result.

**APPLICATION NOTES**

The recommended application volume is 1 gallon of B-NINE spray solution to cover 200 square feet of area. This will provide foliage coverage just to the point of runoff.

Plants should be well watered prior to application of B-NINE. Wilted plants do not readily absorb B-NINE and poor results might be obtained if application is made to wilted plants.

The plant foliage should be dry when sprays are applied. Do not syringe or overspray the foliage for 18 to 24 hours after applying B-NINE to allow the chemical to enter the plant.

Two applications of B-NINE at 1/2 to 3/4 the label rates may give better control than a single application of the total recommended rate.

<sup>1</sup>Use on bed-grown or containerized ornamentals without impervious floors not permitted by the Arizona Department of Environmental Quality.

**B-NINE & CYCOCEL® TANK MIX:** On certain crops where B-NINE alone provides limited height control, the application of this tank mix can provide a synergistic effect that results in enhanced activity. Optimum rates for the tank mix can be adjusted to obtain a desirable level of activity, but the general guidelines are to use a Cycocel rate which does not cause phytotoxicity and to then vary the rate of B-NINE to adjust activity.

The following table provides general guidelines for recommended rates based on the desired level of activity:

ACTIVITY LEVEL	B-NINE (ppm)	CYCOCEL (ppm)
Very High	5,000	1,500
High	2,500	1,250
Medium	1,250	1,250
Low	800	1,000

Cycocel® is a registered trademark of American Cyanamid Co.

**USE AND RATE RECOMMENDATIONS BY CROP**

Although the use of B-NINE has been found to be acceptable for the specific plants listed in this label, be sure to read and fully understand the section on DETERMINING PLANT SAFETY before applying to large numbers of plants.

**A. AZALEAS (FLORIST)**

To promote compactness and development of additional buds on plants grown for forcing, spray when new growth following final shaping is 2 to 3 inches with a 0.25% (2500 ppm) solution of B-NINE.

An additional application may be made two weeks later, if necessary.

**B. BEDDING PLANTS / FLOWERING PLANTS (Annual or Perennial)**  
Excessive stem elongation of most bedding plants is prevented by a B-NINE spray made when 1½ to 2 inches of new growth has developed after transplanting or pinching (approximately 2 to 3 weeks) or when the plants begin to elongate (stretch).

Use of a 0.25% to 0.50% (2500 to 5000 ppm) concentration is particularly effective on species such as, but not limited to:

Ageratum	Crossandra	Kalanchoe
Aster	Dahlia	Lisianthus
Begonia	Delphinium	Marigold
Browallia	Dianthus	Petunia
Calendula	Dusty Miller	Phlox
Celosia	Exacum	Salvia
Centaurea	Gerbera	Verbena
Coleus	Gomphrena	Vinca
Cosmos	Hibiscus	Zinnia

Repeat applications may be made when new growth begins to stretch.

To control the length of the peduncle (flower stalk) on plants such as Kalanchoe and Gerbera, apply B-NINE at a concentration of 0.12% to 0.50% (1200 to 5000 ppm). For Gloxinia, do not exceed 0.125% (1250 ppm) or injury may occur. Applications should begin 2 to 3 weeks after initiation of short days.

**Note:** Some varieties of Kalanchoe with cupped leaves have shown a sensitivity to B-NINE that results in slight phytotoxicity to the foliage. This phytotoxicity occurs when B-NINE spray solution accumulates, and therefore concentrates, in these cupped areas. To avoid possible phytotoxicity on such varieties, B-NINE solution should be applied during the late afternoon or evening, and the foliage should then be rinsed thoroughly with water the next morning.

To reduce leaf injury of petunias caused by air pollutant ozone and sulfur dioxide: Make a second application of 0.50% (5000 ppm) one week after the first. B-NINE will not protect against leaf damage caused by the air pollutant PAN. Growth retardation will be more pronounced and there may be a delay in flowering time from the second B-NINE application. Plants sprayed for pollution protection will be no shorter than those sprayed for compact growth.

**C. BEDDING PLANT PLUGS**

In order to maintain proper size of bedding plant plugs for transplanting and shipping, apply B-NINE to plugs as needed, beginning at the first true leaf stage (III) through the finishing stage (IV).

For optimum growth control, apply B-NINE at concentrations of 0.15% to 0.25% (1500 to 2500 ppm). The concentrations used will depend on seedling vigor and projected number of applications. Repeat applications can be made at 1 to 2 week intervals or as needed. The most vigorous seedlings may require weekly applications. Properly treated plugs will not be overly stunted and will continue to grow when transplanted.

In addition to the bedding plant species listed above (Section B), B-NINE has also been shown to be effective in controlling the height of impatiens and pansies in the plug stage.

**D. CHRYSANTHEMUMS (POT)**

To produce compact, branched (pinched) potted plants, apply B-NINE in the range of 0.25% to 0.5% (2500 to 5000 ppm). For very sensitive varieties, apply the 0.25% rate when the desired height is reached. For other cultivars, use the 0.25% rate during winter and 0.5% in the summer, when axillary shoots are 1 to 2 inches long.

Additional applications, if required, may be made at 2 week intervals, stopping one week prior to disbudding.

It is suggested that a "MEDIUM" schedule calling for shading and pinching on the same day be used for "TALL" varieties. This will eliminate the open, relatively leafless appearance often associated with the use of delayed pinch schedules.

**E. CHRYSANTHEMUMS (CUT)**

To retard neck stretching just below the flower on potted and cut flowers, spray the top ½ of the foliage to runoff with 0.25% (2500 ppm) B-NINE two days after disbudding.

**F. CHRYSANTHEMUMS (CUTTINGS)**

At certain times of the year or with certain tall or long internoded varieties, the conventional spray applications described above may not be adequate. Additional applications of B-NINE may be useful as pre-plant dips and post-plant sprays as follows:

**1. Pre-plant dip: - Use 0.10% (1000 ppm):**

**ROOTED CUTTING:** Hold a handful of cuttings by the root system; dip in the B-NINE solution just long enough to thoroughly wet all leaves and stems, remove and pot. Allow the foliage to dry before watering-in. Normally, by the time you are at the end of a bed, you can start watering-in those plants first potted.

**UNROOTED CUTTING:** Remove unrooted cuttings from the box. Dip stem in the B-NINE solution, remove and place in flat. Cover with cheesecloth to avoid dehydration and place in the cooler overnight. Stick the next day and go on to a normal misting program.

**2. Post-plant spray:** Spray rooted cuttings as soon as the cuttings establish themselves (approximately 3 to 5 days after potting). Concentration will vary from 0.125% to 0.50% (1250 to 5000 ppm), depending on variety and time of year.

**G. FOLIAGE PLANTS**

B-NINE, sprayed at a concentration of 0.25% to 0.75% (2500 to 7500 ppm) is effective for controlling elongation (stretching) and promoting improved appearance and coloration on foliage plants such as, but not limited to:

Ficus	Pothos	Schefflera
Philodendron	Radermachera	Synogonium

Two or more applications may be necessary if new growth begins to stretch or for enhanced coloration.

**H. GARDENIAS**

To produce compact plants for spring bloom, spray with 0.50% (5000 ppm) B-NINE when plants are about ¾ of final marketing size. This is from mid-August to mid-September for the Florida area and during the first two weeks of December for most other areas.

## I. HYDRANGEAS

To retard spring forcing growth, spray with a 0.50% (5000 ppm) solution of B-NINE when the new growth has just started to unfold and 4 to 5 pairs of leaves are visible. Apply 2 to 4 weeks after the start of forcing but not later than this time.

For those greenhouse varieties that produce excessive growth during the summer following pinching, spray to runoff with a 0.75% (7500 ppm) solution of B-NINE when the regrowths are 1 to 2 inches in length, usually in late July, but not after the first week in August.

## J. POINSETTIAS

To reduce the elongation (stretching) of poinsettias, application of B-NINE should begin when new growth is 1½ to 2 inches long.

Seasonably late applications will reduce plant height but may also reduce bract size and delay flowering. For growers scheduling early December flowering, applications should not be made after initiation of short days. As a guide, do not apply after October 1 for areas outside Florida, or after October 25 in Florida.

The recommended rate range is 0.20% to 0.30% (2000 to 3000 ppm). Use the 0.2% dilution in areas north of the sunbelt and 0.3% in the sunbelt. Vigorous growing varieties may require higher rates and repeat applications may be necessary for optimum plant size.

### DETERMINING PLANT SAFETY

The use of B-NINE has been found to be acceptable for the specific plants listed on this label. Due to the large number of species and varieties of ornamentals, it is impossible to test every one for efficacy and safety to B-NINE. Neither the manufacturer nor the seller has determined whether or not B-NINE can be used safely on ornamentals not specified on this label. Prior to any large scale application on such plants, the user should determine the efficacy and safety of B-NINE by testing a small number of the type of plants to be treated at the recommended rates for that particular group, i.e. bedding plants, foliage, etc., and observing the treated plants over a one to two week period for phytotoxicity. The user assumes all risks arising out of application to unlabeled plants.

### STORAGE AND DISPOSAL

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

**STORAGE:** Store in the original container only. After partial use, close the container tightly. Store in a secure place that is temperate and dry. High humidity and moisture will cause this product to harden.

Use spray and stock solutions within 24 hours. Do not store solutions. Immediate use is appropriate if another component is added to spray mixture.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### CONTAINER DISPOSAL

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

**Paper:** Completely empty bag into application equipment. Then dispose of bag in a sanitary landfill, by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**Fiber cartons with liners or bags:** Completely empty liner or bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or packaging equipment. Then dispose of liner or bag in a sanitary landfill, or by incineration if permitted by State and local authorities. Dispose of carton in the same manner.

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**IMPORTANT NOTICE:** The directions and recommendations on this label are derived from research to ensure correct product usage. Insufficient control may result from extremes in weather conditions, or lack of following label instruction. The use of this product is beyond the control of Uniroyal Chemical and seller. Buyer is responsible for proper use as per directions and acceptance of product performance under extraordinary or unusual weather conditions. Uniroyal Chemical is not responsible for losses or damage resulting from using B-NINE in any manner not specifically recommended.

Seller warrants that this product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with the directions and instructions specified on the label under normal conditions of use, but neither this warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product, contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use.

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