

JUL 4 1994

Dr. Richard A. Carver
E.I. Du Pont de Nemours & Co.
P.O. Box 80038
Wilmington, DE 19880-0038

Dear Dr. Carver:

Subject: Benlate SP Fungicide
EPA Reg. No. 352-564
Your Submissions of May 5, May 20, and May 24, 1994

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

1. Revise the main label as indicated below:

a. The letter from the California EPA states that both normal work clothing and chemical resistant clothing must be worn by handlers of both dilute and concentrated product. This is not clear as worded on the label. It is suggested that labeling be revised to read "Coveralls or long-sleeved shirt and long pants and full body, chemical resistant clothing" for both sections under Personal Protective Clothing on page 1.

b. Under Stone Fruits, delete the use for control of Cytospora canker of peaches. It would not be possible to use this product as directed without opening the water soluble packet.


c. In the seed treatment table, move the statement concerning use of a dye to the column "Further Use Information" since this applies to all seed treatments indicated on the label.

2. Submit five copies of final printed labeling before release of these labels.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product and supplemental labeling for use with this product constitutes acceptance of these conditions.

Copies of the stamped label and supplemental labels are enclosed for your records.

Sincerely yours,


Steve Robbins
Acting Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (7505C)

enclosure

7505C:C.Grable:cg:7/14/94

ACCEPTED
with COMMENTS
In EPA Letter Dated

JUL 14 1994

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

352-564



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BENLATE® SP

FUNGICIDE

WETTABLE POWDER IN WATER-SOLUBLE FILM

ACTIVE INGREDIENT

BY WEIGHT

Benomyl [Methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate] 50%

INERT INGREDIENTS 50%

TOTAL 100%

EPA Reg. No. 352-564

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION! MAY IRRITATE EYES, NOSE, THROAT AND SKIN.

Avoid breathing dust or spray mist. Avoid contact with skin, eyes, and clothing.

This product may cause a temporary allergic skin reaction in a few susceptible persons. This condition should be treated as an allergic dermatitis. There is no evidence of after effects or permanent injury.

First Aid: In case of contact, flush skin or eyes with plenty of water; for eyes, get medical attention.

For medical emergencies involving this product, call toll free 1-800-441-3637.

PERSONAL PROTECTIVE EQUIPMENT

Handlers who may be exposed to the dilute through application or other tasks must wear:

Coveralls or long-sleeved shirt and long pants.

Waterproof gloves.

Chemical-resistant footwear plus socks.

Full body, chemical-resistant clothing, and a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

Handlers who may be exposed to the concentrate through mixing, loading, application, or other tasks must wear:

Long-sleeved shirt and long pants.

Waterproof gloves.

Chemical-resistant footwear plus socks.

Chemical-resistant apron when mixing or loading.

For exposures in enclosed areas, a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

For exposures outdoors, a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

All protective clothing must be cleaned daily or discarded after the day's use. 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.

ENGINEERING CONTROL STATEMENTS

A closed system is required for the transfer of the liquid mixture of BENLATE SP Fungicide from the mix tank to the application tank. Human flaggers must be in enclosed cabs.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

The closed system or enclosed cabs must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)]. The handler PPE requirements may be reduced or modified as specified in the WPS.

PRECAUTIONARY STATEMENTS (continued on next page)

PRECAUTIONARY STATEMENTS (continued)

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. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. For terrestrial uses, do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark, except for the registered aquatic use on rice. Do not apply where runoff is likely to occur. Drift and runoff from treated areas may be hazardous to fish in adjacent areas. Do not contaminate water when disposing of equipment washwaters. Do not apply when weather conditions favor drift from areas treated. For registered aquatic uses: Aquatic organisms may be killed at recommended application rates.

PHYSICAL OR CHEMICAL HAZARDS

Keep away from fire or sparks.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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.
- Waterproof gloves.
- Chemical-resistant footwear plus socks.

BENLATE should be used only in accordance with the recommendations on this label, or the recommendations in separate DuPont publications available through local dealers.

DuPont will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by DuPont. User assumes all risk associated with such nonrecommended use.

GENERAL INFORMATION

BENLATE is a systemic fungicide recommended for the control of many important plant diseases. Apply as a spray with ground equipment, except as otherwise directed in the "Crop/Rate Table", using sufficient water to obtain thorough coverage of plants. Application by air or chemigation is permitted for some crops. Under severe disease conditions, use the higher treatment rate and shorter interval for repeat applications as specified on the label for each crop. Large mature trees will also require the higher labeled rate. Use only in commercial or farm plantings. Not for use in home plantings nor once any commercial crop is turned into "U-Pick", "Pick Your Own" or similar operation.

Resistance Management

If treatment with BENLATE is not effective, a benomyl-resistant strain of the fungus may be present. If this is the case, neither BENLATE nor any other benzimidazole- or thio-phanate-type fungicide will effectively control that disease. Consider prompt use of other types of suitable fungicides.

Repeated, exclusive use of BENLATE may lead to buildup of resistant strains of fungi and loss of disease control. A spray program alternating BENLATE use with other fungicides may delay buildup of resistant strains. For guidance on your particular crop and disease control situation, consult your state extension specialist or official state recommendations.

Preparation of Spray Mixture

Add the required amount of BENLATE to the necessary volume of water in the spray tank; continuously agitate the tank by hydraulic or mechanical means to keep the material in suspension. Do not tank mix BENLATE with lime or alkaline pesticides such as Bordeaux mixture or lime sulfur.

When the use of a spray oil is recommended (for crops such as apples, peanuts, pecans, and stone fruits), use a nonphytotoxic superior-type spray oil (60 to 70 second viscosity); add oil as last ingredient to spray tank. Consult product labels before applying other pesticides in conjunction with spray oil or immediately before or after an oil application. Follow label instructions for each product used in tank mixtures; observe all precautions and restrictions.

BENLATE SP is a 50% active ingredient wettable powder formulation premeasured in 1 lb. (16 oz) polyvinyl alcohol (PVA) water soluble packets. Rates on the label in pounds per acre are equivalent to packets per acre.

CAREFULLY OPEN ENVELOPE AND IMMEDIATELY DROP INNER PACKET INTO SPRAY TANK. DO NOT OPEN, DIVIDE OR HANDLE THE INNER PACKET.

Tank mixtures with liquid fertilizer or solutions containing Boron will affect solubility of the water soluble film. When using fertilizers or Boron containing solutions follow these procedures:

1. Add the correct amount of "Benlate" SP to clean water.
2. Be sure the soluble packets are completely dissolved.
3. Introduce the fertilizer or Boron containing solutions last.

**NUMBER OF ACRES TREATED
PER 1 LB. PACKET OF "BENLATE" SP
AT VARIOUS USE RATES**

<u>RATE PER ACRE</u>		<u>1 PACKET WILL TREAT</u>
<u>(OUNCES)</u>	<u>(POUNDS)</u>	<u>(ACRES)</u>
2	1/8 (0.125)	8
4	1/4 (0.25)	4
6	3/8 (0.375)	2 2/3
8	1/2 (0.5)	2
12	3/4 (0.75)	1 1/3
16	1	1
32	2	1/2
64	4	1/4

For use rates other than those listed in the table above, divide the product use rate (in ounces) into 16 (ounces of product per packet) to determine the number of acres that one packet will treat. For example, if the product use rate is 24 ounces per acre:

$$\frac{16 \text{ ounces per packet}}{24 \text{ ounces per acre}} = 2/3 \text{ acres per packet}$$

eg. Use 2 packets per 3 acres.

or alternatively, divide the product use rate (in pounds) into 1 (pound of product per packet) to determine the number of acres that one packet will treat. For example, if the product use rate is 1 1/2 pounds per acre:

$$\frac{1 \text{ pound per packet}}{1.5 \text{ pounds per acre}} = 2/3 \text{ acres per packet}$$

eg. Use 2 packets per 3 acres.

Notes

Do not tank mix or alternate BENLATE with benzimidazole or thiophanate products such as Mertect¹ or Topsin².

Do not use on greenhouse crops, including hydroponically grown crops.

Do not use on any container-grown crops.

Do not use on ornamentals.

CHEMIGATION

Apply BENLATE only through sprinkler irrigation, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation systems only on beans, carrots, celery, cucurbits, peanuts, strawberries or tomatoes. Do not apply BENLATE to any other crops using chemigation.

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

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

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

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.

Specific Instructions for Public Water Systems

1. 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.
2. 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. 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 from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

Specific Instructions for Sprinkler Irrigation Systems

1. 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.

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2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Good agitation is required in the injection tank.
9. In moving systems, apply specified dosage of BENLATE as a continuous injection. In nonmoving systems inject BENLATE for 15 to 30 minutes at end of cycle. Use the least amount of water possible consistent with uniform coverage.
10. Mix the amount of BENLATE needed for acreage to be treated into the quantity of water determined during prior calibration. For moving systems inject into the system continuously for one complete revolution of the field. For nonmoving systems inject into system for the time established during calibration.
11. Stop injection equipment after treatment is completed and continue to operate irrigation equipment until all BENLATE is flushed from system.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

Controlling Droplet Size - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

Controlling Droplet Size - Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- **Boom Length** - The boom length should not exceed 3/4 of the wing or rotor length - longer booms increase drift potential.
- **Application Height** - Application more than 10 ft above the canopy increases the potential for spray drift.

BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID GUSTY AND WINDLESS CONDITIONS.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they effect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that

layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

AIR ASSISTED (AIR BLAST) TREE AND VINE SPRAYERS

Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream.

In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- *Adjust deflectors and aiming devices so that spray is only directed into the canopy.*
- *Block off upward pointed nozzles when there is no overhanging canopy.*
- *Use only enough air volume to penetrate the canopy and provide good coverage.*
- *Do not allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.*

CROP/RATE TABLE

Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallage	Application Timing	Last Application (days to harvest)
Almonds	Brown Rot Blossom Blight (<i>Monilinia</i>)	48 oz (3 lb)	16 to 24 oz/A 10 gal/A air	Apply at pink bud. If needed, repeat during half to full bloom or 10 days after initial application, whichever comes first.	80
	<ul style="list-style-type: none">• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.• Under severe disease conditions or on disease-susceptible varieties, make a second application during half to full bloom.				
Apples	• See POME FRUITS.				
Apricots	• See STONE FRUITS.				
Avocados (FL and PR only)	Scab (<i>Sphaceloma</i>) Cercospora Spot Anthracnose	96 oz (6 lb)	16 to 32 oz/A 10 gal/A air	Apply at bud swell. Repeat at 3 to 4 week intervals.	30
	• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.				
BEANS Dry Succulent	White Mold (<i>Sclerotinia</i>) Gray Mold (<i>Botrytis</i>)	64 oz (4 lb)	24 to 32 oz/A 25 gal/A 3 gal/A air	Apply at initial bloom (25 to 50%). Repeat 7 to 10 days later. Pacific NW: Apply prior to first petal fall/row fill. Repeat 7 to 10 days later.	Dry/Snap 14 Other Succulent 28
	<ul style="list-style-type: none">• May be used through irrigation systems.• For narrow-row (20 to 40") plantings of irrigated dry beans in MT, NE, CO, WY, apply at initial bloom, and repeat 7 to 10 days later. BENLATE provides only partial control of white mold.				
Dry (band spray)	White Mold (<i>Sclerotinia</i>) Gray Mold (<i>Botrytis</i>)	64 oz (4 lb)	32 oz/A 25 gal/A	Apply at 10 to 20% bloom.	
	• For band sprays, a second application may be needed under heavy disease conditions. A 3-nozzle-per-row arrangement used at high pressure provides best results.				
Snap	Fusarium Root Rot	64 oz (4 lb)	12 to 16 oz/A 15 gal/A	Apply in-furrow at planting.	NA*
	• BENLATE does not control <i>Pythium</i> sp.				
Blackberries	• See CANEBERRIES.				

Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallonage	Application Timing	Last Application (days to harvest)
Blueberries	Botrytis Blossom Blight Mummy Berry	Before harvest: 48 oz (3 lb) After harvest: 32 oz (2 lb)	16 oz/A 5 gal/A air	Apply at green tip. Repeat at 7 to 10 day intervals through petal fall.	21
	Anthracnose Leaf Spot	Total: 80 oz (5 lb)		Apply when disease appears. Repeat 14 days later. After harvest, make 2 applications at 14 day intervals as needed.	
	<ul style="list-style-type: none">• Do not make more than 3 applications at 16 oz/A before harvest.• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.• Do not use on container-grown blueberries.				
Boysenberries	• See CANEBERRIES.				
Broccoli	• See BRASSICA.				
BRASSICA (seed crops) Broccoli Brussels Sprouts Cabbage Chinese Cabbage Cauliflower Collard Kale Kohlrabi Mustard Greens Rutabagas Turnip:	White Mold (<i>Sclerotinia</i>)	96 oz (6 lb)	32 oz/A 5 gal/A air	Apply at first petal fall. Repeat at 14 day intervals.	NA*
<ul style="list-style-type: none">• Add a spreader sticker to aid in wetting plants.• Do not graze livestock in treated areas.• Do not use treated seed or plant parts for food or feed.					
BRASSICA Brussels Sprouts	White Mold (<i>Sclerotinia</i>) Gray Mold (<i>Botrytis</i>) Anthracnose Ring Spot	96 oz (6 lb)	32 oz/A 3 gal/A air	Apply when disease appears. Repeat at 7 day intervals.	7
	• Do not make more than 3 applications per crop per season.				
Chinese Cabbage	White Mold (<i>Sclerotinia</i>)	48 oz (3 lb)	8 oz/A	Apply when disease appears. Repeat at 7 to 10 day intervals.	
	• Do not make more than 6 applications per crop per season.				
Turnip Greens (AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA only)	Cercospora / Cercospora Leaf Spots Anthracnose Powdery Mildew (<i>Erysiphe</i>)	24 oz (1.5 lb)	8 oz/A 3 gal/A air	Apply when disease appears. Repeat at 14 day intervals.	14
• Do not make more than 3 applications per crop per season.					
Brussels Sprouts	• See BRASSICA.				
Cabbage	• See BRASSICA.				

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Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallonage	Application Timing	Application (days to harvest)
CANEBERRIES Blackberries Boysenberries Dewberries Loganberries Raspberries	Botrytis Powdery Mildew Penicillium Rots	60 oz (3.75 lb)	12 oz/A	Apply at 5 to 10% bloom. Repeat at full bloom, followed by 14 day intervals.	3
• Do not make more than 5 applications per crop per season.					
Caprifigs (mammary crop; CA only)	Endosepsis	4 oz (0.25 lb)	4 oz/25 gal	Immerse figs into solution.	NA*
Carrots	White Mold (<i>Sclerotinia</i>)	48 oz (3 lb)	4 to 16 oz/A 5 gal/A air	Apply when disease appears. Repeat at 7 to 10 day intervals.	4
• May be used through irrigation systems.					
Cauliflower	• See BRASSICA.				
Celery	Early Blight (<i>Cercospora</i>) Late Blight (<i>Septoria</i>)	48 oz (3 lb)	4 to 8 oz/A 5 gal/A air	Apply when disease appears. Repeat at 7 to 10 day intervals.	7
• May be used through irrigation systems.					
Cherries	• See STONE FRUITS.				
CITRUS	Scab (<i>Elsinoe</i>)	96 oz (6 lb)	24 to 48 oz/A	For light disease, apply once at 2/3 petal fall. For heavy disease, apply at pinhead stage. Repeat at 2/3 petal fall.	2
	Greasy Spot (<i>Mycosphaerella</i>)			Apply once from mid-June to mid-July.	
	Fruit Decay (Green or Blue Mold, Stem-end Rot)		16 to 32 oz/A	Apply once from 3 weeks to 2 days before harvest.	
	• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide or alternate with copper sprays. • Do not graze livestock in treated groves.				
Collard	• See BRASSICA.				
CONIFERS (PINE) Austrian Red Scots	Tip Blight (<i>Diplodia</i>)	48 oz (3 lb)	16 oz/A 100 gal/A	Apply at bud break. Repeat 10 to 14 days later, just before needles emerge from sheath; repeat again 10 to 14 days after needle emergence.	NA*
(FIR) Douglas	Swiss Needle Cast (<i>Phaeocryptopus</i>) Rhabdochline Needle Cast	80 oz (5 lb)	16 oz/A 50 gal/A	Apply initially in early May. Repeat at 4 week intervals.	
(continued on next page)	• Add a spreader sticker to improve coverage. • Use minimum gallonage with mist-blower types of sprayers and higher gallonage with conventional sprayers. • Do not graze livestock in treated areas.				

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Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallonage	Application Timing	Last Application (days to harvest)
(continued)					
CONIFERS (seedling treatment)	Brown Needle Blight (<i>Scirrhia</i>)	NA*	1 oz/9.5 oz dry Kaolinite clay for seedling roots	Wet seedling roots in clean water, then apply BENLATE/Kaolinite mixture to wet roots.	NA*
Longleaf					
Loblolly Longleaf Slash	Fusarium and Rhizoctonia Root Rot		2 oz/50 oz Kaolinite clay, plus enough water to make a slurry	Thoroughly cover seedling roots with BENLATE/Kaolinite slurry.	
	<ul style="list-style-type: none"> Do not apply mixture to seedling foliage. During treatment, avoid excessive drying of roots or exposure to temperatures greater than 90 °F or less than 32 °F. BENLATE does not control <i>Pythium</i> or <i>Phytophthora</i>. 				
Cucumbers	• See CUCURBITS.				
CUCURBITS	Anthracnose (<i>Colletotrichum</i>)	32 oz (2 lb)	ground: 4 to 8 oz/A 50 gal/A	Apply when disease appears or when runners form. Repeat at 7 to 14 day intervals.	1
Cucumber	Gummy Stem Blight (<i>Didymella</i>)		air: 8 oz/A 5 gal/A		
Melon	Powdery Mildew				
Pumpkin	Target Spot (<i>Corynespora</i>)				
Squash					
	<ul style="list-style-type: none"> To control Target Spot, the 7 day interval is recommended for repeat applications. May be used through irrigation systems. 				
Melons	Cephalosporium Wilt	8 oz (0.5 lb)	8 oz/A	Apply in-furrow at planting.	NA
	• Do not use less than 10 gallons of solution per acre.				
Currants	Powdery Mildew (<i>Sphaerotheca</i>)	60 oz (3.75 lb)	12 oz/A	Apply at early bloom. Repeat at full bloom, followed by 7 to 14 day intervals.	21
Dandelions (FL only)	White Mold (<i>Sclerotinia</i>)	32 oz (2 lb)	8 oz/A	Apply when disease appears. Repeat at 7 day intervals.	7
Dewberries	• See CANEBERRIES.				
Fir	• See CONIFERS.				
Garlic (CA only)	Penicillium Clove Rot	16 oz (1 lb)	16 oz/100 gal	Completely immerse garlic cloves in suspension for at least 5 minutes.	NA*
	<ul style="list-style-type: none"> Continuously agitate the solution tank by hydraulic or mechanical means. After treatment, remove cloves from solution and drain over sand. Dry cloves after treatment and prior to planting. 				
Grapes	Eutypa Dieback	NA*	3.2 oz/gal	Paint or spray on immediately after pruning.	NA*
	• Apply immediately after pruning—before rain, dew, and spores come in contact with fresh wood.				
	Botrytis Bunch Rot	96 oz (6 lb)	16 to 24 oz/A 15 gal/A air	Apply at first bloom (1 to 5%). Repeat 14 days after first bloom. If conditions favor disease, repeat again 14 days later.	70
	Anthracnose (<i>Elsinoe</i>)		24 oz/A	Apply at 4 to 10" shoot growth. Repeat at 10, to 14 day intervals. After harvest, apply to vines at 4 week intervals.	
	Isaropsis Leaf Spot		15 gal/A air		
Grapes (East of Rockies)	Powdery Mildew (<i>Uncinula</i>)		12 to 24 oz/A	Apply at foliar emergence. Repeat at 14 to 21 day intervals	
	Black Rot (<i>Guignardia</i>)		15 gal/A air		
	Bitter Rot (<i>Melanconium</i>)				
	<ul style="list-style-type: none"> BENLATE does not control <i>Rhizopus</i>, <i>Alternaria</i>, or <i>Diplodia</i> Bunch Rots. These rots occur most frequently in high temperature areas such as the San Joaquin and Sacramento Valleys of California. Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide 				

Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallonage	Application Timing	Last Application (days to harvest)
Kale	• See BRASSICA.				
Kohlrabi	• See BRASSICA.				
Loganberries	• See CANEBERRIES.				
Macadamia Nuts (HI only)	Botrytis Blossom Blight	84 oz (5.25 lb)	28 oz/A	Apply 7 to 14 days before bloom. Repeat at 7 to 14 day intervals through bloom.	NA*
	• Do not make more 3 applications per season.				
Mangoes	Anthracnose	96 oz (6 lb)	16 to 32 oz/A	Apply at panicle emergence (2"). Repeat at 7 day intervals through fruit set, followed by 3 to 4 week intervals.	14
	• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.				
Melon	• See CUCURBITS.				
Mushrooms (Agaricus)	Verticillium Spot (Dry Bubble)	4 oz (0.25 lb)/ 1000 sq ft/crop	16 oz/100 gal (use 12.5 gal per 1000 sq ft bed)	New bed: Apply after casing. Repeat at pinning. Production bed: Apply after picking. Repeat 10 days later.	2
Mustard Greens	• See BRASSICA.				
Nectarines	• See STONE FRUITS.				
Onions (seed crop; CA only)	Botrytis	NA*	16 oz/A	Apply when disease appears. Repeat at 7 day intervals.	NA*
	• Do not use treated onions for food or feed.				
Oranges	• See CITRUS.				
Papaya	Anthracnose Powdery Mildew	96 oz (6 lb)	16 to 32 oz/A	Apply at bud expansion. Repeat at 3 to 4 week intervals.	14
Peaches	• See STONE FRUITS.				
Peanuts	Rust (<i>Puccinia</i>) Ascochyta Web Blotch	48 oz (3 lb)	4 oz/A 5 gal/A air	Apply 35 to 40 days after planting or when disease appears. Rust: Repeat at 7 to 10 day intervals. Web Blotch: Repeat at 7 to 14 day intervals.	14
	Blackhull (<i>Thielaviopsis</i>)		4 oz/A	Apply in-furrow at planting.	
	• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide such as DuPont MANZATE® 200 Fungicide at 1.5 lb per acre. • May be used through irrigation systems. • Do not graze livestock in treated areas or feed livestock treated vines, hay, or hulls.				
Pears	• See POME FRUITS.				
Pecans	Scab (<i>Fusicladium</i>) Brown Leaf Spot (<i>Cercospora</i>) Downy Spot (<i>Mycosphaerella</i>) Powdery Mildew (<i>Microsphaera</i>) Liverspot Zonate Leaf Spot Fungal Leaf Scorch	48 oz (3 lb)	8 to 16 oz/A 10 gal/A air	Apply at bud break or leaf unfolding. Repeat at nut formation and 3 to 4 week intervals thereafter.	15
	• Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide. • Use the higher treatment rate on trees over 30 ft tall. • Spray oils may be added to the tank mix. • Do not apply after shuck split				

Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallage	Application Timing	Last Application (days to harvest)
Pine	• See CONIFERS.				
Pineapple (seed piece)	Pineapple Butt Rot (<i>Thielaviopsis paradoxa</i>)	NA*	20 oz/100 gal	Immerse seed pieces in solution and wet thoroughly; remove and allow to drain.	NA*
Pistachio (CA only)	Shoot Blight (<i>Botrytis</i> , <i>Botryosphaeria</i>)	32 oz (2 lb)	24 to 32 oz/A 100 gal/A	Apply at first bloom.	NA*
Plums	• See STONE FRUITS.				
POME FRUITS Apples	Scab (<i>Venturia</i>) Powdery Mildew (<i>Podosphaera</i>)	80 oz (5 lb)	6 to 12 oz/A 2 to 3 oz/100 gal dilute spray	Apply at 1/2" green tip. Repeat at 7 to 14 day intervals.	14
	Fly Speck (<i>Schizothrium</i>) Sooty Blotch (<i>Gloeodes</i>) Black Rot (<i>Botryosphaeria</i>)			Apply at petal fall, or when disease threatens. Repeat at 14 to 21 day intervals.	
	Fruit Rots (<i>Botrytis</i> spp., <i>Penicillium</i> spp., <i>Gloeosporium</i> spp.)		6 oz/100 gal	Apply once 2 to 3 weeks before harvest.	
Pears	Scab (<i>Venturia</i>) Powdery Mildew (<i>Phyllactinia</i>)	80 oz (5 lb)	12 to 24 oz/A	Apply at 1/2" green tip. Repeat at 7 to 14 day intervals.	
	Fly Speck Sooty Blotch		4 to 6 oz/100 gal dilute spray	Apply at petal fall or when disease threatens. Repeat at 14 to 21 day intervals.	
	Fruit Rots (<i>Botrytis</i> spp., <i>Penicillium</i> spp., <i>Gloeosporium</i> spp.)		6 oz/100 gal	Apply once 2 to 3 weeks before harvest.	
	<ul style="list-style-type: none">Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.Under severe disease conditions or on disease-susceptible varieties, use higher treatment rates and shorter intervals for repeat applications.Spray injury may result if Captan³ is used as a tank mix partner immediately before or closely following an oil spray. (Apples)Do not graze livestock in treated orchards.				
Prunes	• See STONE FRUITS.				
Pumpkin	• See CUCURBITS.				
Raspberries	• See CANEBERRIES.				
Rice (excludes CA)	Sheath Blight (<i>Rhizoctonia</i>)	64 oz (4 lb)	16 to 32 oz/A 3 gal/A air	Scout at 1/2" internodes, spray at 5 to 15% infection. Repeat 10 to 14 days later.	21
	Blast (<i>Piricularia</i>)			Apply at late boot stage (just prior to head emergence). Repeat 7 to 10 days later or at 90% head emergence from boot.	
	Stem Rot (<i>Sclerotium</i>) Narrow Brown Leaf Spot (<i>Cercospora</i>) Leaf Smut (<i>Entyloma</i>) Sheath Rot (<i>Acrocyndrium</i>)			Apply between 1/2 to 3/4" internodes and late booting. Repeat 14 days later.	
	<ul style="list-style-type: none">To ensure adequate coverage when disease is severe, use higher treatment rates, higher gallonage, and make additional BENLATE applications.The most effective way to control Blast is to use BENLATE in a preventive treatment program. Visual symptoms of Blast may not appear on rice until 4 to 7 days after infection occurs. Field scouting is highly recommended.Do not apply to fields where crayfish or catfish are farmed.Do not drain treated water into fields where crayfish or catfish are farmed.Do not use treated water to irrigate other crops.Do not apply to stubble rice.BENLATE is toxic to fish. Keep out of lakes, streams, or ponds. Do not apply when weather conditions favor drift from treated areas.				

13 7 15

Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallage	Application Timing	Last Application (days to harvest)
Rutabagas	• See BRASSICA.				
SEED CROPS (grown for seed; CA only) Anise Brussels Sprouts Cabbage Cardoon Cauliflower Chickory Corn Cucumbers Dill Melons Peas Peppers, Bell Squash	Powdery Mildew	NA*	16 oz/A 5 gal/A air	Apply when disease appears. Repeat at 7 to 14 day intervals.	NA*
• Do not use treated seed or plant parts for food or feed.					
Soybeans (seed or food crop)	Diaporthe Pod and Stem Blight Anthracnose (<i>Glomerella</i>) Septoria Brown Spot Frogeye Leaf Spot (<i>Cercospora</i>) Purple Seed Stain	16 oz (1 lb)	8 to 16 oz/A 5 gal/A air	Apply at early pod set (pods 1/8 to 1/4" long at 1 of 4 main stem upper nodes). Repeat 14 to 21 days later (as needed).	35
	Aerial Blight (<i>Rhizoctonia</i>)		16 oz/A 5 gal/A air	Apply when disease threatens.	
	• Do not graze livestock in treated areas or feed livestock treated vines or hay.				
Squash	• See CUCURBITS.				
STONE FRUIT Apricots Nectarines Peaches Plums Prunes	Brown Rot Blossom Blight (<i>Monilinia</i>) Powdery Mildew Peach Scab (<i>Venturia</i>)	64 oz (4 lb)	East of Rockies: 16 to 32 oz/A West of Rockies: 24 to 32 oz/A 10 gal/A air	Apply at early bloom before infection occurs. Apricots: early red bud Peaches/Nectarines: pink bud Plums/Prunes: green tip <u>Blossom Blight:</u> Repeat at full bloom or 10 days later. <u>Powdery Mildew or Peach Scab:</u> Repeat at full bloom or 10 days later. At shuck fall and 14 days later use a nonbenzimidazole fungicide.	3
	Fruit Brown Rot (<i>Monilinia</i>)			Apply 3 to 21 days before harvest. Use additional nonbenzimidazole sprays as needed.	
Plums Prunes	Black Knot (<i>Dibotryon</i>)			12 to 24 oz/A 10 gal/A air	
Peaches (continued on next page)	Cytospora Canker	NA*	2 Tbsp/16 oz wound dressing	As a wound dressing, apply to pruned or cut surface.	NA*
SEE NOTES ON NEXT PAGE					

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Crop	Disease	Limit /Acre /Crop	Rate, Minimum Gallonage	Application Timing	Last Application (days to harvest)
(continued) STONE FRUIT Cherries	Brown Rot Blossom Blight (<i>Monilinia</i>) Powdery Mildew Cherry Leaf Spot (<i>Mycosphaerella</i>)	96 oz (6 lb)	East of Rockies: 16 to 32 oz/A West of Rockies: 24 to 32 oz/A 10 gal/A air	Apply at early popcorn stage. <u>Blossom Blight:</u> Repeat at full bloom or 10 days later. <u>Powdery Mildew:</u> Repeat at full bloom or 10 days later. At shuck fall and 14 days later use a nonbenzimidazole fungicide. <u>Cherry Leaf Spot:</u> Repeat at 10 to 14 day intervals; make one application 2 to 3 weeks after harvest.	3
	Fruit Brown Rot			Apply 3 to 21 days before harvest.	
	<ul style="list-style-type: none">Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.For aerial application, fly over every row or center.BENLATE does not control Peach Leaf Curl, Shot Hole, bacterial Blast, or fruit rots caused by <i>Rhizopus</i> spp. and <i>Alternaria</i> spp.Do not graze livestock in treated orchards.BENLATE is not labeled for Peach Scab west of the Rocky Mountains.				
Strawberries	Powdery Mildew Leaf Scorch Leaf Blight <i>Mycosphaerella</i> Leaf Spot	80 oz (5 lb)	8 to 16 oz/A 10 gal/A air	Apply at 16 oz/A at 10% bloom and at full bloom. Repeat at 8 oz/A at 10 to 14 day intervals	1
	Anthrachnose		16 oz/A 10 gal/A air	Apply when plants are established. Repeat at 7 day intervals.	
	<ul style="list-style-type: none">Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.May be used through irrigation systems.				
Tomatoes	Gray Mold (<i>Botrytis</i>) Leaf Mold (<i>Cladosporium</i>) White Mold (<i>Sclerotinia</i>) Cercospora Leaf Spot Phoma Leaf Spot Target Spot (<i>Corynespora</i>)	80 oz (5 lb)	8 to 16 oz/A 50 gal/A 5 gal/A air	Apply when disease appears. Repeat at 7 to 14 day intervals.	1
	<ul style="list-style-type: none">Do not use BENLATE alone. Use only in combination with a labeled nonbenzimidazole fungicide.May be used through irrigation systems.				
Turnips and Turnip Greens	• See BRASSICA.				
Wheat	Strawbreaker Foot Rot (<i>Pseudocercospora</i>)	48 oz (3 lb)	12 to 32 oz/A 15 gal/A 5 gal/A air	Apply once at full tillering but before elongation.	21
	<ul style="list-style-type: none">Where resistance is suspected or known to exist, do not use BENLATE alone. Use only in combination with a nonbenzimidazole fungicide.Do not allow livestock to graze in treated fields.				
	Powdery Mildew (<i>Erysiphe</i>) Leaf Rust (<i>Puccinia</i>) Helminthosporium Leaf Blight	48 oz (3 lb)	4 to 8 oz/A 15 gal/A 5 gal/A air	Apply at boot stage to early heading. Repeat 14 days later.	
	<ul style="list-style-type: none">For effective control of these diseases, tank mix with 16 to 32 oz/A of MANZATE 200. Time the applications to keep the flag leaf free of disease. Do not use BENLATE alone.				
	Septoria Leaf Glume Blotch Powdery Mildew (<i>Erysiphe</i>) Leaf Rust	48 oz (3 lb)	4 oz/A 15 gal/A 5 gal/A air	Apply at boot stage. Repeat 14 days later.	
	<ul style="list-style-type: none">For effective control of these diseases, tank mix with 2 to 4 oz/A of Bayleton¹. Time the applications to keep the flag leaf free of disease.				
Yams (PR only)	Anthrachnose (<i>Colletotrichum</i>)	96 oz (6 lb)	16 to 32 oz/A	Apply when disease appears. Repeat at 3 to 4 week intervals.	90

SEED TREATMENT TABLE

Crop	Disease	Rate	Application Timing	Further Use Information
Beans, Snap	Fusarium Root Rot	6 oz/50 lb seed	Use slurry treatment.	All Crops: <ul style="list-style-type: none">Label treated seed as follows: "Do not use treated seed for food, feed, or oil purposes. This seed treated with BENLATE Fungicide." Slurry Treatment: <ul style="list-style-type: none">Make a slurry of BENLATE in sufficient water to uniformly treat seed.Use a slurry-type treater specifically designed and approved for this purpose.Allow seeds to dry before planting; seeds may be planted any time after being well cured.
	• BENLATE does not control <i>Pythium</i> sp.			
BRASSICA Broccoli Brussels Sprouts Cabbage Chinese Cabbage Cauliflower Collard Kale Kohlrabi Mustard Greens Rape (Canola) Rutabagas Turnips	Seed-borne Blackleg (<i>Phoma</i>)	8 oz/100 lb seed in 1/2 to 3 pt water	Use slurry treatment.	<ul style="list-style-type: none">Make a slurry of BENLATE in sufficient water to uniformly treat seed.Use a slurry-type treater specifically designed and approved for this purpose.Allow seeds to dry before planting; seeds may be planted any time after being well cured.
	An EPA-approved dye that imparts an unnatural color to the treated seed must be used with the treatment.			
Chickpeas (ID and WA only)	Seed-borne <i>Ascochyta blight</i>	10 oz/100 lb seed in 1/3 to 1/2 pt water	Use slurry treatment.	
	BENLATE does not control soil-borne <i>Ascochyta</i> .			
Spinach	Fusarium Wilt	16 to 32 oz/100 lb seed in 1/2 to 2 pt water	Use slurry treatment.	
Wheat, Barley, Oats, Rye	Bunt and Common Bunt Flag Smut, Loose Smut, and Covered Smut.	1 to 2 oz/bushel seed	Use slurry treatment.	Do not allow livestock to graze on plants grown from treated seed.

STORAGE AND DISPOSAL

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

STORAGE: Never allow "Benlate" SP to become wet during storage. This may lead to certain chemical changes which will reduce the effectiveness of "Benlate" SP as a fungicide. Keep container tightly closed when not in use. Store product in original container only.

PRODUCT DISPOSAL: Do not contaminate water, food, or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty contents of envelope into application equipment. Then dispose of empty envelope in a sanitary landfill, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

NOTICE OF WARRANTY

DuPont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of DuPont. In no case shall DuPont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the buyer. DUPONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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