



**FERMENTA™**  
**PLANT PROTECTION**

Fermenta Plant Protection Company  
7528 Auburn Road, P.O. Box 348  
Painesville, Ohio 44077

P421 50534-157  
p2106  
**BRAVO<sup>R</sup> 90DG**

## Supplemental Labeling

**ACCEPTED**

**MAY 12 1987**

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 50534-157

### SUPPLEMENTAL DIRECTIONS FOR THE USE OF

**BRAVO<sup>R</sup> 90DG**  
(EPA Reg. No. 50534-157)

For Control of Diseases on Bean (Snap), Cranberry, Cucurbits, Grasses Grown for Seed, Onion (dry bulb), Parsnip, Tomato and Conifers.

#### Directions for Use

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

Dosage rates on this label indicate pints of Bravo 90DG per acre, unless otherwise stated. Under conditions favoring disease development the high rate specified and shortest application interval should be used.

#### **FIELD AND ROW CROPS:**

Apply Bravo 90DG in sufficient water to obtain adequate coverage of foliage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume usually will range from 20 to 150 gallons per acre (200 to 1400 liters per hectare) for dilute sprays and 5 to 10 gallons per acre (50 to 100 liters per hectare) for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions are given for a crop. Application through sprinkler irrigation systems is not recommended unless specific directions are given for a crop. See application and calibration instruction below.

**BEST AVAILABLE COPY**

Warranty and Limitation of Damages: Seller warrants that this material conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use and Buyer assumes the risk of any use contrary to such directions. Seller makes no other express or implied warranty, including any other express or implied warranty of fitness or of merchantability, and no agent of seller is authorized to do so except in writing with a specific reference to this warranty. In no event shall Seller's liability for any breach of warranty exceed the purchase price of the material as to which a claim is made.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Bean (Snap)	Rust	1 1/8 to 2 1/2 lbs.	Use in sufficient water to obtain adequate applications during early bloom stage or threatens and repeat at weekly intervals to maintain control. <b>DO NOT</b> apply within 7 days of harvest. <b>DO NOT</b> graze treated areas or feed treated livestock.
	Botrytis blight (gray mold)	2 1/2 lbs.	
Cranberry	Fruit rots, Lophodermium leaf/twig blight	3 1/2 to 5 3/4 lbs.	<p>Apply at early bloom and repeat at 10 to 14 day intervals. Under severe disease conditions use the 5 3/4 lb. rate on a 10 day schedule. <b>Do Not</b> apply Bravo 90DG more than 5 times per season, or within 50 days before harvest. <b>Do Not</b> apply to bogs when flooded or allow release of water from bogs for at least 3 days following application.</p> <p>Bravo 90DG may be applied through sprinkler or flood irrigation equipment. Use 300 gallons of water per acre for set systems only. See calibration directions in the label section.</p>

Cucurbits: Cucumber, Cantaloupe, Muskmelon, Honeydew melon, Watermelon, Squash, Pumpkin	Anthracnose, Downy mildew, Target spot	1 1/4 to 1 1/2 lbs.	Use in sufficient water to obtain adequate coverage. Begin applications when plants are in first true leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals. Under severe disease conditions, shorten spray interval.  Bravo 90DG may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). See calibration directions preceding this section.
	Cercospora leafspot, Gummy stem blight (black rot), Alternaria leaf blight, Scab, Powdery mildew (Sphaerotheca only)	1 1/2 to 2 1/2 lbs.	
	Cucumber belly rot (Rhizoctonia solani)	7 lbs.	Use Bravo 90DG in sufficient water to obtain runoff to soil surface. Make a single application when vines begin to form. Bravo 90DG may be applied through sprinkler irrigation equipment as directed above.
Grasses Grown for Seed	Stem rust, Leaf rust, Stripe rust, Septoria leafspot, Glume blotch, Bipolaris and Drechslera leafspots	7/8 to 1 1/8 lbs.	Use in sufficient water to obtain adequate coverage. Begin applications during stem elongation when conditions favor disease development. Re-apply at flag (top) leaf emergence and repeat applications at 14 day intervals. Do Not apply within 14 days of harvest. Do Not allow livestock to graze in treated areas or feed treated plant parts to livestock.
	Selenophoma (eyespot)	7/8 to 1 3/4 lbs.	

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### FIELD AND ROW CROPS:

Apply Bravo 90DG in sufficient water to obtain adequate coverage of foliage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume usually will range from 20 to 150 gallons per acre (200 to 1400 liters per hectare) for dilute sprays and 5 to 10 gallons per acre (50 to 100 liters per hectare) for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions are given for a crop. Application through sprinkler irrigation systems is not recommended unless specific directions are given for a crop. See application and calibration instruction below.

Onion (dry bulb)	Botrytis leaf blight/ blast, Botrytis neck rot (suppression), Purple blotch	Apply in sufficient water to obtain thorough coverage recommended for use with disease monitoring systems and frequency of application according to disease hazard
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Low Disease Hazard & Prior to Infection	Low Disease Hazard & Some Infection
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Rate per Acre:	7/8 lb.	1 lb.
Frequency:	10 days	7 days

For suppression of neck rot (*Botrytis* spp.) during weekly applications prior to lifting, using 1 1/8 lb. per acre, is recommended. Do not apply within 7 days of harvest.

Onion (green bunching), Leek, Shallot, Garlic, Onion grown for seed	Botrytis leaf blight/ blast, Purple blotch, Downy mildew (suppression)	1 1/8 to 2 1/4 lbs.	Use in sufficient water to obtain thorough coverage. Begin applications prior to first infection and repeat at 7 to 10 day intervals in favor of disease. Use the high rate for applications when heavy dew or rain is expected within 7 days of harvest on green bunching onions, leeks or shallots. Control is needed before harvest. Do not use fungicide.
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Parsnip	Alternaria leafspot, Downy mildew, Anthracnose, Botrytis blight (gray mold), Bottom rot ( <i>Rhizoctonia</i> )	1 1/8 to 1 3/4 lbs.	Apply in sufficient water to obtain thorough coverage. the first application at the first infection. If conditions are favorable for disease, repeat applications on a 7 to 10 day basis. Not more than 4 times per season or within 14 days of harvest. Not feed treated plant parts.
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Tomato

FOLIAGE (apply every 1 1/8 to  
7-10 days): 1 3/4 lbs.  
Early blight,  
Late blight,  
Gray leafspot,  
Gray leaf mold,  
Septoria leafspot,  
Target spot

FRUIT (apply every 1 3/4 to  
7-14 days beginning 2 1/4 lbs.  
at fruit set):  
Anthracnose,  
Alternaria fruit rot  
(black mold),  
Rhizoctonia fruit rot,  
Late blight fruit rot  
Botrytis gray mold

Apply in sufficient water to obtain adequate coverage. Begin applications when dew or rain occur and disease threatens. Use the highest rate and shortest interval specified when disease conditions are severe. **Bravo 90DG** may be combined in the spray tank with EPA-registered pesticide products that claim copper as the active ingredient and are labeled for control of bacterial diseases of tomatoes. Check the copper manufacturer's label for specific instructions, precautions and limitations prior to mixing with **Bravo 90DG**. Do Not use with Copper-Count N in concentrated spray suspensions.

**Bravo 90DG** may be applied through sprinkler irrigation equipment (solid set or portable wheel move systems only). See calibration directions preceding this section.

\* Copper-Count is a registered trademark of Mineral Research & Development Corp.

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## TREE AND ORCHARD CROPS:

Apply Bravo 90DG in sufficient water and with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, Bravo 90DG may be applied with aircraft using at least 20 gallons per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Bravo 90DG listed may be used. Do not allow livestock to graze in treated areas. The following spray volumes are recommended as gallons of spray per acre:

CROP	SPRAY VOLUME (Gallons per Acre)	
	Dilute	Concentrate
Conifers		
Forest Stands	Not used	10 to 20 (aircraft)
Christmas trees	100	10 to 50 (aircraft or ground equipment)
Nursery beds	100	5 to 10 (ground equipment only)

CROP	DISEASES	BRAVO 90DG ACRE	RATE PER 100 GAL	APPLICATION DIRECTIONS
Conifers	Cyclaneusma and Lophodermium needlecast (pines)	2 1/4 to 4 1/2 lbs.	2 1/4 to 4 1/2 lbs.	Apply in early spring prior to budbreak. Repeat applications at approximately 6 to 8 week intervals, until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.
	Rhabdocline needlecast (Douglas-fir)	1 1/8 to 2 1/4 lbs.	1 1/8 to 2 1/4 lbs.	Apply at budbreak and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.

Tomato

FOLIAGE (apply every 1 1/8 to  
7-10 days): 1 3/4 lbs.  
Early blight,  
Late blight,  
Gray leafspot,  
Gray leaf mold,  
Septoria leafspot,  
Target spot

FRUIT (apply every 1 3/4 to  
7-14 days beginning 2 1/4 lbs.  
at fruit set):  
Anthracnose,  
Alternaria fruit rot  
(black mold),  
Rhizoctonia fruit rot,  
Late blight fruit rot  
Botrytis gray mold

Apply in sufficient water to obtain adequate coverage. Begin applications when dew or rain occur and disease threatens. Use the highest rate and shortest interval specified when disease conditions are severe. **Bravo 90DG** may be combined in the spray tank with EPA-registered pesticide products that claim copper as the active ingredient and are labeled for control of bacterial diseases of tomatoes. Check the copper manufacturer's label for specific instructions, precautions and limitations prior to mixing with **Bravo 90DG**. **Do Not** use with Copper-Count N in concentrated spray suspensions.

**Bravo 90DG** may be applied through sprinkler irrigation equipment (solid set or portable wheel move systems only). See calibration directions preceding this section.

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TREE AND ORCHARD CROPS:

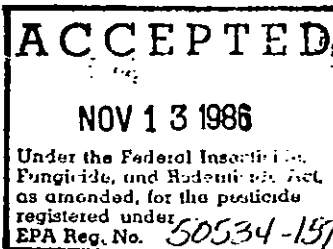
Apply Bravo 900G in sufficient water and with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, Bravo 900G may be applied with aircraft using at least 20 gallons per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Bravo 900G listed may be used. Do not allow livestock to graze in treated areas. The following spray volumes are recommended as gallons of spray per acre:

CROP	SPRAY VOLUME (Gallons per Acre)	
	Dilute	Concentrate
Conifers		
Forest Stands	Not used	10 to 20 (aircraft)
Christmas trees	100	10 to 50 (aircraft or ground equipment)
Nursery beds	100	5 to 10 (ground equipment only)

CROP	DISEASES	BRAVO 900G RATE PER		APPLICATION DIRECTIONS
		ACRE	100 GAL	
Conifers	Cyclaneusma and Lophodermium needlecasts (pines)	2 1/4 to 4 1/2 lbs.	2 1/4 to 4 1/2 lbs.	Apply in early spring prior to budbreak. Repeat applications at approximately 6 to 8 week intervals, until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.
	Rhabdocline needlecast (Douglas-fir)	1 1/8 to 2 1/4 lbs.	1 1/8 to 2 1/4 lbs.	Apply at budbreak and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.

**BRAVO 90DG**  
(EPA Reg. No. 50534-157)

For Control of Diseases of Cranberry



Directions For Use

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

Dosage rates on this label indicate pounds of BRAVO 90DG per acre, unless otherwise stated. Applications should be made in sufficient water to obtain adequate coverage of foliage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume usually will range from 20 to 150 gallons (approximately 80 to 600 liters) per acre for dilute sprays and 5 to 10 gallons (approximately 20 to 40 liters) per acre for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions for ground application only are given for a crop. Application through sprinkler irrigation systems is recommended for some crops which are specified on the label below. Follow application and calibration instructions.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Cranberry	Fruit rots, Lophodermium leaf/twig blight	3 1/2 to 5 3/4 lb.	Apply at late bloom and repeat at 10 to 14 day intervals. Under severe disease conditions use the 5 3/4 lbs/acre rate on a 10 day schedule. DO NOT apply BRAVO 90DG more than 3 times per season, or within 50 days before harvest. DO NOT apply to bogs when flooded or allow release of irrigation water from bogs for at least 3 days following application.

**Warranty and Limitation of Damages:** Seller warrants that this material conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use and Buyer assumes the risk of any use contrary to such directions. Seller makes no other express or implied warranty, including any other express or implied warranty of fitness or of merchantability, and no agent of seller is authorized to do so except in writing with a specific reference to this warranty. In no event shall Seller's liability for any breach of warranty exceed the purchase price of the material as to which a claim is made.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
BRAVO 90DG may be applied through sprinkler irrigation equipment. Use 300 gallons of water per acre through solid set systems only. See calibration directions following this section.			

#### APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION

##### SOLID SET IRRIGATION EQUIPMENT:

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of BRAVO 90DG for acreage to be covered into quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. BRAVO 90DG can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until BRAVO 90DG has been cleared from the last sprinkler head.

**DO NOT** operate irrigation system without safety valves or other devices to prevent back-siphoning of BRAVO 90DG into water source. Irrigation water treated with BRAVO 90DG should be maintained on the treated area until the water is absorbed by the soil. Tank containing BRAVO 90DG should be connected to the discharge side of irrigation pump or other pressurized equipment attached to irrigation line.

**NOTE:** It is important to read and observe the precautionary statements and all other information appearing on the BRAVO 90DG label. Use only as directed.

**NOTE:** This labeling must be in the possession of the user at the time of pesticide application.