

Container label

GROUP	BM-01	FUNGICIDE
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PROBLAD BIOFUNGICIDE

A fungicide for the control or suppression of powdery mildew, *Botrytis* diseases (grey mold, bunch rot, fruit rot, or blight), blossom blight or brown rot in cucumber (greenhouse), grapes, strawberry, fruiting vegetables (eggplant [field and greenhouse], ground cherry [field only], pepino [field and greenhouse], pepper including bell, chili, cooking, pimento and sweet [field and greenhouse], tomatillo [field and greenhouse], tomato [field and greenhouse] stone fruit (apricot, cherry, nectarine, peach, plum, prune) and almond, lowbush and highbush blueberry, outdoor, greenhouse ornamentals and caneberries (crop subgroup 13-07A).

AGRICULTURAL

SUSPENSION

ACTIVE INGREDIENT: BLAD polypeptide 20%

REGISTRATION NO: 34050 PEST CONTROL PRODUCTS ACT

CAUTION – EYE AND SKIN IRRITANT

READ THE LABEL AND LEAFLET BEFORE USING
KEEP OUT OF THE REACH OF CHILDREN

NET CONTENTS: 1-120 Litres

Date of Manufacture:

Manufactured by:

CEV, S.A.
Zona Industrial de Cantanhede, LT 120
3060-197 Cantanhede
Portugal

Distributed by:
N. M. Bartlett Inc.
4509 Bartlett Road
Beamsville, Ontario L0R 1B1
905-563-8261

DIRECTIONS: See leaflet for complete set of Directions for Use.

PRECAUTIONS:

KEEP OUT OF THE REACH OF CHILDREN. CAUTION: May irritate eyes and skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse. Wear the appropriate Personal Protective Equipment (PPE).

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

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during mixing, loading, clean-up and repair.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools, and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

ENVIRONMENTAL PRECAUTIONS:

To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body. Additional guidance can be found on the Runoff Mitigation portion of the Canada.ca website.

FIRST AID:

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Treat symptomatically.

STORAGE

Store this product away from food or feed. Keep in original container during storage. Store

product in a cool, dry, well-ventilated place.

DISPOSAL:

Disposal of container: DO NOT reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial or territorial requirements.

Disposal of unused, unwanted product: For information on disposal of unused, unwanted product, contact the registrant or the provincial or territorial regulatory agency. Contact the registrant and the provincial or territorial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

Booklet

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DIRECTIONS FOR USE:

GENERAL INFORMATION

PROBLAD BIOFUNGICIDE is a broad spectrum, preventive biofungicide with penetration properties. It is formulated as a suspension concentrate and contains the active ingredient BLAD polypeptide. The BLAD protein structure is the unique and driving force behind the antifungal activity of **PROBLAD BIOFUNGICIDE**. It is a contact product which presents a multi-site Mode of Action (MOA) with a very low probability of resistance developing over time. This MOA is an excellent fit into current, standard fungicide programs as an effective, resistance management tool for use in IPM programs. **PROBLAD BIOFUNGICIDE** stands apart from existing products with its own biological mode of action FRAC Group, BM 01 as a truly novel MOA. **PROBLAD BIOFUNGICIDE** controls or suppresses listed plant diseases. It may be applied as a foliar spray alone, in alternating spray programs or in tank mixes with other registered pesticides. **PROBLAD BIOFUNGICIDE** may be applied with spray equipment commonly used for making ground applications.

As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT allow releases, effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds, or other waters.

Preparation of the Spray Solution: Ensure the spray tank is clean and free of residues from previous spray treatments. Fill the spray tank $\frac{3}{4}$ full with clean water. Shake the container and pour the required amount of **PROBLAD BIOFUNGICIDE** into the sprayer tank while the tank agitation system is operating. Add specified amount of **PROBLAD BIOFUNGICIDE** while filling with the appropriate amount of water into the spray tank. Maintain agitation. It is recommended that the spray solution has a pH above 6. Adjust pH if necessary. Do not store the mixture overnight.

Spray Volume: Apply **PROBLAD BIOFUNGICIDE** as noted in the application instruction table for each crop or crop grouping. Increase spray volume as crop growth increases to ensure thorough coverage of the foliage and fruit. Check equipment calibration frequently. Complete coverage and uniform application are essential for the most effective results, especially when lower spray volumes are applied.

ORCHARD AND VINEYARD CROPS: Airblast sprayer

To achieve optimum pest control, it is important to obtain thorough and uniform spray coverage of the plant. Choose a finished spray volume appropriate for the size of tree or vine and amount of foliage that will provide thorough coverage throughout the canopy. For certain pests, also follow recommendations listed under specific crop directions. Within the rate range, use the higher rate for heavy infestations or dense foliage. The specific length of residual control depends on environmental factors, plant growth, dosage rate, and degree of disease infestation.

PROBLAD BIOFUNGICIDE may be mixed with foliar fertilizers, provided that the fertilizer is added after **PROBLAD BIOFUNGICIDE** has been diluted to the recommended field application.

TANK MIXING:

This product may be tank mixed with a fertilizer, a supplement, or with registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in reduced pesticide efficacy or increased host crop injury. The user should contact N. M. Bartlett Inc. at 905-563-8261 for information before applying any tank mix that is not specifically recommended on this label.

Pre-Harvest Interval: **PROBLAD BIOFUNGICIDE** can be applied up to and during the day of harvest.

Integrated Pest Management (IPM): Integrate **PROBLAD BIOFUNGICIDE** into a disease management strategy that follows practices known to reduce disease development and prevent fungicide resistance. Consult local agricultural advisors for specific IPM strategies meeting the specific crop and location.

Field sprayer application: DO NOT apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT apply with sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) Fine classification. Boom height must be 60 cm or less above the crop or ground.

Airblast application: DO NOT apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. DO NOT apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

DO NOT apply by air.

USE DIRECTIONS (Applications, Rates, Timings)

Restrictions:

- **PROBLAD BIOFUNGICIDE** requires two to four hours drying time on plant foliage for the active ingredient to absorb into the plant tissue before watering the plants in the greenhouse.
- Do not make more than five foliar applications of **PROBLAD BIOFUNGICIDE** per year (for field crops) or per crop cycle (for greenhouse crops).
- Do not make more than two sequential applications of **PROBLAD BIOFUNGICIDE** before alternating to a registered fungicide with a different mode of action.

- **PROBLAD BIOFUNGICIDE** may be applied up to and including the day of harvest.

GRAPE

APPLICATION INSTRUCTIONS

CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
GRAPE	Control of Botrytis bunch rot / grey mold (<i>Botrytis cinerea</i>) Control of Powdery mildew (<i>Erysiphe necator</i>)	1.5-3.3 L/ha

GENERAL:

Apply in a minimum of 375 litres of spray solution per hectare. Increase spray volume as vine growth increases in order to provide thorough coverage of vines and fruit for optimum disease control. The rates on the **PROBLAD BIOFUNGICIDE** label reflect the amount of product that should be applied uniformly over a hectare of ground on a broadcast basis. Thorough coverage is important for optimum disease control.

Powdery Mildew

Apply in a preventive spray schedule. Make the first application of **PROBLAD BIOFUNGICIDE** before bloom and continue applications every 7 to 10 days. Under conditions of moderate to severe disease pressure, use the higher labeled rate and shorter interval.

Botrytis bunch rot / grey mold

For control of Botrytis bunch rot apply **PROBLAD BIOFUNGICIDE** prior to onset of disease development when conditions favor Botrytis development during early bloom, bunch pre-closure, veraison and ripening up to the harvest day.

STRAWBERRY

APPLICATION INSTRUCTIONS

CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
Field and greenhouse STRAWBERRY	Control of Botrytis grey mold (<i>Botrytis cinerea</i>) Suppression of Powdery mildew (<i>Podosphaera aphanis</i> syn <i>S. macularis</i>).	1.5-3.3 L/ha

GENERAL:

Begin applications of **PROBLAD BIOFUNGICIDE** at early bloom and continue on a 7- to 10-day interval if conditions continue to favor disease development, in the field or greenhouse. Under conditions of moderate to severe disease pressure, use the higher labeled rate and shorter interval. For field and greenhouse strawberry: apply in a minimum of 450 litres of spray solution per hectare with conventional ground application equipment except when using an electrostatic sprayer where a minimum of 100 litres of spray solution may be used. Apply using backpack, boom, or sprinkler equipment in the greenhouse. Thorough coverage is important for optimum disease control or suppression.

FRUITING VEGETABLES

APPLICATION INSTRUCTIONS		
CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
Fruiting vegetables: eggplant (field and greenhouse), ground cherry (field only) pepino (field and greenhouse), pepper including bell, chili, cooking, pimento and sweet (field and greenhouse), tomatillo (field and greenhouse), tomato (field and greenhouse)	Control of Botrytis grey mold (<i>Botrytis cinerea</i>)	1.5-3.3 L/ha
<p>GENERAL: Begin applications of PROBLAD BIOFUNGICIDE prior to onset of disease development and continue on a 7- to 10-day interval to maintain disease control. Under conditions of moderate to severe disease pressure, use the higher labeled rate and shorter interval. Apply the specified rate of PROBLAD BIOFUNGICIDE as a foliar spray in a minimum of 200 litres or more of water per hectare to assure thorough coverage of the plants. Apply using backpack, boom, or sprinkler equipment in the greenhouse. Thorough coverage is important for optimum disease control.</p>		

STONE FRUIT & ALMOND

APPLICATION INSTRUCTIONS		
CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
Almond Apricot Cherry	Suppression of Blossom blight (<i>Monilinia fructigena, M. laxa</i>)	1.5-3.3 L/ha
Nectarine Peach Plum Prune	Suppression of Brown Rot (<i>Monilinia fructigena, M. laxa</i>)	1.5 L/ha
	Control of Brown Rot (<i>Monilinia fructigena, M. laxa</i>)	2.0-3.3 L/ha
<p>GENERAL: Apply PROBLAD BIOFUNGICIDE in a minimum spray volume of 450 litres per hectare. Blossom blight phase: Begin application prior to disease development at pink, white or red bud depending on the crop. Make a second application at full bloom and if conditions remain favorable for disease, make another application at petal fall. Under conditions of weather favoring severe disease pressure apply the higher labeled rate. Brown rot phase: Make applications during the month before harvest on a 7- to 10-day preventive schedule when conditions favor disease development. Under conditions of weather favoring severe disease pressure apply the higher labeled rate and shorter intervals.</p>		

OUTDOOR AND GREENHOUSE ORNAMENTALS

APPLICATION INSTRUCTIONS		
CROP	DISEASE	RATE OF PROBLAD

		BIOFUNGICIDE
Outdoor and Greenhouse Ornamentals	Control of Botrytis grey mold (<i>Botrytis cinerea</i>)	1.5-3.3 L/ha

GENERAL:

Apply **PROBLAD BIOFUNGICIDE** on nursery stock (bedding plants and flowering plants described above). Good coverage and wetting of the foliage is necessary. Spray to run off.

In the field apply in 150- 300 litres of a spray solution per hectare depending upon the stage of growth. Use higher rates of water and **PROBLAD BIOFUNGICIDE** as the plants grow and develop more foliage. Apply using backpack, boom, or sprinkler equipment in the greenhouse.

Apply **PROBLAD BIOFUNGICIDE** preventatively or when disease symptoms first appear. Repeat applications in 7- to 10-day intervals depending upon crop growth and disease pressure. Higher rates and shorter intervals should be used when disease pressure reaches moderate levels.

PROBLAD BIOFUNGICIDE has not been tested on all ornamental species and should be tested on a small scale for potential phytotoxicity before using for commercial scale production.

LOWBUSH AND Highbush BLUEBERRY

APPLICATION INSTRUCTIONS

CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
Lowbush and Highbush blueberry	Control of Botrytis blight (<i>Botrytis cinerea</i>)	1.5-3.3 L/ha

GENERAL:

Begin applications of **PROBLAD BIOFUNGICIDE** at early bloom and continue on a 7- to 10-day interval if conditions continue to favor disease development. Under conditions of moderate to severe disease pressure, use the higher labeled rate and shorter interval. Apply in a minimum of 450 litres of spray solution per hectare with conventional ground application equipment. Increase spray volume as vine growth increases in order to provide thorough coverage of vines and fruit for optimum disease control.

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than CEV, S.A. under the User Requested Minor Use Label Expansion program. For these uses, CEV, S.A. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

GREENHOUSE ORNAMENTALS (INCLUDING CUT FLOWERS, PERENNIALS AND ANNUALS)

APPLICATION INSTRUCTIONS

CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
Greenhouse grown ornamentals (including cut flowers, perennials and annuals)	Suppression of powdery mildew (<i>Erysiphe</i> spp., <i>Podosphaera</i> spp. and <i>Golovinomyces asterum</i>)	1.5-3.3 L/ha

GENERAL:

Apply **PROBLAD BIOFUNGICIDE** nursery stock (bedding plants and flowering plants described above). Good coverage and wetting of the foliage is necessary. Spray to run off.

Apply in a minimum of 375 L/ha. Use higher rates of water as the plants grow and develop more foliage to provide thorough coverage.

Apply **PROBLAD BIOFUNGICIDE** preventatively or when disease symptoms first appear. Repeat applications in 7- to 10-day intervals depending upon crop growth and disease pressure. Higher rates and shorter intervals should be used when disease pressure reaches moderate levels.

PROBLAD BIOFUNGICIDE has not been tested on all ornamental species and should be tested on a small scale for commercial scale production.

PROBLAD BIOFUNGICIDE is a contact fungicide with penetration properties.

CANEBERRY (CROP SUBGROUP 13-07A)

CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
CANEBERRIES (blackberry; loganberry; raspberry, black and red; wild raspberry; cultivars, varieties and/or hybrids of these)	Control of Botrytis fruit rot (<i>Botrytis cinerea</i>)	2.0-3.3 L/ha

GENERAL:

Apply in a minimum of 800 litres of spray solution per hectare. Increase spray volume as vine growth increases in order to provide thorough coverage of canes and fruit for optimum disease control. The rates on the **PROBLAD BIOFUNGICIDE** label reflect the amount of product that should be applied uniformly over a hectare of ground on a broadcast basis.

The first application is made preventively or at early onset of disease and the subsequent applications are made at a 7- to 10-day interval.

GREENHOUSE CUCUMBER		
CROP	DISEASE	RATE OF PROBLAD BIOFUNGICIDE
Cucumber, Greenhouse	Control of Powdery mildew (<i>Podosphaera xanthii</i> , syn. <i>Sphaerotheca fuliginea</i>)	2.0-3.3 L/ha
<p>GENERAL: Begin applications of PROBLAD BIOFUNGICIDE prior to onset of disease development and continue on a 7- to 10-day interval to maintain disease control. Under conditions of moderate to severe disease pressure, use the higher labeled rate and shorter interval. Apply the specified rate of PROBLAD BIOFUNGICIDE as a foliar spray in a minimum of 200 litres or more of water per hectare to assure thorough coverage of the plants. Apply using backpack, boom, or sprinkler equipment in the greenhouse. Thorough coverage is important for optimum disease control.</p>		

PRECAUTIONS:

KEEP OUT OF THE REACH OF CHILDREN. CAUTION: May irritate eyes and skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse. Wear the appropriate Personal Protective Equipment (PPE).

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

Remove PPE and 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.

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during mixing, loading, clean-up and repair.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools, and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

ENVIRONMENTAL PRECAUTIONS:

To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body. Additional guidance can be found on the Runoff Mitigation portion of the Canada.ca website.

FIRST AID:

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with

plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Treat symptomatically.

STORAGE

Store this product away from food or feed. Keep in original container during storage. Store product in a cool, dry, well-ventilated place.

DISPOSAL:

Disposal of container: DO NOT reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

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