

ProBlad®

A BROAD-SPECTRUM PREVENTIVE BIOFUNGICIDE FOR THE CONTROL AND SUPPRESSION OF FUNGAL DISEASES ON BANANA, COFFEE, COCOA, CITRUS, TOMATO, RICE AND OTHER CROPS

Active Ingredient:

Banda de Lupinus albus doce (BLAD)* 20%

Other ingredients 80%

TOTAL **100%**

* BLAD is a naturally-occurring protein formed during the germination of sweet lupines (*Lupinus albus*)



**KEEP OUT OF REACH OF CHILDREN
CAUTION**

Registration No: UGC/2021/002756/AD/R



Manufacturer and registrant:

CEV, S.A.

Zona Industrial de Cantanhede, Lote 120,
3060-197 Cantanhede, PORTUGAL



Biry United Agencies Ltd

Distributed by: Biry United Agencies Ltd

Plot 281/583 Block 2, Rutii- Mbarara

P. O. Box 18 Mbarara, UGANDA

Tel: +256 393 249973, +256 200 926088

Email: inquiries@biryunited.co.ug

Net content: **1 L**



Supplied by:

AgroPy UK Ltd

Parkwood, Maltmans Lane,
Chalfont St Peter, Gerrards Cross,
Buckinghamshire, SL9 8RP

GROUP BM 01 FUNGICIDE



CAREFULLY READ THE LABEL BEFORE USE

SAFETY PRECAUTIONS:

IMPORTANT: All instructions within this section must be read carefully in order to obtain safe and successful use of this product. Follow these label instructions.

CAUTION: Causes moderate eye irritation. Harmful if inhaled or absorbed through skin. Handle with care and avoid breathing spray mist. 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). Do not eat, drink or smoke during application.

Personal Protective Equipment (PPE) - applicator's mixers, loaders and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

Operator protection - users should:

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

- Do not apply directly to water, or to areas where surface water is present.
- Do not contaminate water when disposing of equipment washwater or rinsate.

STORAGE AND DISPOSAL:

- KEEP OUT OF THE REACH OF CHILDREN. KEEP AWAY FROM FOOD, DRINK, AND ANIMAL FEEDINGSTUFFS.
- Store in a secure dry, cool and well-ventilated place. Keep under lock and key. Store preferably within a temperature range of 5°C to 35°C. Store the product in unopened original container. Do not store for prolonged periods in direct sunlight.
- Containers which are opened must be carefully closed and kept upright to prevent leakage. Keep only in the original container.
- Do not use original packaging or empty containers for other purposes.

Empty container disposal:

Non-refillable container. Do not reuse or refill this container. Triple rinse container promptly after emptying as follows: empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available or puncture and dispose of the container in a sanitary landfill, or by other procedures approved by state and local authorities.

FIRST AID MEASURES:

In case of contact with eyes: Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

In case of skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

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

If swallowed: Call a poison control center 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 center or doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: There is no known antidote for exposure to this material. Treatment of overexposure should be directed at the control of symptoms and clinical condition.

PRODUCT DESCRIPTION

PROBLAD® is a natural broad-spectrum preventive biofungicide with penetrative properties recommended for the control and suppression of many important fungal diseases. PROBLAD® is a soluble concentrate (SL) formulation containing 20% (w/w) of BLAD protein active ingredient extracted from germinated seeds of *Lupinus albus* plants. The BLAD protein structure is the unique and driving force behind the antifungal activity of PROBLAD®. It is a contact product with no systemic properties 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® stands apart from existing products with its own biological mode of action FRAC Group, BM 01 as a truly novel MOA.

DIRECTIONS FOR USE AND APPLICATION RATES

Crop	Target Pest	Dose rate	Remarks
Banana and Plantains	Black Sigatoka (<i>Mycosphaerella fijiensis</i>)	3.2 L/ha	Begin applications prior to onset of disease development when first leaves appear and continue on a 7 to 14-days interval to maintain disease control. Apply in sufficient water to obtain thorough coverage of all leaves. For improved disease control PROBLAD may be tank mixed with an oil and an emulsifier agent registered for the control of Sigatoka at recommended labelled doses, following the local practices in the region. PROBLAD should be applied in a rotational spray program with other fungicides with a different mode of action registered for control of Sigatoka for an effective disease and resistance management following the best practices in the region.
Chili pepper	Phytophthora blight (<i>Phytophthora capsici</i>)	3.2 L/ha	Begin applications prior to onset of disease development and continue on a 7 to 10-days interval to maintain disease control. Apply the specified rate as a foliar spray in a minimum water volume of 500 L/ha to assure thorough coverage of plants.
CITRUS FRUITS (Sweet orange, Mandarin orange)	Citrus Black Spot (<i>Phyllosticta citricarpa</i>)	2.0 – 3.2 L/ha	Begin applications preventively at the beginning of fruit set when conditions are favorable for disease development and continue on a 14 to 30-days interval to maintain disease control. Under conditions of weather favoring severe disease pressure apply the higher dose rate with the shorter spray interval. Apply in a minimum water volume to ensure thorough coverage of fruits and foliage.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	
Cocoa	Black Pod Disease (<i>Phytophthora megakarya</i>)	3.2 L/ha	Apply preventively before disease onset, based on disease risk. Make 1 application 2 weeks apart at the beginning and during the rainy season to the entire tree. Apply in a minimum water volume to ensure thorough coverage of fruits and foliage.
Coffee	Coffee Leaf Rust (CLR) (<i>Hemileia vastatrix</i>)	2.0 – 2.5% (2.0 – 2.5 L/hL water)	Apply preventively before disease onset, based on disease risk:
	Coffee Berry disease (CBD) (<i>Colletotrichum kahawae</i>)		<ul style="list-style-type: none"> • Dry season (low pressure) – 2.0 %, for instance: <ul style="list-style-type: none"> - 400 ml to 20 litres of water (50 trees) - 20 litres to 1000 litres of water (1 ha or 2500 trees) • Rainy season (conditions favourable to high infestation) – 2.5 %, for instance: <ul style="list-style-type: none"> - 500 ml to 20 litres of water (50 trees) - 25 litres to 1000 litres of water (1 ha or 2500 trees)
	Red Blister disease (<i>Cercospora coffeicola</i>)		<p>Coffee Leaf Rust: If disease symptoms are evident, spray the leaves and the orange colour spores directly. Apply to the top and bottom surface of all coffee leaves. Applications can be repeated 3 times throughout the coffee growing season: first application in January, second in April and third in September.</p> <p>Apply in the adequate water volume to achieve thorough coverage of leaves and berries.</p>

CUCURBITS (Cucumber, Pumpkins, Squash, Watermelon, Melon, Zucchini)	Powdery mildew (<i>Erysiphe spp.</i>)	2.0 – 3.2 L/ha	Begin applications at early bloom before disease development begins and continue applications on a 7 to 10-days preventive interval if conditions continue to favour disease development. Under conditions of weather favouring severe disease pressure apply the higher rate or shorter interval. Apply the specified rate as a foliar spray in a minimum water volume of 500 L/ha to assure through coverage of plants.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	
	Downy mildew (<i>Pseudoperonospora cubensis</i>)	3.2 L/ha	
	Gummy stem blight (<i>Didymella bryoniae</i>)	2.0 – 3.2 L/ha	
Grapes	Powdery mildew (<i>Uncinula necator</i>)	2.0 – 3.2 L/ha	Apply in a preventive spray schedule when conditions favour disease development. Apply in a minimum water volume of 400 L/ha. Powdery mildew: Make the first application before bloom and continue applications using spray intervals of up to 14 days in low to moderate disease pressure at the lower rate in the rate range. Use higher rates and a 7 to 10-days schedule when disease pressure is severe. Increase spray volume as vine growth increases in order to provide thorough coverage of vines and fruit for optimum disease control. Gray mold: Apply before disease onset during early bloom, bunch pre-closure, veraison and ripening up to the harvest day. Increase spray volume as vine growth increases in order to provide thorough coverage on both sides of grape bunches for optimum disease control.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	
Lettuce	White mold (<i>Sclerotinia sclerotiorum</i>)	3.2 L/ha	Begin applications soon after plant emergence or transplanting and repeat on 7 to 14-days interval as long as conditions favour disease development. Apply as a foliar spray in sufficient water to achieve thorough coverage of all above-ground plant parts. White mold: Apply in a water volume of 300 to 500 L/ha as a directed spray toward soil surface and lower leaves. Make first application to direct-seeded lettuce immediately after emergence. For transplanted lettuce, make first application immediately after transplanting. In both cases, apply prior to disease development. Apply again if soil is disturbed by cultivation or thinning and conditions continue to favour disease development.
	Gray mold (<i>Botrytis cinerea</i>)		
Passion fruit	Powdery mildew (<i>Oidium passiflorae</i>)	2.0 – 3.2 L/ha	Apply as preventive at 7 to 10-days interval when conditions are favourable for disease development. Apply in a minimum water volume of 500 litres/ha to achieve thorough coverage of the foliage and fruits.
	Anthracnose (<i>Colletotrichum gloeosporioides</i>)	3.2 L/ha	
POME FRUITS (Apples, Pears)	Powdery mildew (<i>Podosphaera leucotricha</i>)	2.0 – 3.2 L/ha	Apply in a minimum water volume of 800 litres/ha and increase the spray volume/ha as crop growth increases to ensure thorough coverage of foliage and fruits. Powdery mildew: Apply from early bloom to petal fall as preventive before the onset of disease and repeat applications at 10 to 14-days interval. Use the lower rate under low to moderate disease pressure and the higher rate under conditions of weather favouring severe disease pressure. Gray mold: Begin applications prior to disease development and repeat applications at 10 to 14-days interval.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	

Potato	Late blight (<i>Phytophthora infestans</i>)	3.2 L/ha	Begin applications soon after emergence and when conditions are conducive to disease development and repeat applications at 7 to 10-days interval. Apply in a minimum water volume of 500 litres/ha and increase the spray volume/ha as crop growth increases to ensure thorough coverage of foliage. For improved performance, integrate PROBLAD in a rotational program with other registered fungicides for Late blight control.
Rice	Rice Blast (<i>Pyricularia oryzae</i>)	3.2 L/ha	Apply as a preventative before the onset of disease. Two applications are recommended: the first at mid to late boot stage, followed by a second application after 14 days at the end of panicles emergence or beginning of flowering stage. Apply in a water volume of 400 L/ha ensuring a thorough coverage of leaves and panicles.
Strawberry	Powdery mildew (<i>Sphaeroteca macularis</i>)	2.0 – 3.2 L/ha	Begin applications at early bloom and continue on a 7 to 10-days interval if conditions continue to favour disease development. Apply in a minimum water volume of 500 L/ha to assure thorough coverage of foliage and fruits.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	
STONE FRUITS (Peaches, Nectarines, Cherries, Plums, Apricots)	Blossom blight Brown rot (<i>Monilinia</i> spp.)	3.2 L/ha	Apply in a water volume of 1000 to 1500 L/ha to ensure thorough coverage of foliage and fruits. Blossom blight: Begin application at pink, white or red bud depending on the crop. Make a second application at full bloom and if conditions remain favourable for disease, make another application at petal fall. Brown rot on fruit: Make applications during the month before harvest on a 7 to 14-days preventive schedule when conditions favour disease development.
	Powdery mildew (<i>Podosphaera pannosa</i>)	2.0 – 3.2 L/ha	Powdery mildew: Begin applications preventively when conditions are favourable for disease development and continue on a 7 to 10-days interval if conditions continue to favour disease development. Under conditions of severe disease pressure, use the higher rate.
Tea	Gray Blight (<i>Pseudopezalotopsis theae</i>)	2.0 – 3.2 L/ha	Begin applications preventively when conditions are favourable for disease development and continue on a 7 to 10-days interval. Under conditions of severe disease pressure, use the higher rate. Apply in a minimum water volume to ensure thorough coverage of foliage throughout the crop canopy.
Tomato	Powdery mildew (<i>Oidium neolycopersici</i>)	2.0 – 3.2 L/ha	Begin applications prior to onset of disease development and continue on a 7 to 10 days interval to maintain disease control. Under conditions of severe disease pressure, use the higher rate. Apply in a water volume of 200 to 1000 L/ha to ensure thorough coverage of foliage and fruits.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	
	Late blight (<i>Phytophthora infestans</i>)	3.2 L/ha	
TREE CROPS (Avocado, Mango, Papaya)	Anthraxnose (<i>Colletotrichum gloeosporioides</i>)	3.2 L/ha	Start application preventively at the onset of the flowering season when conditions are favorable for disease development and continue on a 7 to 14 days interval to maintain disease control. Apply in a water volume of 800 to 1500 L/ha to ensure thorough coverage of foliage and fruits.
VEGETABLES (Brassicas, Carrots, Chillies, Pepper, Eggplant, Beans, Onions, Peas)	Powdery mildew (<i>Leveillula taurica</i> , <i>Oidium neolycopersici</i> , <i>Podosphaera</i> spp.)	2.0 – 3.2 L/ha	Apply as preventive before the onset of disease and repeat applications at 7 to 10-day interval. Apply in a minimum water volume of 500 litres/ha to achieve thorough coverage of the crop. Use the higher rate under conditions of severe disease pressure.
	Gray mold (<i>Botrytis cinerea</i>)	3.2 L/ha	

GENERAL APPLICATION CONDITIONS:

PROBLAD® is a natural biofungicide for the control and suppression of fungal diseases on Banana, Coffee, Cocoa, Citrus, Tomato and other crops and may be used according to the pattern described in the table above. In order to optimize its use, PROBLAD® should be integrated into adapted programs, with application preferably made prior to onset of disease development for preventative control. All spray applications must be made with suitable equipment that is in good working order and correctly calibrated and appropriate spray volume to give the desired coverage for that particular method of application.

SPRAY VOLUME:

Being a contact fungicide, PROBLAD® applications should be done with the adequate water volume to ensure thorough and uniform coverage of the crop with the spray solution. Increase spray volume as crop growth increases to ensure thorough coverage of the foliage and fruits. Check equipment calibration frequently. Complete coverage and uniform application are essential for the most effective results, especially when lower spray volumes are applied.

PREPARATION OF THE SPRAY SOLUTION:

Make sure the spray tank is clean and free of residues from previous spray treatments. Add half the required volume of water and start agitation. Shake the PROBLAD® container before opening and pour the required amount of PROBLAD® into the spray tank while agitating. Fill the tank to the required volume whilst maintaining agitation. It is recommended that the spray solution has a pH above 6. Adjust pH if necessary. Continuous agitation must be maintained until spraying is complete. Apply immediately after mixing; do not allow spray mix to stand overnight.

COMPATIBILITY

Do not tank mix PROBLAD® with products containing a prohibition against tank mixing. PROBLAD® may be mixed with foliar fertilizers, provided that the fertilizer is added after PROBLAD® has been diluted to the recommended field application. Follow the most restrictive labeling requirements of any tank mix product. To determine the physical compatibility of PROBLAD® with other products, use a jar test. The following procedure should be followed: Pour the specified proportions of the products into a suitable container. Add one litre of water; mix thoroughly and allow to stand for at least 15 minutes. If the combination remains mixed or can be re-mixed readily, the mixture is considered a homogeneous solution and physically compatible. If separation occurs (e.g. oils float to top, clumps of solids form, etc.), the combination is incompatible and cannot be used. For further information, contact your local distributor.

INTEGRATED PEST MANAGEMENT (IPM): Integrate PROBLAD® 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.

RESISTANCE

Resistance is thought unlikely to occur due to the mode of action of PROBLAD®. The BLAD protein is classified by Fungicide Resistance Action Committee (FRAC) in group BM 01, having multi-site contact activity with multiple effects and is thus considered low risk. However, as part of a resistance management strategy, to avoid resistance build-up within the targeted pathogens, PROBLAD® should always be used according to label and respecting the following instructions:

- PROBLAD® should always be applied according to recommendation of uses particularly regarding doses and number of applications.
- Do not apply more than 5 applications per growing cycle or season.
- Do not apply more than 2 sequential applications before alternating with a fungicide with a different mode of action.
- As much as possible, PROBLAD® should be used preventively, at the onset of the disease.
- **Whenever used within spray sequences, alternation with products of different modes of action is recommended.**

PRE-HARVEST INTERVAL (PHI): 0 days

RESTRICTED ENTRY INTERVAL: 4 Hours. Treated crops should not be re-entered before spray deposits on leaf surfaces have completely dried.

RAINFASTNESS: A minimum of four hours drying time on plant foliage is required before rain or irrigation occurs. If, during the next 12 hours after an application it rains significantly, a new application is recommended as soon as possible during the next 4 days. Do not apply if rain is expected within 4 hours. Do not apply under slow drying conditions. Do not apply to wet crops.

LIMITATION OF WARRANTY AND LIABILITY

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

Conditions: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks 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 Biryra United Agencies Ltd. All such risks shall be assumed by the user or buyer.

Disclaimer of Warranties: Biryra United Agencies Ltd makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of Biryra United Agencies Ltd is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. Biryra United Agencies Ltd disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

Limitations of Liability: To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price of the material as to which a claim is made.

MANUFACTURING DATE: please see bottle

BATCH NUMBER: please see bottle

EXPIRY DATE: 3 years after manufacturing date in its original closed packing.

FOR FURTHER INFORMATION ON THIS PRODUCT, CONTACT BIRYA UNITED AGENCIES LTD,

Mbarara, UGANDA (+256) 393 249973, (+256) 200 926088, inquiries@biryraunited.co.ug

SPECIMEN

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