

ProBlad®

TECHNICAL SHEET

ACTIVE INGREDIENT: 250 g/L BLAD*

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

GROUP BM 01 FUNGICIDE

ORIGIN AND COMPOSITION



- ▶ **PROBLAD** is a biological fungicide of natural origin. It is a concentrate plant extract containing 20% (w/w) of **BLAD protein as a novel and unique active ingredient.**

PERFORMANCE

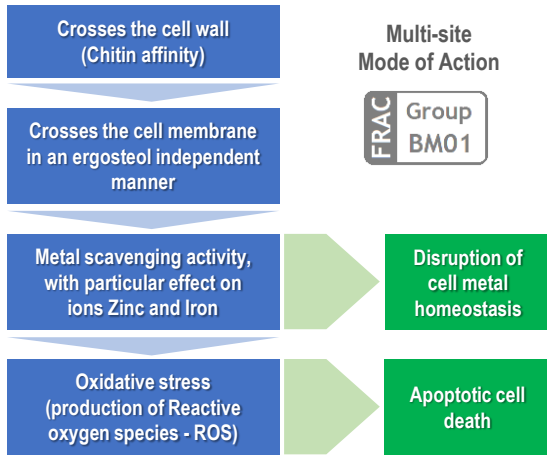
- ▶ Broad spectrum (universal targets in fungal cells)
- ▶ Active against most life stages of disease (spores, hyphae, mycelium and haustoria)
- ▶ Can be integrated in rotational programs with no negative impact on efficacy
- ▶ Preventative (7 to 10-day disease prevention)
- ▶ Curative (up to 8-day reach back activity)
- ▶ Fast knock down effect (less than 24 hours)
- ▶ Not affected by the pH of spray solution, except at pH 5.5
- ▶ Tank mix compatible with most fungicides, insecticides and fertilizers

FORMULATION

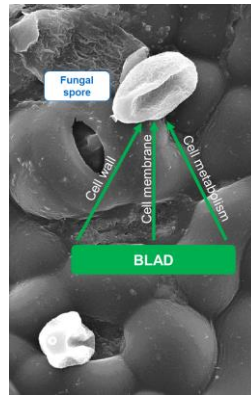


- ▶ Soluble concentrate liquid formulation (SL): 250 g/L of BLAD
- ▶ Contact fungicide (Not Systemic)
- ▶ Thorough coverage of foliage and fruits is a key factor to ensure optimal performance
- ▶ Spray volume should not exceed the point of run-off
- ▶ Safe and excellent resistance management tool due to its Multi-site MOA

NOVEL AND UNIQUE MODE OF ACTION (MOA)



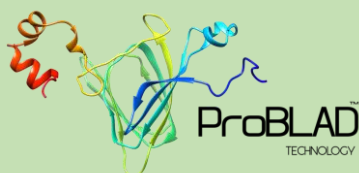
Multi-site targets:



- ▶ **PROBLAD** fungicide activity works on contact and results from a combined action of **BLAD protein active ingredient** at several targets in the fungal cell. **BLAD** is able to bind to fungal chitin structures, disturbing the cell wall and cell membrane and enters into the fungus cell. Inside the cell induces major changes in cell metabolism from which the most important is the disturbance of the cell metal homeostasis due to its chelating activity on several cations. By depleting the fungal cells in divalent cations, **BLAD** is able to block several metabolic pathways, as these cations are essential co-factors for many enzymes that will be inactivated in their absence. An oxidative stress is then generated inside the cells. All these actions then starts a chain of events that disrupt nutrient absorption, end cellular reproduction and, ultimately, lead to an apoptotic fungal cell death.

FEATURES AND BENEFITS

FEATURES	BENEFITS
Better performance when applied as preventative but also with curative effect	Highly effective and consistent control against many pathogens even when compared with conventional chemical products
FRAC Group BM 01. Multisite Mode of Action that allows the rotation with all other listed fungicides	Novel and unique Mode of Action with low risk for developing fungal resistance. Optimum resistance management partner to be integrated in a spray program
Low risk active ingredient. Sustainable and Environmentally friendly product	Non-toxic to mammals, birds, aquatic organisms, soil macro and microorganisms, non-target arthropods, beneficial insects, pollinating insects and plants
Compatible with the large majority of the plant protection products (PPP)	Effective disease management tool to be implemented into Integrated Pest Management (IPM) strategies
Re-Entry Interval (REI): 4 Hours	Allowing tasks within treated area to be completed soon after application
Exempt from Maximum Residue Levels (MRL) Preharvest Interval (PHI) : 0 Days	No residues helping growers to meet increasing food chain requirements
Can be applied from the beginning of the crop up to and including the harvest day	Selective in all crops, no impact on transformation processes



ENJOY THE EXPERIENCE OF A NEW
CONCEPT OF FUNGICIDE

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ProBlad®

A new Biofungicide providing superior efficacy and multi-site mode of action for decisive disease management

LABELED CROPS & TARGETS – BROAD SPECTRUM

Country	Crop/Group *	Target Disease	Dose Rate
UGANDA 	BANANA AND PLANTAINS	Black Sigatoka	3.2 L/ha
	CHILI PEPPER	Phytophthora blight	3.2 L/ha
	CITRUS FRUITS (Sweet orange, Mandarine orange)	Citrus Black Spot Botrytis Grey mold	2.0 – 3.2 L/ha 3.2 L/ha
	COCOA	Black Pod Disease	3.2 L/ha
	COFFEE	Coffee Leaf Rust Coffee Berry disease Red Blister disease	2.0 – 2.5 L/hL water
	CUCURBITS (Cucumber, Pumpkins, Squash, Watermelon, Melon, Zucchini)	Powdery mildew Gummy stem blight Botrytis Grey mold Downy mildew	2.0 – 3.2 L/ha 3.2 L/ha
	GRAPES	Powdery mildew Botrytis Grey mold	2.0 – 3.2 L/ha 3.2 L/ha
	LETTUCE	Botrytis Grey mold White mold	3.2 L/ha
	PASSION FRUIT	Powdery mildew Anthracnose	2.0 – 3.2 L/ha 3.2 L/ha
	POME FRUITS (Apples, Pears)	Powdery mildew Botrytis Grey mold	2.0 – 3.2 L/ha 3.2 L/ha
	POTATO	Late blight	3.2 L/ha
	RICE	Rice blast	3.2 L/ha
	STRAWBERRY	Powdery mildew Botrytis Grey mold	2.0 – 3.2 L/ha 3.2 L/ha
	STONE FRUITS (Peaches, Nectarines, Cherries, Plums, Apricots)	Powdery mildew Monilinia (Blossom blight Brown rot)	2.0 – 3.2 L/ha 3.2 L/ha
	TEA	Gray Blight	2.0 – 3.2 L/ha
TOMATO	Powdery mildew Botrytis Grey mold Late blight	2.0 – 3.2 L/ha 3.2 L/ha	
TREE CROPS (Avocado, Mango, Papaya)	Anthracnose	3.2 L/ha	
VEGETABLES (Brassicacs, Carrots, Chillies, Pepper, Eggplant, Beans, Onions, Peas)	Powdery mildew Botrytis Grey mold	2.0 – 3.2 L/ha 3.2 L/ha	



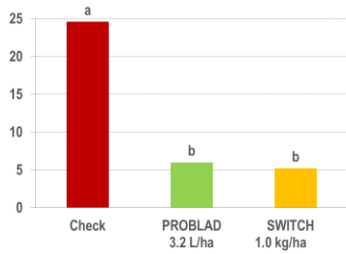
GRAPES



STRAWBERRIES

Botrytis - Valencia, SPAIN, 2017

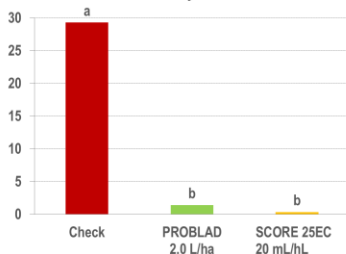
% Severity on bunches



Grape variety: Bobal
3 applications@ BBCH 77, 81, 86-87
Rating 21 days after 3th application (21DAA3)

Powdery mildew - Central Macedonia, GREECE, 2018

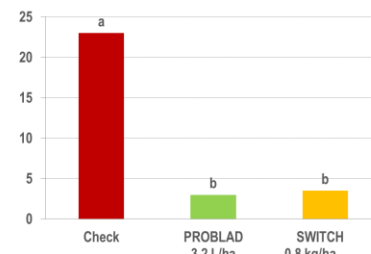
% Severity on bunches



Grape variety: Souttanina
6 applications@ BBCH 72 - 75
Rating 21 days after 6th application (21DAA6)

Botrytis - Catania/Sicily, ITALY, 2018

% Incidence (damaged fruits)



Strawberry variety: Portola
5 applications@ BBCH 61-89 | 17 days interval
Rating 7 days after 5th application (7DAA5)

Product for professionals: be caution during handling, storage and application of agrochemical products. Always read and follow all label directions, restrictions and precautions before use.

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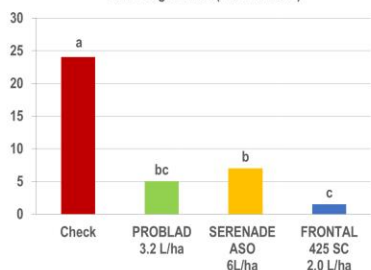




BLUEBERRIES

Botrytis - Placilla, L. B. O'Higgins, CHILE, 2019

% Damaged fruits (Post-harvest*)



Cultivar: Star

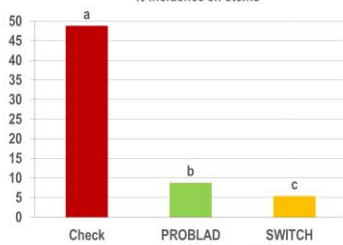
4 app@ beginning of bloom; 80-100% bloom, veraison, pre-harvest
*Rating after 30 days storage in cold + 7 days at room temperature



TOMATO

Botrytis - Zuid-Holland, NETHERLANDS, 2017

% Incidence on stems



Tomato variety: Merlice

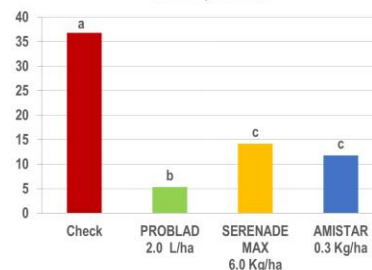
5 applications@ BBCH 61, 63, 64, 68, 70
Rating 6 days after 5th application (6DAA5)



CUCURBITS

Powdery mildew - Puebla, MÉXICO, 2018 (Greenhouse)

% Severity on leaves



Crop: Cucumber; Cultivar: Centauro

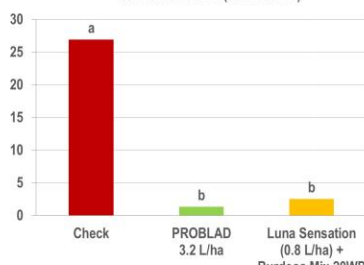
3 applications: A-1st PM symptoms; 7DAA; 14DAA
Rating 7 days after 3rd application (7DAA3)



LETTUCE

Sclerotinia - Letnitsa, BULGARIA, 2020

% Plants affected (% Incidence)



Lettuce variety: Gentilina

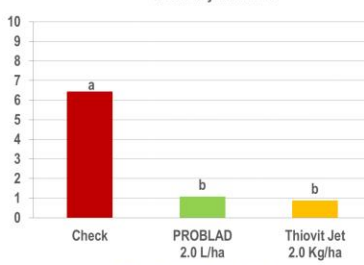
6 applications@ BBCH 33, 39, 42, 44, 45, 47
Rating 14 days after 6th application (14DAA6)



POME FRUITS

Powdery mildew - Wiesloch, GERMANY, 2019

% Severity on shoots



Crop: Apple; Variety: Idared

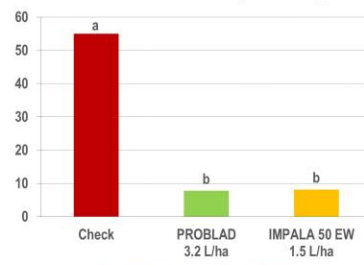
6 app@ BBCH 72 (fruit size up to 20mm) - 85 (advanced ripening)
Rating 20 days after 6th application (20DAA6)



STONE FRUITS

Monilinia (Brown rot) - Valencia, SPAIN, 2017

% Incidence on fruits (Post-Harvest*)



Crop: Peach; Variety: Royal Galdis

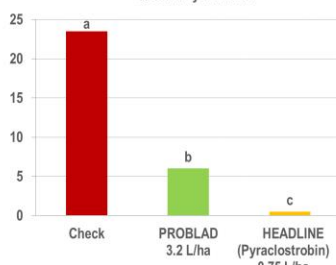
5 applications@ BBCH 69, 69, 85, 89, 89
Rating 17 days after 5th application (17DAA5)
*(10 days of Storage at room temperature after Harvest)



AVOCADO

Anthraxose - Tlalnepantla, MEXICO, 2018

% Severity on fruits



Crop: Avocado; Cultivar: Hass

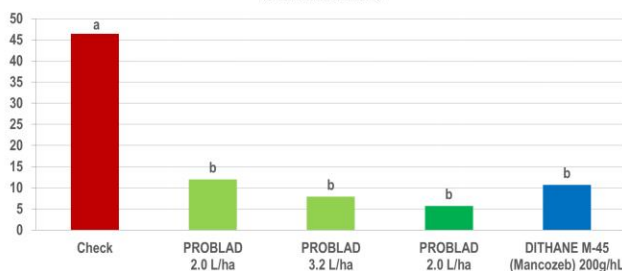
5 applications: A-1st disease symptoms; 7 days interval
Rating 7 days after 5th application (7DAA5)



CITRUS

Black Spot - Tzaneen, Limpopo, SOUTH AFRICA, 2018

% Incidence on fruits



Crop: Sweet Orange; Cultivar: Valencia

5 applications: BBCH 71 (Fruit set) , 72, 73, 74, 74 (Dark green fruit);
Interval: 21 - 42 days
Rating 193 days after 5th application (193DAA5)

Product for professionals: be caution during handling, storage and application of agrochemical products. Always read and follow all label directions, restrictions and precautions before use.

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