



ProBlad®

TECHNICAL SHEET

A PROVEN Biofungicide that produces EFFECTIVE results with a UNIQUE mode-of-action and a very SAFE profile.

ACTIVE INGREDIENT: BLAD polypeptide 20%*

PMRA Registration No: 34050

COMPOSITION

- ▶ **PROBLAD®** is a biological fungicide of natural origin. It is a formulated suspension with a plant extract named **BLAD** as its novel and unique active ingredient. *BLAD polypeptide is a naturally-occurring protein formed during the germination process of sweet lupines (*Lupinus albus*).
- ▶ **PROBLAD®** is formulated as a stable liquid suspension with a long shelf-life and comes in a 4 x 4L case. It is readily available through your retailer of choice via the Bartlett distribution network.
- ▶ **PROBLAD®** is recognized as safe to use under the Canadian Organic Regulations (COR). Always check with your certifier before use.



UNIQUE Mode-of-Action

- ▶ **PROBLAD®** fungicide starts working upon contact with fungal bodies and results from a combined action of **BLAD protein** at several targets in the fungal cell. **BLAD** enters the cell by binding to the chitin of fungal spores, hyphae, mycelium and/or haustoria, disturbing the cell wall and cell membrane. The cell's metabolism is greatly impacted by the disturbance of the cell's metal homeostasis due to **BLAD's** chelating activity on divalent cations. These cations are essential components for many critical fungal enzymes that will be inactivated in their absence. An oxidative stress is generated inside the fungal cells leading to fungal cell death. This process takes from 6-24 hours and is irreversible.
- ▶ **Multi-site targets:** cell wall, cell membrane, cell metabolism. By affecting different metabolic reactions, it targets different metabolic pathways, resulting in a multi-site mode of action. This makes **PROBLAD®** a highly unique tool in IPM programs for resistance management.

FRAC Group
BM01

ProBlad®

EFFECTIVE - SAFE - UNIQUE

N.M. **BARTLETT** INC.

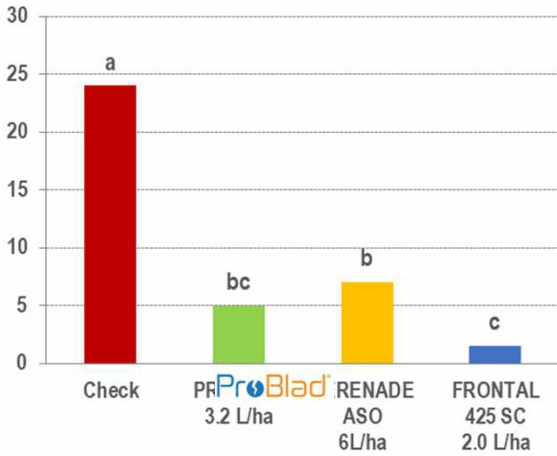


EFFECTIVE Disease control

BLUEBERRIES

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

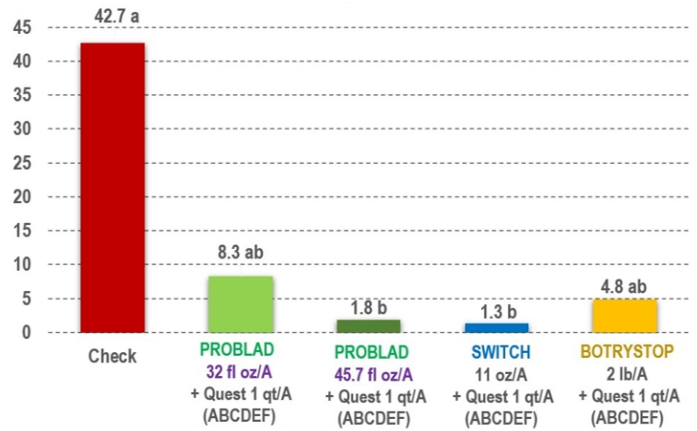
% Damaged fruits (Post-Harvest*)



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

Botrytis (Grey Mould) - Kingsburg, California, USA, 2020

% Severity on fruits

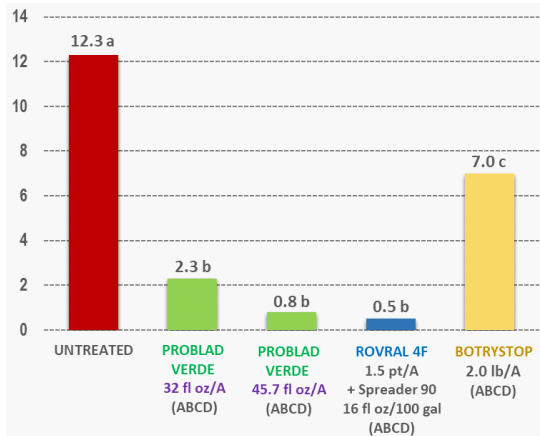


Variety: Rebels | N° applications: 6 | Interval: 9-11 days
 Timing (BBCH): 63 (Flowering - 30% flowers open); 64; 74; 77; 79; 85 (Advanced ripening)
 Rating: 3 days after application F (3DA-F)

CANEBERRIES

Botrytis (Blackberry) - Visalia, California, USA 2020

(Infected berries/plot - 7DAA4)

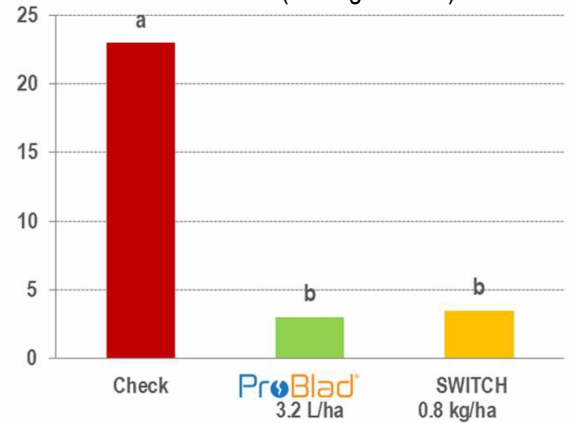


Variety: Owathatha
 Trial: 4 apps started at bloom, repeated after 7-10 days in 50 GPA

STRAWBERRIES

Botrytis - Catania/Sicily, ITALY, 2018

% Incidence (damaged fruits)



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

Quick Conversion:

32 fl oz/A = 2.3 L/ha

45.7 fl oz/A = 3.3 L/ha

Product names are trademarked by their respective owners



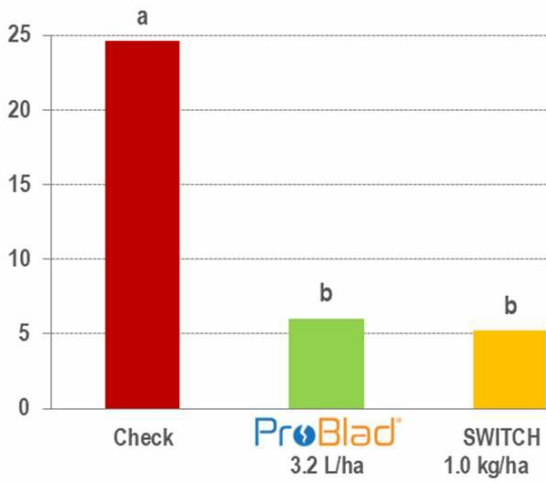
SAFE For users, consumers and the environment



GRAPES

Botrytis - Valencia, SPAIN, 2017

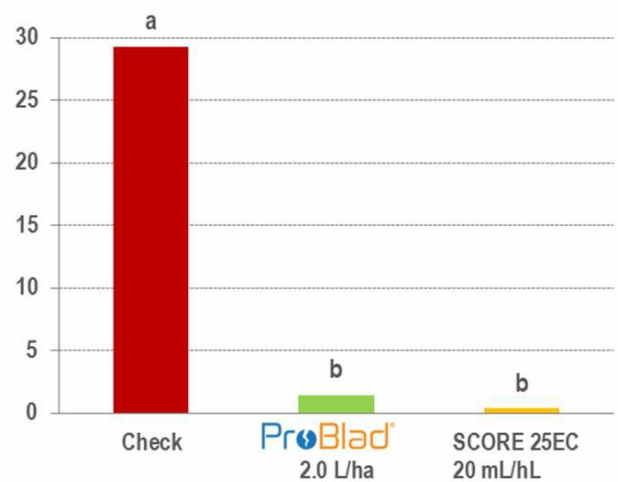
% Severity on bunches



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

Powdery Mildew - Central Macedonia, GREECE, 2018

% Severity on bunches



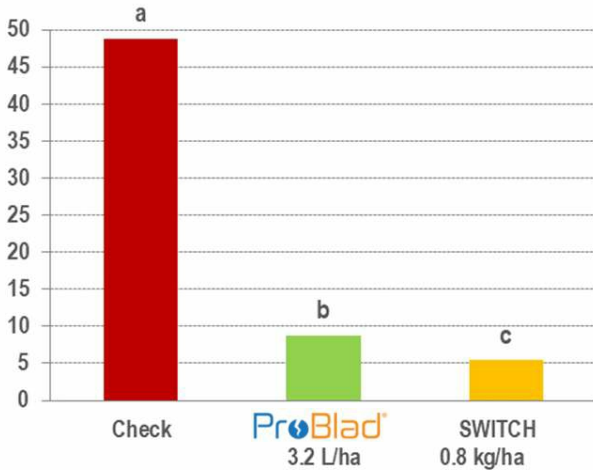
Grape Variety: Soultanina
6 applications @ BBCH 72 - 75
Rating 21 days after 6th application (21DAA6)



TOMATO

Botrytis - Naaldwijk/Zuid-Holland, NETHERLANDS, 2017

% Incidence on stems



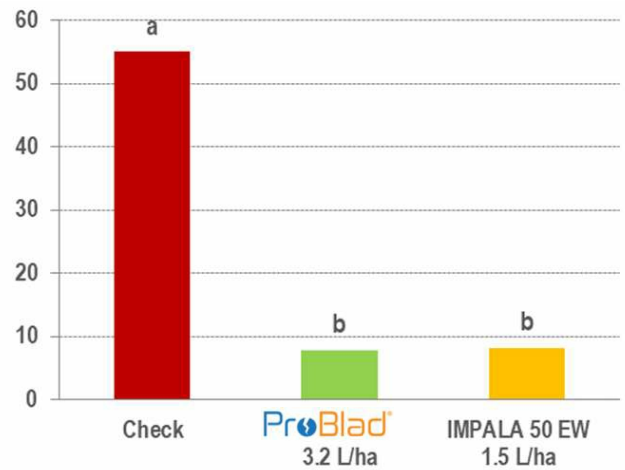
Tomato Variety: Merlice
5 applications @ BBCH 61, 63, 64, 68, 70
Rating 6 days after 5th application (6DAA5)



STONE FRUITS

Monilinia (Brown Rot) - Valencia, SPAIN, 2017

% Incidence on fruits (Post-Harvest*)



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

Product names are trade-
marked by their respective
owners



LABELLED CROPS & TARGETS

Crop / Group	Disease Labelled for Control	Rate
GRAPE	Botrytis Grey Mould Powdery Mildew	1.5 - 3.3 L/ha See label for details
STRAWBERRY (Field and Greenhouse)	Botrytis Grey Mould Powdery Mildew (supp.)	
FRUITING VEGETABLES (Field and Greenhouse) Eggplant, Ground cherry, Pepino, Pepper (including bell, chili, cooking, pimento and sweet), Tomatillo, Tomato	Botrytis Grey Mould	
STONE FRUIT Apricot, Cherry, Nectarine, Peach, Plum, Prune	Blossom Blight and Brown Rot (Monilinia fructigena and laxa) Suppression at low rates, control at high rates	
ALMOND	Monilinia (Blossom Blight Brown Rot)	
BLUEBERRY (Highbush and Lowbush)	Botrytis Blight	
CANEBERRY Blackberry, Loganberry, Raspberry (red, black and wild)	Botrytis Fruit Rot	

KEY USAGE NOTES

- ▶ For optimum results with stand-alone applications, use higher rate range. If tank-mixing or in lower pressure scenario, the lower rate range can be used
- ▶ Tank-mix compatible with the vast majority of commonly used products in conventional and organic systems including oils and fertilizers (avoid copper sulphate mixes)
- ▶ Stable in a wide pH range (4-10), but avoid the specific pH of 5.5 as the BLAD protein can denature as this is the very specific iso-electric point
- ▶ Rain-fast in 12-24 hrs. If heavy rain occurs before this time has elapsed, top-up with a subsequent application
- ▶ The addition of a surfactant has shown to provide an increased tolerance to wash-off and can increase efficacy on certain diseases in certain circumstances.
- ▶ Coverage is important, but the product has translaminar activity
- ▶ Flexible application window with both curative and protective qualities and efficacy on various fungal life stages (8 day reach-back and 8 days forward protection on powdery mildew)
- ▶ IPM friendly with a trusted track record of strong disease activity from a unique fungicide group with no known resistance
- ▶ Acceptable for use in Organic systems
- ▶ 5 apps max per crop cycle

0 PHI

0 REI

0 MRL

ProBlad[®]

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EFFECTIVE - SAFE - UNIQUE

Always read and follow all label directions, restrictions and precautions before use.

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