PROBLAD®
프로블라드

ACTIVE INGREDIENT: BLAD polypeptide 20%*
* BLAD is a naturally-occurring protein formed during the germination process of sweet lupines (*Lupinus albus*)

RDA Registration No: 제14-살균-36호

TECHNICAL SHEET

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

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**.

SG© 한국삼공

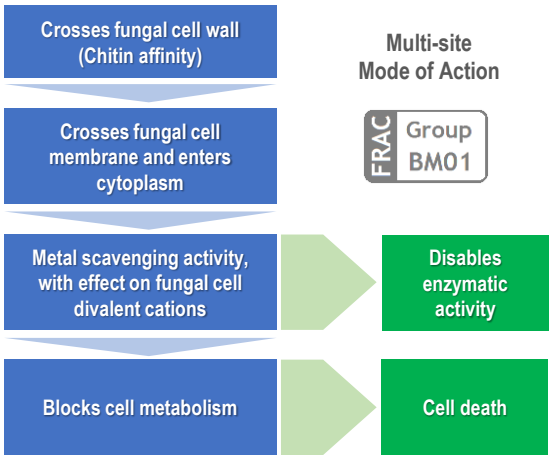
FORMULATION

- Soluble concentrate (SL)
- Contact fungicide with Translaminar activity
- 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

PERFORMANCE

- Broad spectrum (universal targets in fungal cells)
- Active against most life stages of disease (spores, hyphae, mycelium and haustoria)
- Can be integrated in conventional 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

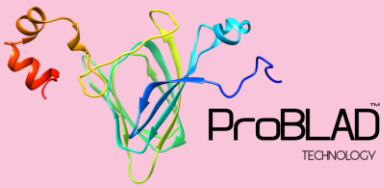
NOVEL AND UNIQUE MODE OF ACTION (MOA)



- 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 divalent 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. By affecting different metabolic reactions, it targets different metabolic pathways, resulting in a multi-site mode of action. An oxidative stress is then generated inside the cells leading to an apoptotic fungal cell death.
- **Multi-site targets:** cell wall, cell membrane, cell metabolism.

ADVANTAGES

FEATURES	BENEFITS
Better performance when applied as preventative but also with curative effect	Highly effective and consistent control against many pathogens in conventional programs
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 on conventional farming
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
No Re-Entry Interval (REI) established when product has dried	Allowing tasks within treated area to be completed soon after application
Exempt from Maximum Residue Levels (MRL)	No residues helping growers to manage residues and meet increasing food chain requirements.
No Preharvest Interval (PHI)	May be applied up to and including the day of harvest
Can be applied from the beginning of the crop up to the day before harvest	Selective in all crops, no impact on transformation processes



ENJOY THE EXPERIENCE OF A NEW CONCEPT OF FUNGICIDE

Learn more about PROBLAD:

SCAN ME

TS-PROBLAD-KR-02/23-EN
Version 1 | Date: 02.02.2023

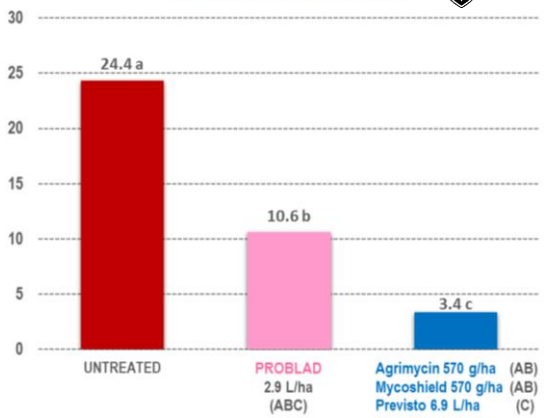
LABELED CROPS & TARGETS – SOUTH KOREA

Crop	Target Disease	Mode of applicatiion	Dilution rate	Dilution in 20L water	Preharvest Interval (PHI)
Pear	Fire blight	Foliar spray at intervals of 7 days at the beginning of flowering	2000 x	10 mL	0 days
Apple			2000 x	10 mL	0 days
Strawberry	Botrytis gray mold	Foliar spray at intervals of 7 days at the beginning of disease onset	1000 x	20 mL	0 days
Tomato			1000 x	20 mL	0 days
Tomato cherry			1000 x	20 mL	0 days
Cucumber			1000 x	20 mL	0 days
Grape			1000 x	20 mL	0 days
Lettuce	Sclerotinia crown rot	Foliar spray at intervals of 7 days at the beginning of disease onset	1000 x	20 mL	0 days
Korean lettuce			1000 x	20 mL	0 days

PEAR – FIRE BLIGHT

Fire blight - Pear
% Blighted clusters (47DAA3)

Oregon State University Extension Service

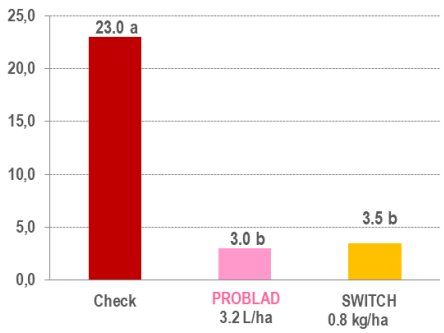


Oregon State University, Oregon, USA, 2020

Variety: Comice
Applications: 3
Timing:
A: 70-80% bloom,
B: Full bloom,
C: Petal fall
Spray interval: 3 - 7 days
Spray volume: 1000 L/ha

STRAWBERRY – GRAY MOLD

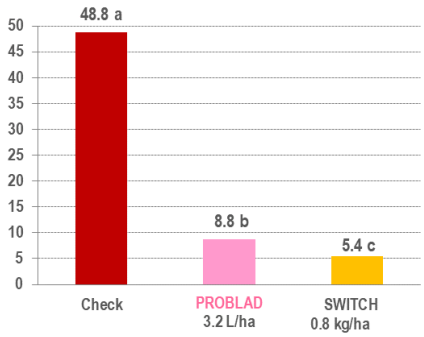
Botrytis - Catania/Sicily, ITALY, 2018
% Incidence (damaged fruits)



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

TOMATO – GRAY MOLD

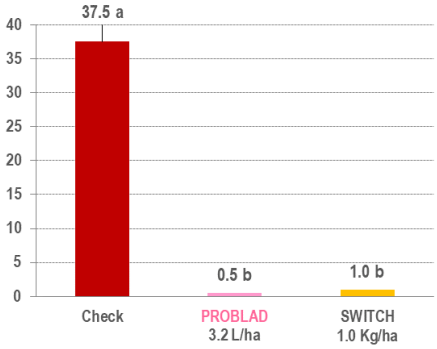
Botrytis - Naaldwijk/Zuid-Holland, NETHERLANDS, 2017
% Incidence on stems



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

CUCUMBER – GRAY MOLD

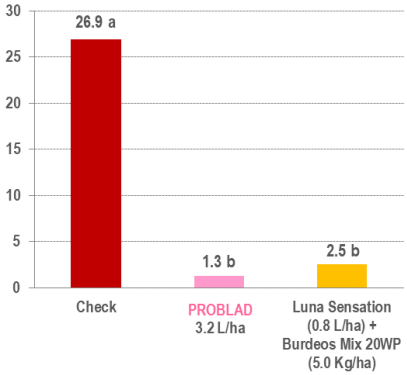
Botrytis - Chemogorovo, BULGARIA, 2020
% Incidence on fruits



Crop: Butternut squash; Cultivar: Avalon
6 applications: BBCH 62; 64; 75; 77; 83; 85
Rating 14 days after 6th application (14DAA6)

LETTUCE – SCLEROTINIA

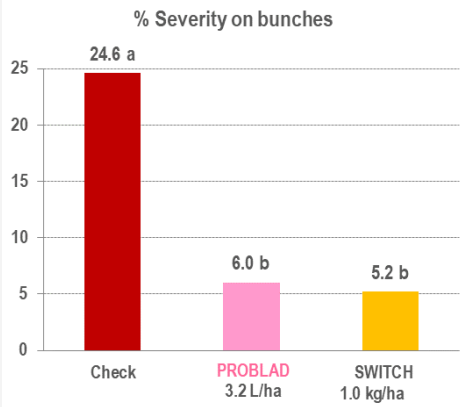
Sclerotinia - Letnitsa, BULGARIA, 2020
% Plants affected (% Incidence)



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

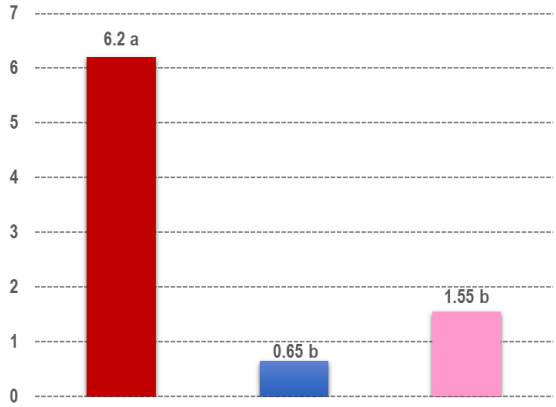
GRAPE – GRAY MOLD

Botrytis - Valencia, SPAIN, 2017



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

Botrytis bunch rot
(%Severity on bunches - 20DAA6)



Miravis Prime 1.0 L/ha	(A)	PROBLAD 3.2 L/ha	(A)
Aprovia Top 1.0 L/ha	(B)	Luna Sensensation 0.6 L/ha	(B)
Inspire Super 1.5 L/ha	(C)	Luna Experience 0.6 L/ha	(C)
Miravis Prime 1.0 L/ha	(D)	PROBLAD 3.2 L/ha	(D)
Quintec 0.5 L/ha	(E)	Scala 1.3 L/ha + Kumulus 9.0 Kg/ha	(E)
Aprovia Top 1.0 L/ha	(F)	PROBLAD 3.2 L/ha	(F)

CAL POLY
Wine & Viticulture

Santa Maria, California, USA, 2021

PROBLAD® integrated in conventional fungicide spray program

Variety: Chardonnay

A = 25 May (**Bloom**);
B = 8 June (**Berries groat-sized**);
C = 22 June (**Pea size berries**);
D = 7 July (**Bunch closure**);
E = 20 July (**Pre-veraison**);
F = 3 August (**Veraison**)

PROBLAD® FEATURES

NEW

Natural plant protection product extracted from germinated Lupinus seeds

FREE

Residue free as a natural plant protection product (No MRL)

Simultaneous control of fungal and bacterial diseases

Flowering use O.K.

Can be sprayed with Excellent crop safety even during the sensitive flowering periods

NEW PRODUCT

Manufactured by:

CEV

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Email: cev@cev.com.pt | Web: www.cev.com.pt

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