Suterra® CheckMate®

VMB-F Flowable
for Vine Mealybug (VMB)

DATASHEET

CheckMate® VMB-F Flowable

CheckMate® VMB-F is Suterra's pioneering sprayable pheromone release formulation for Vine Mealybug (VMB) mating disruption in grapevines.

The world's first and only sprayable option for VMB control, this product easily fits into growers' existing integrated pest management (IPM) program. It is tank-mixable with common agrochemicals and works well with nearly any water volume. This product releases VMB sex pheromone in microcapsules throughout the vineyard, reducing adult males' ability to find females to disrupt the mating cycle and suppress pest populations.

CheckMate® VMB-F gives growers the flexibility to spray two, three, four or more times each season depending on the timing and pressure of VMB in their vineyards. Many leading PCAs recommended the addition of CheckMate® VMB-F to grower spray programs during the 2019 growing season and saw excellent results lowering pest populations and less VMB damage. Also, CheckMate® VMB-F can be used with CheckMate® VMB-XL for a flexible approach against hot spots and additional late season control.

Suterra formulates and synthesizes pheromone in their state-of-the-art facility in Bend, Oregon. All of Suterra's mating disruption products are harmless to all other living organisms and beneficial insects.

Vine Mealybug
(Planococcus ficus)

Raisin grapes, table grapes and wine grapes

Look throughout your vineyard for honeydew and ant activity on vines

Monitor mating disruption effectiveness using small paper delta traps with sex pheromone lure

Hang traps in March to detect early activity

One trap per 10-20 acres; at least 2 traps per block

Hang at cordon height

Check traps a minimum of once every 2 weeks, replacing lures every 4 weeks

Decreased vine vigor, defoliation and grape cluster damage

Sooty mold damage on grapes due to honeydew production results in quality loss and unmarketable fruit

Spread of leafroll virus

For Additional Information

call: +1 541.388.3688
email: agsales@suterra.com
visit: suterra.com

Made in USA

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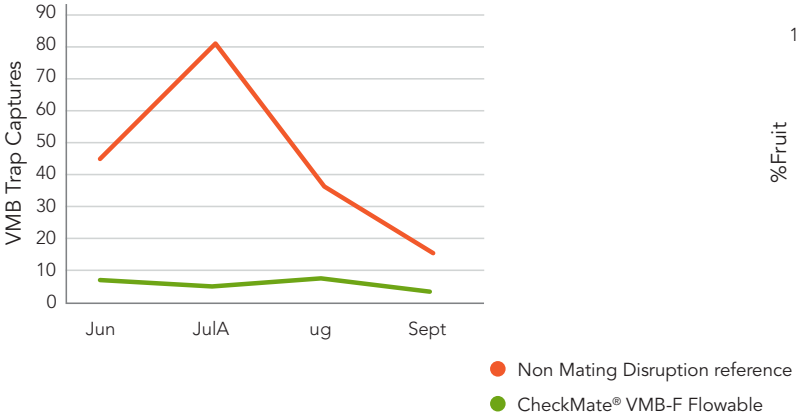
VMB-F Flowable
for Vine Mealybug (VMB)

Sprayable Pheromone Release Technology for Vine Mealybug Control

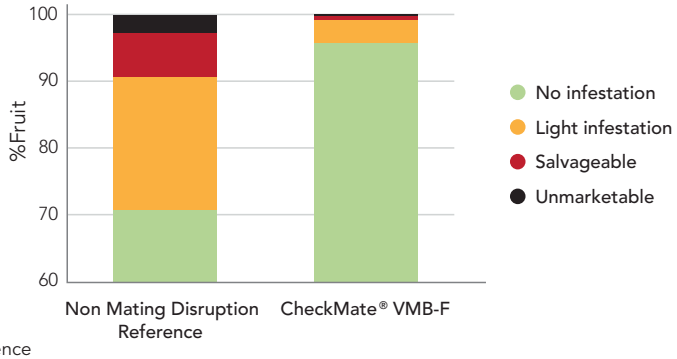
Trap Inhibition

CheckMate® VMB-F Flowable hindered the ability of males to find pheromone traps as compared to areas treated with grower standard practices.



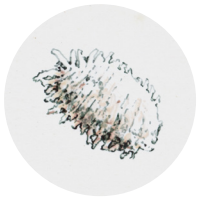
Damage Reduction

The addition of CheckMate® VMB-F Flowable into a comprehensive IPM program, cuts Vine Mealybug damage by 90%.



Vine Mealybug Identification

(Planococcus ficus)



Application Overview

- Shake well before use
- Do not use peristaltic (roller) or gear pumps
- Apply to the canopy
- Use 50 mesh screens or coarser
- Use D1 nozzles or larger
- Minimum 300 micron droplet size
- Reapply after significant rain

Made in USA

The use of Mating Disruption tools should be part of an overall Integrated Pest Management (IPM) program. The use of other pest control measures may be necessary and should be based on proper pest monitoring and field scouting.

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Suterra® CheckMate®

VMB-XL Dispenser
for Vine Mealybug (VMB)

DATASHEET

CheckMate® VMB-XL Dispenser

CheckMate® VMB-XL is Suterra's season-long mating disruption dispenser for control of Vine Mealybug (VMB) in grapevines.

This easy-to-deploy product releases the sex pheromone of the VMB pest continuously throughout the vineyard, reducing adult males' ability to find females to disrupt the mating cycle and suppress pest populations.

CheckMate® VMB-XL utilizes Suterra's proprietary release technology and is compatible with all integrated pest management (IPM) tools. This product can be used together with CheckMate® VMB-F. It is also suitable for organic production.

Suterra formulates and synthesizes pheromone ourselves in our state-of-the-art facility in Bend, Oregon. All of Suterra's mating disruption products are harmless to all other living organisms and beneficial insects.

Why Growers Choose VMB-XL Dispensers

- Reduces Vine Mealybug (VMB) populations and damage
- Fights insecticide resistance
- Easy-to-deploy proprietary pheromone release technology
- One application offers season-long solution
- Compatible with all IPM tools
- Can be used together with CheckMate® VMB-F
- Suitable for organic production
- Does not harm beneficial insects

Vine Mealybug
(Planococcus ficus)

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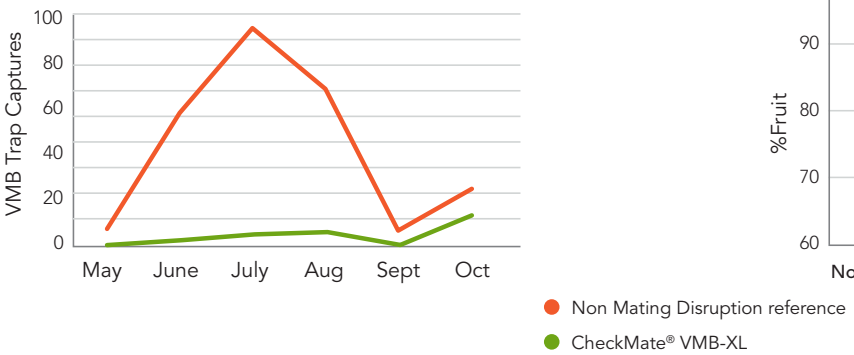
VMB-XL Dispenser
for Vine Mealybug (VMB)

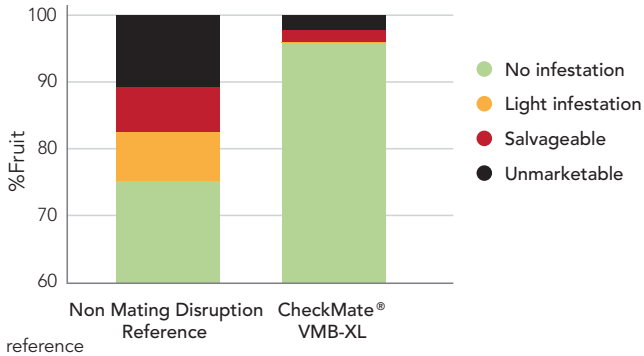
Trap Inhibition

CheckMate® VMB-XL hindered the ability of males to find pheromone traps as compared to areas treated with grower standard practices.



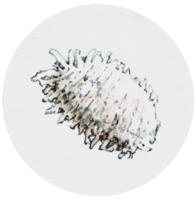
Damage Reduction

The addition of CheckMate® VMB-XL into a comprehensive IPM program, cuts Vine Mealybug damage by 75%.



Vine Mealybug Identification

(Planococcus ficus)



Application Overview

- Distribute throughout the vineyard according to your hang pattern
- Hang dispensers at the cordon wire or the base of the canes
- Hang in a shady location

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The use of Mating Disruption tools should be part of an overall Integrated Pest Management (IPM) program. The use of other pest control measures may be necessary and should be based on proper pest monitoring and field scouting.

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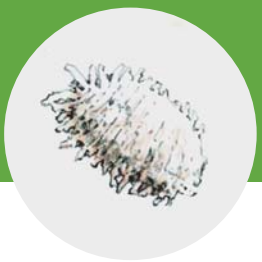
Vine Mealybug
Monitoring Guidelines

Grapevines



Planococcus ficus

For Monitoring Mating Disruption Performance

Materials and Methods

Traps	Suterra® Small Paper Delta Trap *(shown at right)*
Lures	Suterra® VMB Septa Lure *(shown at right)*
Trap Density	At least 1 pheromone trap per 10-20 acres, minimum of 2 traps per block
Good Practices	Hang traps in March to detect early activity, and continue to trap until late October/November Hang traps at cordon height, entrance should be free of branches and leaves Check traps and record captures a minimum of once every 2 weeks Replace traps at every check Replace lures monthly Keep unused lures in cold storage

Suterra®
Small Paper
Delta Trap

Suterra®
VMB Septa Lure

Sources: UC IPM Guidelines

Pest Identification

Adult Males *Length 0.7 mm* *(0.03 inches)*	Traps catch adult males only Males have 2 wings and 6 legs, Body is amber or brown Large eyes and long antennea Abdomen is narrow and thorax is wide Wings are transparent A lens or microscrope may be necessary for identification

Source: UC IPM Guidelines

For Technical Training on Monitoring: Contact your Suterra® Representative

Suterra® Monitoring Guidelines are suggestions only and may vary depending upon circumstances. Always read and follow individual label directions or consult with licensed agricultural pest control advisers for recommendations.

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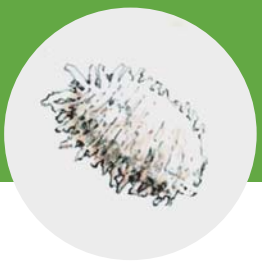
Vine Mealybug
Monitoring Guidelines

Grapevines



Planococcus ficus

Crop Damage Assessments

Timing	Conduct one survey after each flight or monthly
Sample Size and Examination	At least 100 plants per block during each survey Look for presence of honeydew, wet trunks, or ant activity Look for infested grape clusters; rotting grapes cause unmarketable fruit Trunk inspections are cumbersome but provide the best information: peel back bark to see females and crawlers Females and juveniles have very soft bodies, with a waxy coating and an overall cottony appearance Adult females are 2.5 - 3.5 mm long
Additional Techniques	Bunch inspections can be conducted, but ideally detection should occur before the fruit is reached

Sources: UC Guidelines

VMB infestation in fruit

VMB infestation under bark

VMB Females and Juvenile

The use of Mating Disruption tools should be part of an overall Integrated Pest Management (IPM) program. The use of other pest control measures may be necessary and should be based on proper pest monitoring and field scouting

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