

2019 WESTERN PRODUCT GUIDE

Crop Protection Solutions








ADAMA

Simply. Grow. Together.



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OUR BRAND PROMISE

Simply.

Our customers are central to everything we do. We recognize the complexities within agriculture and your business. Our singular focus is to create simplicity, never settling for the status quo. For you, this means we will always strive to deliver our solutions, our services and ourselves as simply as possible. This is what drives us.

Grow.

We understand that our growth and our customers’ growth go hand-in-hand. We are not interested in the quick return or win-lose relationships. Through our no-nonsense approach—as individuals and as ADAMA—we strive for mutual, sustainable growth and development wherever we invest ourselves. This is what our people and our customers can expect from us.

Together.

At ADAMA, we seek always to listen, to understand and to evolve with our customers. We recognize that in isolation, we can only be partially successful. That is why, when developing a new product or service, we work together with peers and customers. This collaboration ensures our solutions create value for all.

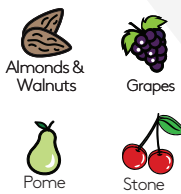
INSECTICIDES



INSECTICIDES



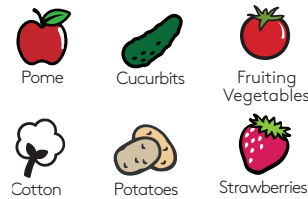
Advanced



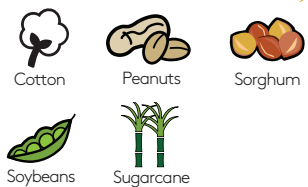
Apollo® SC / Clofentezine

Apollo SC is a long lasting ovicide/larvicide that delivers consistent residual control and flexible application timing. Its unique mode of action breaks the mite lifecycle by inhibiting egg respiration and stopping development in the first two larval stages. Excellent in an IPM rotation.

Container Size: 3 x 4 x 1 qt



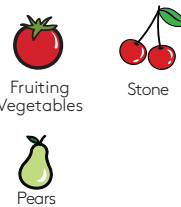
+ more!



Diamond® / Novaluron

As an insect growth regulator, Diamond breaks the life cycle of insects plus reduces adult female egg laying & egg viability to control plant bugs, stink bugs & caterpillars. Diamond is moderate on beneficials & provides long residual activity of target insects.

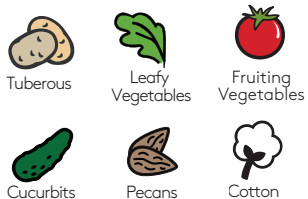
Container Size: 2 x 2.5 gal



Diazinon 50W & AG500 / Diazinon

Diazinon 50W & Diazinon AG500 control severe infestations of aphids, mealybugs, & other insect pests that have the potential to damage crops & reduce fruit quality.

Container Size: 8 x 5 x 1 lb (50W), 2 x 2.5 gal (AG500)



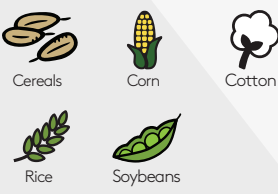
+ more!

Fulfill® / Pymetrozine

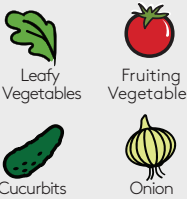
Fulfill is the aphid specialist with a unique mode of action that inhibits feeding one to two hours after ingestion & results in aphid death, which helps prevent the spread of plant viruses.

Container Size: 27.5 oz

Advanced



+ more!



Silencer® VXN / Lambda-Cyhalothrin

Silencer VXN is the only lambda-cyhalothrin brand with a 'Caution' signal word that delivers extended residual while rapidly controlling major economic pests on a wide variety of crops. Silencer VXN does not cause skin irritation, improving the user experience by simplifying handling & tank mixing.

Container Size: 4 x 1 gal, 125 gal

Trigard® / Cyromazine

Trigard penetrates leaves & kills leafminer larvae before they cause damage. Trigard offers up to two weeks of residual activity & is compatible with existing IPM programs.

Container Size: 17.955 lbs (18 x 6 x 2.66 oz)



+ more!

Vulcan® / Chlorpyrifos

Vulcan is a high-performance, reduced odor EC chlorpyrifos that is formulated to reduce impact on the environment. This powerful formulation maintains fuming action to provide quick knockdown & superior control & is the only 4 lb/gal liquid chlorpyrifos with a 'Caution' signal word.

Container Size: 2 x 2.5 gal

DID YOU KNOW?

- A pH of 5 is key for optimum control with Apollo.
- Vulcan is the only chlorpyrifos that doesn't require cholinesterase testing.
- Unlike other lambda-cys, Silencer VXN has no odor & doesn't cause skin irritation.
- In the right conditions, Diamond can help with a yield bump in cotton!
- Always use a penetrating surfactant with Fulfill to get maximum efficacy.



Essential



+ more!

Alias® 4F / Imidacloprid

Alias 4F is a unique 4-lb formulation that provides long-lasting, economic control of whiteflies, aphids & glassy-winged sharpshooters. It is labeled for soil applied, seed-piece or foliar applications.

Container Size: 4 x 1 gal, 4 x 1 qt



+ more!

Fanfare® ES / Bifenthrin

Fanfare ES provides quick knockdown of a broad range of soil & foliar pests. Fanfare ES, a low VOC (volatile organic compound) formulation, is an enhanced solution that performs like an EC with improved environmental impact & handling ease.

Container Size: 4 x 1 gal, 270 gal



Farewell® / Pyriproxyfen

Farewell controls whiteflies & other pests while remaining soft on pollinators & other beneficial insects.

Container Size: 4 x 1 gal



Pitch® 0.86 EC / Pyriproxyfen

Pitch offers excellent control of scale while remaining soft on pollinators & other beneficial insects.

Container Size: 4 x 1 gal

Essential



+ more!

Silencer® / Lambda-Cyhalothrin

Silencer provides fast knockdown activity and is labeled on more than 50 crops.

Container Size: 4 x 1 gal, 4 x 1 qt, 260 gal



Terva® 35WP / Pyriproxyfen

Terva provides excellent control of scale and is soft on pollinators & other beneficial insects. Labeled in California, Oregon & Washington.

Container Size: 4 x 10 x 4 oz

Apollo® SC

For broad spectrum mite control in tree nuts, vines, and tree fruit.

Apollo® SC is a long lasting ovicide/larvicide that delivers consistent residual control for up to 60 days. Its unique mode of action breaks the mite lifecycle by inhibiting respiration in eggs and stopping development of the first two larval stages. Apollo SC is highly effective for use throughout the growing season.

Apollo SC. Better Mite Control.

- Controls damaging mite species
- Up to 60 days of residual activity
- Targets egg & early larval stages
- Flexible application timing
- Soft on beneficial mites and insects



Product Features



5-Star

Broad mite control.
Targets 3 stages of lifecycle.
Easy handling. Low rates.



Residual Activity

Protects up to 60 days.
Reduces spray passes.
Saves money.



Application Flexibility

Early & mid-season control.
Tank mixes with adulticides.
Extends time between sprays.



Resistance Fighter

Unique mode of action.
Breaks resistance cycles.

Quick Facts

Active Ingredients

Clofentezine

Formulation

Suspension Concentrate

Signal Word

Caution

Target Insects

Two Spotted Spider Mite, European Red Mite, Pacific Mite and more

Mode of Action

Novel, but unresolved

Restricted Use

No

Group Number

10A

Timing

Early season, mid-season

Packaging Information

3 x 4 x 1 quart

EPA Registration

66222-47

Better Mite Control



Mite Control: Achieving High Performance

- 1 Label approved rate is 6 to 8 fluid ounces
- 2 Length of control will increase via rate adjustment
- 3 Expect 7 days of additional residual for each ounce administered
- 4 Use high spray volumes to cover top & bottom of leaf surfaces
- 5 Use a quality surfactant or horticultural oil per application
- 6 Early season use recommended following drought conditions
- 7 A pH of 5 or below is recommended to improve performance

Mite Lifecycle: Direct Impact

- Interrupts ovicidal & early immature development
- Inhibits respiration in eggs, larvae & nymph (Proto) stages
- Adult females lay infertile eggs as long as they stay on treated area
- Mode of action stops resistance between populations
- Non-toxic to beneficial mites, insects & pollinators
- No phytotoxicity observed



Mite Math: Re-population Statistics

- Mites thrive in hot, dry conditions (all U.S. geographies)
- Aggressive feeding & egg shed occurs at high temperatures
- 1 adult female can produce 120 offspring in a single reproductive cycle
- At optimal temperatures 1 life cycle can occur in 5 to 7 days
- 60 females can produce 26 million offspring in 4 generations

How Apollo Works



Inhibits Egg Respiration



Reduces Fecundity



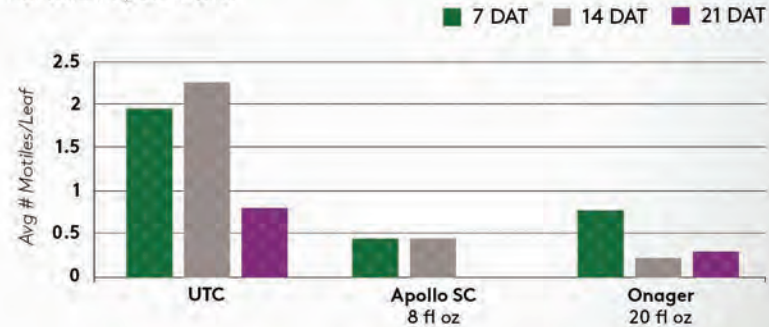
Stops Nymph Development



Easy on Beneficials

Control of Twospotted Spider Mite in Grape

Porterville, CA 2015



Stops Pests Now!

Cormoran is a foliar applied insecticide that controls damaging life stages of a broad range of target pests. With two modes of action, Cormoran provides both knockdown and residual and is an excellent rotational tool.

Cormoran. For Serious Insect Protection.

- Knockdown + Residual
- Manages Resistance
- Broad Spectrum Control



Product Features



5-Star

Broad spectrum.
Optimized premix rates
Soft on beneficials.



Fighting Resistance

Two distinct modes of action.
Stops damage before it starts.



Application Flexibility

Controls both eggs &
larvae of target pests.
Versatile timing & rates.
Good tank mix partner.



Residual Activity

Long lasting protection.
Reduces applications.
Saves money.

Quick Facts

Active Ingredients

Novaluron + Acetamiprid

EPA Registration #

66222-264

Mode of Action

Chitin inhibitor + nicotinic
receptor modulator

Target Pests

Spotted Wing Drosophila, Plant
Bug, Whitefly, Lepidoptera

Signal Word

Caution

Formulation

Dispersible Concentrate

Group Number

15 + 4A

Timing

At egg lay stage

Restricted Use

No

Packaging Information

2 x 2.5 gallon case

Cormoran on Stone & Broccoli



"Cormoran worked very well on whitefly in my fall cantaloupes. Two week residual and very economical price. Also works very well on brassicas. Great on looper and whitefly."

Matthew Phillips | Sunland Chemical, Arizona

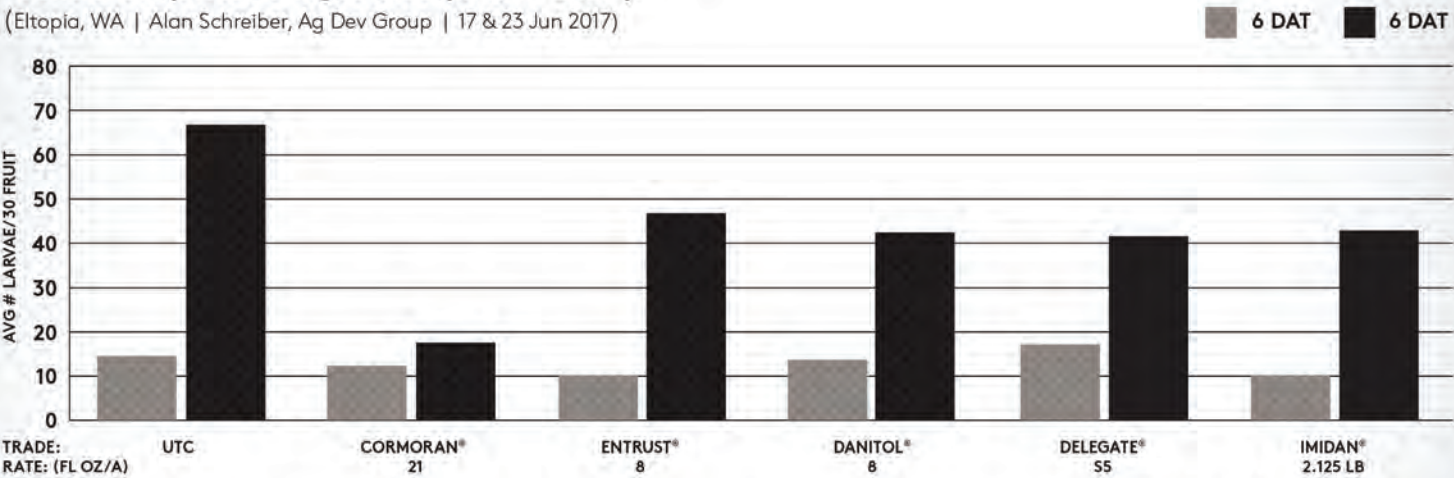
Cormoran is an optimized pre-mix of novaluron and acetamiprid with two modes of action, taking away the guesswork of mixing while providing an excellent rotational product to aid in the management of insecticide resistance. The chitin inhibitor mode of action in Cormoran specifically

targets egg and immature insect stages. This means that immature insects are unable to molt and grow a new exoskeleton, so they can never mature and reproduce. Since immature insects can't reproduce to create a new generation, this mode of

action is excellent for residual control as adults die off. Cormoran's nicotinic receptor modulator affects sucking pests systemically and prevents them from being able to feed on valuable crops. This mode of action accounts for the knockdown properties of Cormoran.

*Control of Spotted Winged Drosophila in Cherry

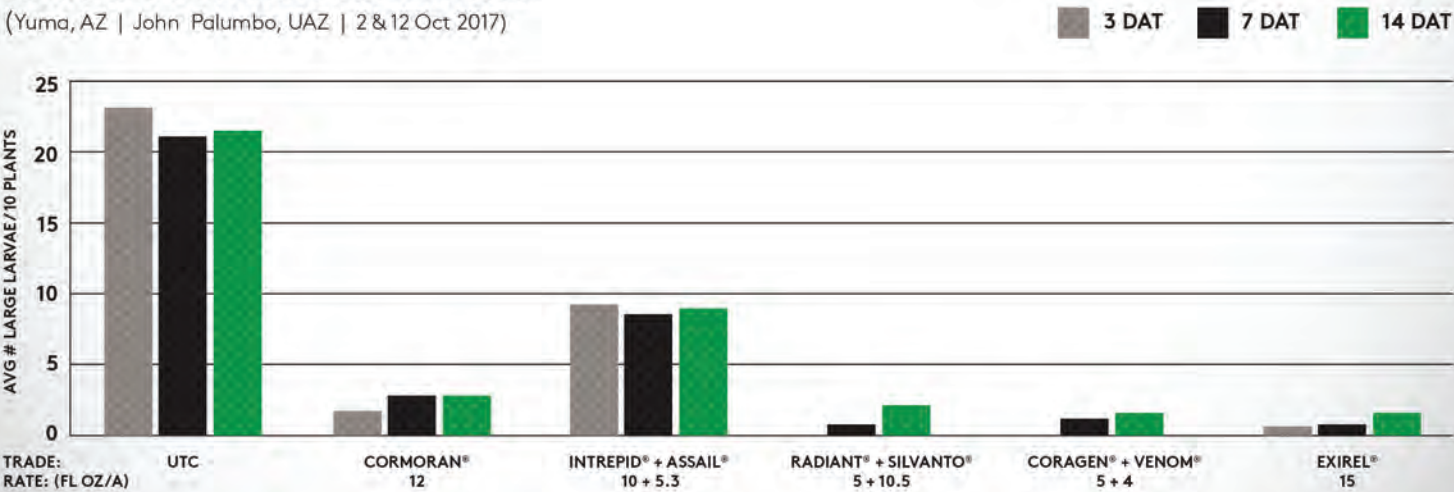
(Eltopia, WA | Alan Schreiber, Ag Dev Group | 17 & 23 Jun 2017)

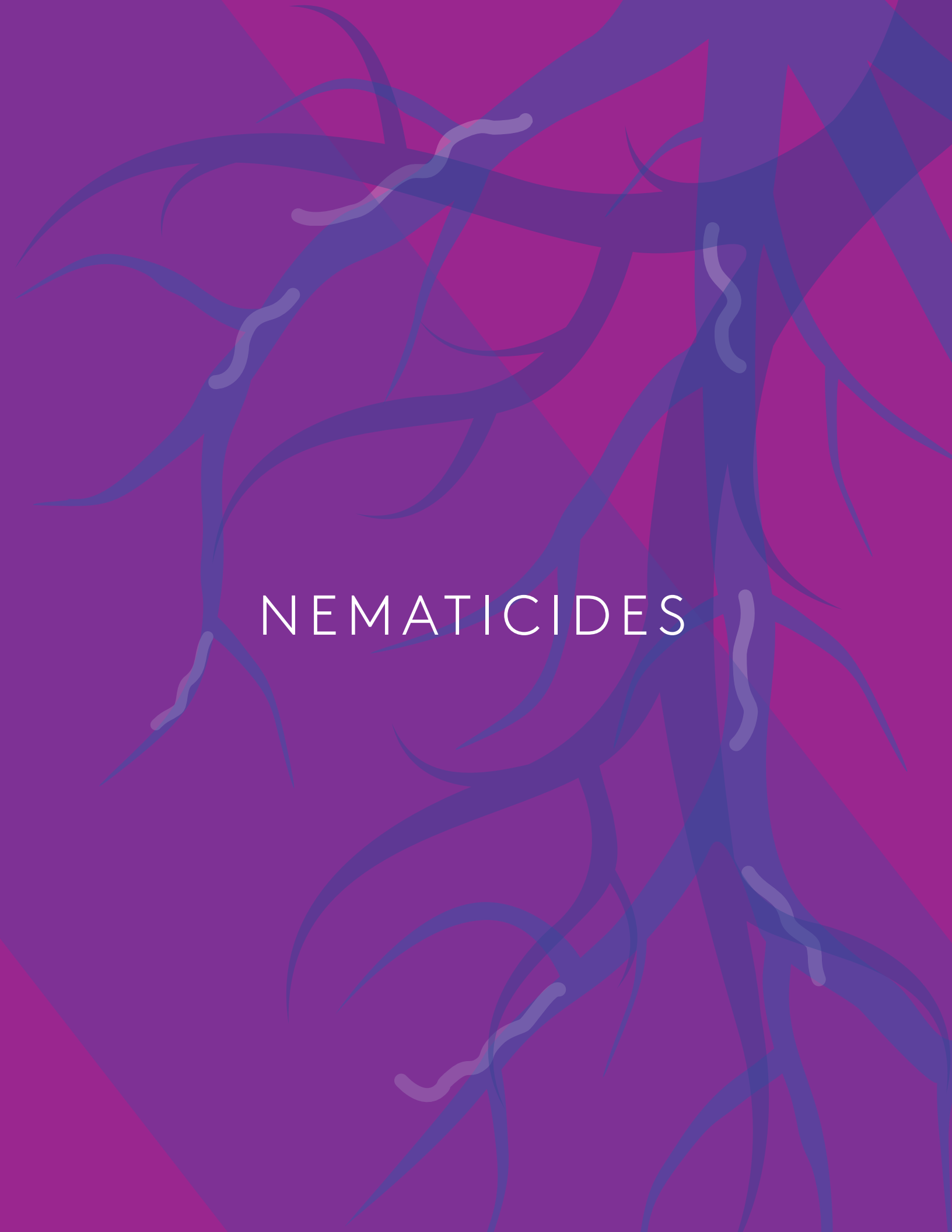


*Pending EPA review & approval

Control of Diamondback Moth in Broccoli

(Yuma, AZ | John Palumbo, UAZ | 2 & 12 Oct 2017)





NEMATOCIDES

NEMATOCIDES

Advanced



+ more!

NIMITZ® / Fluensulfone
NIMITZ is a highly effective non-fumigant nematicide that provides selective control of plant-parasitic nematodes (PPN). This non-restricted use pesticide kills targeted nematodes within 24 to 48 hours. By halting nematode feeding & reducing root damage and resulting pathogen infection, NIMITZ helps enhance root health & ongoing plant development.
Container Size: 2 x 2.5 gal

THE POWER OF NIMITZ

In addition to efficacious control of PPN, NIMITZ offers simple application features & improved handling characteristics.

NIMITZ promotes a healthier crop by protecting roots from damaging nematodes and preserving beneficial nematodes, fungi & other microbes that enhance soil health. Under PPN pressure, NIMITZ maximizes crop yield & quality potential, protecting growers’ bottom line.

- Premier Benefits**
- Superior protection against yield-robbing PPN
 - Better root health
 - Fewer complexities & less risk
 - Improved production sustainability

	FUMIGANT	NIMITZ
Management Plan Required	YES	NO
Strict PPE	YES	NO
24 HR Field Monitoring	YES	NO
Buffer Zones	YES	NO
Long Pre-Plant Waiting Period	YES	NO
Long Re-Entry Interval	YES	NO
Kills Beneficial Nematodes	YES	NO

VISIT [NIMITZWORKS.INFO](https://nimitzworks.info) TO LEARN MORE

FUNGICIDES

FUNGICIDES

Advanced



Fruiting Vegetables



Tuberous



Roots



Leafy Vegetables



Peanuts



Tree Nuts

+ more!

Bravo Ultrex® / Chlorothalonil

Bravo Ultrex is designed to adhere tightly to the leaf's surface, sticking and staying where it's sprayed for coverage you can count on, even in heavy rains. Plus, the convenient water-dispersible granule formulation makes Bravo Ultrex easy to store and easy to use.

Container Size: 27.4 lb



Fruiting Vegetables



Peanuts



Cucurbits



Leafy Vegetables



Soybeans



Almonds

+ more!

Bravo Weather Stik® / Chlorothalonil

Bravo Weather Stik is a broad-spectrum foliar protectant fungicide labeled for use on fruits & vegetables. It has a unique and patented formulation that sticks and stays on the plant surface longer than any other preventative fungicide available.

Container Size: 2 x 2.5 gal, Bulk



Grapes



Berries



Stone



Strawberries



Pome



Almonds

+ more!

Captan Gold® 80 WDG and 4L / Captan

Captan Gold is a broad spectrum, non-systemic contact fungicide that acts immediately to control fungal spores. Captan has more than 50 years of use with no documented case of resistance, making it an excellent tool for IPM programs.

Captan Gold's premiere 80WDG formulation has less dust and easy-open packaging for an improved use experience; plus, it dissolves easily in water for optimum performance.

Captan Gold 4L is the only liquid captan formulation with a 'Caution' signal word.

Container Size: 8 x 6.25 lb, 20 lb, 30 lb (80WDG), 2 x 2.5 gal (4L)



Tree Nuts



Fruiting Vegetables



Cucurbits



Leafy Vegetables



Oranges



Grapes

+ more!

Mastercop® / Copper Sulfate Pentahydrate

Mastercop is a higher quality copper formulation that provides superior control and mixing without the coating of copper residues and soil toxicity.

Container Size: 2 x 2.5 gal

MASTERCOP®
MAXIMUM CONTROL, MINIMUM
ENVIRONMENTAL IMPACT

Mastercop—the only true copper fungicide/bactericide solution with BioRetain™ technology — exhibits maximum control with minimal environmental impact.

What is BioRetain?

BioRetain is a next-generation formulation technology that delivers a smaller copper particle size with immediate bio-availability. This means better spray coverage with uniform & quick distribution of copper ions as well as an improved uptake system, including enhanced leaf adhesion, penetration, bio-availability, and retention within the leaf cuticle. With broad-spectrum protection and multi-site activity, it is ideal for Integrated Pest Management programs. With less % metallic copper than traditional coppers, Mastercop also complies with new proposed EPA maximum copper application rules.

Use Mastercop to AVOID hassles like:

- Clogging nozzles & filters
- A face full of dust when mixing
- Settling in the tank, creating sludge
- Phytotoxicity



Premier Benefits

- Better coverage per spray
- Uniform & quick distribution of copper
- Improved uptake system
- Enhanced leaf adhesion, retention & residual activity
- Superior crop safety
- Excellent tank partner

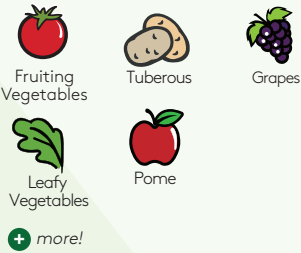
VISIT MASTERCOP.INFO TO LEARN MORE

FUNGICIDES continued

For more information visit adama.com



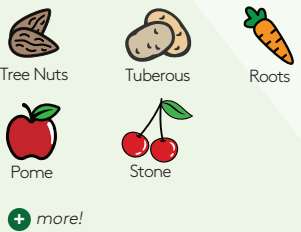
Essential



Harbour® / Ag Streptomycin Sulfate

Harbour controls fire blight, bacterial stem and leaf rot, bacterial spot, bacterial blight, bacterial wilt, crown gall, potato soft rot and blackleg plus tobacco blue mold and wildfire.

Container Size: 10 x 2 lb



Incognito® 4.5 F and 85 WDG / Thiophanate-Methyl

Incognito is a systemic, preventative and curative broad-spectrum fungicide for control of yield-robbing plant diseases.

Container Size: 2 x 2.5 gal, 270 gal, 5 lb (85 WDG)



Nevado® 4F / Iprodione

Nevado 4F is a locally systemic, broad-spectrum fungicide with a multi-site mode of action that reduces the risk of resistance against tough diseases.

Container Size: 2 x 2.5 gal

HERBICIDES

HERBICIDES

Essential



Roots



Tuberos



Soybeans



Fruiting
Vegetables

+ more!

Arrow® 2EC / Clethodim

Post-emergence — Arrow 2EC controls the most troublesome annual & perennial grass weeds in a wide range of crops.

Container Size: 4 x 1 gal



Cotton



Alfalfa



Stone



Pome



Oranges

+ more!

Direx® 4L / Diuron

Pre- and post-emergence — Direx 4L provides unmatched versatility, value & long-residual weed control, including control of many species that are resistant to glyphosate.

Container Size: 2 x 2.5 gal, 270 gal



Berries



Oranges



Stone



Pome



Grapes



Tree Nuts

Fugitive® / Oryzalin

Post-emergence — Fugitive offers reliable pre-emergence control of grasses & small-seeded broadleaf weeds in vineyards, orchards & row crops.

Container Size: 2 x 2.5 gal



Cotton



Oranges



Pome



Soybeans

+ more!

Galigan® 2E / Oxyfluorfen

Pre- and post-emergence — Galigan 2E is a powerful residual broadleaf herbicide & an ideal tank-mix partner with glyphosate or paraquat for long lasting control of broadleaf weeds and many grasses.

Container Size: 2 x 2.5 gal



Oranges



Alfalfa



Cotton



Pome



Grapes

+ more!

Karmex® DF / Diuron

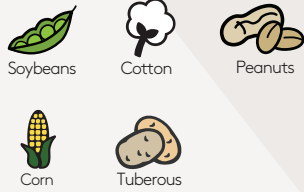
Pre- and post-emergence — Karmex DF is a reliable herbicide that offers long-term residual control of wide range of tough grasses & broadleaf weeds.

Container Size: 10 x 5 lb, 25 lb

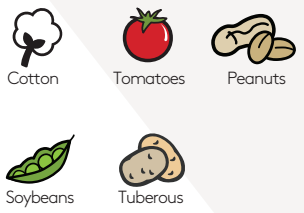


For more information visit adama.com

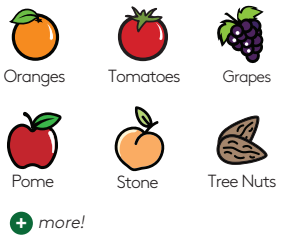
Essential



Parallel® / Metolachlor + safener
Pre- and post-emergence — Parallel is designed for corn & provides outstanding control of grasses & small-seeded broadleaf weeds. It is ideal as a layered residual with pre or post-emergence use and can be tank mixed with a variety of broadleaf herbicides for broad spectrum weed control.
Container Size: 2 x 2.5 gal, 270 gal, Bulk



Parallel® PCS / Metolachlor
Pre- and post-emergence — Parallel PCS provides outstanding control of grasses & small-seeded broadleaf weeds. It is ideal as a layered residual with pre or post-emergence use and can be tank mixed with a variety of broadleaf herbicides for broad spectrum weed control.
Container Size: 2 x 2.5 gal, 270 gal



Pruvin® 25DF / Rimsulfuron
Pre- and post-emergence — Pruvion 25DF controls many troublesome grass and broadleaf weeds in tomatoes and several other fruit and nut crops.
Container Size: 10 x 20 oz



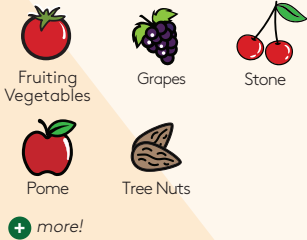
Triflurex® HFP / Trifluralin
Pre-plant incorporated — Triflurex HFP is a selective herbicide for the control of annual grasses & small-seeded broadleaf weeds in many crops.
Container Size: 2 x 2.5 gal, 270 gal, Bulk

HARVEST AIDS/PGRs



For more information visit adama.com

Essential



Ethephon 2SL™ / Ethephon
Growth Regulator — Ethephon 2SL promotes earlier ripening and maturation of a variety of fruit and nut crops. Ethephon accelerates ripening and drop of unharvested fruit.
Container Size: 4 x 1 gal, 2 x 2.5 gal



Klean-Pik® 500 SC / Thidiazuron
Defoliant — Powerful defoliant with excellent tank mix flexibility with boll openers like Setup®.
Container Size: 4 x 1 gal



Redi-Pik® 1.5 EC / Thidiazuron + Diuron
Defoliant — Same great defoliation as Klean-Pik with faster action and reduced regrowth.
Container Size: 2 x 2.5 gal



Setup® 6L / Ethephon
Boll Opener — Setup 6L opens nearly 98 percent of mature, unopened bolls within 7 to 14 days of treatment to help boost overall yield and harvestability.
Container Size: 2 x 2.5 gal, 270 gal

YOUR ADAMA TEAM



Jared Clavin
Northern CA Solution Specialist
• 209.844.6651
• jared.clavin@adama.com

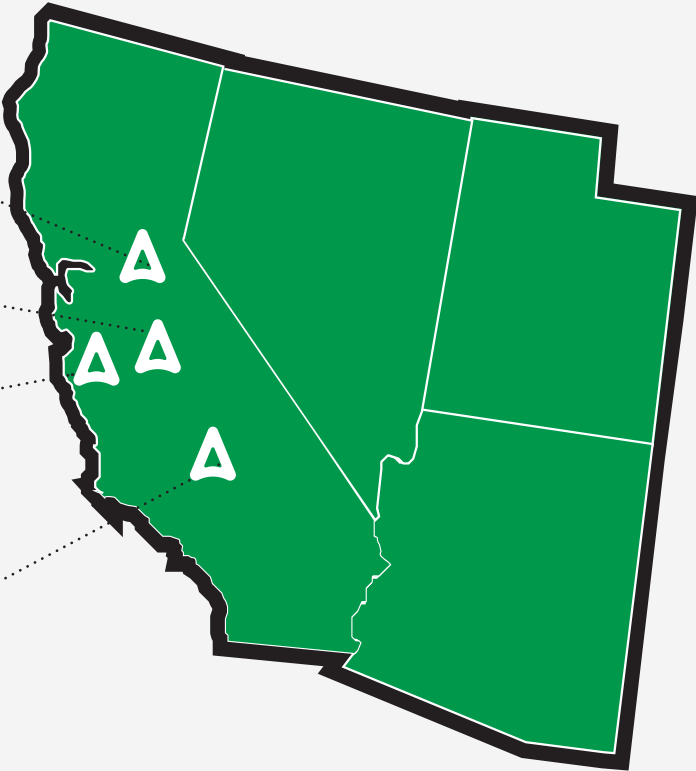


Michael DeWall
Central CA Solution Specialist
• 559.301.7618
• michael.dewall@adama.com



Lesley Miller
Coastal CA Solution Specialist
• 831.206.1414
• lesley.miller@adama.com

Southern CA Solution Specialist



Dennis Fuller
Western Regional Leader
• 559.997.5733
• dennis.fuller@adama.com



Warren Hragyil
Account Leader
• 319.240.5550
• warren.hragyil@adama.com



Mitchell Stamm
Regional Development Leader
• 919.802.0260
• mitchell.stamm@adama.com



Kendall Barton
Regional Marketing Leader
• 209.629.6945
• kendall.barton@adama.com

With Registered Crops

NOTES



Nematicide

[illegible][illegible]



Call 866.406.6262 or visit adama.com for more information

ALWAYS READ AND FOLLOW LABEL DIRECTIONS.

Diazinon, Diazinon 50W, Diazinon AG500, Fanfare 2EC, Fanfare ES, Silencer, Silencer VXN and Vulcan are Restricted Use Pesticides.

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