

**SOLUTION
GUIDE**

FLORIDA CITRUS CROPS



Nufarm
Grow a better tomorrow

FLORIDA CITRUS SOLUTIONS OVERVIEW

	PRODUCT	RE-ENTRY INTERVAL	PRE-HARVEST INTERVAL
INSECTICIDES / MITICIDES			
Asian citrus psyllid, broad mite, citrus broad mite, citrus leafminer, citrus rust mite, citrus thrips, leafhoppers, leafminers, thrips, two-spotted spider mite, whiteflies	Abamex™	12 hours	7 days
Aphids, leafminers, mealybugs, mole crickets, plant bugs, sawflies, scales, termites, thrips Diseases suppressed via vector control: citrus tristeza virus, citrus yellows	Nuprid® 4F MAX	12 hours	0 days
HERBICIDES (NON-SELECTIVE / SELECTIVE)			
Chickweed, clover, crabgrass, dandelion, fleabane, foxtail, henbit, horseweed (marestail), lambsquarters, mallow, malva, morningglory, nutsedge, purslane, ragweed, ryegrass, spurge, vetch, woodsorrel*	Cheetah® • Non-selective	12 hours	14 days
Wide spectrum of emerged grass, broadleaf and sedge species*	Credit® Xtreme • Non-selective	4 hours	1 day
Filaree, Florida pusley, lambsquarters, morningglory, pigweed, prickly sida, spurge*	Goal® 2XL • Selective	24 hours	365 days
Filaree, Florida pusley, lambsquarters, morningglory, pigweed, prickly sida, spurge*	GoalTender® • Selective	24 hours	365 days†
Chickweed, dandelion, filaree, groundsel, henbit, horseweed (marestail), Johnsongrass, lambsquarters, little mallow, London rocket, mustard, nightshades, pigweeds, prickly lettuce, puncturevine, purslane, radish, redmaids, shepherd's-purse, sowthistle, waterhemp*	Tuscany® SC • Selective	12 hours	3 days
FUNGICIDES / BACTERICIDES			
Alternaria, citrus canker, greasy spot, melanose, scab*	Champion++™	48 hours	0 days
Alternaria, citrus canker, greasy spot, melanose, scab*, black spot**	Champ® Dry Prill	48 hours	0 days
Alternaria, citrus canker, greasy spot, melanose, scab*	Champ® Formula 2 Flowable	48 hours	0 days
Alternaria, citrus canker, greasy spot, melanose, scab*, black spot**	Champ® WG	48 hours	0 days
Citrus foot rot, root rot, trunk canker, Gummosis, Phytophthora spp.*	Ultra Flourish®	48 hours	0 days
Foot rot, root rot, brown rot (Phytophthora spp.)	Phostrol®	4 hours	0 days
HLB suppression - supplemental label	Mycoshield®	12 hours	40 days

*See label for complete list

**2EE labeled use for Florida

†Apply GoalTender only to non-bearing citrus (trees that will not bear fruit for one year)



TARGET MITES AND OTHER TOUGH PESTS.

New low VOC, water-based formulation. Unique mode of action offers residual control against mites and leaf-feeding beetles and worms, leafminers, psyllids and thrips. Abamex™ Insecticide is labeled for use on many crops including a variety of citrus fruits.

ACTIVE INGREDIENT

abamectin 2.0% (0.15 lb active ingredient/gal) (Group 6 insecticide)

BENEFITS OF ABAMEX

- Provides excellent control of mites, leafminers, and other insects
- Flexible application timing in an easy-to-use liquid formulation
- Short 12-hour REI
- Rainfast within hours of application

KEY PESTS CONTROLLED See label for citrus insects

Asian citrus psyllid, citrus leafminer, two-spotted spider mites

APPLICATION GUIDELINES

Concentrate sprays: Apply 5-20 fl oz/A.

Apply using conventional ground equipment using a minimum of 40 gallons of water per acre and a horticultural spray oil at 0.25% v/v.

Best mite control is achieved when spray is deposited on new foliage growth. Use alternate modes of action if infestation requires multiple treatments.

- Re-entry interval: 12 hours
- Pre-harvest interval: 7 days

Abamex™ is an EPA Restricted-Use Pesticide. Always read and follow label directions.

See citrus label for complete directions for use.

Nuprid® 4F MAX

THE CLEAR CHOICE FOR TOUGH INSECTS.

Nuprid® 4F Max systemic insecticide provides economical and long-lasting control of a broad spectrum of damaging insects. The expanded label allows for both soil and foliar application on a variety of crops, including citrus. It offers outstanding control of aphids, whiteflies, mealybugs, leafhoppers and many other sucking and piercing pests. Nuprid 4F Max delivers consistent performance, plus it's easy to mix, use and apply.

ACTIVE INGREDIENT

imidacloprid 40.4% (4 lbs active ingredient/gal) (Group 4A insecticide)

BENEFITS OF NUPRID 4F MAX

- Selective control of key sucking and piercing insects
- Expanded label allows for soil and foliar application on multiple crops
- Reliable performance against yield robbing pests
- Helps stop transmission of insect-vector citrus tristeza virus (CTV)
- Readily mixes with other tank-mix partners to save a trip across the field

KEY PESTS CONTROLLED See label for citrus insects

Aphids, cherry fruit fly, fleahoppers, green June beetle, leafminers, mealybugs, mole crickets, plant bugs, sawflies, scales, termites, thrips, white grub complex, wireworms

APPLICATION GUIDELINES

Soil Applications: Apply at 8.0 to 16.0 oz/A.

Foliar Applications: Apply at 4.0 to 8.0 oz/A.

Nuprid 4F Max may also be applied through drench application methods. Thorough uniform coverage is necessary to achieve insect control. Use adequate spray volumes, properly calibrated application equipment, and an adjuvant to improve coverage. Failure to provide adequate coverage and retention of this product on leaves and fruit may result in loss of insect control or delay in onset of activity.

- Re-entry interval: 12 hours
- Pre-harvest interval: 0 days

See label for complete directions for use.



SATISFACTION: CLEANER. QUICKER. CHEETAH®.

Cheetah® Herbicide utilizes a novel mode of action to better protect your high-value TNVW crops from weed competition including glyphosate-resistant weeds. This fast non-selective herbicide will let you focus more on profitability and less on weeds.

ACTIVE INGREDIENT

glufosinate-ammonium 24.5% (2.34 lb active ingredient/gal) (Group 10 herbicide)

BENEFITS OF CHEETAH

- Fast non-selective control of tough grass, sedge, and broadleaf weeds
- Best glyphosate alternative, offering broad-spectrum weed control
- Directed sprays provide excellent control and crop safety in orchards
- Controls glyphosate-resistant weeds without special handling restrictions

KEY WEEDS CONTROLLED See label for complete list

Chickweed, clover, crabgrass, dandelion, fleabane, foxtail, henbit, horseweed (marestail), lambsquarters, mallow, malva, morningglory, nutsedge, purslane, ragweed, ryegrass, spurge, vetch, woodsorrel

APPLICATION GUIDELINES

Apply 48.0 to 82.0 fl oz/A as determined by weed size.

Apply as a broadcast, banded, spot treatment, or direct spray.

Apply to emerged, young actively growing weeds. Warm temperatures, high humidity and bright sunlight improve the performance.

Weeds under stress or in dense populations will require application at the highest specified label use rate.

- Re-entry interval: 12 hours
- Pre-harvest interval: 14 days
- Spray interval: 14 days

See label for complete directions for use.

Credit® Xtreme

POWERFUL WEED CONTROL.

Credit® Xtreme Herbicide from Nufarm delivers powerful performance. The rapid uptake leads to quicker activity and rainfastness, so you can apply it with confidence. Credit Xtreme has an acid equivalent content of 4.5 lbs glyphosate per gallon and treats 50% more acres than many products which only have 3.0 lbs a.e. per gallon.

ACTIVE INGREDIENT

glyphosate: isopropylamine salt 30.94%, potassium salt 22.99% (equivalent to 540 g/l, or 4.5 lbs/gal of the acid glyphosate) (Group 9 herbicide)

BENEFITS OF CREDIT XTREME

- Contains proprietary Dual-Salt Technology™ for faster translocation activity and rainfastness
- Takes on the toughest weeds with quick burndown and complete control
- Excellent tank-mix compatibility, even in hard water environments
- Treats more acres per tote than many alternative glyphosate products

KEY WEEDS CONTROLLED See label for complete list

Many tough weeds like paragrass and guineagrass

APPLICATION GUIDELINES

Apply 1.3 to 3.3 qt/A in 3 to 30 gallons of water per acre. Where weed foliage is dense, use 10 to 30 gallons of water per acre.

Allow a minimum of 1 day between last application and harvest in citrus crops. For citron groves, apply as directed sprays only.

- Re-entry interval: 4 hours
- Pre-harvest interval: 1 day

See label for complete directions for use.

Goal® 2XL

GoalTender®

STAY UNDEFEATED WITH GOAL® 2XL AND GOALTENDER®

The Goal® brand family controls dozens of broadleaf and grassy weeds with pre- and post-emerge on-contact activity. Goal herbicides form a chemical barrier on the soil surface, catching weeds as they emerge for up to 8 months. Goal 2XL delivers extra power in a user-friendly emulsifiable concentrate while water-based GoalTender allows for greater crop safety and application flexibility.

ACTIVE INGREDIENT

GOAL 2XL: oxyfluorfen 22.3% (Group 14 herbicide)

GOALTENDER: oxyfluorfen 41% (Group 14 herbicide)

BENEFITS OF GOAL 2XL AND GOALTENDER

- Pre- and post-emerge control, as a pre-emerge, Goal herbicides form a soil-surface barrier to block weeds through direct contact at emergence
- Tried and tested gold standard herbicide with proven staying power and flexible application options
- Select from Goal 2XL power in a user-friendly emulsifiable concentrate or water-based GoalTender for performance on tender crops with low use rates and less environmental load

KEY WEEDS CONTROLLED See label for complete list

Filaree, Florida pusley, lambsquarters, morningglory, pigweed, prickly sida, spurge

APPLICATION GUIDELINES

Apply to non-bearing citrus orchards only. Apply only as a directed spray to the orchard floor avoiding contact with citrus foliage.

Pre-emergence: Apply for residual pre-emerge weed control

GOAL 2XL: up to 6 pt/A

GOALTENDER: up to 3 pt/A

Post-emergence: Highest use rates will control weeds up to 4 inches tall

GOAL 2XL: 2 to 6 pt/A

GOALTENDER: 1 to 3 pt/A

Weeds greater than 4-leaf or 4 inches tall may be partially controlled. Use sufficient spray volume for complete and uniform coverage of weeds. Increase the spray volume with increased weed height and density to ensure complete coverage.

- Re-entry interval: 24 hours
- Maximum amount per acre per season: 6 pt/A (Goal 2XL), 3 pt/A (GoalTender)

See label for complete directions for use.



YOUR CROP. OUR GOAL.

— NOW FROM NUFARM —

Goal® 2XL AND GoalTender®

- /// PROVEN PRE- AND POST-EMERGE CONTROL
- /// LONG-LASTING RESIDUAL ACTIVITY
- /// EXCELLENT TANKMIX PARTNER

[NUFARM.COM/USCROP/MYGOAL](https://www.nufarm.com/uscrop/mygoal)



STAY WEED-FREE WITH LIQUID TUSCANY® SC.

Now in a convenient liquid formula, the tree, nut and vine specialist, Tuscany® SC Herbicide blocks more than 60 tough weeds with long-lasting residual control. Liquid Tuscany SC stays where you put it, with low leaching and volatilization potential. For proven crop safety and dependable control in various weather conditions, count on Tuscany SC.

ACTIVE INGREDIENT

flumioxazin 41.4% (4 lb per gallon) (Group 14 herbicide)

BENEFITS OF TUSCANY SC

- Controls a broad spectrum of annual broadleaf and grass weeds, including most broadleaf weeds resistant to glyphosate
- Convenient liquid formulation makes mixing and loading faster and easier
- Enhances burndown of existing weeds when tank-mixed with Cheetah® (glufosinate) or Credit® Xtreme (glyphosate)
- Lasting residual control to keep orchard floors clear for months
- At least 1/4 inch rainfall or irrigation required to release activity

KEY WEEDS CONTROLLED See label for complete list

Chickweeds, dandelion, filaree, groundsel, henbit, horseweed (marestail), Johnsongrass, lambsquarters, little mallow, London rocket, mustard, nightshades, pigweeds, prickly lettuce, puncturevine, purslane, radish, redmaids, shepherd's-purse, sowthistle, waterhemp

APPLICATION GUIDELINES

Apply 6.0 to 12.0 fl oz/broadcast acre plus 0.25% v/v non-ionic surfactant or 1 qt/A concentrate as determined by weed.

Apply as a broadcast, banded, or spot treatment.
Apply as a pre-emergence or post-emergence application.

Thorough spray coverage is necessary to maximize the post-emergence activity.

- Re-entry interval: 12 hours
- Pre-harvest interval: 3 days

See label for complete directions for use.



SMALLEST COPPER PARTICLES, MORE COMPLETE CONTROL.

ChampION⁺⁺™ Fungicide/Bactericide* has the smallest, most consistent copper ions (particles) of any WG copper formulation. The result: better coverage and better disease control. And, ChampION⁺⁺ delivers all that with less environmental load than high dose copper products.

ACTIVE INGREDIENT

copper hydroxide 46.1% (30% metallic copper equivalent)
(Group M1 fungicide)

BENEFITS OF ChampION⁺⁺

- Small particle size results in excellent coverage and disease protection
- Stable WG formula pours easily and disperses quickly
- High density copper product means lower use rates and smaller pack sizes
- Controls plant pathogenetic fungi and bacteria (non-public health bacteria)
- OMRI Listed® for use in organic crop production

KEY DISEASES CONTROLLED See label for complete list

Alternaria, citrus canker (suppression), greasy spot, melanose, scab

APPLICATION GUIDELINES

Alternaria Brown Spot: Apply at 1.75 to 3.5 lb/A to susceptible varieties on the first flush in the spring and every additional flush. Application to fruit should start after two-thirds of the petals have fallen. Repeat applications at 7 to 21 day intervals.

Citrus Canker (suppression): Apply 1.0 to 2.5 lb/A to fresh flushes 7 to 14 days after shoots begin to grow. Make an additional application to young fruit if needed. Make applications to each flush when disease pressure is severe.

Greasy Spot: Apply 0.75 to 2.5 lb/A in summer on new growth/flush. Repeat applications to new growth/flush when disease pressure is severe. Apply using the higher rates when conditions favor disease development.

Melanose and Scab: Apply 1.75 to 5.0 lb/A as a pre-bloom and post-bloom spray using the higher rates when conditions favor disease development.

- Re-entry interval: 48 hours
- Spray interval: 7 to 21 days

See label for complete directions for use and additional disease control applications.

*Non public health bacteria

Champ® Dry Prill

FIGHT DISEASES WITH CHAMP® DRY PRILL.

Champ® Dry Prill is an advanced copper formulation that delivers excellent disease control. It is the only dry prill copper available for no-dust mixing and handling.

ACTIVE INGREDIENT

copper hydroxide 57.6% (37.5% metallic copper equivalent) (Group M1 fungicide)

BENEFITS OF CHAMP DRY PRILL

- Only dry prill copper product on the market – unique polymer process results in a virtually dust-free formula
- Unique adjuvants that enhance coverage and retention
- Mixes fast and easily
- Excellent control of key diseases

KEY DISEASES CONTROLLED See label for complete list

Alternaria, black spot*, citrus canker (suppression), greasy spot, melanose, scab

APPLICATION GUIDELINES

Alternaria Brown Spot: Apply 5.33 to 6.67 lb/A to susceptible varieties on the first flush in the spring and every additional flush. Application to fruit should start after two-thirds of the petals have fallen. Repeat applications at 7 to 21 day intervals.

Black Spot*: Apply 2.0 to 3.75 lb/A prior to or when disease symptoms first appear. Continue applications at 7 to 21 day intervals as needed. Use higher rates when conditions favor disease development. The minimum retreatment interval is 7 days.

Citrus Canker - Florida Specific (suppression): Apply 1.25 to 8.0 lb/A. Begin applications to protect new leaf flushes. Repeat at 14 to 21 day intervals, or every 7 days if needed. It is important to protect all subsequent leaf flushes throughout the year. Young fruit may require an additional application.

Under dry conditions and low disease pressure, use 1.25 to 2.5 lb/A. Under wet conditions and high disease pressure, higher rates may be required (4.0 to 8.0 lb/A).

Greasy Spot: Apply 1.33 to 4.0 lb/A in summer on expanded new flush. Repeat on subsequent flushes at 7 day intervals when disease pressure is severe. Use the higher rates when conditions favor disease development.

Melanose and Scab: Apply 2.75 to 8.0 lb/A as pre-bloom and post-bloom sprays at weekly intervals.

- Re-entry interval: 48 hours
- Spray interval: 7 to 21 days

See label for complete directions for use.

*See 2EE label for complete directions for use.

Champ® Formula 2 Flowable

DON'T SETTLE FOR LESS.

Champ® Formula 2 Flowable is an advanced copper formulation that delivers excellent disease control. Developed with a small particle size, Champ Formula 2 Flowable stays in suspension longer, mixes easier in water and covers plants better to deliver superior protection.

ACTIVE INGREDIENT

copper hydroxide 37.5% (24.4% or 2.91 lb/gal metallic copper equivalent) (Group M1 fungicide)

BENEFITS OF CHAMP FORMULA 2 FLOWABLE

- Excellent control of key diseases
- Consistently ideal crystal size combined with state-of-the-art surfactants means Champ Formula 2 Flowable sticks better and performs better
- Long shelf life
- Pours and mixes easily – even after extended storage

KEY DISEASES CONTROLLED See label for complete list

Alternaria (suppression), citrus canker (suppression), greasy spot, melanose, scab

APPLICATION GUIDELINES

Alternaria Brown Spot (suppression): Apply 5.33 to 6.66 pt/A to susceptible varieties when the first spring flush appears and each flush thereafter. Application to the fruiting bodies should start after two thirds of the petals have fallen and be repeated on a 21 day schedule.

Citrus Canker - Florida Specific (suppression): Apply 1.25 to 8.0 pt/A. Begin applications to protect new leaf flushes. Repeat at 14 to 21 day intervals, or more often if needed. It is important to protect all subsequent leaf flushes throughout the year. Young fruit may require an additional application.

Under dry weather conditions and low disease pressure, use 1.25 to 2.5 pt/A. Under conditions of wet weather and high disease pressure, higher rates may be required (4.0 to 8.0 pt/A).

Greasy Spot: Apply 1.33 to 4.0 pt/A. Use higher rates when conditions favor disease.

Melanose and Scab: Apply 2.66 to 8.0 pt/A. Depending on disease severity, apply as a pre-bloom and post-bloom spray.

- Re-entry interval: 48 hours
- Spray interval: 7 to 21 days

See label for complete directions for use.

Champ® WG



CONVENIENT AND EFFICIENT.

Champ® WG is an effective copper hydroxide formulation that is easy and efficient to use. As a water-dispersible granule, it provides surface area coverage and fungicidal protection. Plus, Champ WG won't clog equipment and allows more acres to be covered per day.

ACTIVE INGREDIENT

copper hydroxide 77% (50% metallic copper equivalent) (Group M1 fungicide)

BENEFITS OF CHAMP WG

- Actively controls several disease causing fungi
- Multi-site mode of action
- Excellent rainfastness
- Resistance management for strobilurins and sterol-inhibitors
- OMRI Listed® for use in organic crop production

KEY DISEASES CONTROLLED See label for complete list

Alternaria (suppression), black spot, citrus canker (suppression), greasy spot, melanose, scab

APPLICATION GUIDELINES

Alternaria Brown Spot (suppression): Apply 4.0 to 6.3 lb/A to susceptible varieties when the first spring flush appears and each flush thereafter. Application to the fruiting bodies should start after two thirds of the petals have fallen and be repeated on a 7 to 21 day schedule.

Black Spot*: Apply 3-5.5 lb/A prior to or when disease symptoms first appear. Continue applications at 7- to 21-day intervals as needed. Use the higher rates when conditions favor disease development. The minimum retreatment interval is 7 days.

Citrus Canker (suppression): Spray 6.3 lb/A on canker flushes 7 to 14 days after shoots begin to grow. Young fruit may require an additional application. Number and timing of applications will be dependent upon disease pressure.

Greasy Spot: Apply 4.0 to 6.3 lb/A in summer on expanded new flush. Repeat on subsequent flushes if disease conditions are present.

Melanose and Scab: Apply 4.0 to 6.3 lb/A as pre-bloom and post-bloom sprays.

- Re-entry interval: 48 hours
- Spray interval: 7 to 21 days

See label for complete directions for use.

*See 2EE label for complete directions for use.

Ultra Flourish®

PROTECT AND IMPROVE.

Ultra Flourish® Agricultural Fungicide forms a protective barrier from harmful soil diseases caused by Pythium and Phytophthora species. Ultra Flourish's systemic mode of action prevents spore production and inhibits mycelial growth of fungus and improves crop health and vigor.

ACTIVE INGREDIENT

mefenoxam 25.1% (2 lb active ingredient/gal) (Group 4 fungicide)

BENEFITS OF ULTRA FLOURISH

- Highly active fungicide formulation
- Excellent crop safety
- Provides efficient control of several soilborne diseases in a wide variety of citrus crops

KEY DISEASES CONTROLLED See label for complete list

Brown rot, citrus foot rot, root rot, trunk canker, Phytophthora spp.

APPLICATION GUIDELINES

Resets or new plantings in Florida: Apply 4.0 pt/A as a soil spray or 1.0 pt per grove acre via injection. Make a total of 2 to 3 applications per year at one of these schedules: (1) spring & summer, (2) summer & fall, or (3) spring, summer & fall.

Established plantings in Florida: Apply 2.0 pt/A as a soil spray or 1.0 pt per grove acre via injection to groves that have a Phytophthora count of 10 to 20 propagules per cubic centimeter of soil. If more than 20 propagules per cubic centimeter are present, use 4.0 pt/A as a spray or 2.0 pt per grove acre through injection. Make a total of 2 to 3 applications per year at one of these schedules: (1) spring & summer, (2) summer & fall, or (3) spring, summer & fall.

- Re-entry interval: 48 hours
- Spray interval: 2 to 3 months

See label for complete directions for use.

Phostrol®

SYSTEMIC ACTIVITY FOR EFFECTIVE DISEASE CONTROL.

Phostrol® Agricultural Fungicide is one of the few phosphorous acids labeled as a fungicide. A neutral pH requires no buffering and allows integration with many other fungicides. These traits allow for compatibility in tank-mixes, making Phostrol an excellent fit for any disease management program.

ACTIVE INGREDIENT

mono- and di-basic sodium, potassium, and ammonium phosphites 53.6% (6.27 lb/gal equivalent to 4.17 lb a.e./gal) (Group 33 fungicide)

BENEFITS OF PHOSTROL

- Provides prevention and control of a broad spectrum of diseases
- Clear, virtually odorless formulation
- No buffer necessary

KEY DISEASES CONTROLLED

 See label for complete list

Phytophthora spp.

APPLICATION GUIDELINES

Foot, Root, and Brown Rot: Apply 4.5 pt/A as a dilute spray when conditions favor disease development and apply to run-off to make sure the foliage is thoroughly wet.

Foot Rot: Apply 2.5 to 5.0 pt/A with 5 gallons of water and apply directly to trunk lesions; use enough spray volume to thoroughly wet the lesions. In the absence of lesions, apply to the trunk from the soil line to about 2 feet up the trunk. Use the higher rate when lesions are present.

- Re-entry interval: 4 hours

See label for complete directions for use.



SHIELD CITRUS FROM HLB.

Although traditionally used to control fire blight in apples and pears and bacterial spot in peaches and nectarines, Mycoshield® has recently been approved for Huanglongbing (HLB), also known as Citrus Greening, suppression on citrus in Florida, Nevada, Texas and Arizona. Mycoshield contains calcium oxytetracycline, an antibiotic that can help the overall health of HLB infected citrus trees.

ACTIVE INGREDIENT

calcium oxytetracycline 17.7% (equiv. to 17% oxytetracycline) (Group 41 fungicide)

BENEFITS OF MYCOSHIELD

 (Specific to HLB suppression)

- Improves overall health of infected citrus tree
- 40 day pre-harvest interval

KEY DISEASES CONTROLLED

 See label for complete list

HLB suppression (Section 3 approved for Florida, Nevada, Texas, Arizona citrus only)

APPLICATION GUIDELINES

 (Specific to HLB suppression)

RATE: 1.5 lb (equivalent to 0.255 lb oxytetracycline free base)

INSTRUCTIONS: Apply as a foliar spray using sufficient carrier volume to ensure complete coverage. Use with spray adjuvant, spreader sticking agent, or horticultural oil. Make first application at initiation of spring flush to suppress HLB titer and disease symptoms. Make a second application mid-summer (not less than 21 days after first application). Make a third application in late summer to reduce the incidence of HLB-induced fruit drop and to further suppress HLB titer and disease symptoms (not less than 21 days after second application).

RESTRICTIONS:

- Do not apply more than 1.5 lb of product (0.255 lb oxytetracycline free base) per acre per application
- Do not apply more than 4.5 lb of product (0.77 lb oxytetracycline free base) per acre per year
- Maximum number of applications per year: 3
- Minimum retreatment interval: 21 days
- Do not apply within 40 days of harvest
- Use only the full-strength application rate
- Follow "Application Restrictions – All Uses" in Mycoshield supplemental label or container label registered for use on citrus

See the supplemental label for complete application restrictions and directions for use.

WHAT YOU NEED TO KNOW ABOUT CITRUS GREENING

Citrus Greening—also known as Asiatic Huanglongbing (HLB), which means “yellow shoot/dragon disease” in Chinese—is one of the most destructive diseases to attack the global citrus industry. The disease is sometimes called citrus greening due to part of the fruit retaining its green color at maturity.



HLB is thought to have first emerged in China during the early 1900s and was detected in Florida in 2005. The disease has since caused \$1.3 billion in damages to the Florida citrus industry and has been detected in several southern states and Mexico.

Fruit from trees infected with HLB gradually decline in production. Fruit may drop prematurely, fail to ripen (hence the term ‘citrus greening’), and have little to no value due to poor size and flavor. Within three to five years, an infected tree typically stops bearing fruit and dies.



While HLB can kill a tree in as little as five years, it takes at least one to two years for the plant to show symptoms of infection. The bacterium that causes HLB, *Candidatus Liberibacter asiaticus* (CLas), can infect most citrus cultivars, species and hybrids. The disease is spread by the Asian citrus psyllid, whose reproduction cycle correlates with flush. The psyllid lays its eggs on emerging leaves and transmits bacteria from infected trees as it feeds.

There are three known forms of HLB, two of which have been detected in the USA: a heat-tolerant form called *Candidatus Liberibacter americanus*, and the Asian form *Candidatus Liberibacter asiaticus*.

Images: Florida Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Bugwood.org

HOW TO DETECT HLB

Identifying HLB can be tricky, with symptoms taking one to two years to appear. The yellowing of leaves is one symptom that may be confused with a zinc deficiency. However, yellowing due to a nutrient deficiency normally appears along the leaf veins in a symmetrical pattern; yellowing due to HLB appears blotchy on the leaf, with one side appearing green and the other side of the leaf yellow. Leaf yellowing ranges from small spots on the leaf to the leaf turning completely yellow. In chronic cases, the tree will start dying back and have stunted growth with very little fruit.



The fruit from infected trees tends to be smaller and lopsided in appearance, and drops prematurely. As the disease progresses, the tree bears a lower yield and eventually dies.



Because the symptoms of HLB in citrus plants are similar to symptoms from other pathogens and deficiencies, diagnostic laboratories are needed to confirm its presence.

ECONOMIC EFFECTS

HLB affects the marketable yield of citrus trees due to visual characteristics, such as misshapen fruit that only partially ripens. Because the fruit is unable to develop properly, it may have a bitter taste or may produce sour-tasting juice, and therefore is not marketable. The loss in marketability due to HLB increases as the disease progresses to the point that the tree stops bearing fruit and dies, which can happen within 3 to 5 years.



REDUCE HLB THREATS ON CITRUS CROPS.

NOW APPROVED FOR CITRUS USE IN FLORIDA, NEVADA, TEXAS, ARIZONA

NUFARM.COM/USCROP/MYCOSHIELD



NUFARM.COM/USCROP

Abamex™ is a Restricted-Use Pesticide. Always read and follow label directions.

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