

2016 Florida Citrus Pest Management Guide: Ch. 9

Asian Citrus Psyllid and Citrus Leafminer¹

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Asian Citrus Psyllid Psyllid Management

The Asian citrus psyllid (*Diaphorina citri* Kuwayama) has become the most important insect pest of Florida citrus due to the presence of citrus greening disease also known as huanglongbing (HLB) which is spread by the psyllid. Use of insecticides to control the psyllid vector is a major component of greening management strategies in Florida and elsewhere. There is good evidence that reducing psyllid populations via insecticide application not only slows the rate of HLB spread but also reduces severity of the disease once established. However, it should be noted that elimination of HLB from an area has never been successful and would not be possible with vector control alone.

Products recommended in this chapter for psyllid suppression have been demonstrated in field trials conducted by the University of Florida to be effective for reducing psyllid populations. However, *most of these products will have negative effects on natural enemy populations. Thus, it is possible that new pest problems may develop as a result of increased insecticide use for psyllid suppression.* However, the problems posed by these other potential pests are generally less serious than the threat posed by citrus greening disease.

The goal of psyllid management programs is to reduce psyllid populations in commercial citrus groves to as low of levels as possible and still remain economically viable. Management programs should be developed specifically to optimize benefits while minimizing costs and negative impacts on beneficial insects and mites. The following information is provided to aid in the development of site-specific psyllid management programs.

Factors Affecting Psyllid Populations

New flush is required for psyllid females to lay eggs as well as for subsequent development of the psyllid nymphs. Female psyllids lay their eggs in developing leaf buds and on feather-stage flush which has not yet unfurled. Once young leaves have expanded, they are no longer attractive to psyllids for egg laying. When suitable flush is not available for egg laying, psyllids may either remain on a tree feeding on the mature leaves until new flush is available for reproduction or they may leave the tree in search of other host plants on which to lay their eggs. These plants may be citrus trees within the same grove (particularly young resets which flush more often) or trees producing flush in neighboring groves. Therefore, psyllid management practices in

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one grove may affect future psyllid populations in nearby surrounding citrus groves.

Temperature is also closely linked to the abundance of psyllids in the field. The ideal temperature conditions for psyllids are between 77–86°F. At these temperatures, the reproductive potential of ACP is highest. When the daily temperatures are above 90°F, the average lifespan of a female psyllid decreases to less than 30 days in the laboratory, with an average of fewer than 70 eggs produced per female. Below 60°F egg laying slows to less than 2 per day and development time increases to 2 months. Thus, under Florida conditions, psyllid populations will be lower during the mid summer months and in winter compared to late spring and even early fall due to both temperature and a reduced amount of new flush available for egg laying.

Psyllid Feeding Damage and Disease Transmission

Psyllid feeding damage is limited to new growth, resulting in curling and distortion of the young leaves due to toxins present in saliva that is injected during the course of feeding on plant fluids. Because of the nature of this damage, in the absence of HLB, past control recommendations were targeted only to young trees on which the new flush comprised a significant portion of the total leaf canopy. Since the citrus greening pathogen is now present in Florida, it is necessary to manage psyllid populations on bearing and nonbearing trees to slow spread of greening.

Much of the information on transmission of the citrus greening pathogen by the Asian citrus psyllid is still unclear. However, it is clear that acquisition of the pathogen is usually through nymphal feeding, while adults are responsible for transmission from tree to tree. Transmission of the pathogen is thought to occur through salivary secretions, requiring 1–7 hours of feeding for successful transmission to occur. Detailed studies are underway to determine to what extent pathogen transmission might be prevented or reduced by the use of insecticides.

Chemical Control NONBEARING TREES

Young trees that produce multiple flushes throughout the year are at greater risk of greening infection than mature trees, because of the attraction of adult psyllids to the new flush. Even without greening, young trees in the field need to be protected for about 4 years from psyllids and leafminers to grow optimally. Soil-applied systemic insecticides will provide the longest lasting control of psyllids with the

least impacts on beneficials. Currently three soil-applied insecticides (imidacloprid, thiamethoxam, and clothianidin) are available that provide control of psyllids on young nonbearing trees. The active ingredients of all three are considered neonicotinoids or group 4A according to the Insecticide Resistance Action Committee (IRAC) mode of action classification system (www.irac-online.org). Depending on formulation, neonicotinoids may be applied as either to the soil as a drench or as foliar sprays. However, drench applications are by far the most effective way to use these products on young trees.

Soil-drenches are best applied using an applicator metered to deliver 8–10 oz of formulated drench solution to each tree. Drench applications should be applied directly at the soil-rootstock interface. Use restrictions limit the number applications that can be made in a growing season. Imidacloprid applications are limited to no more than 0.5 lbs AI/A per growing season, regardless of application method. This equates to 14 fluid ounces per acre for 4.6F formulations, 16 oz/ac for 4F formulations or 32 fluid ounces per acre for 2F formulations. A 24(c) Special Local Need (SLN) label was issued for Admire Pro 4.6F. This SLN is valid until December 31, 2014 and permits application of up to 28 fl oz/A of Admire Pro (1.0 lbs a.i./A) as a soil drench per 12 months. No more than 14 fl oz/A may be applied at one time. This SLN for Admire Pro allows for an additional soil drench application needed to provide additional protection for citrus trees 5–9' in height. Thiamethoxam applications are limited to no more than 0.172 lb AI/A (or 3.67 oz Platinum) per growing season. Clothianidin (Belay 50 WDG) is currently labeled for non-bearing use only and is limited to 0.4 lbs AI/A (or 12.8 oz Belay 50 WDG) per growing season. However, the Florida Department of Agriculture and Consumer Services (FDACS) has issued a Section 18 Emergency Exemption for Belay 2.13 Insecticide (EPA Reg. No. 59639-150) permitting two applications at a rate of 12 fl oz/A/application to bearing citrus trees. Applicators must have the Section 18 label for Belay Insecticide and letter issued by Commissioner Putnam (FDACS) present when making applications of Belay Insecticide to bearing citrus.

Due to restrictions on the amount of neonicotinoid insecticide products that can be used in a growing season, the number of applications that can be made in solid plantings of trees 5–9' in height is greatly limited. It is also important to note that because imidacloprid, thiamethoxam, and clothianidin all share the same mode of action these products are not considered alternatives for rotation to prevent pesticide resistance. Foliar sprays of products other

than imidacloprid or thiamethoxam should be used between soil-drench applications to provide additional control of psyllid populations and to help minimize selection for insecticide resistance development.

BEARING TREES

Broad-spectrum foliar sprays targeting adults are most effective when used prior to the presence of new flush. Once psyllids begin reproducing on new flush, it becomes increasingly difficult to gain control of rapidly increasing populations with these products. Psyllid management programs should begin by first targeting overwintering adult psyllids when the trees are not producing flush. By eliminating these overwintering adults, psyllid populations will be greatly reduced on the following spring flushes. Targeting psyllids early in the year this should provide enough suppression in psyllid populations to reduce the need for psyllid sprays during bloom when pollinators are present and most pesticide products cannot be applied. Additional sprays for psyllids should be made when observing an increase in adult populations in a grove.

Biological Control

Foliar insecticide applications should only be used when needed to minimize the impact on natural enemies that maintain psyllids and other pests at lower levels later in the year. While a single female psyllid can lay as many as 800 eggs, studies in Florida and Puerto Rico have shown that over 90% of psyllids that hatch in the field do not survive to become adults. Many are consumed by predaceous insects such as ladybeetles. The parasitic wasp (*Tamarixia radiata*) has become established throughout Florida and also contributes some mortality, especially in fall. Additionally, there are many potential pests such as scales, mealybugs, whiteflies, etc. that are currently maintained at low levels in Florida citrus due to biological control. Excessive sprays could result in resurgence of these pests.

Other Management Considerations

Management practices used within a grove can affect psyllid populations, especially those practices that promote new flush such as hedging and topping and fertilization. Trees should always be sprayed with a broad spectrum insecticide prior to or just after hedging and topping before any flush develops. Management strategies that reduce or limit the duration of flush may help to keep psyllid populations at low levels and reduce the need for additional pesticide applications. Alternate host plants such as orange jasmine (*Murraya paniculata*) and box orange (*Severinia buxifolia*), in the vicinity of the grove can serve as sources of psyllids for infestation. When possible, both of these plant species

should be removed from areas surrounding commercial citrus groves.

Bee Caution

Citrus growers should be aware that most insecticides recommended for psyllid control have restrictions on the pesticide label due to the impact these products may have on pollinators. Planning ahead to control psyllids prior to the presence of bloom will help reduce the need to apply pesticides during the bloom period. Check the pesticide label for restrictions on application of a product when trees are in bloom. Currently there are three products which are considered to have minimal effects on pollinators and thus can be applied during bloom. These products, listed in Table 2, are recommended for psyllid control during the period when citrus is in bloom.

Citrus Leafminer

Adults of the citrus leafminer (*Phyllocnistis citrella*) are tiny moths that hide within the canopy during the day and emerge at night to lay eggs individually on young, expanding leaf flushes. The egg first appears as a tiny dew drop, usually alongside the midvein on the underside of an unexpanded leaf. The larva emerges directly into the leaf tissue, mining first along the mid-vein, then back and forth as it makes its way to the leaf margin where pupation occurs.

Leafminer populations decline to their lowest levels during the winter, due to cool temperatures and the lack of flush for larval development. Populations of leafminer build rapidly on the spring flush, although their presence is not apparent until late spring, as populations increase while the amount of new foliage decreases. Throughout the ensuing warm season, leafminer populations vary with the flushing cycles, and subsequent flushes are often severely damaged. The summer period of high leafminer damage coincides with the rainy season when canker spread is most likely.

Citrus leafminer greatly exacerbates the severity of citrus canker caused by *Xanthomonas axonopodis* pv. *citri*. This insect is not a vector of the disease. Nevertheless, leafminer tunnels are susceptible to infection much longer than mechanical wounds. Tunnels infected by canker produce many times the amount of inoculum than in the absence of leafminer. Control of leafminer should be optimized in areas where infection by canker is high. Natural enemies already present in Florida have responded to leafminer infestations, causing up to 90% mortality of larvae and pupae. These natural enemies include the introduced parasitoid *Ageniaspis citricola* that has established throughout most of

Florida and is responsible for up to 30% of this mortality, mostly later in the year.

Leafminer Management

NONBEARING TREES

On young trees, use of the soil-applied neonicotinoid insecticides are the most effective means of preventing mining damage on the new flush and has little direct effect on natural enemies. Soil drenches directly to the base of the tree with neonicotinoids have been shown to provide at least 8 weeks control of leafminer. Injection through the irrigation system is less effective because a large portion of the material falls beyond the root zone. Compared to soil applications, foliar-applied insecticides provide a shorter duration of protection, lasting only about 2 weeks depending on weather conditions and the uniformity of flush pattern.

Soil applications of neonicotinoids should be made about 2 weeks prior to leaf expansion to allow time for the pesticide to move from the roots to the canopy. Avoid applications 24hr prior to significant rainfall events which will result in movement of the product out of the root zone before it can be taken up by the plant. When the residual effects of the spring application have worn off, typically during the mid-summer rainy season, foliar sprays of other materials can be used on small trees to reduce leafminer damage if necessary. Reapplication of imidacloprid is not recommended during this part of the season because of the likelihood of the material being leached away by frequent summer rains.

BEARING TREES

If canker is present in a grove (or in a nearby grove), healthy trees with leafminer damaged leaves are more likely to become sites for new canker infection. The only products currently available for leafminer control on large trees are foliar insecticide sprays. While a number of products are effective against this pest, achieving control of leafminer using foliar sprays on large trees is difficult, due to the unsynchronized flush typically encountered during summer and fall. However, since leafminers affect only developing leaves, coverage of peripheral leaves in the canopy should be adequate to exert suppression when applying foliar pesticides. Foliar sprays are directed against the larvae and thus should be timed to coincide with the appearance of the first visible leaf mines, which occur immediately following the feather leaf stage or about 13 days after budbreak. At this time, insecticide applications will provide protection for most of the leaves in the new flush.

Recommended Chemical Controls

READ THE LABEL.

Some product labels specify rates per acre, while others specify rates per volume delivered (e.g. per 100 gallons). Refer to the label for details on how product should be mixed for desired targets.

Rates for pesticides are given as the maximum amount required to treat mature citrus trees unless otherwise noted. When treating smaller trees with commercial application equipment, including handguns, mix the per acre rate for mature trees in 100 gallons of water. Calibrate and arrange nozzles to deliver thorough distribution and treat as many acres as this volume of spray allows.

Table 1. Recommended Chemical Controls for the Asian Citrus Psyllid

Pesticide/Trade name ^{1,4}	IRAC MOA ²	Rate/Acre	Comments	Other Pests Controlled
Chlorpyrifos				
Lorsban 4E	1B	5 pts	Restricted Use Pesticide. Highly toxic to bees, do not apply during bloom. Lorsban 4E has a 2(ee) label for control of Asian citrus psyllid; other formulations of chlorpyrifos are not currently labeled for psyllid control.	Mealybug, orangedog, katydids, grasshoppers, aphids, thrips
Clothianidin (soil-drench)				
Belay 50 WDG	4	3.2–6.4 oz	For use on non-bearing trees only, do not apply within 1 year of fruit harvest. Do not exceed 12.8 oz/A (0.4 lb a.i./A) of Belay 50 WDG per acre per year. Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period.	Aphids, citrus leafminer
Cyantranilprole				
Exirel + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	28	16 fl oz + 1% v/v	Do not apply a total of more than 0.4 lb ai/A of Cyazypyr or cyantranilprole containing products per year. See label for bloom restrictions.	Citrus leafminer
Dimethoate				
Dimethoate 4 E	1B	1 pt	Highly toxic to bees, do not apply during bloom. Do not make more than 2 applications per crop season. Consult label for buffering instructions when water pH is greater than 7.	Aphids, scales except snow scale and black scale, flower thrips
Fenpropathrin				
Danitol 2.4EC	3	1 p	Restricted use pesticide. Highly toxic to bees, do not apply during bloom.	Flower and orchid thrips, adult root weevils
Imidacloprid (foliar application)				
Couraze 1.6F Nuprid 1.6F Pasada 1.6F	4	10 to 20 fl oz	Limit of 0.5 lbs/AI per acre per growing season regardless of application type (soil and/ or foliar) and trade name of imidacloprid product used. Do not apply during bloom or within 10 days of bloom or when bees are	Aphids
Admire Pro 4.6F		7 to 14 fl oz		
Imidacloprid (soil-drench)				
Admire Pro 4.6F	4A	7 to 14 fl oz	SLN FL-120008, permits up to 1.0 lb a.i. (28 fl oz of Admire Pro 4.6F) per acre per 12 months when applied as a soil drench. Do not exceed 14 fl oz/A per application. See SLN for additional information.	Aphids, citrus leafminer
Admire 2F Alias 2F Couraze 2F Nuprid 2F		16 to 32 fl oz	Limit of 0.5 lbs/AI per acre per growing season regardless of application type (soil and/ or foliar) and trade name of imidacloprid product used. Recommended application is a soil drench made to base of trees up to 6 feet tall.	
Phosmet				

Imidan 70 W	1B	1.0 lb	Highly toxic to bees, do not apply during bloom. Consult label for buffering instructions when water pH is greater than 7. Do not make more than 2 applications per season. EPA SLN No. 10163-169, FIFRA 2(ee).	Citrus Root Weevils
Spinetoram				
Delegate WG + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	5	4 oz + 2% v/v	Highly toxic to bees, do not apply during bloom. Do not apply more than 12 oz of product (0.188 lb ai) per acre per season. Do not make more than 3 applications per calendar year.	Citrus leafminer
Spirotetramat				
Movento 240 SC + Petroleum Oil 97+% (FC 435-66, FC 455-88 or 470 oil)	23	10 fl oz + 3% v/v	Only controls psyllid nymphs, not adults. Limit of 20 oz of product (0.32 lb ai) per acre per season. Do not apply within 10 days prior to bloom, during bloom, or until petal fall is complete.	Citrus rust mites, some scale insects, mealybugs
Movento MPC + Petroleum Oil 97+% (FC 435-66, FC 455-88 or 470 oil)		16 fl oz + 3% v/v		
Sulfoxaflor				
Closer SC + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	4C	4 to 5 fl oz + 2% v/v	Controls both adult and psyllid nymphs. Only one application is allowed between 3 days before bloom and until after petal fall per year. Do not apply more than 17 fl oz of Closer SC (0.266 lb ai of sulfoxaflor) per acre per year. Closer is no longer available for purchase, but growers may continue to use existing stocks per label directions.	Aphids, mealybugs
Thiamethoxam (foliar application)				
Actara 25 WG	4A	4.0-5.5 oz	Do not exceed a total of 11.0 oz/Acre (0.172 lb a.i./A) of Actara or 0.172 lb a.i. of thiamethoxam-containing products per acre per growing season. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids
(soil drench)				
Platinum 75 SG	4A	1.83-3.67 oz	Do not exceed a total of 3.67 oz/Acre (0.172 lb a.i./A) of Platinum 75 SG or 0.172 lb a.i. of thiamethoxam-containing products per acre per growing season. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids, citrus leafminer
Thiamethoxam + Chlorantraniliprole				
VoliamFlexi	4A 28	7 oz	Do not exceed 14 oz /A/season of VoliamFlexi or 0.172 lb a.i. of thiamethoxam containing products per growing season. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids, citrus leafminer
Thiamethoxam + abamectin				

Agri-Flex + Petroleum Oil 97+% (FC 435-66, FC 455-88 or 470 oil)	4A 6	8.5 fl oz + 2% v/v	Do not exceed a total of 17 fl oz/A or 3 applications per season of Agri-Flex or 0.172 lb a.i./A of any thiamethoxam containing products or 0.047 lb a.i./A of abamectin containing products per growing season. Must be mixed with a minimum of 0.2 percent oil. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids, citrus leafminer, citrus rust mites
Zeta-cypermethrin				
Mustang Insecticide	3	4.3 oz	Restricted use pesticide. Highly toxic to bees, do not apply during bloom. Do not make more than 4 applications (0.20 lb ai) per acre per season.	Citrus root weevils

Table 2. Recommended chemical controls for the Asian citrus psyllid during bloom.

Pesticide/Trade name ^{1,4}	IRAC MOA ²	Rate/Acre	Comments	Other Pests Controlled
Diflubenzuron				
Micromite 80WGS + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	15	6.25 oz + 2% v/v	Controls psyllid nymphs only. Do not apply more than 3 applications per season. See restrictions on label. Do not apply when temperatures exceed 94°F.	Citrus root weevils, citrus rust mites, citrus leafminer
Fenpyroximate				
Portal	21A	32-64 fl oz	Controls psyllid nymphs only. Do not apply more than 4.0 pints per acre per growing season. Do not make more than 2 applications per growing season. Allow 14 days between applications.	Suppression of spider mites and rust mites
Sulfoxaflor				
Closer SC + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	4C	4 to 5 fl oz + 2% v/v	Controls both adult and psyllid nymphs. Only one application is allowed between 3 days before bloom and until after petal fall per year. Do not apply more than 17 fl oz of Closer SC (0.266 lb ai of sulfoxaflor) per acre per year. Closer is no longer available for purchase, but growers may continue to use existing stocks per label directions.	Aphids, mealybugs

Table 3. Recommended Chemical Controls for Citrus Leafminer

Pesticide/Trade Name	IRAC MOA ¹	Rate/Acre ²	Comments	Other Pests Controlled
Abamectin				
Agri-Mek 0.15 EC or Agri-Mek SC + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	6	5 oz or 1 oz + min of w1 gal oil	Do not apply Agri-Mek or any other abamectin-containing product within 30 days of last treatment. Do not apply more than 40 fl oz of Agri-Mek 0.15 EC or 8.5 oz of Agri-Mek SC (0/47 lb ai/ac) or any abamectin-containing product in a growing season. Do not make more than 3 applications of Agri-Mek or any abamectin-containing product in a growing season. Always apply with spray oil as directed. Do not apply in citrus nurseries.	Citrus rust mite, Asian citrus psyllid
Clothianidin (soil-drench)				
Belay 50 WDG	4	3.2–6.4 oz	For use on non-bearing trees only, Do not apply within 1 year of fruit harvest. Do not exceed 12.8 oz/A (0.4 lb a.i./A) of Belay 50 WDG per acre per year. Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period.	Aphids, Asian citrus psyllid
Cyantraniliprole				
Exirel + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	28	16 fl oz + 1% v/v	Do not apply a total of more than 0.4 lb ai/A of Cyazypyr or cyantranilip- role containing products per year. See label for bloom restrictions.	Asian citrus psyllid
Diflubenzuron				
Micromite 80WGS + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	15	6.25 oz + 2% v/v	Do not apply more than 3 applications per season. See restrictions on label. Do not apply when temperatures exceed 94°F.	Citrus root weevils, citrus rust mites, citrus psyllids
Imidacloprid (soil drench)				
Admire Pro	4A	7-14 oz	Limit of 0.5 lb/AI per acre per growing season regardless of application type (soil and/or foliar) and trade name of imidacloprid product used. Recommended application is a soil drench made to base of trees up to 6 feet tall. Apply prior to or at onset of pest	
Admire 2 F		16-32 oz		
Methoxyfenozide				
Intrepid 2F + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	18	8 oz + 2% v/v	Do not apply more than 16 fl oz /A per application or 64 fl oz/A per season. Do not apply within 14 days of last application.	Orangedog
Petroleum Oil				
97+% (FC 435-66, FC 455-88, or 470 oil)	NR ³	5 gal	Do not apply when temperatures exceed 94°F. 470 weight oil has not been evaluated for effects on fruit coloring or ripening. These oils are more likely to be phytotoxic than lighter oils.	
Spinetoram				
Delegate WG + Petroleum Oil 97+% (FC 435-66, FC 455-88, or 470 oil)	5	6 oz + 2% v/v	Do not apply more than 12 oz of Delegate WG in a growing season. Do not make more than 3 applications in a growing season. Do not apply within 7 days of last treatment.	Asian citrus psyllid
Spinosad				
SpinTor 2SC	5	6 oz	Limit of 2 applications per season.	Orangedog
Thiamethoxam (soil drench)				

Platinum 75 SG	4	1.83-3.67 oz	Do not exceed a total of 3.67 oz/Acre (0.172 lb a.i./A) of Platinum 75 SG or 0.172 lb a.i. of thiamethoxam-containing products per acre per growing season. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids, Asian citrus psyllid
Thiamethoxam + Chlorantraniliprole				
VoliamFlexi	4 28	7 oz	Do not exceed 14 oz /A/season of VoliamFlexi or 0.172 lb a.i. of thiamethoxam containing products per growing season. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids, citrus psyllids
Thiamethoxam + abamectin				
Agri-Flex + Petroleum Oil 97+% (FC 435-66, FC 455-88 or 470 oil)	4 6	8.5 fl oz + 2% v/v	Do not exceed a total of 17 fl oz/A or 3 applications per season of Agri-Flex or 0.172 lb a.i./A of any thiamethoxam containing products or 0.047 lb a.i./A of abamectin containing products per growing season. Must be mixed with a minimum of 0.2 percent oil. Do not apply during pre-bloom or during bloom when bees are actively foraging.	Aphids, citrus leafminer, citrus rust mites
¹ Mode of action class for citrus pesticides from the Insecticide, Fungicide, and Herbicide Resistance Action Committees. Refer to ENY624, <i>Pesticide Resistance and Resistance Management</i> , in the <i>2016 Florida Citrus Pest Management Guide</i> for more details. ² Lower rates may be used on smaller trees. Do not use less than the minimum label rate. ³ No resistance potential exists for these products.				