



Eastern NC Nursery News April 2020

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Thrips Control in Nursery Production

I have recently had one question about this and also looked at thrips in container nursery production recently so I thought it would be a good time for a review of thrips management: (read the fact sheet at the link below and review the tables)

[NC State University Flower Thrips Fact Sheet](#)

Here are some images of insect management tables from the

[2017 Southeastern US Pest Control Guide for Nursery Crops and Landscape Plantings](#)

Keep in mind to avoid IRAC # 1A, 1B, and 3A for thrips management as they have detrimental effects on natural enemy populations and their repeated use may result in an increase in thrips activity over time. There are many options for thrips management. Rotate products by IRAC # group every two weeks. A product could be applied once a week for two weeks (if allowable on the label) before rotating to a product from a different IRAC # group. The N for use site is for nursery, G is greenhouse, I is interiorscape, and L is landscape.

Table 4-2. Insecticides registered for control of sucking insects, thrips, and mites
See key to footnotes on page 56.

IRAC #	Active ingredients	Selected trade names ¹	Use site ³	REI (hours, unless noted otherwise)	Sucking insects												Mites			
					Adelgids	Aphids	Psyllids	Armored scales ⁴	Soft scales ⁵	Mealybugs	Leafhoppers	Planthoppers	Plant bugs	Lace bugs	Whiteflies	Thrips	Broad mite	Eriophyid mites	Spider mites	Mites ⁶
1A	carbaryl	Sevin SL	L,N,G	12	X	X	X	X	X	X	X		X	X	X	X		X		
	methiocarb	Mesuro 75W	N,G	24		X										X	X	X	X	X
1B	acephate	Orthene	L,N,G	24		X		X	X	X	X		X	X	X	X				
		Lepitect	L,N,G	24		X		X	X	X	X		X	X	X				X	
		Precise GN	N,G	12		X				X					X					
	chlorpyrifos	Dursban 50W	N	24	X	X	X	X	X	X	X		X	X	X	X			X	
		DuraGuard ME	N,G	24		X		X	X	X	X		X			X			X	
	dicrotophos	Inject-A-Cide B	L	N/A		X	X	X	X		X		X						X	
	dimethoate	Dimethoate 4E,4EC	N	10-14 days		X	X	X	X	X	X			X		X	X	X	X	
	malathion	Malathion 5EC	L	12		X		X	X	X	X		X	X		X			X	
	methidathion	Supracide 2E	N	3 days				X	X											
	oxydemeton methyl	Harpoon	L	0	X	X			X	X									X	
		MSR Spray Concentrate	N	10 days	X	X										X			X	
3A	bifenthrin	Attain TR	G	12		X		X	X	X			X			X			X	
		Menace GC	L,N,G	12		X		X	X	X	X		X	X		X	X	X	X	
		Onyx	L	N/A		X	X	X	X	X	X		X	X		X	X	X	X	
		Onyx Pro	L,N,I	12	X	X	X	X	X	X	X		X	X		X	X		X	
		Talstar S Select	N,G	12		X		X	X	X	X			X			X	X	X	
		Talstar Nursery G	N	12						X										
	cyfluthrin	Decathlon	L,N,G,I	12		X		X	X	X	X		X	X		X				
	<i>beta</i> -cyfluthrin	Tempo Ultra WP	L,I	N/A		X		X	X	X	X		X	X		X				
		Tempo SC Ultra	L,I	N/A		X		X	X	X	X		X	X		X				
	<i>lambda</i> -cyhalothrin	Demand	L	N/A		X		X	X	X	X		X	X	X	X	X		X	
		Scimitar CS	L	N/A		X		X	X	X	X		X	X		X	X		X	
		Scimitar GC	L, N, G	24		X		X	X	X	X		X	X		X	X		X	
	cypermethrin	Demon WP	L,I	N/A		X														
	deltamethrin	DeltaGard G	L,I	N/A						X	X									

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3A (continued)	fenpropathrin	Tame 2.4 EC	N,G,I	24		X		X		X	X		X	X		X			X	
	<i>tau</i> -fluvinate	Mavrik Aqualow	L,N,G,I	12	X	X	X			X	X		X	X		X			X	
		permethrin	Astro	L,G,I	12	X				X	X		X	X		X				
	pyrethrins	Permethrin Pro	L,I	N/A		X				X	X		X	X		X				
		Perm-Up 3.2 EC	L,N,G,I	12		X				X	X		X	X		X				
		Tersus	N,G	12		X	X	X	X	X	X	X	X	X		X	X	X	X	
	pyrethrum	Pyganic	N,G	12		X		X	X	X	X					X			X	
		Pyrethrum TR	N,G	12		X		X	X	X	X					X			X	
3A+4A	bifenthrin + clothianidin	Alot ² LC G, LC SC	L	N/A	X	X		X	X	X	X		X	X		X				
	bifenthrin + imidacloprid	Allectus ² SC	L,I	N/A	X	X	X	X	X	X	X		X	X		X	X		X	
	cyfluthrin + imidacloprid	Discus ² N/G	N,G,I	12	X	X	X	X	X	X	X		X	X		X				
	<i>lambda</i> -cyhalothrin + thiamethoxam	Tandem ²	L	N/A	X	X	X	X	X	X	X		X	X		X	X			
	<i>zeta</i> -cypermethrin + bifenthrin + imidacloprid	Triple Crown T&O ²	L,I	N/A	X	X	X	X	X	X	X		X	X	X	X	X		X	
		pyrethrins + piperonyl butoxide	Pyreth-It ²	N,G	12		X	X			X		X			X				
4A	acetamiprid	TriStar 8.5 SL	L,N,G	12	X	X	X	X	X	X	X		X		X	X				
		Arena 0.25 G	L,I	12		X				X					X					
		Arena 50 WDG	L,I	12		X				X					X					
	dinotefuran	Safari 2G	L,N,G,I	12	X		X	X	X	X	X			X	X	X				
		Safari 20SG	L,N,G,I	12	X	X	X	X	X	X	X			X	X	X				
		Zylam Liquid	L	12	X	X	X	X	X	X	X		X	X	X					
		Transtect 70 WSP	L	N/A	X	X	X	X	X	X	X		X	X	X	X				
	imidacloprid	Xytect 75WSP, 2F	L,N,G,I	12	X	X	X	X	X	X	X	X	X	X	X	X				
		Marathon II	N,G,I	12	X	X	X	X	X	X				X	X	X				
		Marathon 60WP	N,G,I	12	X	X	X	X	X	X	X				X	X	X			
		Merit	L,I	N/A	X	X	X	X	X	X	X	X	X	X	X	X				

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4A (continued)	imidacloprid	CoreTect	L,I	N/A	X	X	X	X	X	X	X	X		X	X	X				
		Discus Tablets	N,G,I	12	X	X	X	X	X	X	X		X	X	X					
	thiamethoxam	Flagship 25WG	N,G,I	12	X	X	X		X	X	X		X	X	X					
		Meridian 0.33G	L,I	N/A	X	X			X	X	X		X	X	X					
4C + 5	sulfoxalor + spinetoram	Meridian 25WG	L,I	N/A	X	X	X		X	X	X		X	X	X	X				
5	spinosad	XXpire	L,N,G	12		X		X		X			X	X	X	X				X
		Conserve	L,N,G	4												X				X
		Entrust	L,N,G	4												X				X
6	abamectin	Lucid, Avid	L,N,G	12		X									X	X	X	X	X	
		Aracinate TM	L,N,G,I	N/A	X	X		X	X				X		X	X	X	X	X	
		Award II	L,N	12																
	emamectin benzoate	Arbormectin	L	N/A		X		X					X							X
		Tree-Age	L	N/A				X					X							
		Enfold	N	12			X													X
	milbemectin	Ultiflora	N	12																X
6 + 20D	abamectin + bifentazate	Sirocco	L,N,G,I	12		X								X	X	X	X	X	X	
7A	s-kinoprene	Enstar AQ	G,I	4		X		X	X	X	X			X	X					
	s-methoprene	Extinguish	L,N	4																
7B	fenoxycarb	Preclude TR	G	12		X		X	X	X				X	X	X			X	
7C	pyriproxifen	Distance IGR	L,N,G,I	12		X		X	X	X				X						
		Distance	L,N	12																
		Fulcrum	L,N,G,I	12		X		X	X	X				X						
8D	sodium tetraborohydrate decahydrate	Prev-AM Ultra	N,G	12		X		X	X	X				X			X	X	X	
9B	pymetrozine	Endeavor	L,N,G,I	12		X								X						
	pyrifluquinazon	Rycar	G	12		X				X	X			X	X					
10A	clofentazine	Ovation SC	N,G	12																X
	hexythiazox	Hexygon DF	L,N,G,I	12																X

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10B	etoxazole	Beethoven TR	G	24											X				X	
		TetraSan 5 WDG	L,N,G,I	12															X	
12B	fenbutatin-oxide	Meraz, ProMite 50WP	L,N,G	48															X	
13	chlorfenapyr	Pylon	G	12												X	X	X	X	
15	diflubenzuron	Adept	G	12											X					
	novaluron	Pedestal	N,G	12											X	X				
16	buprofezin	Talus 70DF	L,N,G	12				X	X	X	X	X			X					
20B	acequinocyl	Shuttle 15 SC	L,I	12															X	
		Shuttle-O	N,G	12															X	
20D	bifenazate	Floramite SC	L,N,G,I	12															X	
		Floramite SC/LC	L	N/A															X	
21A	fenazaquin	Magus	L,N,G,I	12											X				X	
	fenpyroximate	Akari 5SC	N,G,I	12						X							X	X	X	
	pyridaben	Sanmite	N,G	12			X				X				X		X		X	
	tolfenpyrad	Hachi-Hachi SC	G	12		X		X	X	X	X				X	X				
22A	indoxacarb	Provaunt	L	N/A							X									
23	spiromesifen	Forbid 4F	L	N/A											X		X	X	X	
		Judo	N,G	12											X		X	X	X	
	spirotetramat	Kontos	N,G,I	24	X	X	X	X	X	X	X				X	X	X	X	X	
25	cyflumetofen	Sultan	L,N,G,I	12															X	
28	chlorantraniliprole	Acelepryn	L,I	N/A	X	X			X					X						
	cyantraniliprole	Mainspring	G,I	4		X			X					X	X	X				
29	flonicamid	Aria	L,N,G	12		X		X	X	X	X		X		X	X				

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Unknown	azadirachtin	Azatin O	L,N,G,I	4	X	X	X	X	X	X	X		X		X	X					
		Azatin XL	N,G,I	4		X	X			X	X				X	X					
		Azatrol EC Insecticide	L,N,G,I	4		X	X	X	X	X	X		X	X	X	X			X		
		Ornazin EC	L,N,G,I	12		X	X	X	X	X	X		X	X	X	X					
pyridalyl	Tree-Azin	L,N,G	Until dry	X																	
	Overture 35 WP	G	12													X					
Unclassified	<i>Beauveria bassiana</i>	BotaniGard ES	L,N,G,I	4		X	X				X		X	X	X	X			X		
		BotaniGard 22 WP	L,N,G,I	4		X	X						X	X	X	X					
		Naturalis-L	L,N,G	4		X	X				X		X		X	X	X	X	X		
	<i>Chromobacterium subtsugae</i>	Grandevo PTO	L,N,G	4		X							X	X	X	X	X	X	X	X	
		<i>Isaria fumosorosea</i> (= <i>Paecilomyces fumosoroseus</i>)	NoFly	G	12		X	X				X		X		X	X				
		Preferal	L,N,G	4		X	X						X		X	X	X	X	X		
	<i>Metarhizium anisopliae</i>	Met52, Tick-EX	L,N,G	4													X				
	<i>Steinernema</i> sp.	TigraNem	L,N,G,I	N/A											X						
	<i>Steinernema carpocapsae</i>	Millenium	L,N,G,I	N/A																	
		Nematac C	L,N,G,I	N/A														X			
	<i>Steinernema feltiae</i>	NemaShield	L,N,G,I	N/A														X			
		EntoNem	L,N,G,I	N/A														X			
	horticultural oil	Ultra-Pure Oil, TriTek	L,N,G,I	4	X	X	X	X	X	X	X	X		X	X	X	X		X	X	
	insecticidal soap	M-Pede	L,N,G,I	12	X	X	X	X	X	X	X	X		X	X	X	X		X	X	
neem oil	Trilogy	L,N	4		X				X	X					X	X		X	X		
	Triact 70	L,N,G,I	4		X			X	X						X				X		
capsicum extract, garlic oil, soybean oil	Captiva	L, N	4			X				X	X		X		X	X	X		X		

2017 Southeastern U.S. Pest Control Guide for Nursery Crops and Landscape Plantings

Red Headed Flea Beetle Update

We have reached at least 590.5 GDD based on 50 degrees fahrenheit as the base temperature in all locations in eastern NC. This should mean that the insects are likely at least pupae at this point. Here are a few examples as of Monday, April 27 of GDD:

Elizabeth City : 590.5
Raleigh: 628
Tarboro: 690
Greenville: 710.5
Rocky Mount/Wilson: 735
Fayetteville: 824
Wilmington: 825



RHFB pupa, image by Matt Bertone.

It is possible that the Southeastern (Wilmington) area of NC could already have adults. I have not heard reports of any yet. Let me know if you have seen any.

Actually any area of eastern NC could have adults by now, particularly if plants were overwintered in houses. If not overwintered in houses it may be as late as 900 GDD before adults emerge. We are getting closer, be on the lookout.

Cercospora leaf spot on Hydrangeas

Cercospora leaf spots on hydrangeas, particularly on bigleaf hydrangeas, are often seen as a concern later in summer or fall. However, initial infection usually occurs in May but symptoms don't show up until later in the year. Initial spots are usually visible on older leaves later in the year and are purple and small. Later on they become tan in the center and have a purple or brown border. Plants in late summer or fall may develop leaves that yellow due to high level of leaf spot infection. Excessive overhead irrigation and rainfall can



Cercospora leaf spot.

There are several fungicides that have shown to be effective in IR-4 Trials (FRAC codes listed for rotation): azoxystrobin (11), chlorothalonil (M5), myclobutanil (3), propaconazole (3), and thiophanate methyl (1) are the active ingredients that have done well in past tests. There may be newer products that work well also but I am not aware of research with newer products. These products work best if applied just prior to or at first sign of leaf spot development. Repeat applications should be made every 10-14 days as long as environmental conditions are right for development.

increase infection.

Sanitation is an important part of management of this disease. Dead leaf debris in the growing area should be removed. Drip irrigation can also help prevent severe outbreaks.

Pesticide disclaimer: Recommendations for the use of agricultural chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by NC Cooperative Extension nor discrimination against similar products or services not mentioned.

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The Eastern Region Nursery and Greenhouse Program at NC Cooperative Extension is your source for research-based production information for greenhouse and nursery crops in Eastern North Carolina.

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