

Phytophagous Mites and their Management on Ornamental Plants
LGP 1154 Horticulture, Table 3 (3 pages)

Table 3. Insecticides and miticides registered for use against phytophagous mites on ornamental plants in South Carolina.

IRAC Group No.	Mode of Action (MOA)	Chemical Class	Active Ingredient	Trade Names	Use Site	REI (hours)	Target mite groups						
							Spider mites	Tarsonemid mites	Eriophyid mites	Mites in general			
1A	Acetylcholinesterase inhibitors	Carbamates	carbaryl	Sevin SL	G, N, L	12			✓				
1B		Organophosphates	acephate	1300 Orthene TR	G	24	✓						
				Orthene T&O	G, N, L	24	✓						
			malathion	Malathion 50% E.C.	L	12	✓						
3A	Sodium channel modulators	Pyrethroids, Pyrethrins	bifenthrin	Ascertain TR	G	12				✓			
				OnyxPro	N, L	12	✓	✓		✓			
				Talstar Select	G, N, L	12	✓	✓		✓			
						lambda-cyhalothrin	Scimitar GC	G, N, L	24	✓	✓		
						fenpropathrin	Tame 2.4 EC	G, N	24	✓			
						tau-fluvalinate	Mavrik Aquaflow	G, N, L, I	12	✓			✓
						pyrethrins	Pyganic EC Pyrethrum TR	G, N G, N	12 12	✓ ✓		✓ ✓	✓ ✓
3A + UN			pyrethrins + azadirachtin	Azera Gardening	G, N, L	N/A	✓						
3A + UNF			pyrethrins + <i>Beauveria bassiana</i>	Botanigard MAXX	G, N, L, I	12	✓						
3A + UC			pyrethrins + canola oil	Pycana	G, N	12	✓						
4C + 5			sulfoxaflor + spinetoram	XXpire	G, N	12	✓						
5	Nicotinic acetylcholine receptor allosteric modulators – Site I	Spinosyns	spinosad	Conserve SC	G, N, L	4	✓						
				Entrust SC	G, N, L	4	✓						
6	Glutamate-gated chloride channel allosteric modulators	Avermectins, Milbemycins	abamectin	Avid 0.15 EC	G, N, L	12	✓	✓	✓				
			emamectin benzoate	TREE-äge	L	N/A					Red palm mite		
6 + 20D			abamectin + bifenazate	Sirocco	G, N, L, I	12	✓	✓	✓				

8D	Miscellaneous non-specific (multi-site) inhibitors	Borates	sodium tetraborohydrate decahydrate	Pre-AM Ultra	G, N	12					✓	
10A	Mite growth inhibitors affecting CHS1	Clofentezine, Hexythiazox	clofentezine	Notavo	G, N	12	✓					
10B			Etoxazole	hexythiazox	Hexygon IQ	G, N, L, I	12	✓				
		etoxazole		Beethoven TR	G	24	✓					
				TetraSan 5 WDG	G, N, L	12	✓					
12B	Inhibitors of mitochondrial ATP synthase	Organotin miticides	fenbutatin oxide	Vendex 50WP	G, N, L	48	✓					
13	Uncouplers of oxidative phosphorylation via disruption of the proton gradient	Pyrroles	chlorfenapyr	Pylon	G	12	✓	✓		✓		
20B	Mitochondrial complex III electron transport inhibitors	Acequinocyl	acequinocyl	Shuttle 15 SC	L	12	✓					
				Shuttle O	G, N, L, I	12	✓					
20D		Bifezanate	bifenazate	Floramite	G, N, L, I	12	✓					
21A	Mitochondrial complex I electron transport inhibitors	METI acaricides and insecticides	fenazaquin	Magus	G, N, L	12					✓	
			fenpyroximate	Akari 5SC	G, N, I	12	✓	✓	✓			
			pyridaben	Sanmite SC	G, N	12	✓	✓	✓			
23	Inhibitors of acetyl CoA carboxylase	Tetronic and tetramic acid derivatives	spiromesifen	Forbid 4F	L, I	N/A	✓	✓	✓			
				Savate	G, N	12	✓	✓	✓			
			spirotetramat	Kontos	G, N	24	✓	✓	✓			
25	Mitochondrial complex II electron transport inhibitors	Beta-ketonitrile derivatives	cyflumetofen	Sultan	G, N, L, I	12	✓					
32	Nicotinic acetylcholine receptor allosteric modulators – Site II	GS-omega/kappa HXTX-Hv1a peptide	GS-omega/kappa HXTX-Hv1a peptide	Spear T	G, N	4	✓	✓		✓		
UN	Unknown MOA	Azadirachtin	azadirachtin	Azaguard	G, N, L, I	4	✓			✓		
		Sulfur	sulfur	Microfine Sulfur	G, N	24	✓					
UNB	Bacterial agents of unknown or uncertain MOA	<i>Burkholderia</i> spp.	Heat-killed <i>Burkholderia</i> spp. strain A396 cells and spent fermentation media	Venerate CG	G, N, L, I	4	✓				✓	
		<i>Chromobacterium</i> spp.	<i>Chromobacterium subtsugae</i> strain	Grandevo CG	N, G, L	4					✓	

			PRAA4-1 and spent fermentation media								
UNE	Botanical essence with unknown or uncertain MOA	Neem oil	neem oil	Triact 70	G, N, L, I	4				✓	
UNF	Fungal agents of unknown or uncertain MOA	<i>Beauveria bassiana</i>	<i>Beauveria bassiana</i> strain GHA	BotaniGard 22WP, ES	G, N, L, I	4	✓				
			<i>Beauveria bassiana</i> strain PPRI 5339	Velifer	G	12				✓	
		<i>Isaria fumosorosea</i>	<i>Isaria fumosorosea</i> Apopka strain 97	Ancora	G, N, L	4	✓				
			<i>Isaria fumosorosea</i> strain FE 9901	NoFly WP	G, N	12	✓		✓	✓	
		<i>Metarhizium anisopliae</i>	<i>Metarhizium anisopliae</i> strain F52	Met52	G, N, L	4				✓	
UC	Active ingredients are not classified by IRAC	mineral, petroleum, or paraffinic oil (horticultural or dormant oil)	SuffOil-X	G, N, L	4				✓		
			SunSpray Ultra-Fine Oil	G, N, L, I	4	✓		✓			
			Ultra-Pure Oil	G, N, L, I	4	✓		✓			
		potassium salts of fatty acids (insecticidal soap)	Kopa	G, N, L	12	✓			✓		
			M-Pede	G, N, L	12	✓					
		capsicum oleoresin extract + garlic oil + canola oil	Captiva Prime	G, N, L	4	✓	✓	✓	✓		

Note: IRAC = Insecticide Resistance Action Committee. Use sites: G = greenhouse; N = nursery; L = landscape; I = interiorscape. Trade names of insecticides and miticides are provided as examples only. No criticism of unmentioned products is intended. Check product labels for precaution, use site, application, and rate information.

Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, gender, religion, national origin, disability, political beliefs, sexual orientation, gender identity, marital or family status and is an equal opportunity employer. The information in this publication is provided for educational and informational purposes only. The use of any brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by Clemson University nor does it imply discrimination against similar products or services not mentioned. Recommendations for the use of agricultural chemicals may be included in this publication as a convenience to the reader. Individuals who use agricultural chemicals are responsible for ensuring that their intended use of the chemical complies with current regulations and conforms to the product label.

This publication may be reprinted in its entirety for distribution for educational and informational purposes only. Any reference made from this publication must use the provided citation.