MICHIGAN STATE UNIVERSITY | Extension

Insecticides and Miticides Registered for Christmas Trees, 2015

Read and follow all label instructions before using any pesticide product. Information derived from this publication does not constitute a label replacement or a recommendation. Before applying any pesticide, read and understand the entire pesticide label and any additional labeling related to the proposed use. **Before purchasing, be certain the product is labeled for both the host and pest you want to control.**

Active Ingredient	Insecticide & Formulation	EPA Reg#	Company	RUP	REI	Mode of Action(1)
abamectin	Ardent 0.15 EC	100-896	Syngenta	no	12 hrs	**6**
	Avid 0.15 EC	100-896	Syngenta	no	12 hrs	
	Lucid	83100-5-83979	Rotam North America,	no	12 hrs	
	Minx	228-657	Nufarm	no	12 hrs	
	Nufarm Abamectin	228-657	Nufarm	no	12 hrs	
	Phoenix Merlin	70506-276	United Phosphorus, Inc	no	12 hrs	
	Reaper .15 EC	34704-923	Loveland Products	yes	12 hrs	
	Reaper Clearform	34704-1078	Loveland Products	yes	12 hrs	
acephate*	Acephate 90 Prill	66222-123	Makhteshim-Agan of	no	24 hrs	**1B**
*some of these products	Acephate 90 WDG	34704-1051	Loveland Products, Inc.	no	24 hrs	
may only be labled on	Acephate 97	70506-8-55467	TENKOZ, Inc., Inc.	no	24 hrs	
Douglas-fir	Acephate 97 UP	70506-8	United Phosphorus, Inc	no	24 hrs	
	Bracket 97	70506-8-1381	Winfield Solutions	no	24 hrs	
	Orthene TTO 97	5481-8978	Amvac	no	24 hrs	
	Orthene TTO WSP	59639-26-5481	Amvac	no	24 hrs	
	Tide Acephate	84229-7	Tide International	no	24 hrs	
azadirachtin	Aza-Direct	71908-10163	Gowen	no	4 hrs	**un**
	AzaGuard	70299-17	BioSafe Systems	no	4 hrs	
	Ecozin Plus 1.2% ME	5481-559	Amvac	no	4 hrs	
	Molt-X	68539-11	BioWorks, Inc.	no	4 hrs	
Bacillus thuringiensis, subsp. Kurstaki	DiPel ES	73049-17	Valent USA	no	4 hrs	**11A**
	DiPel PRO DF	73049-39	Valent USA	no	4 hrs	
bifenthrin	Bifen 2 AG Gold	83222-1	Direct Ag Source	yes	12 hrs	**3**
	Onyx Pro	279-3177	FMC Corp	yes	12 hrs	
	Sniper	34704-858	Loveland Products	yes	12 hrs	
bifenazate	Acramite 4SC	400-514	Chemtura	no	12 hrs	**un**
	Floramite SC	400-508-59807	OHP,Inc.	no	12 hrs	
bifenazate and abamectin	Sirocco	400-582-59807	OHP,Inc.	no	12 hrs	**6/un**
carbaryl	Carbaryl 4L	34704-447	Loveland	no	12 hrs	**1A**
	Drexel Carbaryl 4L	19713-49	Drexel	no	12 hrs	
	Prokoz Sevin SL	432-1227-72112	Prokoz	no	12 hrs	
	Sevin 4F	264-349	Bayer CropScience	no	12 hrs	
	Sevin 4F	61842-38	Tessenderlo Kerley (NovaSource)	no	12 hrs	
	Sevin 80S	264-316	Bayer CropScience	no	12 hrs	
	Sevin SL Carbaryl	432-1227	Bayer CropScience	no	12 hrs	
	Sevin XLR Plus	264-333	Bayer CropScience	no	12 hrs	
	Sevin XLR Plus	61842-37	Tessenderlo Kerley (NovaSource)	no	12 hrs	

Active Ingredient	Insecticide & Formulation	EPA Reg#	Company	RUP	REI	Mode of Action(1)
chlorpyrifos	Chlorpyrifos 4E AG	66222-19	Makhteshim-Agan of North America, Inc	yes	24 hrs	**1B**
	Drexel Chlorpyrifos 4E AG	19713-520	Drexel	yes	24 hrs	
	Govern 4E	62719-220-55467	TENKOZ, Inc.	yes	24 hrs	
	Hatchet	62719-220	Dow AgroSciences	yes	24 hrs	
	Lorsban Advanced	62719-591	Dow AgroSciences	yes	24 hrs	
	Lorsban 4E	62719-220	Dow AgroSciences	yes	24 hrs	
	Lorsban 75WG	62719-301-10163	Gowan	no	24 hrs	
	Nufos 4E	67760-28	Cheminova	yes	24 hrs	
	Quali-Pro Chlorpyrifos 4E	66222-19	Makhteshim-Agan of North America, Inc	yes	24 hrs	
	Warhawk	34704-857	Loveland	yes	24 hrs	
	Whirlwind	62719-220-5905	Helena	yes	24 hrs	
	Yuma 4E Insecticide	62719-220-1381	Winfield Solutions LLC	yes	24 hrs	
	Vulcan	66222-233	Makhteshim-Agan of North America, Inc	yes	24 hrs	
clofentezine	Apollo SC	66222-47	Makhteshim-Agan of North America, Inc	no	12 hrs	**10A**
cyflumetofen	Sultan Miticide	7969-337	BASF Ag Products	no	12 hrs	**25**
cyfluthrin	Baythroid XL	264-840 EPA-SLN No. MI 060003	Bayer CropScience	yes	12 hrs	**3**
diflubenzuron	Dimilin 25W	400-465	Chemtura Corp.	yes	12 hrs	**15**
	Dimilin 4L	400-474	Chemtura Corp.	yes	12 hrs	
disulfoton * **only on Fir**	Di-Syston 15% Granular	264-723	Bayer CropScience	yes	48 hrs	**1B**
emamectin benzoate	Enfold	100-1411	Syngenta	yes	12 hrs	**6**
esfenvalerate	Asana XL	352-515	DuPont	yes	12 hrs	**3**
	S-fenvalostar	71532-21-73006	LG Life Sciences	yes	12 hrs	
	Zyrate	71532-21-83979	Rotam	yes	12 hrs	
etoxazole	TetraSan 5 WDG	59639-108	Valent USA	no	12 hrs	**10B**
fenazaquin	Magister	10163-297	Gowan	no	12 hrs	**21A**
	Magus Miticide	10163-297	Gowan	no	12 hrs	
flubendiamide	Belt SC	264-1025	Bayer CropScience	no	12 hrs	**28**
hexythiazox	Hexygon DF	10163-251	Gowan	no	12 hrs	**10A**
	Onager	10163-277	Gowan	no	12 hrs	
	Savey 50DF	10163-250	Gowan	no	12 hrs	
horticulture oil	Damoil	19713-123	Drexel	no	4 hrs	
	Glacial Spray Fluid	34704-849	Loveland	no	4 hrs	
	Mite-E-Oil	5905-302	Helena Chemical	no	4 hrs	
	Purespray Green	69526-9	Petro-Canada	no	4 hrs	
	Purespray 10E	69526-5	Petro-Canada	no	4 hrs	
	Ultra-Pure Oil Hort	69526-5-499	Whitmire Micro-Gen Research Lab	no	4 hrs	

Active Ingredient	Insecticide & Formulation	EPA Reg#	Company	RUP	REI	Mode of Action(1)
imidacloprid	Admire Pro	264-827	Bayer CropScience	no	12 hrs	**4A**
	Advise 2FL	1381-205	Winfield Solutions	no	12 hrs	
	Alias 2F	66222-203	Makhteshim-Agan of North America, Inc	no	12 hrs	
	Alias 4F	66222-156	Makhteshim-Agan of North America, Inc	no	12 hrs	
	AmTide Imidacloprid 2F	83851-12	AmTide, LLC	no	12 hrs	
	AmTide Imidacloprid 4F	83851-20	AmTide, LLC	no	12 hrs	
	Couraze 2F	67760-91	Cheminova	no	12 hrs	
	Couraze 4	67760-116	Cheminova	no	12 hrs	
	Macho 2.0 FL	42750-140	Albaugh, LLC/Agri Star	no	12 hrs	
	Macho 4.0	42750-140	Albaugh, LLC/Agri Star	no	12 hrs	
	Malice 2F	34704-893	Loveland Products	no	12 hrs	
	Malice 75 WSP	34704-1009	Loveland Products	no	12 hrs	
	Mallet 75 WSP	228-588	Nufarm	no	12 hrs	
	Midash Forte	83529-6	Sharda USA LLC	no	12 hrs	
	Montana 2F	83100-7-83979	Rotam North America	no	12 hrs	
	Montana 4F	83100-21-83979	Rotam North America	no	12 hrs	
	Nuprid 1.6 F	228-488	Nufarm	no	12 hrs	
	Nuprid 2F	228-484	Nufarm	no	12 hrs	
	Nuprid 2SC	228-572	Nufarm	no	12 hrs	
	Nuprid 4.6F Pro	228-527	Nufarm	no	12 hrs	
	Nuprid 4F MAX	228-528	Nufarm	no	12 hrs	
	Pasada 1.6F	66222-228	Makhteshim-Agan of North America, Inc	no	12 hrs	
	Prey 1.6	34704-894	Loveland Products	no	12 hrs	
	Provado 1.6F	264-763	Bayer CropScience	no	12 hrs	
	Sherpa	34704-983	Loveland Products	no	12 hrs	
	Widow	34704-893	Loveland Products	no	12 hrs	
	Wrangler	34704-931	Loveland Products	no	12 hrs	
insecticidal soap	M-Pede M-Pede Insecticide	62719-515 10163-324	Dow AgroSciences Gowan	no no	12 hrs 12 hrs	
malathion	Cheminova Malathion 57% Low Voc	67760-119	Cheminova	no	12 hrs	**1B**
	Cheminova Malathion 57%	67760-40	Cheminova	no	12 hrs	
	Drexel Malathion 5EC	19713-217	Drexel Chemical	no	12 hrs	
	Malathion 8 Flowable	10163-21	Gowan	no	12 hrs	
	Malathion 8 Aquamul	34704-474	Loveland Products	no	12 hrs	
methoxyfenozide	Intrepid 2F	62719-442	Dow AgroSciences	no	4 hrs	**18**
oxydemeton-methyl	MSR Spray Concentrate	10163-220	Gowan	yes	18 days	**1B**
peppermint and rosemary oil	Ecotec	exempt	Brandt Consolidated	no		**un**
permethrin	Ambush 25W	5481-502	Amvac	yes	12 hrs	**3**
phosmet	Imidan 70-W	10163-169	Gowan	no	13 days	**1B**
propargite	Omite 30 WS	400-427	Chemtura	yes	14 days	**12C**
pymetrozine	Endeavor	100-913	Syngenta	no	12 hrs	**9B**
spinosad	Blackhawk Naturalyte Conserve SC Entrust Entrust EC SpinTor 2SC Success Naturalyte	62719-523 62719-291 62719-282 62719-621 62719-294 62719-523	Dow AgroSciences Dow AgroSciences Dow AgroSciences Dow AgroSciences Dow AgroSciences Dow AgroSciences	no no no no no no	4 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs	**5**

Active Ingredient	Insecticide & Formulation	EPA Reg#	Company	RUP	REI	Mode of Action(1)
spirodiclofen	Envidor 2SC Mitecide	264-831	Bayer Cropscience	no	12 hrs	**23**
spirotetramat	Movento	264-1050	Bayer Cropscience	no	24 hrs	**23**
tebufenozide	Confirm 2F	8033-111-10163	Gowan	no	4 hrs	**18**
thiamethoxam	Flagship .22G Flagship 25WG	100-960 100-955	Syngenta Syngenta	no no	12 hrs 12 hrs	**4A**

MSU is an affirmative-action, equal-opportunity employer, committed to achieving excellence through a diverse workforce and inclusive culture that encourages all people to reach their full potential. Michigan State University Extension programs and materials are open to all without regard to race, color, national origin, gender, gender identity, religion, age, height, weight, disability, political beliefs, sexual orientation, marital status, family status or veteran status. Issued in furtherance of MSU Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Ray Hammerschmidt, Interim Director, MSU Extension, East Lansing, MI 48824. This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by MSU Extension or bias against those not mentioned.

(1) Wherever possible, growers should rotate classes of insecticides and avoid using the same chemistry more than once per year, or better, once every other year. Note the resistance group number of each insecticides and avoid using chemistries from the same group.

Mode of Action Groups/Chemical Class

1A Carbamates
1B Organophosphates
3 Pyrethroid
4A Neonicotinoids
5 Spinosyns
6 Avermectins
9B Pymetrozine
10A Clofentezine, Diflovidazin, Hexythiazox
10B Etoxazole
11A Bacillius thuringiensis
12C Propargite
15 Benzoylureas
18 Diacylhydrazines)
21A Fenazaquin
23 Tetronic and tetramic cid derivatives
25 Beta-ketronitrile derivatives
28 Diamides
UN Compounds of unknown or uncertain mode of action