

**Insecticides & Miticides
Christmas Trees
2011**

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 | Avid 0.15 EC | 100-896 | Syngenta | no | 12 hrs | 6 |
| | Flora-Mek 0.15EC | 100-896-72112 | Prokoz | no | 12 hrs | |
| | Lucid | 83100-5-83979 | Rotam North America, | no | 12 hrs | |
| | Minx | 1001-83 | Cleary Chemical Corp. | no | 12 hrs | |
| | Quali-Pro Abamectin 0.15EC | 73220-10 | Farmsaver.com | no | 12 hrs | |
| | Quali-Pro Abamectin 0.15EC | 66222-210 | Makhteshim-Agan of North America, Inc | no | 12 hrs | |
| | Timectin 0.15 EC T&O | 84229-1 | Tide International | no | 12 hrs | |
| acephate* | Acephate 90 Prill | 66222-123 | Makhteshim-Agan of | no | 24 hrs | 1B |
| | Acephate 90 Soluble | 66330-356 | Arysta LifeScience | no | 24 hrs | |
| * some may only be labeled for Douglas-fir | Acephate 90 WDG | 66330-370 | Arysta LifeScience | no | 24 hrs | |
| | Acephate 90 WDG | 34704-1051 | Loveland Products, Inc. | no | 24 hrs | |
| | Acephate 90 WSP | 34704-862 | Loveland Products, Inc. | no | 24 hrs | |
| | Acephate 97 UP | 70506-8 | United Phosphorus, Inc | no | 24 hrs | |
| | Bracket 97 | 70506-8-1381 | Winfield Solutions | no | 24 hrs | |
| | Lesco-Fate | 51036-236-10404 | Lesco | no | 24 hrs | |
| | Orthene TTO | 59639-26 | Valent USA | no | 24 hrs | |
| | Orthene TTO 97 | 59639-91-5481 | Amvac | no | 24 hrs | |
| | Orthene TTO WSP | 59639-26-5481 | Amvac | no | 24 hrs | |
| | Tenkoz Acephate 97 | 70506-8-55467 | Tenkoz, Inc | no | 24 hrs | |
| Bacillus thuringiensis, subsp. Kurstaki | DiPel ES | 73049-17 | Valent USA | no | 4 hrs | 11.B2 |
| | DiPel PRO DF | 73049-39 | Valent USA | no | 4 hrs | |
| bifenthrin | Onyx Pro | 279-4269 | FMC Corp | yes | 12 hrs | 3A |
| | Quali-PRO Bifenthrin Golf & Nursery 7.9F | 66222-192 | Makhteshim-Agan of North America, Inc | yes | 12 hrs | |
| | Talstar One | 279-3206 | FMC Corp | yes | 12 hrs | |
| | Talstar Select Flowable | 279-3155 | FMC Corp | yes | 12 hrs | |
| buprofezin | Talus 40SC | 71711-20-67690 | SePRO Corp | no | 12 hrs | 16 |
| | Talus 70 DF | 71711-21-67690 | SePRO Corp | no | 12 hrs | |
| carbaryl | Carbaryl 4L | 34704-447 | Loveland | no | 12 hrs | 1A |
| | 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 80 WSP Carbaryl | 432-1226 | Bayer CropScience | 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 | |

| 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 |
| | Chlorpyrifos 4E AG | 19713-520 | Drexel | yes | 24 hrs | |
| | Govern 4E | 62719-220-55467 | Tenkoz | yes | 24 hrs | |
| | Lorsban Advanced | 62719-591 | Dow AgroSciences | yes | 24 hrs | |
| | Lorsban 4E | 62719-220 | Dow AgroSciences | yes | 24 hrs | |
| | Lorsban 50W WSP | 62719-221 | 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 | |
| | Quali-Pro Chlorpyrifos 4E | 66222-19-73220 | FarnSaver | yes | 24 hrs | |
| | Warhawk | 34704-857 | Loveland | yes | 24 hrs | |
| | Warhawk | 62719-220-34704 | Loveland | yes | 24 hrs | |
| Whirlwind | 62719-220-5905 | Helena | yes | 24 hrs | | |
| Yuma 4E Insecticide | 62719-220-1381 | Winfield Solutions LLC | yes | 24 hrs | | |
| clofentazine | Apollo SC | 66222-47 | Makhteshim-Agan of | no | 12 hrs | 10A |
| cyfluthrin | Baythroid XL | 264-840 EPA-SLN No. MI 060003 | Bayer CropScience | yes | 12 hrs | 3A |
| 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% | 264-723 | Bayer CropScience | yes | 48 hrs | 1B |
| esfenvalerate | Adjourn | 352-515-66222 | Makhteshim-Agan of | yes | 12 hrs | 3A |
| | Asana XL | 352-515 | DuPont | yes | 12 hrs | |
| 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 | |
| | Prescription Treatment Brand Ultra-Fine Oil | 862-23-499 | Whitmire Micro-Gen | no | 4 hrs | |
| | Purespray 10E | 69526-5 | Petro-Canada | no | 4 hrs | |
| | Purespray Green | 69526-9 | Petro-Canada | no | 4 hrs | |
| Superior Spray Oil N.W. | 2935-405 | Wilbur-Ellis | no | 12 hrs | | |
| imidacloprid | Admire Pro | 264-827 | Bayer CropScience | no | 12 hrs | 4A |
| | Couraze 1.6F | 264-763-67760 | Cheminova | no | 12 hrs | |
| | Couraze 2F | 67760-91 | Cheminova | no | 12 hrs | |
| | Couraze 4F | 67760-97 | Cheminova | no | 12 hrs | |
| | Pasada 1.6F | 264-763-66222 | Makhteshim-Agan of North America, Inc | no | 12 hrs | |
| | Prey | 34704-894 | Loveland | no | 12 hrs | |
| | Provado 1.6F | 264-763 | Bayer CropScience | no | 12 hrs | |
| insecticidal soap | M-Pede | 62719-515 | Dow AgroSciences | no | 12 hrs | |

| Active Ingredient | Insecticide & Formulation | EPA Reg# | Company | RUP | REI | Mode of Action(1) |
|--------------------------|---------------------------------|-----------|-------------------|-----|---|-------------------|
| | | | | | | |
| malathion | Malathion 8 | 10163-21 | Gowan | no | 12 hrs | 1B |
| | Malathion 8 Aquamul | 34704-474 | Loveland | no | 12 hrs | |
| oxydemeton-methyl | MSR Spray Concentrate | 10163-220 | Gowan | yes | 18 days (new label) 48 hrs (old label) | 1B |
| | | | | | | |
| phosmet | Imidan 70-W | 10163-169 | Gowan | no | 13 days | 1B |
| propargite | Omite 30 WS | 400-427 | Chemtura | yes | 14 days | 14 |
| | | | | | | |
| pymetrozine | Endeavor | 100-913 | Syngenta | no | 12 hrs | 9B |
| | | | | | | |
| spinosad | Conserve SC | 62719-291 | Dow AgroSciences | no | 4 hrs | 5 |
| | SpinTor 2SC | 62719-294 | Dow AgroSciences | no | 4 hrs | |
| | | | | | | |
| spirodiclofen | Envidor 2SC Mitecide | 264-831 | Bayer Cropscience | no | 12 hrs | 5 |
| | | | | | | |
| spirotetramat | Movento | 264-1050 | Bayer Cropscience | no | 24 hrs | 23 |
| | | | | | | |
| tebufenozide | Confirm 2F | 62719-420 | Dow AgroSciences | no | 4 hrs | 18 |
| | Mimic 2LV Specialty Insecticide | 62719-439 | Dow AgroSciences | no | 4 hrs | |
| | | | | | | |
| thiamethoxam | Flagship 25WG | 100-955 | Syngenta | no | 12 hrs | 4A |

MSU is an affirmative-action, equal-opportunity employer. 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. Thomas G. Coon, 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

- | | |
|---|---|
| 1A - Carbamates | 9B - Selective feeding blockers |
| 1B - Organophosphates | 10A - Mite growth inhibitor |
| 3A - Pyrethroid | 11.B2 - Bacterial larvicide |
| 3B - Organochlorine | 14 - Inhibition of magnesium-stimulated ATPase |
| 4A - Neonicotinoids | 15 - Inhibitors of chitin |
| 5 - Spinosyns | 23 - Inhibior of acetyl CoA |
| 6 - Chloride channel activators (Avermectins) | |