

2005 NORTH CAROLINA AGRICULTURAL CHEMICALS MANUAL

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ARTHROPOD CONTROL FOR TREES AND WOODY ORNAMENTALS

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TABLE 5-18C. ARTHROPOD CONTROL ON CHRISTMAS TREES

Also see CEDAR, FIR, JUNIPER, and PINE in TABLE 5-18B or refer to specific pest in TABLE 5 18A

** N.C. label

Insect or Mite	Insecticide and Formulations	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Precautions and Remarks
ADELGIDS (Balsam Woolly Adelgid, Cooley, Eastern Spruce Gall)	bifenthrin (Talstar Nursery Flowable)		40 oz/acre	12 hr	Will also control twig aphids and spider mites but not rust mites.
	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress. Control is achieved only when eggs and crawlers are not present.
	** endosulfan (Thiodan 3 EC)	1 tsp/gal	2/3 qt/100 gal	24 hr	Do not apply more than 4 qt per acre per year. Do not apply within 300 ft of ponds and streams.
	esfenvalerate (Asana XL)		5.8 to 9.6 oz/100 gal	12 hr	Use full rate to control balsam woolly adelgid.
	imidacloprid (Provado 1.6 F)		4 to 8 oz/acre OR 2 oz/100 gal	12 hr	Adding a spray adjuvant may improve coverage. Do not apply more than 40 oz per acre per year.
	oxydemeton-methyl (Metasystox-R) (Gowan)		1 to 2 pt/acre	48 hr in areas receiving at least 25 in. of rain per year	Apply specified dosage per acre in sufficient water for complete coverage. Do not make more than two applications per season.
	permethrin (Astro)		16 to 32 oz/100 gal	24 hr	
ANTS	carbaryl (Chipco Sevin SL)		1 qt/acre	12 hr	
	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress.
APHID (including Balsam Twig Aphid)	abamectin (Avid 0.15 EC)		8 oz/100 gal	12 hr	Do not apply more than 16 oz or less than 8 oz per acre. To suppress aphids, spray must contact young immatures.
	<i>Beaveria bassiana</i> (Naturalis T&O)	0.3 to 1 oz/gal	30 to 100 oz/100 gal	4 hr	Spray immediately after mixing.
	carbaryl (Chipco Sevin SL)		1 qt/acre	12 hr	
	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress.
	cinnamaldehyde (Cinnamite)	0.85 oz/gal	85 oz/100 gal	4 hr	
	dimethoate (Dimethoate 400) (Clean Crop)		35 oz/100 gal	48 hr	
	**disulfoton (Di-Syston 15 G)		1 tsp/tree 20 to 30 lb/acre	48 hr	Spread the granules in the root zone of the trees at the dripline and work into the soil or water thoroughly within 48 hr of application. Not for use in bare-ground plantations.
	esfenvalerate (Asana XL)		5.8 to 9.6 oz/100 gal	12 hr	
	imidacloprid (Provado 1.6 F)		4 to 8 oz/acre OR 2 oz/100 gal	12 hr	Adding a spray adjuvant may improve control. Do not apply more than 40 oz per acre per year.
	oxydemeton-methyl (Metasystox-R) (Gowan)		1 to 2 pt/acre	48 hr in areas receiving at least 25 in. of rain per year	Apply specified dosage per acre in sufficient water for complete coverage. Do not make more than two applications per season.
pymetrozine (Endeavor)		2.5 to 5 oz/100 gal Up to 10 oz/acre	12 hr	Do not apply more than 48 oz per acre per year.	
BAGWORM	carbaryl (Chipco Sevin SL)		1 qt/acre	12 hr	
	diflourobenzamide (Dimilin 4L)		1 to 8 oz/acre	12 hr	Apply to early instars in mid- to late June.
	dimethoate (Dimethoate 400) (Clean Crop)		35 oz/100 gal	48 hr	
	tebufenozide (Confirm)		4 to 8 oz/acre	4 hr	Apply to early instar larvae; foliage development should be a minimum of 20%. Do not apply more than 16 oz per acre per year.
ELONGATE HEMLOCK SCALE	dimethoate (Dimethoate 400) (Clean Crop)		35 oz/100 gal	48 hr	Make two applications two to three weeks apart.
	Talus		14 oz/100 gal	12 hr	

TABLE 5-18C. ARTHROPOD CONTROL ON CHRISTMAS TREES (continued)

** N.C. label

Insect or Mite	Insecticide and Formulations	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Precautions and Remarks
EUROPEAN PINE SHOOT MOTH	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress.
	dimethoate (Dimethoate 400) (Clean Crop)		35 oz/100 gal	48 hr	
	phosmet (Imidan 70-WSB) (Gowan)		1.3 to 1.5 lb/acre	24 hr	
GYPSY MOTH	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress.
	diflourorbenzamide (Dimilin 4L)		0.5 to 2 oz/acre	12 hr	Apply to early instar and prior to full leaf expansion.
	ozydemeton-methyl (Metasystox-R) (Gowan)		1 to 2 pt/acre	48 hr in areas receiving at least 25 in. of rain per year	Apply specific dosage per acre in sufficient water for complete coverage. Do not make more than two applications per season.
	phosmet (Imidan 70-WSB) (Gowan)		1.3 to 1.5 lb/acre	24 hr	
	terbufenozide (Confirm)		8 oz/acre	4 hr	Apply to early instar larvae after each foliage flush at approximately 25% foliage expansion. Allow at least 6 hr between application and rainfall to assure thorough spray drying.
LEAFMINER	ozydemeton-methyl (Metasystox-R) (Gowan)		1 to 2 pt/acre	48 hr in areas receiving at least 25 in. of rain per year	Apply specific dosage per acre in sufficient water for complete coverage. Do not make more than 2 applications per season.
MIDGE (Douglas fir needle midge, pine needle midge)	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress.
	esfenvalerate (Asana XL)		5.8 to 9.6 oz/100 gal	12 hr	
NANTUCKET PINE TIP MOTH	carbaryl (Chipco Sevin SL)		1 qt/acre	12 hr	
	diflourorbenzamide (Dimilin 4L)		1 to 2 oz/acre	12 hr	Apply when second generation instars are present or 70% of first generation pupal cases are empty.
	dimethoate (Dimethoate 400) (Clean Crop)		60 oz/100 gal	48 hr	
	**disulfoton (Di-Syston) 15 G		1 tsp/tree 20 to 30 lb/acre	48 hr	Spread granules in the root zone of the trees at the dripline and work into the soil or water thoroughly within 48 hr of application. Not for use in bare-ground plantations.
	esfenvalerate (Asana XL)		5.8 to 9.6 fl oz	12 hr	Apply as needed for control. Spray sufficient gallonage to obtain good coverage of entire tree.
	permethrin (Astro)		4 to 8 oz/100 gal	24 hr	Begin applications when adults appear. Repeat applications may be made in 5- to 7-day intervals as needed.
	phosmet (Imidan 70-WSB) (Gowan)		1.3 to 1.5 lb/acre	24 hr	
	tebufenozide (Confirm)		8 oz/acre	4 hr	Apply to early instar larvae after each foliage flush at approximately 25% foliage expansion. Allow at least 6 hr between application and rainfall to assure thorough spray drying.
PINE CHAFER	esfenvalerate (Asana XL)		5.8 to 9.6 oz/100 gal	12 hr	
PINE CONELET BUG	** dimethoate (Dimethoate 4 EC) (Drexel)		1.3 pt/100 gal	48 hr	Not for use on bare-ground plantations.
ROSETTE BUD MITE	dimethoate (various brands)		1.3 pt/100 gal	48 hr	
RUST MITES	dimethoate (Dimethoate 400) (Clean Crop)		1 to 1.5 pt/acre	48 hr	
	chlorpyrifos (Lorsban 4E)		1 qt/acre	24 hr	Do not treat plants under extreme heat or drought stress.

