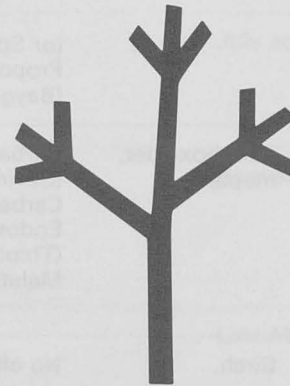


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# Insecticide Suggestions To Control Tree, Shrub, Lawn, And Turf Insects In 1979



Extension Folder 414 — Revised 1979  
AGRICULTURAL EXTENSION SERVICE  
UNIVERSITY OF MINNESOTA

# Insecticide Suggestions To Control Tree, Shrub, Lawn, And Turf Insects In 1979

Pest	Host/habitat	Insecticide/pesticide	Dosage		Timing/remarks	
			Amount of Water	100 gals.		
Ants	Lawn, turf	Diazinon 48% E.C.*	4 fl. oz. per 3 gals.		Spot treat nests (Commercial applicators).	
		25% E.C.	8 fl. oz. per 3 gals.		to cover 125 sq. ft.	
		50% W.P.**	4 oz. per 3 gals.		Spot treat nests.	
		Chlorpyrifos 41.2% E.C. (Dursban)	3/4 fl. oz. per 30 gals.		to cover 1,000 sq. ft. (commercial applicators)	
		5.3% E.C.	4 fl. oz. per 15 gals.		to cover 500 sq. ft.	
Aphids	Apple, basswood, birch, boxelder, elm, flowering shrubs, maple, oak, pine, viburnum, willow, etc.	Malathion 50-57% E.C.	2 tsp.	1 1/2-2 pints	Foliage spray.	
		Malathion 25% W.P.	2 1/2 tbsp.	2 1/2 lbs.	Foliage spray.	
		Dimethoate 23-30% E.C. (Cygon, Defend, Rebelate)	Use as directed on label.			
		Azinphosmethyl 50% W.P. (Guthion)	2 tsp.	3/4-1 lb.		
		22% E.C.	2 tsp.	1 1/2-2 pints		May injure American Linden.
		Chlorpyrifos 41.2% E.C. (Dursban)	1/4 fl. oz. in 3 gals.	4 fl. oz.		Commercial applicators.
		Demeton 25% E.C. (Systox)	2-2 1/2 tsp.	1-1 1/2 pints		Commercial applicators.
		Oxydemetonmethyl 25% E.C. (Meta-Systox R)	1 1/2 tsp.	1 1/2 pints		
Diazinon 25% E.C.	2 tsp.	2 pints				
Acephate 15.6% E.C. (Orthene)	1 tbsp.	1 1/4 qts.		Check label for host restrictions.		
Billbugs	Lawn, turf	Diazinon 48% E.C. (AG 500)	4 fl. oz. in 3 gals.		to cover 1,000 sq. ft. Irrigate lawn after treatment. Apply mid-May — mid-June.	
		(or Spectracide E.C. or G) Propoxur 70% W.P. (Baygon)	As labeled	4 oz. in 15-40 gals.		to cover 1,000 sq. ft. Commercial applicators.
Boxelder bug	Ash, boxelder, maple	Carbaryl 80% W.P. (Sevin)	4 tsp.	1 1/4 lbs.	Apply during late summer.	
		50% W.P.	2 tbsp.	2 lbs.		
		Carbaryl (Sevimol)	1 tbsp.	2 pints		
		Endosulfan 50% W.P. (Thiodan)	3 tbsp.	3 lbs.	Apply during late summer.	
		Malathion 50% E.C.	1 tbsp.	3 pints	Apply during late summer.	
Bronze birch borer	Birch	No effective chemical control available				

\*E.C. = emulsifiable concentrate.

\*\*W.P. = wettable powder.

**Note:** The all-purpose garden and fruit mixture of methoxychlor and malathion will control most leaf-feeding and sapsucking insects on trees and shrubs.

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Pest	Host/habitat	Insecticide/pesticide	Dosage		Timing/Remarks
			Amount of water 1 gal.	100 gals.	
CATERPILLARS: (Also for sawflies)		<i>Bacillus thuringiensis</i> (Dipel, Thuricide, Biotrol)	Use as directed on the label (not for sawflies).		
		Carbaryl 80% W.P.	4 tsp.	1¼ lbs.	
		(Sevin) 50% W.P.	2 tbsp.	2 lbs.	
		Carbaryl (Sevimol)	1 tbsp.	2 pints	
		Malathion 57% E.C.	2 tsp.	2 pints	
		Malathion 25% W.P.	2 tbsp.	2 lbs.	
		Methoxychlor 50% W.P.	2 tbsp.	2 lbs.	
		Methoxychlor 25% E.C.	4 tsp.	½ gal.	
		Acephate 15.6% E.C. (Orthene)	1½ tbsp.	2¼ qts.	
Cankerworm (Spring and Fall)	Apple, ash, basswood, box- elder, cherry, elm, maple, and others	Control as recommended for caterpillars.			Apply at first sign of in- jury, usually early May.
Cutworm	Lawn, turf	Carbaryl 80% W.P. (Sevin) 50% W.P. Chlorpyrifos 41.2% E.C. (Dursban)	1¼ lbs. in 200 gals. to cover 5,000 sq. ft. 2 lbs. in 200 gals. to cover 5,000 sq. ft. ¾ fl. oz. in 30 gals. to cover 1,000 sq. ft. (commercial applicators)		
		5.3% E.C. Diazinon 48% E.C. (or Spectracide) Trichlorfon 80% S.P. = (Dylox, Proxol) 40.5% E.C.	4 fl. oz. in 15 gals. to cover 1,000 sq. ft. 4 fl. oz. per 3 gals. to cover 1,000 sq. ft. of soil. (As labeled) 2½ to 3¼ oz. in 15-30 gals. to cover 1,000 sq. ft. ¼-¾ pint in 15-20 gals. to cover 1,000 sq. ft.		
Withhold water for 2-3 days following application.					
Eastern tent caterpillar	Apple, flowering shrubs, hawthorn, mountain ash, oak, peach, pear, plum, wild cherry	Control as recommended for caterpillars.			When tents first appear, early to mid-May.
Fall webworm	Apple, birch, boxelder, elm, flowering shrubs, oak, willow	Control as recommended for caterpillars.			July and early August.
Oak leaf caterpillars: Red-humped, Variable, Yellow-necked	Basswood, maple, oak	Control as recommended for caterpillars.			August and September.
Spiny elm caterpillar	Elm	For control see under caterpillars except acephate			Late May, early June.
Spruce budworm	Fir, spruce	Carbaryl, Methoxychlor. (see under caterpillars for dosage)			When buds open in early June. Second treatment 10 days later.

\* S.P. = soluble powder.

Pest	Host/habitat	Insecticide/pesticide	Dosage		Timing/Remarks
			Amount of water 1 gal.	100 gals.	
Walnut caterpillar	Butternut, hickory, walnut	Carbaryl, Methoxychlor. (see under caterpillars for dosage)			July to September.
White-marked tussock moth	Apple, basswood, elm, poplar	Carbaryl, Methoxychlor, Acephate. (see under caterpillars for dosage)			Mid- late May, occasionally again in August.
Chinch bug	Lawn, turf grasses	Carbaryl, Diazinon, Chlorpyrifos (see cutworm) Aspon 13% E.C. 5% G 67.6% E.C.	10 $\frac{2}{3}$ fl. oz. in 15 gals. to cover 500 sq. ft. 3 $\frac{1}{2}$ lbs. per 1,000 sq. ft. 18-24 fl. oz. in 150-200 gals. to cover 5,000 sq. ft. (commercial applicators)		
Elm bark beetle	Elm	Methoxychlor 25% E.C.	40 gals. plus 60 gals. water (Mist blower) 8 gals. plus 92 gals. water (Hydraulic sprayer)		
Galls	Basswood, blue spruce, elm, hackberry, maple, oak, poplar, and others		Prune out and destroy infested twigs and leaves. Once a gall is formed, a contact pesticide will not control the pest.		
Leafbeetles, } Leafhoppers }	Aspen, caragana, cottonwood, elm, willow, many deciduous trees	Carbaryl, Methoxychlor, Acephate (see under caterpillars for dosage) Oxydemetonmethyl (Meta-Systox-R)	1 $\frac{1}{2}$ tsp.	1 $\frac{1}{2}$ pints	Apply when adult beetles appear; repeat when larvae appear. Leafhoppers only.
Leafminers	Birch	Diazinon 50% W.P. 47.5% E.C. Trichlorfon 40.5% E.C. (Dylox, Proxol) 80% S.P. Malathion 57% E.C. Dimethoate 23.4% E.C. (Cygon) Carbaryl 80% W.P. (Sevin) 50% W.P. Demeton 25% E.C. (Systox) Oxydemetonmethyl 25% E.C. (Meta-Systox R) Acephate 15.6% E.C. (Orthene)	1 tbsp. 1 tsp. 2-3 tsp. 1 $\frac{1}{2}$ tbsp. 2 tsp. 2 tsp. 4 tsp. 2 tbsp. 1 $\frac{1}{2}$ -2 tsp. 1 $\frac{1}{2}$ tsp. 1 $\frac{1}{2}$ tbsp.	1 lb. 1 pint 2-3 pints 20-30 oz. 2 pints 1 pint 1 $\frac{1}{4}$ lbs. 2 lbs. 1 $\frac{1}{2}$ -2 pints 1-1 $\frac{1}{2}$ pints 2 $\frac{1}{4}$ qts.	Commercial applicators.    Foliar spray.   Commercial applicators. Foliar spray.
Plant bugs	Ash, honeylocust, other trees and shrubs	Carbaryl (Sevimol) (Sevin) 80% W.P. Trichlorfon 40.5% E.C. (Dylox, Proxol) 80% S.P. Malathion 50% E.C.	1 tbsp. 4 tsp. 2-3 pints 1 $\frac{1}{2}$ tbsp. 1 tbsp.	2 pints 1 $\frac{1}{4}$ lbs. 2-3 tsp. 1 $\frac{1}{4}$ lbs. 3 pints	Apply when leaf curling occurs.

Pest	Host/habitat	Insecticide/pesticide	Dosage		Timing/Remarks
			Amount of water 1 gal.	100 gals.	
<b>Sawflies:</b>					
Brown-headed ash sawfly	Ash	See under caterpillars for control recommendations, except <i>B. thuringiensis</i> .			Late May to early June.
Introduced pine sawfly	White pine				Early June, again in late August or early September.
Jack pine sawfly	Jack pine				Late May to early June.
Larch sawfly	Larch				Early June.
Red-headed pine sawfly	Jack pine				Late June, early July.
Yellow-headed spruce sawfly	Spruce				Late June, early July.
<b>Scales:</b>					
		Dormant oil sprays*			
		Ethion 2% Oil	4 fl. oz.	2-3 gals.	
		Ethion 70 Oil	4 fl. oz.	2-3 gals.	
		Diazinon 50% W.P. in oil	½ tbsp.	½ lb.	
(For all following scales: apply sprays as crawlers hatch)					
Cottony maple scale	Basswood, black locust, boxelder, elm, maple	Carbaryl 50% W.P.	2 tbsp.	2 lbs.	Late June, July.
		(Sevin) 80% W.P.	1¼ tbsp.	1¼ lbs.	
		Acephate 15.6% E.C. (Orthene)	1½ tbsp.	2¼ qts.	
		Malathion 50-57% E.C.	3 tsp.	2-2½ pints	
		Malathion 25% W.P.	3-6 tbsp.	3-6 lbs.	
European elm scale	Elm	As recommended for cottony maple scale except Acephate			Late June, early July.
		Azinphosmethyl 50% W.P. (Guthion) 22.2% E.C.	4 tsp. 1 tbsp.	1½-2 lbs. 3-4 pints	May injure American Linden.
European fruit lecanium	Variety of trees and shrubs	As recommended for cottony maple scale			June, early July.
		Diazinon 50% W.P. 47.5% E.C.	1 tbsp. 1 tsp.	1 lb. 1 pint	Commercial applicators.
Fletcher scale	Arborvitae, Yew	As recommended for cottony maple scale			Early July.
Oystershell scale	Apple, birch, cotoneaster, elm, lilac, and others	As recommended for cottony maple scale Azinphosmethyl 50% W.P. (Guthion)			Early June.
			2 tsp.	¾-1 lb.	

\*Note: Dormant oils should be used on deciduous trees and shrubs only. Avoid spraying on maples. Apply in fall after all growth has stopped or in early spring before buds open at temperatures above freezing.

Pest	Host/habitat	Insecticide/pesticide	Dosage		Timing/remarks		
			Amount of water 1 gal.	100 gals.			
Pine needle scale	Pine, spruce	Carbaryl	As recommended for cottony maple scale		Late May.      Commercial applicators.		
		Malathion 57% E.C.	4 tsp.	4 pints			
		25% W.P.	4 tbsp.	4 lbs.			
		Oxydemetonmethyl 25% E.C. (Meta-Systox-R)	2 tsp.	2 pints			
		Chlorpyrifos 41.2% E.C. (Dursban)	1 oz. in 3 gals.	1 quart			
Diazinon 50% W.P. 47.5% E.C.	1 tbsp. 1 tsp.	1 lb. 1 pint					
Pine tortoise scale	Jack pine, scotch pine	As recommended for cottony maple scale			Late June, early July.		
Scurfy scale	Elm, hackberry, maple, willow	As recommended for cottony maple scale			Late June, early July.		
Spruce bud scale	Spruce	As recommended for cottony maple scale			Mid-June to early July.		
Slugs	Lawn, turf	Chlorpyrifos 22% E.C. (Dursban)	By commercial applicators only.				
		Mesurool 2% Bait	1 lb. to cover 1,000 sq. ft.				
		Metaldehyde 2% Bait	1 lb. to cover 1,000 sq. ft.				
Sod webworm	Lawn, turf grasses	Carbaryl, Chlorpyrifos (see cutworm)	4 oz. per 3 gals. to cover 1,000 sq. ft.				
		Diazinon 50% W.P. 48% E.C. (or Spectracide)	4 fl. oz. per 3 gals. to cover 1,000 sq. ft. (As labeled)				
		Trichlorfon 40.5% E.C. (Dylox, Proxol) 80% S.P.	¼-¾ pints in 15-30 gals. to cover 1,000 sq. ft. 2¼-3¾ oz. in 15-30 gals. to cover 1,000 sq. ft.				
		Chlorpyrifos 41.2% E.C. (Dursban)	¾ fl. oz. to cover 1,000 sq. ft. (commercial applicators)				
		5.3% E.C.	4 fl. oz. in 15 gals. to cover 1,000 sq. ft.				
		Aspon 13% E.C.	10⅓ fl.oz. in 15 gals to cover 1,000 sq. ft.				
		Propoxur 13.5% E.C. (Baygon) 70% W.P.	11 fl. oz. in 10-15 gals to cover 1,000 sq. ft.	} Commercial applicators.			
		Ethoprop 5% G	2¾ oz. in 10-15 gals. to cover 1,000 sq. ft.				
				2.3 lbs/1,000 sq. ft.	Use on dry foliage only. Water granules from foliage. Bluegrass only. Not for home lawn use. Commercial applicators only.		

Withhold water for 2-3 days following application.

Pest	Host/habitat	Insecticide/pesticide	Dosage		Timing/remarks
			Amount of water 1 gal.	100 gals.	
Spider mites	Evergreens, several deciduous trees	Dicofol 35% W.P. (Kelthane)	1½ tbsp.	11/3 lbs.	
		Oxythioquinox 25% W.P. (Morestan)	1 tsp.	½ to 1 lb.	Shrubs & flowers only.
		Oxydemetonmethyl 25% E.C. (Meta-Systox-R)	1½ tsp.	1½ pints	
		Dimethoate 23.4% E.C. (Cygon)	2 tsp.	2 pints	
		Diazinon 50% W.P. 48% E.C.	1 tbsp. ½ fl. oz.	1 lb. 1 pt.	
		(or Spectracide)		in 3 gals. (As labeled)	
		Malathion 50-57% E.C. 25% W.P.	2-3 tsp. 2½ tbsp.	1½ pts. 2½ lbs.	
		Ovex 50% W.P.	2 tbsp.	1½ lbs.	
		Plictran 50% W.P.	—	4-6 oz.	
		Tetradifon 25% W.P. (Tedion)	—	1½ lbs.	} Caution: may injure ten- der new growth.
White grub	Lawn, turf	Diazinon 48% E.C.	4 fl. oz. to cover 1,000 sq. ft.		
		Diazinon 2% G	6 lbs. per 1,000 sq. ft.		} also for <i>Ataenius spre-</i> <i>tulus</i> larval control.
		Diazinon 5% G	2½ lbs. per 1,000 sq. ft.		
		Diazinon 14% G	1 lb. per 1,000 sq. ft.		
		Trichlorfon 40.5% E.C. (Dylox, Proxol) 80% S.P.	¾ pints in 30 gals. to cover 1,000 sq. ft.		
		Chlorpyrifos 5.3% E.C. (Dursban)	3¾ oz. in 30 gals. to cover 1,000 sq. ft.		
		41.2% E.C.	16 fl. oz. in 15 gals. to cover 500 sq. ft.		
		Ethoprop 5% G	1½-3 fl. oz. in 30 gals. to cover 1,000 sq. ft. (commercial applicators)		
			2.3 lbs/1,000 sq. ft.		For <i>Ataenius spre-</i> <i>tulus</i> larval control. Apply ½-1" water after appli- cation. Bluegrass only. Not for home lawn use. Use on dry foliage only. Commercial applicators only.
Zimmerman Pine moth	Pines	Endosulfan 50% W.P. (Thiodan) 24% E.C.	1½ tbsp. 3 tsp.	1½ lbs. 1½ qts.	Apply to bark and main trunk in May.
		Trichlorfon 80% S.P. (Dylox, Proxol) 40.5% E.C.	1½ tbsp. 2 tsp.	1¼ lbs. 2 pints	
		Dimethoate 23.4% E.C. (Cygon)	4 tsp.	4 pints	

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- Extension Folder 412 — Insecticide Suggestions to Control Household Insects.
- Extension Folder 413 — Insecticide Suggestions to Control Livestock and Poultry Pests.
- Extension Bulletin 387 — Insecticides.
- Extension Bulletin 388 — Insecticide Suggestions to Control Insect Pests of Field Crops.
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