

## HOME AND LANDSCAPE INSECT CONTROL

With recent changes due to the elimination of Dursban and diazinon from the list of available homeowner products, insect control recommendations have gotten a little more complicated. Also, there are numerous brands available to homeowners that can be found on the shelves in nurseries, garden centers, grocery stores, farm and livestock supply stores, local elevators and others. It has become increasingly difficult with this diversity of choices to talk “brand names.” Instead, the emphasis is on active ingredient in the product and reading the label for specific use directions, which is necessary for any pesticide user.

Another complicating factor is the marketing program of various manufacturers and the naming of their products. The same concentration of an active ingredient might be used in a line of products, each with a different name which specifies its use. But upon reading each product’s label, the insect pests and use sites are identical ..... thus there is no reason to buy two products when one will be adequate.

The following list was prepared in one state to illustrate the diversity of products that can be found. These products may or may not be available in North Dakota and are presented only as an illustration of this diversity. The list contains 27 manufacturers which have utilized 36 active ingredients (of combinations thereof) to produce 132 products which are marketed as RTU (ready-to-use), hose-end, granular, dust, bait and EC (emulsifiable concentrate) formulations.

### acephate

Ortho Isotox Insect Killer  
Ortho Systemic Insect Killer Concentrate  
Ortho Orthonex Insect and Disease Control Concentrate

### azadiractin

Natural Guard Multi-Purpose Neem Insecticide

### *Bacillus thuringiensis*

American Brand Thuricide  
Fertilome Dipel Dust

### bifenthrin

Ortho Home Defense Perimeter and Outdoor Insect Killer RTU  
Ortho Rose and Flower RTU  
Ortho Bug-B-Gon MAX Insect Killer for Lawns Granules  
Scotts Lawn Pro Insect Control and Fertilizer Granules

### carbaryl

Cornbelt Sevin 5% Dust  
Eliminator 7 Dust  
Eliminator Lawn Insect Killer Granules  
Fertilome Carbaryl Garden Spray  
GardenTech Sevin RTU Bug Killer  
GardenTech Sevin Hose-end  
GardenTech Sevin 5 Dust  
GardenTech Sevin Bug Killer Concentrate  
Garden Tech 2% Granules  
Ortho Bug-B-Gon Multipurpose Insect Killer Granules

### carbaryl/malathion

Bonide Fruit Tree Spray

### carbaryl/metaldehyde

Bonide No Escape Snail, Slug and Sowbug Bait

### carbaryl/rotenone

Bonide Tomato/Potato Spray or Dust

### cyfluthrin

Bayer Tempo SC Ultra  
Schultz Insect Killer  
Schultz Lawn and Garden Insect Killer Granules

### cyfluthrin/imidacloprid

Bayer Advance Garden Power Force Multi Insect Killer Hose-end  
Bayer Advance Garden Power Force Multi Insect Killer RTU  
Bayer Advance Garden Power Force Multi Insect Killer Concentrate  
Bayer Advance Rose and Flower Insect Killer RTU

### deltamethrin

Bonide Delta Eight Insect Control

### diatomaceous earth

Concern Diatomaceous Earth Crawling Insect Killer

### dicofol

Hi-Yield Kelthane Concentrate

### dimethoate

Fertilome Ornamental & Evergreen Spray Concentrate  
Hi-Yield Cygon 2E Systemic Ornamental and Vegetable Insecticide Concentrate  
ProTech X-ectue Systemic Insecticide Concentrate

### disulfoton

Bayer Advance Garden 2-in-1 Rose and Flower Care  
Bonide Systemic House Plant Insect Control  
Fertilome Systemic Insecticide Granules  
Fertilome Rose Food Granule  
Hi-Yield Di-Syston Insecticidal Granules

### endosulfan

Fertilome Cutworm & Hornworm Killer Dust  
Hi-Yield Thiodan

### esfenvalerate

KGRO Multi-Purpose Insect Killer Concentrate  
Ortho Bug-B-Gon Garden and Landscape Dust  
Ortho Bug-B-Gon Garden and Landscape RTU  
Ortho Bug-B-Gon MAX Lawn & Garden Insect Killer Hose-end  
Ortho Bug-B-Gon MAX Lawn & Garden Insect Killer Concentrate  
Ortho Bug-B-Gon Multi-Purpose Insect Killer Concentrate  
Ortho Bug-B-Gon Multi-Purpose Insect Killer RTU

### imidacloprid

Bayer Advance Lawn - Season Long Grub Control Hose-end  
Bayer Advance Garden, Tree & Shrub Insect Control Concentrate  
Scotts GrubEX Granules

### iron phosphate

Garden Safe Snail & Slug Bait  
Monterey Sluggo

### lambda cyhalothrin

Spectracide Triazicide hose-end  
Spectracide Triazicide Soil & Turf Insect Killer Concentrate  
Spectracide Triazicide Soil & Turf Insect Killer Granules  
Spectracide Triazicide .04 Granules

### malathion

Fertilome Fruit Tree Spray Concentrate

Fertilome Mal-A-Cide  
 Gordons Malathion Concentrate  
 Green Thumb Malathion Insect Killer Concentrate  
 Hi-Yield Malathion  
 Ortho Malathion Plus Insect Spray EC  
 Schultz Malathion Concentrate  
 malathion/carbaryl  
   Bonide Fruit Tree Spray EC  
 malathion/methoxychlor  
   Fertilome Bagworm and Tent Caterpillar Killer  
   Fertilome Triple Action  
 metaldehyde  
   Hi-Yield Snail and Slug Killer Pellets  
   Eliminator Snail & Slug Bait  
   KGRO Snail and Slug Killer  
 metaldehyde/carbaryl  
   Bonide No Escape Snail, Slug and Sowbug Bait  
   Fertilome Eliminate Snail, Slug and Bug Bait  
   Ortho Bug-Geta Snail and Bug Killer  
 methoxychlor/malathion  
   Fertilome Bagworm and Tent Caterpillar Killer  
 neem  
   Fertilome Triple Action Plus  
 nicotine  
   Bonide Tobacco Dust  
*Nosema locustae*  
   Planet Natural Semaspore Grasshopper Bait  
 oil (Horticultural)  
   Bonide All-Season Spray Oil  
   Ortho Volck Oil Spray  
   Sunspray Ultra-fine Year-Round Pesticidal Oil  
 permethrin  
   Bonide Eight Garden Dust  
   Bonide Eight Insecticide Concentrate Garden and Lawn  
   Bonide Eight Insecticide Concentrate Vegetable, Fruit  
     and Flower  
   Bonide Borer-Miner Killer  
   Bonide Total Pest Control Concentrate (Outdoor  
     Formula)  
   Cutter Bug-Free Backyard Hose-end  
   Do It Best Multi-Purpose Garden Insect Killer  
     Concentrate  
   Do It Best Multi-Purpose Garden Pest Dust  
   Eliminator Ant, Flea, Tick & Mosquito Killer Concentrate  
   Eliminator Ant, Flea and Tick Killer Granules  
   Green Thumb Multi Purpose Insect Killer Concentrate  
   Hi-Yield 38Plus Turf, Tree & Ornamental Insect Control  
     Concentrate  
   Hi-Yield Garden, Pet and Livestock Insect Control  
     Concentrate  
   Hi-Yield Garden, Pet and Liverstock Dust  
   Hi-Yield Kill-A-Bug II Lawn Granules  
   KGRO Insect Killer Granules  
   KGRO Multi-Purpose Insect Killer (hose-end, RTU)  
   Ortho Basic Solutions Lawn & Garden Insect Killer  
     Concentrate (also hose-end)  
   Ortho Basic Solutions Lawn & Garden Insect Killer  
     Granules  
   Ortho Bug-B-Gon Garden and Landscape  
   Ortho Bug-B-Gon Multi-Purpose Garden Dust  
   Ortho Bug-B-Gon Multi-Purpose Insect Killer hose-end  
   Ortho Mosquito-B-Gon Tree, Shrub & Lawn Spray  
     hose-end  
   Schultz Mosquito Control Hose-end  
   Schultz Fungicide Plus Concentrate  
   Schultz Triple Action Formula Fungicide  
   Terro Outdoor Ant Killer Granules

pyrethrin  
   Concern Multi-Purpose Insect Killer  
   Fertilome Triple Action Plus RTU  
   Green Thumb Rose and Flower Insect Killer RTU  
   Green Thumb Tomato and Vegetable Spray RTU  
   KGRO Tomato and Vegetable Insect Killer RTU  
   Schultz Expert Gardener House Plants and Gardens  
     Insect Spray  
   Schultz Expert Gardener Insect Spray  
   Schultz Fruit & Vegetable Insect Spray RTU  
   Schultz Rose and Flower Insect Spray RTU  
 rotenone  
   Hi-Yield Rotenone Insecticide  
 rotenone/carbaryl  
   Bonide Tomato/Potato Spray or Dust  
 rotenone/pyrethrin  
   Bonide Rotenone/Pyrethrum Concentrate  
 rotenone/sulfur  
   Fertilome Rose, Flower & Vegetable Dust  
 soap  
   Concern Insect Killing Soap  
   Safer House Plant Insect Killing Soap concentrate  
   Safer House Plant Insect Killing Soap With Seaweed  
     Concentrate  
   Safer Insecticide Killing Soap With Seaweed RTU  
   Safer Insecticide Killing Soap Concentrate  
   Safer Insecticide Multi-Purpose Soap Insect Killer  
     Concentrate  
 spinosad  
   Fertilome Borer, Bagworm, Leafminer and Tent  
     Caterpillar Spray Concentrate  
 sulfur  
   Fertilome Dusting Sulfur

## TREES AND SHRUB INSECTICIDE PRODUCTS - QUICK REFERENCE CHARTS

Insecticides for the Management of Insect and Mite Pests of Trees and Shrubs.

The "Alternative" products represent those that would be generally classified as "organic," representing botanicals, microbials and soaps.

Always Read and Follow the Label! (● indicates listed pest is found on the pesticide label)	aphids	plant bugs	leafhoppers	scale insects	spider mites	gall insects	leaf beetles	caterpillars	sawflies	wood borers
<b>Synthetic Insecticides</b>										
acephate (Orthene® and Isotox®)	●	●	●	●	●		●	●	●	
carbaryl (Sevin®)	●	●	●	●		●	●	●	●	
cyfluthrin (Bayer Advanced®)	●	●	●	●			●	●	●	
dicofol (Kelthane®)					●	●				
dimethoate (Cygon®)	●									
esfenvalerate (Bug-B-Gone®)	●	●	●				●	●	●	
horticultural oils				●	●	●				
imidacloprid (Bayer Advanced Garden®)	●	●	●	●			●		●	●
malathion	●	●	●	●		●	●			
permethrin (Astro™ and others)	●	●	●					●	●	●
spinosad (Conserve®)					●		●	●		
<b>Bacillus thuringiensis</b>								●		
insecticidal soaps (M-Pede)	●	●	●		●					
Intrepid (IGR)								●		
pyrethrins	●	●	●				●	●		
neem (Bioneem®)	●							●	●	
rotenone							●			
<b>Alternative</b>										
bifenthrin (Talstar®)		●	●	●		●		●	●	●
cyfluthrin (Tempo®)	●	●	●				●	●	●	
deltamethrin (Deltagard® and Suspend®)	●	●	●	●	●		●	●	●	
dicrotophos (Inject-A-Cide B®)	●					●	●			●
disulfoton (Di-Syston®)	●		●				●	●		
fenpropathrin (Tame®)	●		●		●					
fluvalinate (Mavrik®)	●		●			●		●	●	
imidacloprid (Merit®)	●	●	●				●		●	●
lambda-cyhalothrin (Scimitar®)	●	●	●	●	●		●	●	●	
oxythioquinox (Morestan®)					●	●				
pymetrozine (Endeavor®)	●									

## FLOWER GARDEN INSECTICIDE PRODUCTS - QUICK REFERENCE CHARTS

The "Alternative" products represent those that would be generally classified as "organic," representing botanicals, microbials and soaps. Always read and follow the label. Before treating flowering plants, check the label for comments pertaining to plant sensitivity to the chemical.

( '●' indicates listed pest is found on the pesticide label)

	Aphids	Leaf Beetles	Grasshoppers	Rose Curculio	Rose Slug	Spider Mites	Leathoppers	Plant Bugs	Thrips	Scale Insects	Caterpillars	Cutworms	Millipedes	Sowbugs	Slugs & Snails
<b>General Use Insecticides</b>															
acephate (Orthene® and Isotox®)	●	●	●		●	●	●	●	●	●					
carbaryl	●	●	●	●	●		●	●	●	●	●	●	●	●	
chlorpyrifos*										●		●	●	●	
cyfluthrin (Advanced Garden®)	●	●	●		●		●	●		●	●	●	●	●	
dicofol (Kelthane®)						●									
dimethoate	●								●						
imidacloprid (Advanced Garden®)	●						●	●	●	●					
malathion	●	●					●	●	●	●					
mesurol															●
metaldehyde															●
methoxychlor	●	●			●				●						
<b>Alternative Products</b>															
<i>Bacillus thuringiensis</i> (Bt)											●				
insecticidal soaps	●					●	●	●							
neem (Bioneem®)	●								●		●				
pyrethrins	●	●					●	●			●				
rotenone		●							●						
<b>Professional Use Only</b>															
cyfluthrin (Tempo®)	●	●	●				●	●			●	●	●	●	
disulfoton (Di-Syston®)	●	●					●		●						
fenpropathrin (Tame®)	●					●	●								
fluvalinate (Mavrik®)	●						●		●		●				
imidacloprid (Merit®)	●	●					●	●	●						
lambdacyhalothrin (Scimitar®)	●	●				●	●		●		●	●		●	
oxythioquinox (Morestan®)						●									

## INSECTICIDES FOR LAWN PEST CONTROL - QUICK REFERENCE TABLE

Insecticide	Rate	Remarks
<b>WHITE GRUBS</b>		
carbaryl (Sevin, several formulations)	Follow label rates for white grubs.	Water into sod after application.
imidacloprid (Advanced Lawn ®)	3 lbs/1,000 sq. ft.	Apply in mid-May. Water after application.
isazophos 4E (Triumph)	1.5 fl. oz./1,000 sq. ft.	Apply in sufficient water to ensure uniform coverage. As soon as application is complete, apply ½ inch of water but stop watering before puddling or runoff occurs. Do not treat golf course fairways.
isofenfos 22% EC (Oftanol 2)	3.0 fl. oz./1,000 sq. ft. or 1 gal./acre	Water lawn thoroughly within 12 hours of the application, using sufficient water to wet the soil to a depth of 1 to 1½ inches.
<b>SOD WEBWORM</b>		
bendiocarb 76% EC (Turcam)	½ to 1 fl. oz./1,000 sq. ft.	Apply when pest is evident. Use adequate quantity of water to thoroughly moisten grass and thatch.
carbaryl (several formulations) (Sevin)	Follow label rate for sod webworm.	Insure good penetration of turf. For best results mow lawn and apply after a rain or watering. Repeat at 2 to 3 week intervals if needed.
isazophos 4E (Triumph)	0.75 fl. oz./1,000 sq. ft.	Apply in sufficient water to ensure uniform coverage. As soon as application is complete, apply ½ inch of water but stop watering before puddling or runoff occurs. Do not treat golf course fairways.
isofenphos 22% EC (Oftanol 2)	1.5 to 3 fl. oz./1,000 sq. ft. treatment.	Apply ¼ to ½ inch of water within 12 hours of application.
<b>ANTS</b>		
bendiocarb 76% EC (Turcam)	0.5 to 1.0 oz./1,000 sq. ft.	Apply to hills and surrounding areas. Use adequate quantities of water to thoroughly moisten grass and thatch.
carbaryl (several formulations) (Sevin)	Follow label rates for ants.	Same as above.
isazophos 4E (Triumph)	0.75 fl. oz./1,000 sq ft.	Apply in sufficient water to ensure uniform coverage. As soon as application is complete, apply ½ inch of water but stop watering before puddling or runoff occurs. Do not treat golf course fairways.
<b>EARTHWORMS</b>		
<p>There are no lawn insecticides that list earthworms on the label of pests controlled. Publications from Ohio State University have listed the toxicity of the common lawn insecticides to earthworms. The only lawn insecticide that is listed as highly toxic to earthworms is carbaryl (Sevin). From this information the following control procedure is suggested:</p> <ol style="list-style-type: none"> <li>1. In early spring, lightly roll or power rake the lawn to remove old worm castings.</li> <li>2. Thoroughly water the lawn several hours before the application is to be applied.</li> <li>3. Apply liquid carbaryl (Sevin) insecticide at the label rate recommended for sod webworms. Evening applications are most effective. Do not water the lawn for several days after application.</li> <li>4. Repeat if castings continue to appear.</li> </ol>		