

## Survey of Insecticides Available for Homeowners in Lee County, Florida: 2013

The insecticides below are first listed by their family name, for example, Benzoylureas and Neonicotinoids. Knowing the insecticide family is critical when developing a rotation scheme to combat pesticide resistance. The table also includes the insecticide active ingredients or common name, for example, *Bacillus thuringiensis* or Imidacloprid. The active ingredient is the compound that controls the insect pest. An insecticide is often recommended by its active ingredient. This allows the consumer to have a wider choice of products when selecting from brand names. Typically, products with the same active ingredient have similar labeling, but this is not always true. Be sure to carefully read the pesticide labels to ensure that the product is labeled for the identified insect pest and the affected plant. Read and follow label directions.

In late 2013, a total of four garden centers were surveyed in Lee County to determine the types of insecticides available for retail purchase. This included two national chain stores and two independent outlets.

The inclusion of a brand or trade name in the table below is not intended as an endorsement of the product.

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Benzoylureas</b>		
<b>Hexaflumuron</b>	Spectracide, Termite Detection and Killing Stakes	<b>Outside surfaces</b> <b>Controls:</b> Subterranean Termites
<b>Borax</b>		
<b>Borax</b>	Terro –Liquid Ant Bait	<b>Interior Ant Bait for Work Ants</b> <b>Controls:</b> Argentine Ants, Ghost Ants, Pavement Ants, Acrobat Ants, White Footed Ants, Little Black Ants, Odorous House Ants and other sweet eating ants.
<b>Carbamates</b>		
<b>Carbaryl</b>	Bayer Advanced – Complete Insect Killer	<b>Controls:</b> Armyworms, Bean Leaf Beetle, Chinch Bug, Corn Earworm, Cucumber Beetle, Cutworms, European Corn Borer, Fall Armyworm, Flea Beetles, Grasshoppers, Lacebugs, Leafhoppers, Lima Bean Pod Borer, Spittlebugs, Squash Bugs, Stink Bugs, Thrips, Tomato Hornworm, Tomato Pinworm, Webworms, Western Bean Cutworm, Yellowstriped Armyworm.

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Carbamates</b>		
Carbaryl	Bayer Advanced – Vegetable and Garden Insect Spray	<b>Vegetable, Fruits, Ornamentals</b> <b>Controls:</b> Aphids, Sowbugs, Centipedes, Millipedes, Scorpions, Spiders, Ticks, Eriophyid Mites, Leafrollers, Caterpillars, Earwigs, European Earwig, Fleas, Thrips, Firebrat, Silverfish, Beetles, Sweet Potato Weevil, Citrus Root Weevil, June Beetles, Holly Leafminer, Gall Midges, Squash Bug, Chinch Bug, Plant Bugs, Stink Bugs, Boxelder Bug, Lace Bugs, Scale Insects, Spittlebugs, Pine Spittlebug, Leafhoppers, Scales, Thornbug, Mealybugs, Psyllids, Sawflies, Gall Wasps(cynipid), Carpenter Ants, Pharaoh Ant, Webworms, Caterpillars, Oleander Caterpillar, Tomato Pinworm, Tentiform Leafminers, Oak Leafminers, Tent Caterpillars, Puss Caterpillar, Cutworms, Corn Earworm, Armyworm, Southern Armyworm, Fall Armyworm, Citrus Cutworm, Subtropical Pine Tip Moth, Bagworm, European Corn Borer, Tomato Hornworm, Poinsettia Hornworm, Fruit Tree Leafroller, Pitch Pine Tip Moth, Cockroaches, Grasshoppers, Crickets.
Carbaryl	Garden Tech - Sevin	<b>Vegetables, Fruits, Ornamentals</b> <b>Controls:</b> Armyworms, Cutworms, Lace Bugs, Leafhopper, Thrips, Tomato Fruit Worms, Tomato Hornworms, Tomato Pinworms, Ants, Grubs, Spittlebugs, Ticks, Scale Insects (crawlers).
Carbaryl	Garden Tech – SEVIN 5% Dust	<b>Vegetables, Fruits, Ornamentals</b> <b>Controls:</b> Ticks, Leafrollers, Earwigs, Fleas, Thrips, Cucumber Beetles, June Beetles, Japanese Beetle, Boxwood Leafminer, Bed Bug, Squash Bug, Plant Bugs, Lygus Bugs, Stink Bugs, Boxelder Bug, Lace Bugs, Scales (crawlers), Aphisa, Spittlebugs, Leafhoppers, Psyllids, Tent Caterpillars, Corn Earworm, Tomato Fruit Worm, Armyworm, Fall Armyworm, Bagworm, Sod Webworms, Grape Leaf folder, Tomato Hornworm, Redbanded Leafroller.
<b>Metaldehyde, Carbaryl</b>	Ortho – Bug Geta Snail, Slug and Insect Killer	<b>Fruits, Vegetables, Ornamentals, Ground Covers, Lawns</b> <b>Controls:</b> Snails, Slugs, Ants, Cutworms, Armyworms, Earwigs, Sowbugs, Crickets, Pillbugs, Grasshoppers, Millipedes.
<b>Hydramethylnon</b>		
Hydramethylnon	Amdro – Ant Block	<b>Home Perimeter Ant Bait</b> <b>Controls:</b> Acrobat, Argentine, Bighead, Carpenter, Cornfield, Crazy, Field, Fire, Ghost, Harvester, Odorous, Pavement, Pharaoh, Thief Ants
Hydramethylnon	Amdro – Fire Ant Bait	<b>Fire Ants:</b> <b>Controls:</b> Imported and Domestic Fire Ants
Hydramethylnon	Amdro – Fire Strike	<b>Mound Treatment for Fire Ants</b> <b>Controls:</b> Imported & native fire ants, Harvester Ants, Big-headed Ants, Argentine Ants

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Microbial</b>		
<i>Bacillus thuringiensis</i>	Garden Safe – Bt Worm and Caterpillar	<b>Fruits, Vegetables, Ornamentals, Shade Trees</b> <b>Controls:</b> Cabbage Loopers, Tomato Hornworms, Bagworms, Tent Caterpillars, and Fall Webworms
<i>Bacillus thuringiensis</i>	Greenlight Dipel Dust	<b>Vegetables, Fruits, Ornamentals, Flowers, Lawns</b> <b>Controls:</b> Tomato Hornworms, Loopers, Webworms, Armyworms, Cutworms, Leafrollers, Tomato Fruitworms, and other Caterpillars
<i>Bacillus thuringiensis</i>	Southern Ag – Thuricide – Bt Caterpillar Control	<b>Vegetables, Citrus, Nuts, Shrubs, Trees, Flowering Plants</b> <b>Controls:</b> Lepidoptera larve: caterpillars and worms. i.e. Cabbage Loopers, Orange Dogs, Tobacco Hornworms, Imported Cabbageworms
<b>Neonicotinoids</b>		
Acetamiprid	Ortho – Bug-B-Gon	<b>Garden Insects</b> <b>Controls:</b> Aphids, Army Worms (including Fall Army Worm, and Southern Army Worm), Beetles, Caterpillars (including Tomato Fruitworm, Cabbage Looper, Hornworms), Leafhoppers, Leaf Miners (including Citrus), Mealybugs (including Citrus, Longtail, and Pink Hibiscus), Moths, Plantbugs, Psyllids, Scales (including Asian Cycad Scale, Florida Wax Scale, Green Shield Scale, Indian Wax Scale, Pine Needle Scale, Red Scale, and Tea Scale), Squash Bug, Stinkbug, Thrips (including Citrus, Palm, and Western Flower), Weevils (including Pepper Weevil and Strawberry Weevil), Whiteflies (including Greenhouse, Sweet Potato, Silverleaf, Banded and Giant)
Acetamiprid	Ortho – Flower, Fruit and Vegetable Insect Killer	<b>Ornamentals, Roses, Flowers, Trees, Shrubs, listed Edible Plants, Houseplants</b> <b>Controls:</b> Aphids, Caterpillars, Thrips, Whiteflies, Japanese Beetles, and other listed garden pests
Acetamiprid, Triticonazole	Ortho – Rose and Flower Insect and Disease Control	<b>Controls Insects &amp; Diseases In Gardens</b> <b>Controls:</b> Aphids, Army Worms (including Fall Army Worm and Southern Army Worm), Beetles, Caterpillars (including Tomato Fruitworm, Cabbage Looper, Hornworm), Leafhoppers, Leaf Miners (including Citrus), Mealybugs (including Citrus, Longtail, and Pink Hybiscus), Moths, Plantbugs, Psyllids, Scales (including Asian Cycad Scale, Florida Wax Scale, Green Shield Scale, Pine Needle Scale, Red Scale, and Tea Scale), Squash Bug, Stinkbug, Thrips (including Citrus and Palm), Weevils (including Pepper Weevil and Strawberry Weevil), Whiteflies (including Greenhouse, Sweet Potato, Silverleaf, Banded and Giant)
Dinotefuran	Ortho – Tree and Shrub Insect Control	<b>Ornamental Trees &amp; Shrubs</b> <b>Controls:</b> Aphids, Adelgids, Black Vine Weevil (larvae), Roundheaded Borers (including Eucalyptus Longheaded Borers), Japanese Beetles (adults), Lacebugs, Leaf Beetles including Viburnum Leaf Beetles, Leafhoppers (suppression only), Leafminers, Mealybugs, Pine Tip Moth (larvae), Psyllids, Sawfly (larvae), Scale insects, Thrips, Whiteflies

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Neonicotinoids</b>		
Imidacloprid	Bayer Advanced – Fruit, Citrus Vegetable & Insect Control	<b>Fruit, Citrus, Vegetables</b> <b>Controls:</b> Aphids, Beetles, Leafhoppers, Scale, Thrips, Whiteflies
Imidacloprid	Bayer Advanced – Termite Killer	<b>Perimeter of Structure</b> <b>Controls:</b> Termites
Imidacloprid	Bonide Systemic Granules Insect Control	<b>Flower Beds, Roses, Shrubs</b> <b>Controls:</b> Aphids, Armored Scales (suppression), Fungus Gnat Larvae, Japanese Adult Beetles, Lace Bugs, Leaf Beetles, Mealybugs, Pine Tip Moth Larvae, Psyllids, Soft Scales (include Lobate Lac Scales), Thrips, Whiteflies, White Grub Larvae
Imidacloprid	Fertilome Tree & Shrub Systemic Insect Drench	<b>Trees, Shrubs</b> <b>Controls:</b> Leaf Beetle, Leafhopper, Roundheaded Borers, Flatheaded Borers, Mealybugs, Psyllids, Lacebugs, Royal Palm Bugs, Sawfly Larvae, Scales, Thrips, Whiteflies
Imidacloprid	Hi-Yield Systemic Insect Granules	<b>Controls:</b> Aphids, Whiteflies, Mealybugs, Scales, Lacebugs, Leafhoppers, Grubs, Japanese Beetles, Leafminers, Mealybugs, Psyllids, Whiteflies
Imidacloprid	Ortho – Rose and Flower Insect Control	<b>Roses, Flower Beds, Shrubs, and Container Plants</b> <b>Controls:</b> Adelgids, Aphids, Armored Scales (suppression), Fungus Gnats, Japanese Beetle (adults), Lace Bugs, Leaf Beetles (including Viburnum and Lily), Leafhoppers, Leafminers, Mealybugs, Pine Tip Moth Larvae, Psyllids, Root Weevil Larvae, Sawflies (Larvae), Soft Scales (including Lobate Lac Scales), Thrips, White Grub Larvae (such as Japanese Beetles), and Whiteflies.
Imidacloprid	Spectracide, Tree Shrub Insect Killer	<b>Trees, Shrubs</b> <b>Controls:</b> Adelgids, Aphids, Armored Scales (suppression), Eucalyptus Long Horned Borers, Flat Headed Borers, Japanese Beetles (adult), Lace Bugs, Elm Leaf Beetles, Viburnum Leaf Beetles, Leafhoppers, Leafminers, Mealybugs, Pine Tip Moth Larvae, Psyllids, Royal Palm Bugs, Saw-fly Larvae, Soft Scale (suppression), Thrips (suppression), White Grub Larvae, Whiteflies
Imidacloprid Beta-Cyfluthrin	Bayer Advanced – Complete Insect Killer for Lawns	<b>Lawns, Turfs</b> <b>Controls:</b> Ants, Fleas, Ticks, Grubs, Chinch Bugs, Mole Crickets, Sod Webworms, White Grubs, European Crane Fly Larvae and other listed pests
Imidacloprid Beta-Cyfluthrin	Bayer Advanced Complete Insect Killer for Soil & Turf	<b>Flowers, Roses, Shrubs, Trees, Evergreens, Ground Covers, Foliage Plants</b> <b>Controls:</b> Adelgids, Aphids, Bagworms, Cutworms, Fungus Gnats, Grasshoppers, Lace Bugs, Leafhoppers, Leafminers, Psyllids, Scales (crawler stage), Thrips, Whiteflies <b>Lawns:</b> Ants, Ticks, Grubs, Chinch Bugs, Mole Crickets, European Crane Fly, Fleas, Sod Webworms, White Grubs

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Neonicotinoids</b>		
<b>Imidacloprid Clothianidin</b>	Bayer Advanced – Tree and Shrub Protection and Feed	<b>Outdoor trees and shrubs, including listed fruit and nut trees, and containerized plants</b> <b>Controls:</b> Adelgids, Aphids, Emerald Ash Borers, Japanese Beetles, Leafminers, Scale, Whiteflies and other listed pests
<b>Imidacloprid Tau-Fluvalinate</b>	Bayer Advanced – 3 in 1 Insect Disease and Mite Control	<b>Roses, Flowers, Houseplants, Ground Covers, Vines, Ornamentals, Shrubs, Trees</b> <b>Insect Controlled:</b> Aphids, Caterpillars, Japanese beetles, Leafminers, Spider Mites, Whiteflies, and other listed pests. <b>Diseases Controlled:</b> Anthracnose, Black Spot, Leaf Spot, Petal Blight, Powdery Mildew, Rust, and Scab
<b>Imidacloprid Tebuconazole</b>	Bayer Advanced – Rose and Flower Insect, Disease Control	<b>Roses, Flowers</b> <b>Insects Controlled:</b> Adelgids, Aphids, Japanese Beetles, Adult Lace Bugs, Leaf Beetles, Leafhoppers, Leafminers, (including Holly Leafminers), Mealy Bugs, Psyllids, Scales (including Armored Scale, [suppression] and Soft Scale), Thrips, Whiteflies. <b>Diseases Controlled:</b> Black Spot, Powdery Mildew, Rust, Southern Blight
<b>Imidacloprid Tebuconazole</b>	Bayer Advanced – All in One Rose and Flower Care	<b>Roses, Flowers and other Ornamental Shrubs</b> <b>Diseases Controlled:</b> Black Spot, Powdery Mildew, Rust, Southern Blight <b>Insects Controlled:</b> Aphids, Japanese Beetles (adults), Lacebugs, Leaf Beetles, Leafhoppers, Mealybugs, Psyllids, Thrips, Whiteflies
<b>Organics</b>		
<b>Canola Oil</b>	Natria – Multi-Insect Control	<b>Flowers, Fruits, Vegetables, Houseplants, Trees</b> <b>Controls:</b> Aphids, Scales, Fruit Tree Leafroller, Leafhoppers, Mites, certain Caterpillars, Fungus Gnats, Lace Bugs, Leaf Miners, Mealy Bugs, Mites, Scales, Whiteflies, Powdery Mildew
<b>Eugenol Thyme Oil</b>	Eco Smart – Organic Insect Killer Granules for Lawns	<b>Lawns</b> <b>Controls:</b> Ants (including Carpenter, Red Harvester, Pavement, Odorous, Pyramid, Argentine), Armyworms, Billbugs, Centipedes, Chinch Bugs, Crickets, Cutworms, Fleas, Earwigs, Firebrats, Grasshoppers, Ground Beetles, Leafhoppers, Mealybugs, Millipedes, Pillbugs, Scorpions, Spiders, Springtails, Ticks, Wireworms and other insects
<b>Neem Oil</b>	Bonide – Rose Rx 3 in 1	<b>Roses, Flowers, Fruit, Nuts, Herbs, Spices, Houseplants, Trees, Shrubs</b> <b>Controls:</b> Aphids, Mites, Scale, Whitefly, Beetles, Leafrollers
<b>Neem Oil</b>	Bayer Advanced Natria – Neem Oil	<b>Roses, Flowers, Fruits, Vegetables</b> (organic gardening) <b>Insects Controlled:</b> Aphids, Whiteflies, Spidermites <b>Diseases Controlled:</b> Black spot, Rust, Powdery Mildew
<b>Neem Oil</b>	Garden Safe – Neem Oil Extract	<b>Roses, Flowers, Fruits, Vegetables, Ornamental Trees, Shrubs</b> (organic gardening) <b>Disease Controlled:</b> Rust, Leaf Spot, Anthracnose, Scab, Black Spot, Downy Mildew, Botrytis, Needle Rust and Flower, Twig and Tip Blight, Alternaria, Powdery Mildew. <b>Insects Controlled:</b> Aphids, Spider Mites, Scale, Whiteflies, Beetles, Leafrollers, other Insects.

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Organics</b>		
Neem Oil	Southern Ag – Triple Action Neem	<b>Indoor/Outdoor Ornamental Flowering Plants, Trees, Shrubs, Foliage, Vegetables, Fruits, Nuts</b> <b>Insects Controlled:</b> Mites, Whiteflies, Aphids, and Scale <b>Diseases Controlled:</b> Black Spot, Mildew, Rust, Scab
Petroleum Oil	Ortho - Volck Oil Spray	<b>Conifers, Roses, Shrubs and Trees including Listed Fruit Trees, Citrus</b> (overwintering Insects and their eggs) <b>Controls:</b> Spider Mites, Scales, Mealybugs, Whiteflies, Adelgids and Lacebugs, Spider Mite and Tent Caterpillar Eggs, plus Sooty Mold
Potassium laurate	Natria – Insecticidal Soap	<b>Vegetables, Fruits, Ornamentals</b> <b>Controls:</b> Mites, Spider Mites, Earwigs, Thrips, Plant Bugs, Lace Bugs, Scale Insects, Woolly Aphids, Whiteflies, Aphids, Leafhoppers, Mealybugs, Psyllids, Adelgids, Sawflies, Sawflies (larvae), Pearslug, Roseslug, Tent Caterpillars, Grasshoppers
Potassium Salts of Fatty Acids	Garden Safe – Insecticidal Soap	<b>Vegetables, Fruit Trees, Ornamentals, Shrubs, Flowers</b> <b>Controls:</b> Adelgids (Woolly Aphids), Aphids, Lacebugs, Mealybugs, Mites, Grasshoppers, Leafhoppers, Scale Insects, Plant Bugs, Sawfly Larvae, Psyllids, Tent Caterpillars, Thrips, Spider Mites, Earwigs, Whitefly
Potassium Salts of Fatty Acids	Safer Insect Killing Soap	<b>Vegetables, Fruits, Ornamentals, Shrubs, Flowers</b> (organic insecticidal soap) <b>Controls:</b> Whiteflies, Mealybugs, Aphids, Spider Mites, Plant Bugs, Tent Caterpillars, Earwigs, Psyllids, Thrips, Lacebugs, Leafhoppers, Wolly Aphids, Soft Scales,
Potassium Salts of Fatty Acids	Safer Insect Killing Soap with Seaweed Extract	<b>Roses, Flowers, Fruits, Vegetables, Houseplants, Trees, Shrubs</b> Aphids, Earwigs, Grasshoppers, Harlequin Bugs, Leafhoppers, Mealybugs, Mites, Plant Bugs, Psyllids, Soft Scales, Spider Mites, Squash Bugs, Blossoms Thrips, Whiteflies
Rosemary Oil Peppermint Oil Thyme Oil Clove Oil	Eco Smart – Organic Insect Killer	<b>Gardens</b> (organic gardening) <b>Controls:</b> Caterpillars, Army Worms, Aphids, Beetles, Leafhoppers, Mites, Psyllus, Stink Bug, Thrip, Whiteflies
Sesame and edible fish oil	Organocide - 3 in 1 Garden Spray	<b>Gardens</b> (organic gardening) <b>Controls:</b> Small, soft body insects, Spider Mites, Scales, Fungus
<b>Organophosphates</b>		
Acephate	Bonide Systemic Insect Control	<b>Roses, Flowers, Ornamental, Shrubs, Shade Trees</b> <b>Controls:</b> Aphids, Flower Thrips, Leafminers, Mealybugs, Two-Spotted Spider Mites (suppression), Tent Caterpillars, Whiteflies and other list leaf eating caterpillars

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Organophosphates</b>		
<b>Acephate</b>	Hi-Yield Fire Ant Killer	<b>Lawns, Turfs, Recreational Areas, Pastures, Ornamentals, Landscapes, Tree Fruits, Vegetables</b> Fire Ants
<b>Acephate</b>	Ortho – Orthene Fire Ant Killer	<b>Fire Ant Mound Treatment Lawn, Ornamental Plants</b> <b>Controls:</b> Fire Ants, Red Harvester Ants
<b>Malathion</b>	Southern Ag - Malathion	<b>Citrus, Ornamentals, Listed Vegetables, Listed Fruit Trees, Rice, Strawberries</b> <b>Controls:</b> Aphids, Scale, Worms, Japanese Beetle, Horn Flies, Lice, Ticks, Fleas, Bed Bugs, Thrip, Leafminers, Spider Mites and Mosquitoes
<b>Malathion</b>	Spectracide, Malathion	<b>Flowers, shrubs, fruits and vegetables</b> <b>Controls:</b> Aphids, Bagworms, Box Elder Bugs, Fleas, Japanese Beetle (adults), Grape Leafhoppers, Houseflies, Leafhoppers, Leafrollers, Mealybugs, Mites, Mosquitoes, Moths, Rose Leafhoppers, Scales, Scale Crawlers, Spittlebugs, Tent Caterpillars, Thrips, Whiteflies and Woolly Aphids
<b>Phenylpyrazoles (Fiproles)</b>		
<b>Fipronil</b>	Over-N-Out – Fire Ant Killer	<b>Fire Ant Killer</b> <b>Controls:</b> Fire Ants
<b>Pyrethroids</b>		
<b>Beta-Cyfluthrin</b>	Bayer Advanced – Carpenter Ant and Termite Killer Plus	<b>Landscape Trees &amp; Shrubs Roses &amp; Flowers, Ground Covers, Vines</b> <b>Controls:</b> Ants, Aphids Armyworms, Azalea Caterpillars, Bagworms, Boxelder, Budworms, Cockroaches, Crickets Cutworms, Spanworms, Flea Beetles, Flies, Fungus Gnats, Grasshoppers, June Beetles, Lace Bugs, Leaf feeding Caterpillars, Leafrollers, Leaf Skeletonizers, Mealybugs, Midges, Psyllid, Pillbugs, Pine Shoot Moths, Pine Tip Moths, Plant Bugs, Sawfly Larvae, Scale Insects (crawler stages) Sowbugs, Spiders, Spittlebugs, Tent Caterpillars, Termites, Thnps, Wasps, Webworms, Whiteflies, and Stink Bugs
<b>Bifenthrin</b>	Ortho – Bug B Gon Max for Lawns	<b>Lawns, Turfs</b> <b>Controls:</b> Ants (including Carpenter, Pavement, Odorous, Pyramid, Argentine, Pharoah, Fire Ants and Foraging Fire Ants), Armyworms, Billbugs, Centipedes, Chinch Bugs, Crickets, Cutworms, Earwigs, Fleas, Grasshoppers, Leaf Hoppers, Mealybugs, Millipedes, Mole Crickets, Sod Webworms (Lawn Moth), Spiders, Ticks (including ticks that may transmit Lyme Disease), and Weevils (including Hyperodes)
<b>Bifenthrin</b>	Ortho – Max Fire Ant Killer	<b>Lawns</b> <b>Controls:</b> Fire ants. Also kills Argentine, Odorous, Pyramid, Pavement, and Red Harvester Ants

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Pyrethroids</b>		
<b>Bifenthrin</b>	Ortho – Home Defense Max	<b>Foundations, Wood Piles, Fences, Tree stumps, Stored Lumber</b> <b>Controls:</b> Termites, Ants (including Carpenter Ant, Pavement, Odorous, Pyramid, Argentine and Pharaoh), Carpenter Bees, Beetles, Boxelder Bugs, Centipedes, Chiggers, Crickets, Earwigs, Firebrats, Fleas, German Cockroaches, House Flies, Hornets, Millipedes, Scorpions, Silverfish, Sowbugs, Spiders (including Black Widow and Brown Recluse), Springtails, Ticks, Wasps, Wood Destroying Beetles and Yellow Jackets
<b>Bifenthrin</b>	Ortho – Insect Killer for Lawns	<b>Lawns, Ornamentals, Flowers, Vegetable Gardens, Home Foundations</b> <b>Controls:</b> Kills 100+ insects including: Ants (including Carpenter, Pavement, Odorous, Pyramid, Argentine, Pharaoh, Fire Ants and Foraging Fire Ants), Armyworms, Billbugs, Centipedes, Chinch Bugs, Crickets, Cutworms, Earwigs, European Crane Fly Larvae, Fleas, Grasshoppers, Leaf Hoppers, Mealybugs, Millipedes, Mole Crickets, Sod Webworms (Lawn Moth), Spiders, Ticks (including ticks that may transmit Lyme Disease), and Weevils (including Hyperodes)
<b>Bifenthrin</b>	Ortho – Fire Ant Killer	<b>Lawns</b> <b>Controls:</b> Fire Ants, Also kills Argentine, Odorous, Pyramid, Pavement, and Red Harvester Ants
<b>Cyfluthrin</b>	Bayer Advanced – Vegetable and Garden Insect Spray	<b>Vegetables, Lawns, Ground Covers, Flowers, Shrubs, Trees, and Around Homes</b> <b>Controls:</b> Aphids, Japanese Beetles (adults), Corn Earworms, Tomato Hornworms
<b>Cyfluthrin</b>	Bayer Advanced – Rose and Flower Insect Killer	<b>Flowers, Roses, House Plants, Ground Covers, Trees, Shrubs</b> <b>Controls:</b> Adelgids, Ants, Aphids, Bagworms, Boxelder Bugs, Caterpillars, Cockroaches, Crickets, Earwigs, Flies, Fungus Gnats, Grasshoppers, Japanese Beetles (adult), Lacebugs, Leaf-feeding Beetles, Leaf-feeding Caterpillars, Leafhoppers, Leafminers, Mealybugs, Midges, Mosquitoes, Pillbugs, Pine Tip Moths, Pine Shoot Moths, Plant Bugs, Psyllids, Rose Midges, Scale Insects (crawler stages), Sowbugs, Spiders, Spittlebugs, Thrips, Webworms, Weevils (including Root Weevils), Whiteflies.
<b>Deltamethrin</b>	Bengal Products – Ultra Dust 2xFire Ant Killer	<b>Fire Ants</b> <b>Controls:</b> Fire Ants



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<b>Pyrethroids</b>		
<b>Gamma-Cyhalothrin</b>	Spectracide, Triazicide Insect Killer	<p><b>Home Lawns, Trees, Shrubs, Roses, Flowers, Vegetables</b>  <b>Controls:</b> Aphids, Armyworms, Bagworms, Box Elder Bugs, Cockroaches, Crickets, Cutworms, Fall Webworm, Japanese Beetles (adults), June Beetles (adults), Lace Bugs, Lady-Beetles, Leaf-feeding Caterpillars, Leafhoppers, Leafminers (adults), Leafrollers, Leaf Skeletonizers, Midges, Moths, Oleander Moth Larvae, Pillbug, Pine Shoot Beetles, Pine Tip Moths, Plant Bugs, Root Weevil, Scale Insects (crawlers), Spiders, Spittlebugs, and more.  <b>Lawns:</b> Blue Grass Billbug (adult), Chinch Bugs, White Grubs (Japanese Beetle, European Chafer, Southern Chafer), Weevils (adult), Mole Crickets (nymphs and young adults), Ants, Armyworms, Crickets, Cutworms, Earwigs, Fleas, Ladybeetles, Lawn Moths (Sod Webworms), Millipedes, Mosquitoes, Palmetto Bugs, Sowbugs, Mites, Spittlebugs, Waterbugs.  <b>Vegetables:</b> Cabbage Looper, Imported Cabbageworm, Southern Cabbageworm, Cutworm, Cabbage Webworm, Armyworm, Fall Armyworm, Corn Earworm, Japanese Beetle (adult), Grasshopper, Leafhopper, Plant Bug, Stink Bug, Meadow Spittlebug, Aphid, Whitefly, Thrips, Spider Mite</p>
<b>Lambda Cyhalothrin</b>	Cutter – Backyard Bug Control	<p><b>Lawns, Ornamental Trees, Shrubs</b>  <b>Controls:</b> Mosquitoes, Ants, Armyworms, Aphids, Bagworms, Boxelder Bugs, Budworms, Cockroaches, Crickets, Cutworms, Fall Webworm, Flea Beetles, Japanese Beetles (adults), June Beetles (adults), Lace Bugs, Leaf-feeding Caterpillars, Leafhoppers, Leafminers (adults), Leafrollers, Leaf Skeletonizers, Midges, Oleander Moth Larvae, Pillbug, Pine Shoot Beetles, Pine Tip Moths, Plant Bugs, Root Weevil, Scale Insects (crawlers), Spittlebugs, Thrips, Tip moth, Broadmites, Brown Soft Scale, Mealybugs, Pine Needle Scale (crawler), Spider Mites, Whiteflies</p>
<b>Lambda Cyhalothrin</b>	Spectracide, Ant Shield	<p><b>Outside Home Barrier</b>  <b>Controls:</b> Ants, Fleas, Mites, Crickets, Earwigs, Millipedes, Roaches (German and American), Palmetto Bugs, Water Bugs, Sowbugs (Pillbugs), Silverfish, Ticks (including Ticks that may transmit Lyme Disease) and other pests</p>
<b>Lambda-Cyhalothrin</b>	Spectracide, Terminate	<p><b>Outside Surfaces</b>  <b>Controls:</b> Termites, For Beetles (Furniture, False Powderpost, Longhorned, Powderpost), Carpenter ants (and other wood infesting ants), Carpenter Bees and Termites* Including Drywood Termites (*for localized control only)</p>
<b>Lambda-Cyhalothrin</b>	Spectracide, Termite and Carpenter Ant	<p><b>Outside Surfaces</b>  <b>Controls:</b> Exposed Subterranean Termites, Dampwood Termites, Drywood Termites, Carpenter Ants, Ambrosia Beetles, Death Hunter Beetles, False Powderpost Beetles and Powderpost Beetles</p>

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Pyrethroids</b>		
Lambda-Cyhalothrin	Spectracide, Ant Shield	<b>Outside Surfaces</b> <b>Controls:</b> Bees, Wasps, Box Elder Bugs, Centipedes, Millipedes, Pillbugs, Sowbugs, Scorpions, Spiders, Flies, Asian Beetles and Mosquitoes, Ants, Ticks (including Ticks that transmit Lyme disease), Crickets, Fleas and Earwigs
Lambda-Cyhalothrin	Spectracide, Fire Ant Killer	<b>Fire Ant Mounds</b> <b>Controls:</b> Fire Ants, Queen and colony
Lambda-Cyhalothrin	Terro – Ant Killer	<b>Outdoor Ant Bait</b> <b>Controls:</b> Ants, Fire Ants, Cockroaches, Fleas and other unwanted insects
Myclobutanil, Permethrin	Spectracide, Immunox 3 in 1	<b>Roses, Lawns, Flowers, Ornamental Trees</b> <b>Insects:</b> Aphids, Bagworms, Fall Webworms, Inchworms, Leafminers, Leafrollers, Mealybugs, Spider Mites, Thrips (exposed) and Whiteflies. <b>Diseases:</b> Black Spot, Brown Patch, Cercospora Leaf Spot, Dollar Spot, Petal Blight, Powdery Mildew, Rust and Scab
Permethrin	Bayer Advanced – Complete Insect Dust	<b>Fruit Trees, Nut Trees</b> <b>Controls:</b> Caterpillars, Leafhoppers, Leafrollers, Lepidopterous Larvae, Navel Orange Worm, Oriental Fruit Moth, Redbanded Leafroller, Rose Chafer, Spotted Tentiform Leafminer, Tarnished Plant Bug, Thrips <b>On Vegetables &amp; Melons:</b> Aphids, Armyworms, Artichoke Asparagus Beetle, Looper, Corn (adult), Cutworms, Diamondback Moth, European Corn Borer, Fall Armyworm, Beetles, Hornworms Earworm, Corn Rootworm (adult), Cucumber Beetle, Imported Cabbageworm, Leafhoppers, Leafminers, Onion Maggot (adult), Onion Thrips, Pepper Weevil, Pickleworm, Plant Bug (including Lygus, Squash, and Stink Bugs), Potato Aphid, Potato Flea Beetle, Potato Leafhopper, Potato Psyllid, Potato Tuberworm, Rindworm, Squash Vine Borer, Tomato Fruitworm, Tomato Pinworm, and Vegetable Leafminer <b>On Ornamentals (Including Roses):</b> Asparagus Beetle, Beet Armyworm, Cabbage Looper, Japanese Beetle, Lygus Bug, Omnivorous Leafroller
Permethrin	Sunniland – Chinch Bug Gran- ules for Lawns	<b>Lawns</b> <b>Controls:</b> Chinch Bugs and other lawn pests.
Permethrin Myclobutanil	Spectracide, Immunox – Insect and disease control	<b>Flower Gardens</b> <b>Insect Controls:</b> Aphids, Bagworms, Cicadas, Fall Cankerworms, Fall Webworms, Inchworms, Leafminers, Leafrollers, Mealybugs, Spider Mites, Thrips (exposed), Whiteflies <b>Disease Controls:</b> Black Spot, Cercospora Leaf Spot, Petal Blight, Powdery Mildew, Rust
Zeta-Cypermethrin	Amdro – Quick Kill	<b>Lawns, Landscapes</b> <b>Controls:</b> Chinch Bugs, Aphids, and Leafhoppers damage grass by sucking out plant juices. Others pests, like Pillbugs and Caterpillars do their damage by eating the grass

Active Ingredient (Common name)	Brand/ Trade Name	Insects or Diseases Controlled
<b>Pyrethrins</b>		
<b>Pyrethrin, Extract of Neem</b>	Ferti-Lome Triple Action Plus: Insecticide, Fungicide, Miticide	<b>Fruits, Nuts, Vegetables, Herbs, Spices, Roses, House-Plants, Flowers, Shrubs</b> <b>Controls:</b> Insects: Aphids, Spidermites, Scales, Mealybugs, Whiteflies, Beetles, Loopers, Leafminers, Leafrollers, Armyworms, Webworms, Caterpillars, Fungus Gnats, Leafhoppers, Thrips, Tomato Hornworms, Lace Bugs, Grasshoppers, Ants, Earwigs
<b>Pyrethrin Sulfur</b>	Natria – Insect, Disease and Mite Control	<b>Vegetables, Fruit, and Ornamentals</b> <b>Controls:</b> Scab, Powdery Mildew, Brown Rot, Rust, Black Spot, Leaf Spots, Mites, Spider Mites, Chiggers, Earwigs, Thrips, Fruit Flies, Plant Bugs, Lace Bugs, Scales, Whiteflies, Aphids, Spittlebugs, Leafhoppers, Mealybugs, Psyllids, Caterpillars
<b>Pyrethrins Sulfur</b>	Natria – Insect, Disease and Mite Control	<b>Roses, Flowers, Vegetables, and Ornamentals</b> <b>Insects Controlled:</b> Aphids, Mites, Spider Mites, Leafhoppers, Caterpillars, Rose Slugs, Whiteflies, Spittlebugs, Mealybugs, Scale, Thrips, Psyllids, Plant Bugs, Lace Bugs <b>Diseases Controlled:</b> Black Spot, Powdery Mildew, Rust, Scab, Blight, Brown Rot, and Leaf Spot
<b>Pyrethrin, Sulfur, Copper</b>	Bonide – Garden Dust	<b>Vegetables, Fruits, Flowers</b> <b>Controls:</b> Aphids, Mites, Bugs, Scale, Caterpillars, Whitefly, Thrips, plus Scab, Rust, Powdery Mildew, Leaf Spots, Blight, Brown Rot and other listed insects and diseases
<b>Sulfur Pyrethrins</b>	Bonide – Citrus, Fruit and Nut Orchard Spray	<b>Citrus, Fruit and Nuts, Vegetables, Ornamentals, House-Plants, Lawns</b> <b>Insects Controlled:</b> Aphids, Mites, Spider Mites, Leafhoppers, Caterpillars, Spittlebugs, Mealybugs, Scales, and more <b>Diseases Controlled:</b> Powdery Mildew, Rust, Blight, Leaf Spots
<b>Sulfur Pyrethrins</b>	Bonide – Tomato and Vege- table 3 in 1	<b>Vegetables</b> <b>Controls:</b> Aphids, Mites, Bugs, Scale, Caterpillars, Whitefly, Thrips, plus Scab, Rust, Powdery Mildew, Leaf Spots, Blight, Brown Rot and other listed insects and diseases.
<b>Sulfur Pyrethrins</b>	Natria – Insect, Disease and Mite Control	<b>Roses, Vegetables, Flowers, Shrubs and House Plants</b> <b>Insect Controlled:</b> Aphids, Mites, Spider Mites, Leafhoppers, Caterpillars, Rose Slugs, Whiteflies, Spittlebugs, Mealybugs, Scale, Thrips, Psyllids, Plant Bugs, Lace Bugs, Fruit Flies, Chiggers, and Earwigs. <b>Diseases Controlled:</b> Black Spot, Powdery Mildew, Rust, Scab, Blight, Brown Rot, and Leaf Spot.
<b>Syngosyns</b>		
<b>Spinosad</b>	Bonide – Captain Jack's Dead Bug	<b>Fruits, Vegetables, Berries, Citrus, Grapes, Nuts, Ornamentals</b> <b>Controls:</b> Bagworms, Borers, Beetles, Caterpillars, Codling Moth, Gypsy Moth, Loopers, Leaf Miners, Spider Mites, Tent Caterpillars, Thrips and more
<b>Spinosad Iron Salts</b>	Bonide – Bug and Slug Killer	<b>Vegetable, Fruit and Berry Gardens</b> <b>Controls:</b> Earwigs, Cutworms, Sowbugs, Pill Bugs, Crickets, Ants, Slugs and Snails

### ***Bacillus Thuringiensis***

**Type:** *Bacillus thuringiensis* is a bacterial organism which causes disease in certain insects, thereby controlling them.

**Important Insects Controlled:** Armyworms, cabbage looper, and other caterpillars

**Additional Information:** *Bacillus thuringiensis* is a naturally occurring soil bacterium. Bacteria are cultured and then harvested in spore form for use as insecticide. The spores are killed before being made into commercial pesticide products. When they form spores, they also produce a crystal-like structure that is toxic to certain groups of insects. The spores are formulated in wettable powders, flowable concentrates and granules for application to caterpillars, mosquitoes and black flies. *Bacillus thuringiensis* must be eaten before it can kill the targeted insects. The crystals break down the cells lining the insect gut. This causes the insects to stop feeding within one day. Other bacteria pass through the damaged gut tissue and multiply in the insect's body. The infection causes death within two to three days. Bt only kills the immature stages of certain moths and butterflies (caterpillars), beetles (grubs), mosquitoes and black flies.

### **Carbamate**

**Type:** Carbamate insecticide, expressing contact and stomach-poison action with long residual effects.

**Important Insect Controlled:** Aphids, leafhoppers, scale, armyworms, pear psylla, lygus bugs, Japanese beetles, peach twig borers, spittlebugs, thrips, grasshoppers, stinkbugs, cucumber beetles, and many others, including ticks, fleas, and mites.

**Additional Information:** Compatible with insecticides and fungicides. Controls the eggs of some insect species. Flies are tolerant to this compound. Toxicity increases as the temperature increases. Control should last 1-3 weeks.

### **Hydramethylnon**

**Type:** Hydramethylnon is a hydrazone compound used as a slow-activating stomach-poison insecticide.

**Important Insects Controlled:** Fire ants, cockroaches, ants, silverfish and firebrats.

**Additional Information:** Does not bioaccumulate in the environment. Nonsystemic in plants. Not expected to be toxic to fish in the natural environment due to its low water solubility and rapid degradation in sunlight. Controls roaches for 2-3 months. Worker ants carry the bait back to the queen which controls the colony.

### **Imidacloprid**

**Type:** Imidacloprid is a neonicotinoid compound used as a contact and stomach poison systemic insecticide.

**Important Insects Controlled:** Aphids, leafhoppers, some leafminers, soft scales, mealybugs, planthoppers, thrips, whiteflies, some stem-borers, leaf beetles, wireworms, and others. Does not control caterpillars nor mites.

**Additional Information:** Most effective against sucking insects. Systemic, giving long lasting control. Compatible with other pesticide and fertilizers. Foliage treatments usually give shorter length of control than soil treatments. Good root systemic activity.

### **Neem Oil**

**Type:** Neem oil is a naturally occurring compound used as a contact insecticide.

**Important Insect Controlled:** Soft bodied insects such as aphids, white flies, and mealy bugs.

**Additional Information:** Has fungicide and miticide activity. Controls insects by suffocation. Contains extracts derived from the Neem tree. Ovicidal and repellent activity. May be mixed with other insecticides.

### **Neonicotinoid**

**Type:** Contact and stomach poison systemic insecticides.

**Important Insect Controlled:** Aphids, leafhoppers, leafminers, planthoppers, thrips, whiteflies, stem borers, beetles.

**Additional Information:** Neonicotinoids are a relatively new class of insecticides, developed in the mid 1980s and introduced in the U.S. market in the early 1990s. They are quickly growing in widespread use and were recently noted to have 11%-15% U.S. market share of insecticide use. They are well absorbed into plants and consequently are used in agriculture for piercing-sucking insects such as aphids, mealybugs, scales and whiteflies. They act fairly selectively on insects, with comparably less acute toxicity to mammals. Imidacloprid is the most widely used insecticide in this class.

### **Organic**

**Type:** Insecticidal soaps are organic compounds based on oleic acid (fatty acids) and used as a contact insecticide.

**Important Insect Controlled:** Adelgids, aphids, earwigs, grasshoppers, lacebugs, mealybugs, mites, plant bugs, psyllids, scales, thrips, whiteflies and others.

**Additional Information:** Made from naturally occurring biodegradable fatty acids. A natural spreader/ sticker. May be mixed with other pesticides. Destroys the insect cuticle.

### Organophosphate

**Type:** Organophosphate is usually used as a generic term to include all the insecticides containing phosphorus. They are derived from phosphoric acid and are generally the most toxic of all pesticides to vertebrate animals.

**Important Insects Controlled:** Aphids, leaf rollers, weevils, army worms, loopers, corn earworms, cutworms, leaf miners, chinch bugs, grasshoppers, lygus bugs, mites, thrips, and many others.

**Additional Information:** Organophosphate are a class of insecticides, several of which are highly toxic. Until the 21st century, they were among the most widely used insecticides available. Organophosphate are used in agriculture, homes, gardens and veterinary practices. However, in the past decade, several notable OP's have been discontinued for use, including parathion.

### Petroleum Oils

**Type:** Petroleum oils are hydrocarbons applied in both the dormant and growing season, used as contact insecticides, acaricides, and ovicides.

**Important Insect Controlled:** Aphids, mealybugs, scales, whiteflies, mites, leafrollers, and others, as well as the eggs of many species.

**Additional Information:** Very short residual. "What you hit, is what you get."

### Pyrethroids

**Type:** Pyrethroids are a synthetic-pyrethoid compound used as a contact and stomach poison pesticide.

**Important Insects Controlled:** Armyworms, budworms, cabbage worms (imported), codling moth, flea beetles, flies, house flies, leafminers, lice, loopers, lygus, mosquitoes, naval orange worm, peach twig borer, pear psylla, termites, ticks, whiteflies, and many others.

**Additional Information:** Most effective against Lepidoptera species. Good residual activity, since sunlight does not break it down rapidly. Broad spectrum. Non-systemic, with no fumigant activity. Has repellent activity. Fast acting.

### Spinosyn

**Type:** Spinosyn is a naturally occurring compound that has both stomach poison and contact activity.

**Important Insect Controlled:** Armyworms, loopers, leaf rollers, leafminers, thrips, peach twig borers, termites, fire ants, ants, fleas, and many others.

**Additional Information:** A naturalyte type of product based on natural metabolites derives from the fermentation of *Saccharopolyspora spinosa*. Extremely safe on beneficial insects. Insects exhibit tremors and incoordination, prostrate trembling, paralysis and death. These symptoms occur immediately after application and are irreversible. May be mixed with other insecticides.

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## Videos

- [Eastern Lubber Grasshopper](#)
- [Ficus Whiteflies and Ficus Hedges](#)
- [Palmetto Weevils in Bismarck Palm](#)
- [Palmetto Weevils in Canary Island Date Palms](#)
- [Palmetto Weevil Grubs](#)
- [Whiteflies on Red Powderpuff Tree](#)

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