

HOUSEHOLD AND STRUCTURAL PEST CONTROL – Products for Use by the General Public

The following tables provide household and structural pest control recommendations with pesticides for use by the homeowner and with pesticides for use by licensed pest control operators only. Mention of pesticides in this section does not imply that chemicals are or should be the first or only means of control. Nonchemical control methods, including exclusion and sanitation, should always be considered when seeking to obtain a long-term solution to household pest problems.

All chemical information provided below is given with the understanding that no endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Individuals who use pesticides are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Before purchasing or using any pesticide, always read and carefully follow the label directions.

Insecticides listed below are identified by common chemical name. A trade name in parentheses may also be listed as a convenience for the reader. Additional trade names that may be available locally are listed in the HOMEOWNER INSECTICIDE PRODUCT LIST beginning on page 271.

Formulation Designations: A = Aerosol (injectable or spray); B = Bait (gel or granular); D = Dust; F = Fogger (total release aerosol); G = Granular; P = Powder (for mixing with water); L = Liquid (for mixing with water or ready-to-use; S = Bait (station).

Pests	Insecticide	Formulation	Precautions and Remarks
ANT (a) Indoors (For information on Carpenter Ants , see page 258.)	allethrin (Ultrakill)	A	Place bait stations in areas where ants are active. Keep out of reach of children and pets. Use dust formulations only in inaccessible areas. Treat ant-traveled areas. Re-treat as effectiveness diminishes. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Remove food from storage areas before treating. Imiprothrin is usually formulated with other pesticides in these products.
	avermectin (Raid Max Ant Bait)	S	
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	borax/boric acid (Hot Shot, Terro)	B, D, S	
	cypermethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	deltamethrin (Black Flag, Raid)	L	
	dinotefuran (Hot Shot)	S	
	eugenol (Bioganic, Raid)	A, D	
	fipronil (Combat)	B	
	hydramethylnon (Amdro)	S	
	imiprothrin (Hot Shot, Raid)	A	
	indoxacarb (Hot Shot)	S	
	λ-cyhalothrin (Spectracide)	L	
	lemongrass oil (Hot Shot)	A, L	
	mint oil (Victor)	A	
	permethrin (Spectracide)	A, D, G	
	prallethrin (Hot Shot)	A	
	propoxur (Ortho)	S	
pyrethrins, pyrethrum (Spectracide)	A		
sodium O-phenylphenate (Bayer Advanced)	A		
tetramethrin (Hot Shot)	A		
ANT (b) Outdoors See “Ant” and “Imported Fire Ant” under Home Lawns .	β-cyfluthrin (Bayer Advanced)	L	Apply granular bait around nest. Place bait stations in areas where ants are active. Treat nest and surrounding area. May be applied along building perimeter.
	bifenthrin (Ortho)	G, L	
	borax (Terro)	B	
	diatomaceous earth (PermaGuard)	D	Apply products as directed on the label.
	dinotefuran (Hot Shot)	S	

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Pests	Insecticide	Formulation	Precautions and Remarks
ANT (b) Outdoors (cont.)	fipronil (Combat)	B	
	γ-cyhalothrin (Spectracide)	G, L	
	hydramethylnon (Amdro)	B	
	indoxacarb (Spectracide)	S	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	tetramethrin (Ortho)	L	
BED BUG	β-cyfluthrin (Bayer Advanced)	L	Apply to mattress tufts and folds, crevices in bed frame, cracks and crevices along baseboard. Mattress heat sanitizing is an alternative. Imiprothrin is formulated with other pesticides in these products.
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	Apply products as directed on the label.
	imiprothrin (Raid)	A	
	permethrin (Hot Shot, Spectracide)	A	
	pyrethrins, pyrethrum	A, L	
	sumithrin (Enforcer)	A, L	
BEE (a) Indoors	diatomaceous earth (PermaGuard)	D	Apply only for sporadic invaders. If bees are found frequently, locate and remove the nest.
	eugenol (Bioganic)	A, D	Apply products as directed on the label.
	imiprothrin (Raid)	A	
	permethrin (Hot Shot, Spectracide)	A	
	pyrethrins, pyrethrum	A, L	
	resmethrin (Spectracide)	A, L	
	tetramethrin (Raid)	A	
BEE (b) Outdoors For carpenter bees, see Carpenter Bee entry.	β-cyfluthrin (Bayer Advanced)	L	Apply after dark when insects have returned to nest. Some materials available in pressurized cans that propel an insecticide stream up to 10 feet. Re-treatment may be necessary.
	bifenthrin (Ortho)	L	
	carbaryl (Sevin)	D, L, P	Apply products as directed on the label.
	eugenol (Bioganic)	A, D	
	esfenvalerate (Ortho)	L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	prallethrin (Hot Shot)	A	
	tetramethrin (Ortho)	L	

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BOOKLOUSE (psocid) (Indoors and outdoors)	allethrin (Ortho)	A	Apply as a barrier spray along foundation and entry points (doors and windows). Read labels to determine which products are suitable for indoor use. Clean up moisture problems which may attract insects indoors. Excess moisture may impede product effectiveness. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	cypermethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	
	imiprothrin (Raid)	A	
	mint oil (Victor)	A	
	permethrin (Spectracide)	L	
	pyrethrins, pyrethrum (Spectracide)	A	
tetramethrin (Raid)	A		
BOXELDER BUG (Outdoors)	β-cyfluthrin (Bayer Advanced)	L	Harmless insects become nuisances when searching indoors for hibernation sites in the fall. Treat door thresholds, window ledges and other areas where the insects congregate or may gain entry.
	bifenthrin (Ortho)	L	
	deltamethrin (Spectracide)	L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
BROWN DOG TICK (a) Indoors	allethrin (Ortho)	A, L	Spot treat pet beds (not actual bedding), along with cracks, crevices and similar hiding areas. Do not apply to animals (see also Animal Insect Control section). Discard or launder infested bedding in hot, soapy water. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	A, L	
	cypermethrin (Raid)	F	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	
	imiprothrin (Hot Shot)	A	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	A	
	pyrethrins, pyrethrum (Spectracide)	A	
tetramethrin (Raid)	A		
BROWN DOG TICK (b) Outdoors and under buildings	β-cyfluthrin (Bayer Advanced)	L	See also Animal Insect Control section.
	bifenthrin (Ortho)	G	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	
	γ-cyhalothrin (Spectracide)	L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
tetramethrin (Ortho)	L		

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CARPENTER ANT (a) Indoors	allethrin (Ortho)	A	Apply as directed on label.
	β-cyfluthrin (Bayer Advanced)	L	Apply as directed on label.
	bifenthrin (Ortho)	L	Apply as directed on label.
	deltamethrin (Bayer, Spectracide)	L	Apply as directed on label.
	fipronil (Combat)	B	Bait where you see ant activity. Apply as directed on label.
	λ-cyhalothrin (Spectracide)	L	Apply as directed on label.
	permethrin (Spectracide)	L	Apply as directed on label.
	sodium borate (Spectracide)	D, P	Apply as directed on label.
CARPENTER ANT (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Treat into and around the nest, then seal holes.
	bifenthrin (Ortho)	L	Spray or inject into wood.
	cyfluthrin (Bayer Advanced)	L	Apply as directed on label.
	cypermethrin (Martin's Viper)	L	Apply as directed on label.
	λ-cyhalothrin (Spectracide)	L	Apply as directed on label.
	permethrin (Spectracide)	L	Apply as crack and crevice or spot treatment or paint onto surface. Application by drilling and injecting is also permitted.
	sodium borate (Spectracide)	L	Spray, brush on or inject into wood. For long-term protection, apply a water repellent stain to exterior wood surfaces two to three weeks after treatment.
CARPENTER BEE	β-cyfluthrin (Bayer Advanced)	L	Apply liquid as a surface spray and into entrance hole. Seal entrance hole.
	bifenthrin (Ortho)	L	Apply as a coarse surface spray and into entrance hole. Seal entrance hole.
	carbaryl (Sevin)	D, L	Apply liquid as a surface spray and into entrance hole. Puff into and around entrance holes using dust applicator. Seal with wood plugs, putty, stainless steel or copper wool.
	deltamethrin (Spectracide)	D, L	Apply liquid as a coarse surface spray and into gallery entrance. Puff into and around entrance holes using dust applicator. Seal with wood plugs, putty, stainless steel or copper wool.
	λ-cyhalothrin (Spectracide)	L	Spray or inject into wood. Seal holes in wood before injecting. Avoid runoff.
	permethrin (Spectracide)	L	Spray or inject into wood. Seal holes in wood before injecting. Avoid runoff.
	sodium borate (Spectracide)	D	Apply dust formulation directly to galleries.
CARPET BEETLE (a) Nonfabric areas and infested areas of carpets only	allethrin (Ortho)	A, L	Treat cracks, crevices and hidden areas to point of runoff with spray. Moisten, but do not saturate, fabric. For valuable rugs or cloth items, consider hiring a pest control professional. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	imiprothrin (Hot Shot, Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	prallethrin (Ortho)	A	
pyrethrins, pyrethrum (Spectracide)	A		
CARPET BEETLE (b) On fabric	allethrin (Ortho)	A, L	Other pyrethroids, including tetramethrin and sumithrin, are also available ready to use. While specifically recommended for clothes moths, they are also effective on carpet beetles.
	diatomaceous earth (PermaGuard)	D	
	prallethrin (Black Flag)	A	
	pyrethrins, pyrethrum	A, L	

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CENTIPEDE (a) Indoors	allethrin (Ortho)	A, L	Usually infest damp areas, such as basements. Spot-treat cracks, crevices and moldings where pests may crawl. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	A, L	
	cypermethrin (Spectracide)	A, L	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	
	γ-cyhalothrin (Spectracide)	L	
	imiprothrin (Hot Shot, Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	A	
	prallethrin (Ortho)	A	
pyrethrins, pyrethrum (Spectracide)	A		
CENTIPEDE (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Treat infested areas around building foundations, vents and similar access points. Barrier sprays of 12 to 18 inches along perimeter may be effective.
	bifenthrin (Ortho)	G	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
CHIGGER (red bug) (Outdoors)	β-cyfluthrin (Bayer Advanced)	L	Apply to grass, bushes and weeds in infested areas. Thoroughly saturate soil, but avoid runoff into ponds, lakes or other bodies of water. Repeat as needed. Apply labeled repellent products to shoes, ankles and legs before entering suspected chigger-infested areas.
	bifenthrin (Ortho)	G, L	
	deltamethrin (Spectracide)	L	
	γ-cyhalothrin (Spectracide)	L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	tetramethrin (Ortho)	L	
CLOTHES MOTH (a) Nonfabric areas and infested areas of carpet only			See Carpet Beetle .
CLOTHES MOTH (b) On fabric			See Carpet Beetle .
CLOTHES MOTH (c) In storage areas	dichlorvos (Pest Strip, Ortho No-Pest Strip)	Strip	Hang strip in clothes closets or storage chests up to 1,000 cubic feet in capacity. Not for use in occupied rooms or in closets in occupied rooms. Follow label instructions carefully.
	paradichlorobenzene (PDB) naphthalene	Crystals or similar solid	Effective repellents on clean fabric in airtight enclosures. Avoid contact with plastic buttons and zippers.

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CLOVER MITE (a) Indoors	allethrin (Ortho)	A, L	Pests are strictly a nuisance. Treat around door thresholds. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	A, L	
	cypermethrin (Spectracide)	A, L	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	A	
	prallethrin (Ortho)	A	
pyrethrins, pyrethrum (Spectracide)	A		
CLOVER MITE (b) Outdoors	β-cyfluthrin (Bayer Advanced)	G, L	Treat around points of entry, such as foundations, vents, windows and doors. Maintain a 12-inch wide vegetation-free zone along foundation. Spray 1 to 2 feet high along the foundation wall and a 3- to 5-foot barrier on the grass or landscaped areas around the foundation. Water immediately after applying granules. Apply products as directed on the label.
	bifenthrin (Ortho)	C, G	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	G, L	
tetramethrin (Ortho)	L		
COCKROACH (a) Indoors	allethrin (Ultra-Kill)	A, L	Apply sprays along baseboards, under sinks, in cabinets and in other infested areas. Remove and cover food and cooking and eating utensils before spraying cabinets. Do not restock shelves until surface dries completely. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products. Place bait stations in infested areas; follow label instructions. Keep out of reach of children and pets. Sanitation is critical. Before using baits, eliminate other food sources. Place bait stations in cabinets, under sinks and behind stoves and refrigerators. Slow acting but gives long-lasting control. Force small amounts into all hidden nesting areas with dust applicator. Avoid overapplication and inhalation of dust. Some formulations may contain pyrethrins or pyrethrum. Do not contaminate food preparation or storage sites. Use diatomaceous earth in the same manner as boric acid powders. Hydroprene is an insect growth regulator and should be used with an adulticide. Apply products as directed on the label.
	avermectin (Raid Max)	S	
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	A, L	
	boric acid	B, D	
	cypermethrin (Raid)	F	
	diatomaceous earth (PermaGuard)	D	
	deltamethrin (Black Flag)	L	
	dinotefuran (Hot Shot)	S	
	eugenol (Bioganic, Raid)	A, D	
	fipronil (Combat)	B, S	
	hydramethylnon (Combat)	B	
	hydroprene (Egg Stopper)	S	
	imiprothrin (Hot Shot, Raid)	A	
	indoxacarb (Hot Shot)	B	
λ-cyhalothrin (Spectracide)	L		

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Pests	Insecticide	Formulation	Precautions and Remarks
COCKROACH (a) Indoors	lemongrass oil (Hot Shot)	A, L	
	permethrin (Hot Shot, Spectracide)	A	
	prallethrin (Ortho)	A	
	pyrethrins, pyrethrum (Spectracide)	A	
	tetramethrin (Hot Shot)	F	
	tetramethrin (Raid)	A	
COCKROACH (b) Outdoors	β-cyfluthrin (Bayer Advanced)	A, L	Some species of cockroaches can live indoors and outdoors. Cockroaches that live outdoors tend to hide under mulch, ivy and similar cover. Treat groundcover and along foundation walls, patios and other areas where cockroaches are seen. Certain products cannot be used on or around edible plants. Read product labels for any limitations.
	bifenthrin (Ortho)	A, L	
	diatomaceous earth (PermaGuard)	D	
	dinotefuran (Hot Shot)	S	
	γ-cyhalothrin (Spectracide)	G, L	Apply products as directed on the label.
	hydramethylnon (Amdro)	B	
	permethrin (Spectracide)	A, L	
	tetramethrin (Ortho)	A, L	
CRICKET (Indoors and in crawlspaces)	β-cyfluthrin (Bayer Advanced)	L	Crickets enter homes through basements and similar areas. Some formulations may be sprinkled along foundation. Read product label before using outdoors. Treat along foundation walls, patios and other areas where crickets are seen. Apply in a light 2- to 4-inch band around foundation. Do not use excessive amounts, and do not apply to foliage of ornamentals or to food crops. Imiprothrin is formulated with other pesticides in these products.
	boric acid	B	
	cypermethrin (Spectracide)	L	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	Apply products as directed on the label.
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	prallethrin (Ortho)	A	
pyrethrins, pyrethrum (Spectracide)	L		
tetramethrin (Raid)	A		
EARWIG (a) Indoors	allethrin (Ortho)	A	Re-treatment may be necessary at two-week intervals. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	A, L	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic, Raid)	A, D	
	γ-cyhalothrin (Spectracide)	L	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	prallethrin (Ortho)	A	
	tetramethrin (Raid)	A	

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EARWIG (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Repeat treatments at 14-day intervals if necessary. Granular formulations are for outdoor use only and must be watered in or applied before rain.
	bifenthrin (Ortho)	G, L	
	diatomaceous earth (PermaGuard)	D	
	γ-cyhalothrin (Spectracide)	G, L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	D, G, L	
	tetramethrin (Ortho)	L	
FLEA (a) Indoors	allethrin (Ortho)	D	Only use products specifically labeled for flea control. Apply to carpets and crevices in flooring. Do not leave chemical residue on surface. Avoid accidental inhalation during application. Treat sleeping quarters of pets and other localized areas, such as under cushions and furniture, as specified on label. Vacuum carpets and furniture before applying, and dispose of contents properly. Sprays may be used for general area treatment. Also treat cracks, crevices and similar areas only. Foggers are only effective when used in conjunction with other sprays to other critical areas. Treat infested animals with properly labeled product for lasting control. See also Animal Insect Control section.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin	A	
	boric acid	D	
	deltamethrin (Spectracide)	L	
	eugenol (Bioganic)	A, D	
	λ-cyhalothrin (Spectracide)	L	
	methoprene (Precor)	A, F, L	
	permethrin (Spectracide)	L	
	pyrethrins, pyrethrum	L	
	pyriproxyfen (Archer, Nylar)	A, L	
sumithrin (Enforcer)	D		
tetramethrin (Hot Shot, Ortho, Raid)	F, L		
FLEA (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Concentrate on kennels and shaded areas where animals tend to rest or congregate. Apply liquid formulations with sufficient spray volume to saturate soil. Granular formulations must be watered in or applied before rain. Repeat as needed at four- to six-week intervals. Apply as directed on the label. See also Animal Insect Control section.
	bifenthrin (Ortho)	L	
	deltamethrin (Spectracide)	L	
	diatomaceous earth (PermaGuard)	D	
	γ-cyhalothrin (Spectracide)	G, L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	tetramethrin (Ortho)	L	
FLIES (a) Indoors	allethrin (Ortho)	A	Strips can only be used in unoccupied areas. Apply as a surface spray to areas or objects (such as garbage cans) infested with flies. Repeat treatments as may be necessary. See label before treating areas of vegetation. Sanitation in the area is essential for satisfactory control of flies.
	β-cyfluthrin (Bayer Advanced)	L	
	deltamethrin (Spectracide)	A	
	dichlorvos (Vapona, Pest Strip, Ortho No-Pest, Hot Shot)	Strip	

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FLIES (a) Indoors	eugenol (Bayer)	L	
	lemongrass oil (Hot Shot)	A	
	permethrin (Raid, Spectracide)	A, F	
	pyrethrins, pyrethrum (various)	A, L	
	tetramethrin (Hot Shot Fogger)	F	
FLIES (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Apply as a surface spray to areas or objects (such as garbage cans) infested with flies. Repeat treatments may be necessary. See label before treating areas of vegetation. Sanitation in the area is essential for satisfactory control using any of these chemicals but particularly important with baits. Use as directed.
	bifenthrin (Ortho)	L	
	imidacloprid (Maxforce)	B	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	prallethrin (Ortho)	A	
	tetramethrin (Ortho)	L	
HORNETS, MUD DAUBERS, WASPS, YELLOW JACKETS (a) Indoors	allethrin	A	Apply to insects as needed for quick knockdown. Mechanical control (swatting) is usually adequate. Use product with “crack and crevice” nozzle to reach nests in wall voids. Remove nest when wasps are dead.
	β-cyfluthrin (Bayer Advanced)	L	
	eugenol (Bioganic)	A, D	
	prallethrin (Ultrakill, Spectracide)	A	
	pyrethrins, pyrethrum	A, L	
	S-bioallethrin (Spectracide)	A	
tetramethrin (Ortho, Raid)	A		
HORNETS, MUD DAUBERS, WASPS, YELLOW JACKETS (b) Nest and adjacent areas	β-cyfluthrin (Bayer Advanced)	L	Apply to nest or opening after dark when insects have returned to nest. Re-treatment may be necessary. Most are packaged in pressurized containers that direct an insecticide stream of up to 10 feet. For yellow jackets and other soil-dwelling wasps, apply chemical to nests in soil.
	bifenthrin (Ortho)	L	
	carbaryl (Sevin)	D, L	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	permethrin (Hot Shot)	L	
	prallethrin (Spectracide, UltraKill)	A	
	tetramethrin (Ortho, Raid)	L	
LICE: body, head, crab (on person)	lindane (Kwell Shampoo)	L	Shampoo formulations. Thoroughly treat infested areas of body with lotion. Wash infested clothing with strong soap and very hot water. Dryclean woolens. Kwell and Ovide require a physician’s prescription. Insecticidal treatment of furniture, carpets or other areas of the home are not needed.
	malathion (Ovide)	L	
	permethrin (Nix)	L	
	pyrethrins, pyrethrum (Rid)	L	

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MILLIPEDE (a) Indoors	allethrin (Ortho)	A	Harmless pest is short-lived once indoors; therefore, insecticides may not be necessary. Spot-treat pest entrance areas (door thresholds). Outside treatment is necessary for satisfactory control. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	cypermethrin (Spectracide)	L	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	mint oil (Victor)	A	
	permethrin (Spectracide)	D, L	
	prallethrin (Hot Shot)	A	
pyrethrins, pyrethrum (Spectracide)	A		
MILLIPEDE (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Use as barrier treatment along foundation wall, door threshold and window ledge. Some sprays may damage vegetation under hot, humid conditions. Read label precautions. For lawn treatment, apply an insecticide band 10 to 15 feet wide. Apply liquid formulations with sufficient spray volume to saturate soil. Use granular formulations outdoors only; water in or apply before rain. Repeat as needed at four- to six-week intervals.
	bifenthrin (Ortho)	G, L	
	diatomaceous earth (PermaGuard)	D	
	γ-cyhalothrin (Spectracide)	G, L	
	λ-cyhalothrin (Spectracide)	D, G, L	
	permethrin (Spectracide)	D, G, L	
	tetramethrin (Ortho)	L	
MOSQUITOES (a) Indoors	allethrin (Ortho)	A	Aerosol sprays may provide temporary relief. Keep insects out by installing and repairing screens. Other labeled pyrethroids are also effective.
	deltamethrin (Spectracide)	A	
	lemongrass oil (Hot Shot)	A	
	permethrin (Spectracide)	A	
	pyrethrins, pyrethrum (Raid)	A	
	tetramethrin (Hot Shot)	F	
	tetramethrin (Ortho)	A	
MOSQUITOES (b) Outdoors (See also Insect Control in Recreation Areas)	<i>Bacillus thuringiensis (Bti)</i> (Mosquito Dunks)	Solid	A “biopesticide” containing bacteria that kill mosquitoes and some biting flies. Place in small ponds, bird baths and ornamental pools (not swimming pools). Follow instructions for specifics of application.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	Long-term control requires eliminating or cleaning mosquito breeding areas, such as discarded containers, ditches and other artificial sources of standing water. Spraying nearby vegetation may eliminate some mosquito resting sites, but some formulations may damage vegetation. Aerosols or foggers may be used for temporary relief when winds are insignificant. Use repellents on exposed body areas.
	γ-cyhalothrin (Spectracide)	G, L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Ortho)	A, L	
	prallethrin (Ortho)	A	

HOUSEHOLD AND STRUCTURAL PEST CONTROL – Products for Use by the General Public

Pests	Insecticide	Formulation	Precautions and Remarks
OLD HOUSE BORER	β-cyfluthrin (Bayer Advanced)	L	Spray, brush on or inject into wood. Seal holes in wood before injecting. Avoid runoff.
	bifenthrin (Ortho)	L	Apply as directed on label.
	permethrin (Spectracide)	L	Apply as directed on label.
	sodium borate (Spectracide)	L	Spray, brush on or inject into wood. For permanent protection, a water repellent should be applied to exterior surfaces two to three weeks after treatment.
PANTRY PESTS (Pests in food storage areas)	β-cyfluthrin (Bayer Advanced)	L	Discard infested material. Overall treatment of storage shelves and pantry usually not necessary; treat cracks, crevices, moldings and similar areas only. Remove and cover food and cooking and eating utensils before spraying storage cabinets. Do not restock shelves until surfaces are dry. Cover treated shelves with shelf paper if desired. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products.
	bifenthrin (Ortho)	L	
	cypermethrin (various)	L	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	mint oil (Victor)	L	
	permethrin (various)	L	
	prallethrin (Hot Shot)	A	
pyrethrins, pyrethrum (Ortho, Spectracide)	A, F		
POWDERPOST BEETLE	β-cyfluthrin (Bayer Advanced)	L	Coarse spray, brush on or inject into wood. Avoid excessive runoff.
	bifenthrin (Ortho)	L	
	λ-cyhalothrin (Spectracide)	L	Apply as directed on label.
	permethrin (Spectracide)	L	
	sodium borate (Spectracide)	L	For long-term protection, apply a water repellent to exterior surfaces two to three weeks after treatment.
SILVERFISH	allethrin (Ultra-Kill)	A	Treat cracks, crevices, moldings and similar areas. Attic treatment may be necessary. Apply to cracks and crevices and behind and underneath appliances. Spray along baseboards and other areas where silverfish are found. Imiprothrin is formulated with other pesticides in these products.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	cypermethrin (Spectracide)	L	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Hot Shot, Spectracide)	L	
	mint oil (Victor)	A	
	permethrin (Spectracide)	L	
	prallethrin (Ortho)	A	
pyrethrins, pyrethrum (Spectracide)	A		
tetramethrin (Raid)	A		

HOUSEHOLD AND STRUCTURAL PEST CONTROL – Products for Use by the General Public

Pests	Insecticide	Formulation	Precautions and Remarks
SOWBUGS AND PILLBUGS (a) Indoors	allethrin (Ortho)	A	Clean up breeding and hiding places, and treat thoroughly. Outdoor barrier treatments along foundation and door thresholds are usually sufficient. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	cypermethrin (Spectracide)	L	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	λ-cyhalothrin (Spectracide)	L	
	mint oil (Victor)	A	
	permethrin (Spectracide)	A	
	prallethrin (Ortho)	A	
pyrethrins, pyrethrum (Spectracide)	A		
SOWBUGS AND PILLBUGS (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Use as barrier treatment along foundation, wall, door threshold and window ledges. Oil (petroleum-distillate) sprays may harm asphalt, rubber and vinyl tiles. Some sprays may damage vegetation under hot, humid conditions. Read label precautions. For lawn treatment, apply an insecticide band 10 to 15 feet wide. Apply liquid formulations with sufficient spray volume to saturate soil. Granular formulations are for outdoor use only and must be watered in or applied before rain. Repeat as needed at four- to six-week intervals.
	bifenthrin (Ortho)	G, L	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	γ-cyhalothrin (Spectracide)	G, L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	D, G, L	
tetramethrin (Ortho)	L		
SPIDERS (a) Indoors	allethrin (Ultra-Kill)	A	Treat infested areas along baseboards. Use foggers if rooms have been undisturbed for some time and spider populations are extensive. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products. Apply as directed on the label.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	cypermethrin (Spectracide)	A	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	mint oil (Victor)	A	
	permethrin (Spectracide)	A	
	prallethrin (Ortho)	A	
	pyrethrins, pyrethrum (Spectracide)	A	
tetramethrin (Raid)	A		
SPIDERS (b) Outdoors	β-cyfluthrin (Bayer Advanced)	L	Apply as a barrier treatment along foundation. Spray corners of decks, eaves, porches and other areas where spiders tend to build webs. Webbing can be knocked down as an alternative. Exercise caution when spraying in crawlspace. Avoid inhaling spray. Apply as directed on the label.
	bifenthrin (Ortho)	L	
	diatomaceous earth (PermaGuard)	D	
	permethrin (Spectracide)	L	
	tetramethrin (Ortho)	L	

HOUSEHOLD AND STRUCTURAL PEST CONTROL – Products for Use by the General Public

Pests	Insecticide	Formulation	Precautions and Remarks
SPRINGTAILS (Indoors and Outdoors)	allethrin (Ultra-Kill)	A	Apply as a barrier spray along foundation and entry points. Some products may be used indoors for temporary relief. Clean up moisture conditions that may attract insects indoors. Excess moisture may impede product effectiveness. Use indoors for temporary relief. Some products are not suitable for use in residential kitchens or commercial food/feed preparation sites. Read the product label carefully. Imiprothrin is formulated with other pesticides in these products. Apply as directed on the label.
	β-cyfluthrin (Bayer Advanced)	L	
	bifenthrin (Ortho)	L	
	cypermethrin (Spectracide)	A	
	deltamethrin (Spectracide)	A	
	diatomaceous earth (PermaGuard)	D	
	eugenol (Bioganic)	A, D	
	imiprothrin (Raid)	A	
	λ-cyhalothrin (Spectracide)	L	
	mint oil (Victor)	A	
	permethrin (Spectracide)	L	
	prallethrin (Ortho)	A	
	pyrethrins, pyrethrum (Spectracide)	A	
tetramethrin (Raid)	A		
STINGING CATERPILLARS			See Caterpillar entry under Shrub and Tree Insect Control section.
STORED FOOD PESTS			See Pantry Pests .
TERMITE DRYWOOD SPECIES (Wood treatment)	β-cyfluthrin (Bayer Advanced)	L	Coarse spray. Coarse spray or inject into wood. Coarse spray on wood for localized infestation. For long-term protection, apply a water repellent to exterior surfaces two to three weeks after treatment.
	bifenthrin (Ortho)	L	
	permethrin (Spectracide)	L	
	sodium borate (Spectracide)	L	
TERMITE SUBTERRANEAN SPECIES (a) Wood treatment	β-cyfluthrin (Bayer Advanced)	L	Coarse spray; brush on or inject into wood. Avoid excessive runoff. For use only in voids or channels in damaged wood or to cracks and spaces between wooden members of structures. Apply as directed on label. Localized treatments. Spectracide is not recommended as a sole protection against termites. Coarse spray; brush on or inject into wood. Avoid excessive runoff. Spray, brush on or inject into wood. For long-term protection, apply a water repellent to exterior wood surfaces two to three weeks after treatment. Not a replacement for soil treatment.
	bifenthrin (Ortho)	L	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	L	
	sodium borate (Spectracide)	L	
TERMITE SUBTERRANEAN SPECIES (b) Soil treatment	bifenthrin (Ortho)	L	NOTE: Most termite infestations require treatment by a pest control professional with a Class 1 Termite and Other Structural Pest Control License issued by the Arkansas State Plant Board. Apply these materials as directed on label. Terminate is for the general public. Terminate is not recommended as the sole protection against termites.
	imidacloprid (Bayer Advanced)	G	
	λ-cyhalothrin (Spectracide)	L	
	permethrin (Spectracide)	S	
	sulfuramid (Terminate)	B	
TICKS (Outdoors)			See Brown Dog Tick .
WASPS, YELLOW JACKETS			See Hornets .

INDUSTRIAL AND HOUSEHOLD PESTS – Pesticides for use by licensed pest control operators only

Chemical Class ¹	Inorganics								Carbamates	Organophosphates	Pyrethroids																		
	Boric acid (Niban, Perma-Dust, Perma-Guard)	Diatomaceous earth (Mother Earth D)	Silica gel (Drione, Tri-Die)	Sodium Tetraborate (Advance 388B)	Methomyl (Apache, Flytek)	Propoxur (PT2)	Acephate (Orthene)	DDVP (Nuvan)	Allethrin (PT565 Plus XLO)	Bifenthrin (Bifen, Talstar)	Cyfluthrin (Tempo Ultra, Ultrashield CS)	Cypermethrin (Demon, Cynoff)	Deltamethrin (DeltaDust, DeltaGard, Suspend)	Deltamethrin (DeltaDust, DeltaGard, Suspend)	Deltamethrin (DeltaDust, DeltaGard, Suspend)	Esfenvalerate (Onslaught)	Fenvalerate (Pyrid)	λ-cyhalothrin (Demand, 228L)	λ-cyhalothrin (Demand, 228L)	Permethrin (Flee, Dragnet, Prelude)	Phenothrin (Bedlam)	Prallethrin (ULD Spy-300)	Pyrethrins and pyrethrum (Kicker, Pyrenone)	Pyrethrins and pyrethrum (Kicker, Pyrenone)	Pyrethrins and pyrethrum (Kicker, Pyrenone)	Resmethrin (R-300)	Resmethrin (R-300)	Tetramethrin (CB Stinger)	Tralomethrin (Saga)
Pesticide																													
Formulation ²	B, D	D ³	D ³	B	B	A	S	Strip	S	S, G	S	S	D	G	S		S	S	G	S	S	S	A ³	S ³	D ³	A	S	S	S
Pests																													
ants	Y	Y	Y	Y		Y	Y		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
bed bugs	Y	Y	Y						Y		Y	Y						Y		Y	Y			Y	Y	Y	Y		
bees			Y			Y	Y			Y	Y	Y	Y	Y						Y	Y			Y	Y				
booklice	Y	Y	Y			Y	Y		Y			Y		Y						Y	Y			Y	Y				
boxelder bugs	Y		Y			Y	Y		Y	Y	Y							Y		Y	Y	Y							Y
carpet beetles		Y				Y	Y		Y		Y	Y		Y			Y	Y		Y	Y	Y	Y	Y		Y	Y		Y
centipedes	Y	Y	Y			Y	Y		Y	Y	Y	Y	Y	Y		Y	Y			Y	Y	Y				Y	Y		Y
clothes moths		Y						Y	Y		Y	Y	Y	Y							Y	Y				Y	Y		Y
clover mites	Y	Y	Y			Y	Y		Y		Y	Y		Y				Y			Y	Y		Y	Y				Y
cockroaches	Y	Y	Y			Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
crickets	Y	Y	Y			Y	Y		Y	Y	Y	Y	Y	Y				Y	Y	Y	Y	Y	Y	Y	Y			Y	Y
earwigs	Y	Y	Y			Y	Y	Y		Y	Y	Y						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
fleas		Y	Y			Y	Y		Y	Y	Y	Y	Y					Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
flies/gnats	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
hornets/wasps			Y			Y	Y		Y	Y	Y	Y									Y	Y				Y	Y	Y	Y
lady beetles		Y	Y			Y	Y		Y	Y	Y	Y									Y						Y	Y	Y
millipedes	Y	Y	Y			Y			Y	Y	Y	Y		Y	Y			Y	Y	Y	Y						Y		Y
mosquitoes									Y	Y	Y	Y		Y				Y				Y	Y	Y	Y	Y	Y	Y	Y
pantry pests	Y	Y	Y			Y	Y		Y		Y			Y			Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y
scorpions		Y	Y							Y	Y	Y							Y	Y	Y		Y	Y	Y				Y
silverfish	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y					Y	Y	Y	Y	Y	Y	Y	Y	Y				Y
spiders		Y				Y	Y	Y	Y	Y	Y	Y		Y	Y		Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
springtails		Y				Y				Y	Y	Y		Y						Y	Y	Y							Y
ticks			Y			Y			Y	Y	Y	Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y		Y		Y

¹ Alternating uses of insecticides in different chemical classes can help reduce the likelihood of the pests developing resistance to one group or class of compounds.

² Formulation Designations: A = aerosol (includes crack and crevice); B = bait (granular, gel or station); D = dust; S = sprayable (concentrate or powder, some RTU formulations); G = granular.

³ Some formulations of diatomaceous earth and silica gel contain pyrethrins as a flushing agent. Some pyrethrins formulations contain piperonyl butoxide as a synergist.

INDUSTRIAL AND HOUSEHOLD PESTS – Pesticides for use by licensed pest control operators only (cont.)

Chemical Class ¹	Insect Growth Regulators ³				Other Classes																				
	Hydroprene (Gencor)	Methoprene (Altosid, Kabat, Pharoarid, Precor, Vigren)	Methoprene (Altosid, Kabat, Pharoarid, Precor, Vigren)	Pyriproxyfen (Archer, Ultracide)	Abamectin (Ascend, Avert, Advance)	Acetamiprid (Transport) ⁴	Aluminum phosphide (Phostoxin) ⁵	Chlorfenapyr (Phantom) ⁶	d-Limonene (ProCitra-DL)	Dinotefuran (Advance)	Dinotefuran (Alpine)	Dinotefuran (Alpine)	Dinotefuran (Alpine)	Fenoxycarb (Altosid, Pre-Strike) ⁷	Fipronil (Maxforce F, TopChoice, Termidor ⁸ , Taurus)	Hexa-hydroxyl (Eco PC)	Hydramethylnon (Amdro, Siege, Maxforce)	Imidacloprid (FlyBait, Maxforce, Premise, Pre-empt)	Indoxacarb (Advion)	Indoxacarb (Arlion)	Mint oil (Victor)	2-Phenyl Propionate (EcoPCO EC)	Sulfluramid (Fluorogard, Procontrol)	Sulfuryl fluoride (Vikane, Profume) ⁵	Thiamethoxam (Optigard)
Formulation ²	A, S	B	A, S	A, S	B	B, S	F	S	S	B	A	D	FM	BR	B, G, S	A, S	B	B	B	WDG	A	A, S	B	F	B, S
Pests																									
ants	Y	Y		Y	Y	Y		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y		Y ⁹
bed bugs			Y	Y				Y			Y	Y										Y		Y	
bees						Y						Y				Y				Y	Y				
booklice											Y														
boxelder bugs									Y		Y	Y	Y			Y						Y			Y
carpet beetles											Y	Y										Y		Y	
centipedes						Y			Y			Y				Y						Y			Y
clothes moths									Y			Y												Y	
clover mites						Y			Y		Y													Y	
cockroaches	Y			Y	Y	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
crickets				Y		Y			Y		Y	Y				Y			Y	Y	Y	Y			Y
earwigs	Y					Y			Y		Y	Y									Y	Y			Y
fleas			Y	Y		Y			Y			Y										Y			
flies/gnats	Y			Y		Y			Y		Y	Y					Y				Y	Y			
hornets/wasps						Y			Y			Y				Y					Y	Y			
lady beetles						Y			Y												Y	Y			Y
millipedes						Y			Y		Y	Y				Y					Y	Y			Y
mosquitoes	Y	Y		Y		Y			Y				Y			Y						Y			
pantry pests	Y		Y	Y			Y				Y	Y				Y						Y		Y	Y
scorpions						Y																			
silverfish						Y					Y	Y				Y				Y	Y				Y
spiders						Y			Y		Y	Y				Y						Y			
springtails						Y			Y		Y									Y					
ticks				Y		Y			Y																

¹ Alternating uses of insecticides in different chemical classes can help reduce the likelihood of the pests developing resistance to one group or class of compounds.
² Formulation Designations: A = aerosol; B = bait (granular, gel or station); BR = briquet; D = dust; F = fumigant, FM = foam; G = granular; S = sprayable (concentrate or powder, some RTU formulations); WDG = water dispersible granule.
³ GR products are not typically effective against adult stage of pests. Use an adulticide to provide quicker control of pest population.
⁴ Transport spray also contains bifenthrin; outdoor use only.
⁵ Requires a Class 3 General Fumigation or a Class 8 Food Related Fumigation License issued by the Arkansas State Plant Board.
⁶ Chlorfenapyr labeled for indoor use only for these pests.
⁷ Specialized formulation – briquets.
⁸ Termidor is labeled for outdoor use only; use other fipronil products indoors.
⁹ Optigard is not for use against pharaoh ants or carpenter ants.

