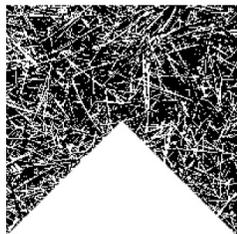


IPM



Urban and Industrial Sites

Insect Control Recommendations for 2008

INSECT CONTROL (For PCO Licensed Applicators)

Urban and Industrial Sites: Insect Control

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Ants			
<i>General Instructions: Ants are difficult to control because of the many individuals in the colony. Spraying foraging ants is the least effective control method because the queen is left to produce more ants. Using baits is recommended over all other control methods. Foraging ants will take the bait inside the nest to the queen. If baiting is not possible, find and treat the nest. Nests may be indoors as well as outdoors. If the nest is not treated, control is slow or impossible. Sanitation will help control ants. Keep all food products sealed in air-tight containers. Take trash out regularly. Also, clean dead insects from window sills regularly because ants feed on insect remains. For commercial sites, sanitation includes sweeping up any potential food source for ants, such as spilled feed. See Extension Circular ANR-999, "IPM Tactics For Argentine Ant Control," for more information.</i>			
<i>Indoor-Baits</i>			
	abmectin ADVANCE	0.5 oz./crack, crevice, other inaccessible areas	Apply 0.5 ounce of Advance in each crack, crevice, or void to be treated. DO NOT use in food or feed areas. Advance is available as granular, gel, or liquid bait.
	borates ANT X75 ANT BAIT (7.5%)	Ready-to-use	AntX75 is for crack, crevice, and spot application. Remove all competing food sources. DO NOT use with other pesticides.
	CB441 ANT STARTER KIT (1%)	Containerized bait	Install CB441 at entry points, ant trails, or close to colony nest.
	DRAX GEL BAIT (5.0%)	Containerized bait	Place other formulations where ants are trailing.
	NIBAN GRANULAR	4 lb./1000 sq.ft. or 6 oz./100 sq.ft.	Place granules where ants are trailing but where the granules are inaccessible to children and pets. Fine-granular (FG) formulation allows for crack and crevice treatment.
	NIBAN-FG (Fine Granular)	4 lb./1000 sq.ft. or 6 oz./100 sq.ft.	Only crack and crevice treatments may be used in food-handling areas. DO NOT use a spray near the bait; spray will repel ants.
	cyfluthrin CB INTRUDER HPX (0.1%)	Ready-to-use	For crack, crevice, spot, and void application. Can be sprayed on surfaces, but not as a space spray. DO NOT spray on plastic, painted or varnished surfaces, or on electronic equipment. May be used for controlling ants, silverfish, roaches, spiders, millipedes, centipedes, pantry pests, carpenter ants, carpenter bees, wasps, flies, gnats, or clothes moths. It is intended for public and industry use. It may be used in homes and buildings, indoors and outdoors.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Ants (cont.)			
<i>Indoor–Baits (cont.)</i>			
	fipronil MAXFORCE FC ANT BAIT STATIONS (0.01%)	Three stations/ average size room	Place stations next to ant trails or close to areas where ants are numerous. Can be placed in cabinets, next to dishes, or anywhere ant problems occur. DO NOT spray the bait station. DO NOT place the station on freshly sprayed surfaces.
	MAXFORCE FC ANT GEL (0.001%)	Ready-to-use syringe applicator; use up to 1 g per spot	APPLICATION IN FOOD/FEED HANDLING ESTABLISHMENT: Limited to crack and crevice treatment only. INDOOR: For cracks, crevices, corners, and any out-of-the-way places, such as under and behind kitchen appliances, along baseboards, under sinks, around pipes and drains, around window and door frames, and in garage, attic, or crawl spaces. Make gel placement where ants may be or have been seen entering structure. Inspect gel placements and reapply as needed.
	hydramethylnon MAXFORCE ANT BAIT STATIONS (0.01%)	Containerized baits	Follow instructions on box for placing bait. DO NOT use spray near the bait because ants will be repelled from bait stations. Allow 1 to 2 weeks for results. If infestations are heavy, check stations monthly; otherwise, check every 3 months. Replace old bait stations; ants will not feed on stale bait, and the old stations become their hiding places. Keep records of bait placements for easier follow up. Can be used in food preparation areas. Child-resistant packaging. DO NOT use in meat and poultry plants. DO NOT apply other insecticides on top of or in close proximity to Maxforce.
	MAXFORCE FINE GRANULE INSECT BAIT (1%)	0.5 oz./crack, crevice, other inaccessible areas	DO NOT use in meat and poultry plants. DO NOT apply other insecticides on top of or in close proximity to Maxforce.
	sulflurmid FLUORGUARD PROCONTROL DUAL CHOICE RAID MAX PLUS	Containerized baits Containerized baits Containerized baits	Same Comments as for hydramethylnon, above. Procontrol is effective against pharaoh ants, Argentine ants, cornfield ants, and a variety of household ants.
<i>Indoors–Dusts</i>			
	bendiocarb FICAM DUST (1%)	Use duster.	Treat nests or use in wall voids, cracks, and crevices.
	cyfluthrin TEMPO DUST (1%)	0.5-1 lb./1000 sq.ft.	Apply to voids, cracks, and crevices in and around doors and windows, baseboards, and other places where ants enter structure. Apply lightly and uniformly using hand or power dusters or other suitable equipment.
	deltamethrin DELTADUST	Use duster.	Treat nests or use in wall voids, cracks, and crevices.
	eugenol (2.5%) + 2- phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.
	pyrethrins DRIONE	Use duster.	Treat nests or use in wall voids, cracks, and crevices.
	tralomethrin SAGA WP	0.1 oz./1000 sq.ft.	Apply to trails and areas where insects inhabit or enter premises. DO NOT apply to water or areas near any body of water.
<i>Indoors—Liquids</i>			
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10 g (two scoops)/gal. SC: 0.27 fl. oz./gal.	For general surface, spot, and crack and crevice treatment. Apply to ant trails on walls, tile, and baseboards; around pipes; under cabinets; and other places where ants are active. Treat entry points such as windows and doors. Locate and treat ant nests by drench or injection if possible. Can be used both indoors and outside.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Ants (cont.)			
<i>Indoors–Liquids (cont.)</i>			
	cyfluthrin TEMPO WP, EC	See label.	Do not use liquids near baits.
	cypermethrin DEMON EC	See label.	Do not use liquids near baits.
	deltamethrin SUSPEND SC	0.25-0.75 oz.	Apply to trails, around doors, windows, and other places where insects may be found.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.
	resmethrin VECTRIN (3%)	See label.	Do not use liquids near baits.
<i>Indoors–Pressurized Containers</i>			
	cyfluthrin CB INTRUDER CY-KICK CS PRESSURIZED CRACK & CREVICE RESIDUAL (0.1%)	6.4 oz.	Can be used in foodhandling sites, in cracks and crevices, and for spot treatments both indoors and outside.
<i>Outdoors–Baits</i>			
	abmectin ADVANCE	0.5 oz./crack, crevice, or void	Apply 0.5 ounce of Advance in each crack, crevice, or void to be treated. Available as granular, gel, or liquid bait. DO NOT use in food or feed areas.
	borates NIBAN FG NIBAN GRANULAR	4 lb./1000 sq.ft. 6 oz./100 sq.ft.	Place granules where ants are trailing but where they are inaccessible to children and pets. Fine-granular (FG) formulation allows for crack and crevice treatment. Do not use spray near the bait because ants will be repelled from it.
	boric acid ANTX75 ANT BAIT (7.5%) CB441 ANT STARTER KIT (1%)	Ready-to-use Containerized baits	For crack, crevice, and spot application. Remove all competing food sources. DO NOT use with other pesticide. Install at entry points, to ant train, or close to colony nest.
	fipronil MAXFORCE FC ANT BAIT STATIONS (0.001%)	See label.	Place adjacent to the structures near ant activity.
	MAXFORCE FC ANT GEL (0.001%)	Ready-to-use syringe applicator; use up to 1 g per spot	OUTDOOR: Apply gel placements next to trails on or adjacent to structure and where ants have been seen or are suspected to enter into structure. May be used in refillable bait stations designed to hold and protect gel baits outdoors. Inspect gel placements and reapply as needed.
	hydramethylnon MAXFORCE ANT KILLER BAIT STATIONS (1%)	See label.	Sprinkle around structure. DO NOT use on edible food crop or areas intended for edible food crop production.
	MAXFORCE FINE GRANULE INSECT BAIT (1%)	0.5 oz/25 linear ft. x 1-2 ft. band: 1 oz./1800 sq.ft.	Broadcast sprinkle.
	MAXFORCE GRANULAR INSECT BAIT (1.0%)	PERIMETER: 4-8 oz. BROADCAST: 1-1.5 lb./A	Scatter sparingly around the perimeter of buildings when temperature is between 70° and 90°F. Do not put baits out before or after a heavy rain because ants will not be foraging. Recommended amount is for an average-size house.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Ants (cont.)			
<i>Outdoors—Dusts</i>			
	See Comments.		See dusts recommended for Indoors, on previous page.
<i>Outdoors—Dusts and Granules</i>			
	deltamethrin DELTAGARD G	2-3 lb./1000 sq.ft.	Apply as perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
<i>Outdoors—Liquids</i>			
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.025-0.05%)	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Treat ant trails around windows and doors, along sidewalks, or in other areas where ants are seen. Locate and treat ant nests by drench or injection if possible. Apply a perimeter treatment as described on the label. Use high rate for severe infestations, faster knockdown, and longer residual.
	cyfluthrin TEMPO WP, EC	See label.	Do not use liquids near baits.
	cypermethrin DEMON EC	See label.	Do not use liquids near baits.
	deltamethrin SUSPEND SC	0.25-0.75 oz.	General surface, spot, or crack and crevice application; indoor and outside treatment.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.
	resmethrin VECTRIN (3%)	See label.	Do not use liquids near baits.
<i>Outdoors—Pressurized Container</i>			
	cyfluthrin CY-KICK CS PRESSURIZED CRACK & CREVICE RESIDUAL (0.1%)	Pressurized container 6.4 oz.	Can be used in foodhandling sites, in cracks and crevices, and for spot treatments both indoors and outside.
Ants: Imported Fire Ants			
<i>General Instructions:</i> Broadcast spraying is not recommended for fire ant control because only the foraging ants will be affected, leaving the queen to produce more ants. Various injection units to treat fire ant mounds can aid in getting the chemical to as many ants as possible. Injection units may be found as "thermal foggers" which volatilize active ingredients, such as resmethrin, in the mound. Units that kill fire ants by steam and hot water and by carbon dioxide are also available. See your distributor for more information. See Extension Circular ANR-175, "Imported Fire Ants In Lawns, Turf, And Structures," for more tips on fire ant control.			
<i>Baits</i>			
	avermectin B ₁ FIRE ANT ENDER	See label.	Applying baits is very different from applying contact insecticides. Baits should be evenly sprinkled 1 to 3 feet from the base of the mound. Do not apply baits to the top of the mound. Apply baits when weather is sunny, between 70° and 90°F. Do not apply immediately after or before a heavy rain. Expect a longer time to see control, but expect a longer lasting control. All of the baits listed here can be used for big-headed ant control. DO NOT use in food or feed areas.
	fenoxycarb AWARD	See label.	
	hydramethylnon AMDRO MAXFORCE ANT KILLER GRANULAR BAIT	See label. See label.	
<i>Broadcast Baits</i>			
	abamectin ASCEND (0.011%) VARSITY (0.011%)	1 lb./A 1 lb./A	For use on turf, lawns, and landscapes.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Ants: Imported Fire Ants (cont.)			
<i>Broadcast Baits (cont.)</i>			
	avermectin B ₁ FIRE ANT ENDER	See label.	Applying broadcast baits is different from applying contact insecticides. Spread baits at a rate of 1 to 1.5 pound per acre. Apply on sunny days, between 70° and 90°F. Do not apply immediately after or before a heavy rain. Expect a longer time to see control, but expect a longer lasting control. DO NOT use in food or feed areas. The broadcast baits listed here can be used for big-headed ant control.
	fenoxycarb AWARD	See label.	
	fipronil CHIPCO CEASEFIRE FIRE ANT BAIT (0.00015%)	1.5-15 lb./A 0.5-5.5 oz./1000 sq.ft.	Make broadcast application to turfgrass to control existing active fire ant populations. Apply when ants are actively searching for food. Do not apply before or after irrigation or rain. Fire ants will begin to die in about 14 days; however, allow 4 to 6 weeks to achieve control. May make a total of four applications per year if needed.
	hydramethylnon AMDRO MAXFORCE ANT KILLER GRANULAR BAIT (1%) SIEGE-PRO (0.73%)	See label. 1-2 lb./A 1-1.5 lb./A	Broadcast bait uniformly with ground equipment (granular spreader) when ants are active. Repeat application as needed. Siege-Pro can be used on turf, lawns, ornamental gardens, and parks.
	methoprene EXTINGUISH (0.5%)	1-1.5 lb./A	May be applied to turf, landscapes, school grounds, parks, perimeter areas of buildings and homes, cemeteries, etc.
	pyridine (IGR) DISTANCE (0.5%)	1-1.5 lb./A	Distance may be used in indoor and outdoor container- or field-grown noncrop plants, residential and domestic sites, and institutional sites.
	SPECTRACIDE (0.05%)	1 lb./4400 sq.ft.	Spectracide may be used on turf, lawns, flower beds, potted plants, and along foundations, driveways, sidewalks, etc.
<i>Broadcast Granules</i>			
	fipronil CHIPCO TOPCHOICE FIRE ANT BAIT (0.0143%) Granule	87 lb./A 2 lb./1000 sq. ft.	Make broadcast application to turfgrass to control existing active fire ant populations. For best results, turf should be watered or irrigated following application. Fire ants will begin to die in about 14 days; however, allow 4 to 6 weeks to achieve control. May make a total of four applications per year if needed.
<i>Mound Treatments—Baits</i>			
	abmectin ADVANCE ASCEND (0.011%) VARSITY (0.011%)	0.5 oz. 5-7 T./mound 5-7 T./mound	Apply Advance in cracks, crevices, and voids. DO NOT use in food or feed areas. Ascend can be used indoors in nonfood areas. Apply to crevices, voids, and infested utilities.
	fipronil CEASEFIRE FIRE ANT BAIT (0.00015%)	5 T./mound	Broadcast granules around the mound in a 4- to 5-foot diameter circle with the mound as center, but do not disturb the mound. Apply when ants are actively foraging. Do not apply before or after irrigation or rain. Fire ants will begin to die in about 14 days; however, allow 4 to 6 weeks to achieve control. May make a total of four applications per year if needed.
	hydramethylnon SIEGE-PRO (0.73%)	5 T./mound	
	methoprene EXTINGUISH (0.5%)	3-5 T./mound	
	pyridine (IGR) DISTANCE (0.5%) SPECTRACIDE (0.05%)	1-4 T./mound 2-4 T./mound	Distance can be used indoors.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Ants: Imported Fire Ants (cont.)			
<i>Mound Treatments—Contact Insecticides: Drenches</i>			
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.05%)	WP: 20 g (4 scoops)/gal. SC: 0.54 fl. oz./gal.	Thoroughly drench or inject the entire mound. When using injection treatment, treat the bottom of the mound. Apply dilution or foam using downward and upward motion of the injector tool. Do not use on pastures or areas of food crop production.
	carbaryl SEVIN Various Formulations	See label. See label.	Treat about 1 foot around the perimeter of the mound; then, pour the remaining liquid on top of the mound to drench the galleries. Do not stir up the mound because disturbances allow the queen to escape.
	deltamethrin SUSPEND SC	1.5 fl.oz./gal.	Gently sprinkle 1 to 2 gallons of solution over the surface of each mound and surrounding area. Cover an area 2 feet in diameter with the mound as center.
	diazinon ORTHO FIRE ANT KILLER SPECTRACIDE LAWN & GARDEN INSECT CONTROL Various Formulations	See label. See label. See label.	Treat about 1 foot around the perimeter of the mound; then, pour the remaining liquid on top of the mound to drench the galleries. Do not stir up the mound because disturbances allow the queen to escape.
<i>Mound Treatments—Contact Insecticides: Dusts</i>			
	carbaryl SEVIN DUST Various Formulations	See label. See label.	Generally, dusts should not be used on windy days, when the soil is excessively wet or dry, or just before a rain. Apply dusts when ants are foraging, either in mid morning or late afternoon. Do not stir up mound; disturbances allow the queen to escape. DO NOT water dust into the ground.
<i>Mound Treatments—Contact Insecticides: Granular</i>			
	chlorpyrifos Various Formulations	See label.	Follow label directions.
	deltamethrin DELTAGARD G	2-3 lb./1000 sq. ft.	Apply as perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
	diazinon Various Formulations	See label.	Follow label directions.
<i>Pressurized Containers</i>			
	cyfluthrin CY-KICK CS PRESSURIZED CRACK & CREVICE RESIDUAL (0.1%)	Pressurized container 6.4 oz.	Can be used in food-handling sites, in cracks and crevices, and for spot treatments both indoors and outside.
Bed Bugs			
	deltamethrin DELTADUST	0.5 lb./1000 sq. ft.	Apply Deltadust thoroughly to all areas where bed bugs are typically found, including folds and tufts of mattresses, coils of springs, cracks and hollow posts of bedsteads, upholstery of chairs and sofas, picture frame molding, and all cracks and crevices in the room. See label for additional instructions.
	SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	Remove linens and wash before reuse. Apply to mattresses, especially tufts, folds, and edges, until moist. Apply to the interior of the frame. Allow to dry before remaking bed. Treat along wall perimeter as general spray or to cracks and crevices of baseboards and other areas where pest or signs of pest are found.
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Bed Bugs (cont.)			
	isopropanal STERI-FAB	Containerized	Follow the container label.
	pyrethrins PYRENONE	See label.	Lightly spray mattress several hours before use; penetrate seams, tufts, and folds. Also treat bed frame and cracks in bedroom walls and floors. Air the mattress in full sunlight to help control insects and reduce odor. Insecticide has a short residual effect; it usually requires several treatments, two times per week, to control bed bugs.
	resmethrin VECTRIN (3%)	See label.	
	Various Formulations	See label.	
Bees, Hornets, and Wasps			
<i>Caution: Use of the following insecticides may drastically affect pollination of fruits and vegetables, depending on where bees are a problem. Wear protective clothing. Apply these insecticides after dark when insects have returned to their nests. Retreatment may be necessary. Seal nest entrance to prevent reinfestation. If honey bees are being treated, remove the comb and honey to prevent staining and infestation by stored product pests. Consult a beekeeper before treating. See Extension Circular ANR-179, "Controlling Honey Bees Around The Home," for more information.</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet 2-4	Check nest 1 to 2 days later and destroy.
	FICAM DUST (1%)	0.33-0.66 oz./sq.yd.	Apply dust in cracks and crevices and wall voids. Leave entrance open until all activity stops.
	FICAM WASP & HORNET SPRAY	Spray until nest is soaked.	Stand away from the nest with your back to breeze, if any. DO NOT use on windy days.
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.05%)	WP: 20 g (4 scoops)/gal. SC: 0.54 fl. oz./gal.	Make pinstream applications directly to the nests. To help avoid stings, treat nests in the evening when insects are inside the nest. Check nest in 1 to 2 days to ensure complete kill. Remove and destroy treated nest to prevent emergence of newly hatched insects.
	carbaryl SEVIN DUST (5-10%)	See label.	Apply dust in cracks and crevices and wall voids. Leave entrance open until all activity stops.
	cyfluthrin CB INTRUDER TEMPO 20WP (0.1%)	2 packets: 19 g	Direct a pinstream spray at nest or insect.
	cypermethrin DEMON 36WP (0.2%)	2 packets: 0.66 oz.	Direct a pinstream spray at nest or insect.
	CYNOFF 40WP (0.2%)	0.66 fl.oz.	
	deltamethrin DELTADUST	Use duster.	Treat nest or use in wall voids, cracks, and crevices.
	eugenol (2.5%) + 2- phenethyl propionate (3.75%)		Shake well before using. For outside use ONLY .
	ECOPCO JET	Ready-to-use	
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply directly to walls, ceilings, window screens, etc., both inside and out.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Direct a pinstream spray at nest or insect.
	(1%)	3.2 fl.oz.	
	pyrethrins (1.0%) + PBO (10.0%) + silica gel (40.0%)	Use duster.	See label. Treat galleries and wall voids.
	DRIONE	See label.	
	PYRENONE 100		
	resmethrin VECTRIN (3%)	See label.	

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Bees, Hornets, and Wasps (cont.)			
	tralomethrin SAGA WP SAGA 40WP	0.1 oz./1000 sq.ft. 2 scoops: 0.2 oz.	Apply in the evening when insects are at rest. Direct a pinstream spray of Saga 40WP at nest or insect; apply it in infested cracks and crevices.
Booklice			
<i>General Instructions: Chemicals give only temporary relief. For long-term relief, remedy the humidity problems in the structure.</i>			
	pyrethrin PT 150 XLO	Ready-to-use	Use as a crack and crevice treatment or as a general volume treatment. Ventilate well.
Boxelder Bugs			
<i>General Instructions: These harmless insects become nuisances in their search for hibernation sites. Treat areas where bugs are congregating in trees.</i>			
	deltamethrin DELTADUST	Use duster.	This is a crack and crevice treatment.
	diazinon DIAZINON 4E Various Formulations	See label. See label.	Treat cracks and crevices where these insects hide.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.
	proprtamphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat cracks and crevices where these insects hide.
	pyrethrins + PBO PYRENONE 100 SYNEROL	See label. See label.	
Carpet Beetles and Clothes Moths			
<i>General Instructions: Remove as many insects as possible before treating. Vacuum carpets, with a beater brush if possible, for carpet beetles. Vacuum closets, especially cracks and crevices, for clothes moths. Discard vacuum bag outside immediately to prevent reinfestation. If treating infested areas of carpet, test color-fastness first. Dry-cleaning will help control clothes moths on clothes and will also kill carpet beetles. See Extension Circular ANR-159, "Controlling Carpet Beetles And Clothes Moths," for more information.</i>			
<i>Nonfabric Areas, Infested Areas of Carpet, Closet Areas</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Apply under rugs and furniture as a spot application.
	cyfluthrin CB INTRUDER HPX CB INTRUDER TEMPO 20WP (0.05%)	0.1% 0.33 oz.	DO NOT apply HPX on plastic, painted, or varnished surfaces or electronic equipment. Apply under rugs and furniture as a spot application.
	deltamethrin DELTADUST SUSPEND SC	Use duster. 0.25-0.75 oz.	For crack and crevice treatment. Also apply under rugs, furniture, etc. Apply to trails, around doors, windows, and other places where insects may be found.
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.
	lambda-cyhalothrin COMMODORE 10WP	0.33 oz.	Apply under rugs and furniture as a spot application.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Apply under rugs and furniture as a spot application.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Carpet Beetles and Clothes Moths (cont.)			
<i>Nonfabric Areas, Infested Areas of Carpet, Closet Areas (cont.)</i>			
	propretamphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Apply under rugs and furniture as a spot application.
	pyrethrins + PBO KICKER PYRENONE 100 SYNEROL	See label. See label. See label.	
	tralomethrin SAGA 40WP (0.06%)	2 scoops: 0.2 oz.	Apply under rugs and furniture as a spot application.
<i>Fabric Treatment</i>			
	deltamethrin SUSPEND SC	0.25-0.75 oz.	Apply to trails, around doors, windows, and other places where insects may be found.
	naphthalene 100	Flakes	Effective ONLY with tight seal.
	paradichlorobenzene	Flakes	Effective ONLY with tight seal.
Centipedes			
<i>General Instructions: Centipedes usually infest mulches, wood piles, etc. Clean up these materials and move them away from structures to control infestation and to prevent entry into structures.</i>			
	bendiocarb FICAM PLUS (0.25%) FICAM (2.5%) G	1 packet: 1 oz. 0.9-1.9 lb./1000 sq.ft.	Apply only as a crack and crevice or spot treatment. Apply around perimeter of house in 6- to 10-foot band.
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.025-0.05%)	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Use as a coarse, low-pressure spray. Treat entry points, such as door entrance, pipes, and areas where pests normally hide. Apply perimeter treatment to reduce the number of insects from entering the structure. Thoroughly treat mulched areas; reduce moist areas around the structure.
	cyfluthrin CB INTRUDER HPX TEMPO 20WP	0.33 oz.	Apply only as a crack and crevice or spot treatment. Can be sprayed on a surface but not as a space spray. DO NOT spray on plastic, painted, or varnished surfaces or on electronic equipment.
	cypermethrin CYNOFF 40WP DEMON 36WP	0.33 oz. 0.33 oz.	Apply only as a crack and crevice or spot treatment.
	deltamethrin DELTADUST DELTAGARD G SUSPEND SC (0.01-0.03%)	Use duster. 2-3 lb./1000 sq.ft. 0.25-0.75 fl. oz./gal.	Apply Deltadust only as a crack and crevice treatment. Apply Deltagard as a perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water. Use as a coarse, low-pressure spot or crack and crevice spray to areas pests normally inhabit. Apply perimeter treatment to reduce the number of insects from entering the structure. Thoroughly treat mulched areas; reduce moist areas around the structure.
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Centipedes (cont.)			
	pyrethrins + PBO DRIONE DUST PYRENONE 100 SYNEROL	See label.	
	resmethrin VECTRIN (3%)	See label.	
	tralomethrin SAGA 40WP	1 scoop: 0.1 oz.	Apply only as a crack and crevice or spot treatment.
Clothes Moths <i>See Carpet Beetles and Clothes Moths.</i>			
Clover Mites			
	deltamethrin DELTAGARD G	2-3 lb./1000 sq.ft.	Apply as perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
	diazinon DIAZINON 4E Various Formulations	See label. See label.	Follow label directions for application on plants.
	pyrethrins + PBO PYRENONE 100 SYNEROL	See label. See label.	
Cockroaches <i>General Instructions: The effectiveness of liquid insecticides is affected by the type of surface on which they are applied and its cleanliness. Greasy surfaces will decrease effectiveness as will unfinished wooden shelves and cabinets. Do not use liquids or dusts around cockroach baits. See Extension Circular ANR-1016, "IPM Tactics For Cockroach Control," for more information.</i>			
<i>Chemical</i>			
	avermectin AVERT AEROSOL	Ready-to-use	Pressurized bait. Treat cracks and crevices where cockroaches dwell. Use lower rate of bait points for light infestations; use higher rate for heavy infestations.
	AVERT BAIT	See label.	Dust formulation.
	bendiocarb FICAM PLUS (0.25%) FICAM DUST (1%)	1 packet: 1 oz. 0.33-0.66 oz./sq.ft.	Treat cracks and crevices where cockroaches dwell.
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	For general surface, spot, and crack and crevice treatment. Can be used both indoors and outside. See label for additional information and restrictions.
	borates NIBAN FG TIM-BOR (15%) TIM-BOR DUST	6 oz./100 sq.ft. 1.5 lb. ---	Treat exterior perimeter areas in a band about 2 feet wide. Also apply to cracks and crevices where cockroaches dwell. Treat cracks and crevices where cockroaches dwell. Dust wall voids, cracks, and crevices.
	cyfluthrin CB INTRUDER CY-KICK CS PRES- SURIZED CRACK & CREVICE RE- SIDUAL (0.1%) TEMPO 20WP	Pressurized container 6.4 oz. 0.33 oz.	Can be used in food handling sites, in cracks and crevices, and for spot treatment both indoors and outside. Treat cracks and crevices where cockroaches dwell.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Cockroaches (cont.)			
<i>Chemical (cont.)</i>			
	cypermethrin CYNOFF EC (0.1%) (0.2%)	0.5 fl.oz. 1 fl.oz.	Use higher rate for clean-out; lower rate for maintenance. Treat cracks and crevices where cockroaches dwell.
	CYNOFF 40WP (0.1%) (0.2%)	0.33 oz. 0.66 oz.	
	DEMON 36WP (0.1%) (0.2%)	0.33 oz. 0.66 oz.	
	deltamethrin DELTADUST	See label.	
	SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	
	Use as a coarse, low-pressure spot or crack and crevice spray in areas pests normally inhabit. Can be used both indoors and outside. See label for additional information and restrictions.		
	diazinon DIAZINON 4E Various Formulations	See label. See label.	
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.
	fipronil MAXFORCE FC	Containerized baits	Place child-proof feeding stations indoors in infested areas according to label instructions. DO NOT apply liquid insecticides in the vicinity of the baits. Liquid insecticides will repel roaches from the bait.
	MAXFORCE FC ROACH KILLER BAIT GEL (0.01%)	Gel or reservoir baits	Place baits according to label instructions. DO NOT use in areas routinely washed. Limited to crack and crevice treatment in food or feed areas.
	MAXFORCE FC SELECT (0.01%)	Ready-to-use syringe	Use as spot or crack and crevice treatment for indoor and outdoor control of cockroaches in residential areas. Also use in food/feed areas of food/feed handling establishments. See label for additional information and restrictions regarding use.
	hydramethylnon SIEGE	Gel baits	Place according to label instructions. DO NOT apply liquid insecticides in the vicinity of the baits. Liquid insecticides will repel roaches from the bait.
	hydramethylnon MAXFORCE ROACH KILLER BAIT (2.15%)	Gel or reservoir baits	Place baits according to label instructions. DO NOT use in areas routinely washed. Limited to crack and crevice treatment within food or feed areas.
	MAXFORCE ROACH KILLER BAIT STATIONS (2%)	Containerized baits	
	hydroprene GENTROL GENTROL POINT SOURCE	1 oz. 1 device/75 sq.ft.	Can be used where sprays and foggers may not be appropriate. Replace all devices every 3 months.
	isopropanal STERI-FAB	Containerized	Follow container label.
	lambdacyhalothrin DEMAND CS DEMAND PEST AB	See label. See label.	Use higher rate for clean-out; lower rate for maintenance. Treat cracks and crevices where cockroaches dwell.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat cracks and crevices where cockroaches dwell.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Cockroaches (cont.)			
<i>Chemical (cont.)</i>			
	propramphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat cracks and crevices where cockroaches dwell.
	propoxur BAYGON 70WP (0.5%) (1%) BAYGON (0.5%) BAIT	1 oz. 2 oz. See label.	DO NOT use as a space spray. DO NOT spray open floors, carpet, furniture, or bedding. Use as a crack and crevice or spot treatment. Apply around buildings in mulch and plantings in a band about 5 feet wide.
	pyriproxyfen ARCHER NYLAR	See label. See label.	Follow label directions.
	silica gel dust DRI-DIE DRIONE	Ready-to-use Ready-to-use	Apply to cracks and crevices where cockroaches dwell.
	sulfluramid bait RAID MAX	Containerized baits	Place child-proof feeding stations indoors in infested areas according to label directions. DO NOT apply liquid insecticides in the vicinity of the baits because they will repel roaches from the bait.
	tralomethrin SAGA 40WP (0.03%) (0.06%)	0.1 oz. 0.2 oz.	Use higher rate for clean-out; lower rate for maintenance. Treat cracks and crevices where cockroaches dwell.
<i>Nonchemical</i>			
	VICTOR ROACH PHEROMONE TRAP	See instructions.	For indoor use on German cockroaches.
Crickets			
General Instructions: Seal cracks and crevices that may serve as entry points to the house. Chemicals should be used as spot treatments, targeting plumbing areas, door thresholds, window sills, or other entry points into buildings. Do not touch surfaces until dry. Crickets are often found in basements.			
	bendiocarb FICAM PLUS (0.25%) FICAM DUST (1%)	1 packet: 1 oz. 0.33-0.66 oz./sq. ft.	Treat cracks and crevices where crickets dwell.
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10-20 g (2-4 scoops)/gal. SC: 0.27-0.54 fl. oz./gal.	For general surface, spot, and crack and crevice treatment. Can be used both indoors and outside. See label for additional information and restrictions.
	borates TIM-BOR (15%) TIM-BOR DUST	1.5 lb. See label.	Treat cracks and crevices where crickets dwell. Dust wall voids, cracks, and crevices.
	cyfluthrin CY-KICK CS PRES- SURIZED CRACK & CREVICE RE- SIDUAL (0.1%) TEMPO 20WP	Pressurized container 6.4 oz. 0.33 oz.	Can be used in foodhandling sites, in cracks and crevices, and for spot treatments both indoors and outside. Treat cracks and crevices where crickets dwell.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Crickets (cont.)			
	cypermethrin CYNOFF EC (0.1%)	0.5 fl.oz.	Treat cracks and crevices where crickets dwell.
	CYNOFF 40WP (0.1%)	0.33 oz.	
	DEMON 36WP (0.1%)	0.33 oz.	
	deltamethrin DELTADUST	See label.	Use Deltadust as a crack and crevice treatment.
	DELTAGARD G	2-3 lb./1000 sq. ft.	Apply Deltagard as a perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
	SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	Use as a coarse, low-pressure spot or crack and crevice spray to areas pests normally inhabit. Can be used both indoors and outside. See label for additional information and restrictions.
	diazinon DIAZINON 4E Various Formulations	See label. See label.	Follow label directions.
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.
	hydramethylnon MAXFORCE GRAN-ULAR INSECT BAIT (1.0%)	See label.	
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.
	COMMODORE 10WP (0.03%)	1 scoop: 0.4 oz.	Treat cracks and crevices where crickets dwell.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat cracks and crevices where crickets dwell.
	propetamphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat cracks and crevices where crickets dwell.
	propoxur BAYGON 70WP (0.5%) (1.1%)	1 oz. 2 oz.	DO NOT use as a space spray. DO NOT spray open floors, carpet, furniture, or bedding. Treat cracks and crevices or use as a spot treatment.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat cracks and crevices where crickets dwell.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Earwigs			
<i>General Instructions: Earwigs are incidental invaders into buildings. They usually dwell in leaf litter, mulches, and wood piles and are common "hitchhikers" on vegetables harvested from home gardens. Cleaning up and moving compost piles or mulching away from structures will aid pest control. Insecticidal control is usually unnecessary for this insect. Direct any treatments to points of entry into buildings.</i>			
	bendiocarb FICAM PLUS (0.25%) FICAM (2.5%) G	1 packet: 1 oz. 0.9-1.9 lb./1000 sq.ft.	Treat cracks and crevices or spot treat where earwigs dwell. Apply granules around perimeter of house in a 6- to 10-foot band.
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	For general surface, spot, and crack and crevice treatment. Can be used both indoors and outside. See label for additional information and restrictions.
	borates ROACH PRUFE	Ready-to-use	Treat cracks and crevices or spot treat where earwigs dwell.
	cyfluthrin CY-KICK CS PRES- SURIZED CRACK & CREVICE RESIDUAL (0.1%) TEMPO 20WP (0.1%)	Pressurized container 6.4 oz. 0.33 oz.	Can be used in food-handling sites, in cracks and crevices, and for spot treatments both indoors and outside. Treat cracks and crevices or spot treat where earwigs dwell.
	cypermethrin CYNOFF EC (0.1%) CYNOFF 40WP (0.1%) DEMON 36W (0.1%)	0.5 fl.oz. 0.33 oz. 0.33 oz.	Treat cracks and crevices or spot treat where earwigs dwell.
	deltamethrin DELTADUST	See label.	Use as a crack and crevice treatment.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat cracks and crevices or spot treat where earwigs dwell.
	proprymphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat cracks and crevices or spot treat where earwigs dwell.
	propoxur BAYGON 70WP (0.5%) (1.1%)	1 oz. 2 oz.	DO NOT use as a space spray. DO NOT spray open floors, carpet, furniture, or bedding. Treat cracks and crevices or use as a spot treatment.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat cracks and crevices or spot treat where earwigs dwell.
Firebrats			
<i>See Silverfish and Firebrats.</i>			

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Fleas			
<i>General Instructions: Prevention is the key to proper flea control. Initiate flea control programs no later than the end of March. Proper control of fleas on pets and on pet bedding and resting areas on the same day is a must for lasting control. First, wash pets; then, clean bedding and resting areas before treatments. Vacuum carpets thoroughly with a beater-brush attachment to take up eggs and larval food source that may be in the carpet before treating carpet. Immediately dispose of vacuum cleaner bag outside. Vacuum at least twice a week until flea populations subside. Steam cleaning carpets and furniture will also help decrease flea populations, especially in the absence of pets. Concentrate treatment on pet and pet resting places. See Extension Circular ANR-997, "IPM Tactics For Flea Control," for more information.</i>			
<i>On Pet</i>			
	fipronil FRONTLINE TOP SPOT or spray	Available ONLY by prescription through veterinarians	Apply between shoulder blades of the cat or dog or as a spray treatment. Lasts about 30 days.
	imidacloprid ADVANTAGE	Available ONLY by prescription through veterinarians	Apply between the shoulder blades. Use one tube for cats or dogs weighing less than 55 pounds. More than one tube may be used for heavier dogs. Lasts about 4 weeks. Kills adult fleas.
	lufenuron PROGRAM	Available ONLY by prescription through veterinarians	This is an insect growth regulator (IGR) given to the pet in a monthly pill. The IGR is circulated through the pet's blood. When adult fleas feed on treated pet's blood, subsequent generations are not able to develop properly, thus breaking the flea life-cycle.
	methoprene PETCOR	Ready-to-use	Follow label directions.
<i>Pet Areas</i>			
GENERAL COMMENTS ON PET AREAS: Always allow insecticides to dry thoroughly before re-entry. Heed special precautions for all products when treating areas frequented by people and pets. Never use a product on a pet unless the label allows it. It may be necessary to treat again in 1 to 2 weeks.			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Treat pet resting areas.
	deltamethrin SUSPEND SC	0.25-0.75 oz.	For crack and crevice treatment. Also apply under rugs, furniture, etc.
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	See label.	Apply according to label instructions.
	lambda-cyhalothrin DEMAND PESTAB (0.03%)	1-2 tablets	For outdoor use ONLY . Apply to trails, around doors, windows, and other places where insects may be found.
	methoprene PRECOR 1E	1 oz.	Does not last in sunlight. Use indoors only to treat pet resting areas.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat pet resting areas.
	propetamphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat pet resting areas.
	propoxur BAYGON 70WP (0.5%) (1.1%)	1 oz. 2 oz.	Treat pet resting areas.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Fleas (cont.)			
<i>Pet Areas (cont.)</i>			
	pyrethrins + PBO DRIONE DUST	See label.	Treat pet resting areas. Follow label directions.
	KICKER	See label.	
	PYRENONE	See label.	
	SYNEROL	See label.	
	pyriproxyfen ARCHER	See label.	Treat pet resting areas. Follow label directions.
	NYLAR	See label.	
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat pet resting areas.
Flies			
General Instructions: <i>Permanent fly control requires sanitation and proper waste disposal. If trash is removed twice a week, fly populations can be reduced.</i>			
	bacillus spores blend DRAINGEL	>700 billion/gallon	Treat two to three drains with each quart of product. It can be sprayed on hard-to-access non-drain sites. For public and industry use.
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Apply as low-volume mist or spray to outside surfaces of buildings, porches, patios, garages, fences, and other areas where flies rest. See label for additional information and restrictions.
	cyfluthrin CB INTRUDER HPX TEMPO 20WP (0.1%)	Ready-to-use 0.33 oz.	CB Intruder is used for crack, crevice, spot, and void application. It can be sprayed on the surface, but not as a space spray. DO NOT spray on plastic, painted, varnished surfaces or electronic equipment. Use Tempo to treat areas where flies are resting such as garbage collection sites.
	cypermethrin CYNOFF EC (0.1%)	0.5 fl.oz.	Cynoff is for outdoor use only. Treat areas where flies are resting such as garbage collection sites.
	CYNOFF 40WP (0.1%)	0.33 oz.	
	DEMON 36WP (0.1%)	0.33 oz.	
	deltamethrin SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	Apply directly to walls, ceilings, window screens, and other resting areas as a residual surface treatment. May be used inside residential buildings, as well as in and around carports, garages, storage sheds, unoccupied horse stables, and pet kennels. See label for additional information and restrictions.
	imidacloprid MAXFORCE GRANULAR FLY BAIT (0.5%)	Ready to use 5.7-6.3 oz./1000 sq. ft.	For use as a scatter bait or paint-on bait or in fly bait stations around the outside of commercial facilities and agricultural production facilities (broiler houses, feedlots, livestock housing structure, and horse stables). See label for additional site information and restrictions.
	isopropanal STERI-FAB	Containerized	For indoor use. Follow container label.
	lambdacyhalothrin COMMODORE 10WP (0.03%)	1 scoop: 0.4 oz.	Treat areas where flies are resting such as garbage collection sites.
	DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Flies (cont.)			
	methomyl GOLDENMALRIN FLY BAIT	See label.	For outdoor use ONLY . DO NOT apply to water or wet surface.
	nonchemical VICTOR FLYING INSECT TRAP	See instructions.	For indoor and outdoor use.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat areas where flies are resting such as garbage collection sites.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat areas where flies are resting such as garbage collection sites.
Hornets <i>See Bees, Hornets, and Wasps.</i>			
Millipedes <i>General Instructions: Millipedes are not insects; therefore, insecticides are not always effective in controlling these arthropods. Usually, millipedes are occasional invaders; however, they are known to build tremendously large populations in certain areas. In these plague-like situations, nonchemical control methods are more effective, such as watering lawns in the morning so that grass and millipedes have time to dry out before night and dethatching heavily thatched lawns. For more information, contact your county Extension office for Timely Information series T-4, "Millipedes," June 16, 1995.</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Treat cracks and crevices or spot treat points of entry into building where millipedes dwell.
	FICAM 2.5G	0.9-1.9 lb./1000 sq.ft.	Apply granules around perimeter of building in a 6- to 10-foot band.
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.025-0.05%)	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Use as a coarse, low-pressure spray. Treat entry points such as door entrance, pipes, and areas where pests normally hide. Apply perimeter treatment to reduce the number of insects from entering the structure. Thoroughly treat mulched areas; reduce moist areas around the structure.
	cyfluthrin CB INTRUDER HPX (0.1%) TEMPO 20WP (0.1%)	Ready-to-use 0.33 oz.	Treat cracks and crevices or spot treat points of entry into building where millipedes dwell.
	cypermethrin CYNOFF EC (0.1%) CYNOFF 40WP (0.1%) DEMON 36WP (0.1%)	0.5 fl.oz. 0.33 oz. 0.33 oz.	Treat cracks and crevices or spot treat points of entry into building where millipedes dwell. Cynoff is for outdoor use ONLY .
	deltamethrin DELTADUST	See label.	Follow label directions.
	SUSPEND SC (0.01-0.03%)	0.25-0.75 fl.oz. /gal.	Use as a coarse, low-pressure spot or crack and crevice spray to areas pests normally inhabit. Apply perimeter treatment to reduce the number of insects from entering the structure. Thoroughly treat mulched areas; reduce moist areas around the structure.
	eugenol (2.5%) + 2- phenethyl propionate (3.75%) ECOPCO D	See label.	Shake well before use.
	lambdacyhalothrin DEMAND CS DEMAND PEST AB	See label. See label.	Treat cracks and crevices or spot treat points of entry into building where millipedes dwell.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Millipedes (cont.)			
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat cracks and crevices or spot treat points of entry into building where millipedes dwell.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat cracks and crevices or spot treat points of entry into building where millipedes dwell.
Mosquitoes			
<i>General Instructions: Mosquitoes breed in tree holes and containers of stagnant water such as old tires, planters, and cans. Destroying the breeding site is the best method of control. Fixing window and door screens or other entrance points into buildings will aid pest control. For temporary relief, the following chemical recommendations may be used.</i>			
<i>Larvicide</i>			
	methoprene (1.5%) PRESTRIKE	1 tsp./211 sq. ft. surface area	Apply in less than 2 feet of water to birdbaths, flower pods, ornamental fountains, gutters, tree holes, water gardens, pool covers, puddles, rain barrels, etc. Provides up to 21 days of control in standing water. DO NOT apply to water that drains into public waterways. For public and applicator use.
<i>On Person</i>			
	repellents containing DEET or other A.I.s	See label.	Apply to skin as directed on container label.
	permethrin PERMANONE (0.5%) SPRAY	Aerosol Ready-to-use	Apply to shoes, pant cuffs, and socks and allow to dry at least 2 hours before wearing. DO NOT apply to skin.
<i>Outdoors</i>			
	<i>Bacillus thuringiensis</i> BACTIMOS Various Formulations	See label. See label.	Immature control. See label for variable rates.
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10-20 g (2-4 scoops)/gal. SC: 0.27-0.54 fl. oz./gal.	Apply at a rate of 1 gallon of solution per 1,000 square feet as a general spray around landscapes, lawns, and buildings to control adult mosquitoes where mosquitoes may rest. See label for additional information and restrictions.
	cyfluthrin TEMPO 20WP (0.1%)	0.33 oz.	Treat breeding areas such as treeholes. DO NOT use near bodies of water. Toxic to aquatic life.
	cypermethrin CYNOFF EC (0.1%)	0.5 fl.oz.	Treat breeding areas such as tree holes. DO NOT use near bodies of water. Toxic to aquatic life.
	CYNOFF 40WP (0.1%)	0.33 oz.	
	DEMON 36WP (0.1%)	0.33 oz.	
	deltamethrin SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	Apply directly to walls, ceilings, window screens, and other resting areas as a residual surface treatment. May be used inside residential buildings, as well as in and around carports, garages, storage sheds, unoccupied horse stables, and pet kennels. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to trails, around doors, windows, and other places where insects may be found.
	methoprene ALTOSID (1-8%) BRIQUETS	See label.	Immature control.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Mosquitoes (cont.).			
<i>Outdoors (cont.)</i>			
	methoprene (1.5%) PRESTRIKE	1 tsp./211 sq. ft. of surface area (water depth of less than 2 ft.)	Mosquito larvicide. Apply to birdbaths, flower pods, ornamental fountains, gutters, tree holes, water gardens, pool covers, puddles, rain barrels, etc. Provide up to 21 days of control in standing water. DO NOT apply to water that drains into public waterways. For public and applicator use.
	resmethrin 40EC	12.5 oz./gal. in light mineral oil	For ULV sprayer application.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat breeding areas such as treeholes. DO NOT use near bodies of water. Toxic to aquatic life.
Pantry Pests			
<i>General Instructions: Discard infested material. Vacuum cracks and crevices and wipe down pantry before applying insecticides. Treat only cracks and crevices in pantry. Insecticides are generally ineffective on unpainted wood surfaces. Overall treatment of storage shelves is not necessary. Do not wash off insecticide residue. Cover with shelf paper, if desired. All pantry pest treatments are for storage areas only. Do not use near food or utensils.</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Treat cracks and crevices.
	beta-cyfluthrin TEMPO ULTRA WP, SC	WP: 10-20 g (2-4 scoops)/gal. SC: 0.27-0.54 fl. oz./gal.	Apply to cupboards, shelving, and storage areas. Use as a coarse, low-pressure spot or crack and crevice spray in areas pests normally inhabit. See label for additional information and restrictions.
	chlorpyrifos DURATION PT 275 DURSBAN PT 270	Ready-to-use Ready-to-use	Treat cracks and crevices.
	cyfluthrin CB INTRUDER HPX (0.1%)	Ready-to-use	For crack, crevice, spot, and void application. Can be sprayed on surfaces, but not as a space spray. DO NOT spray on plastic, painted, or varnished surfaces or on electronic equipment. May be used in homes and buildings, indoors and outdoors.
	deltamethrin DELTADUST	See label.	Follow label directions. Apply to trails, around doors, windows, and other places where insects may be found.
	SUSPEND SC (0.01-0.03%)	0.25-0.75 fl. oz./gal.	Apply to cupboards, shelving, and storage areas. Use as a coarse, low-pressure spot or crack and crevice spray to areas pests normally inhabit. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND PESTAB (0.015-0.03%)	1-2 tablets	Apply to cupboards, shelving, and storage areas. DO NOT contaminate utensils and foodstuffs. Allow to dry before replacing items.
	nonchemical PT ALLURE BEETLE TRAP	See instructions.	
	PT ALLURE MOTH TRAP	See instructions.	
	propetamphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat cracks and crevices.
	pyrethrin PT 150 XLO	Ready-to-use	Treat cracks and crevices.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Pantry Pests (cont.).			
	pyrethrins + PBO DRIONE DUST	See label.	Follow label directions.
	KICKER	See label.	
	PYRENONE	See label.	
	SYNEROL	See label.	
	resmethrin VECTRIN (3%)	See label.	Follow label directions.
	sumithrin PT 120 XLO	Ready-to-use	Treat cracks and crevices.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat cracks and crevices.
Scorpions			
<i>General Instructions: Remove wood and piles of debris away from structures. Scorpions will fluoresce under black light, so inspections at night can identify sources of infestation in difficult cases. Direct insecticides at the source of the infestation. For more information, contact your county Extension office for Timely Information series T-19, "Scorpions," April 25, 1997.</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Treat cracks and crevices where scorpions may dwell.
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.025-0.05%)	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Use as a coarse, low-pressure spray. Treat around entry points, such as door entrance, pipes, and areas where pests normally hide. Apply perimeter treatment to reduce the number of insects from entering the structure. Thoroughly treat mulched areas; reduce moist areas around the structure. See label for additional information and restrictions.
	cyfluthrin TEMPO 20WP (0.1%)	0.33 oz.	Treat cracks and crevices where scorpions may dwell.
	cypermethrin CYNOFF EC (0.1%) CYNOFF 40WP (0.1%) DEMON 36WP (0.1%)	0.5 fl.oz. 0.33 oz. 0.33 oz.	Treat cracks and crevices where scorpions may dwell.
	deltamethrin DELTADUST	See label.	Follow label directions.
	deltamethrin SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	Use as a coarse, low-pressure spot or crack and crevice spray to areas pests normally inhabit. Apply perimeter treatment to reduce number of insects from entering the structure. Thoroughly treat mulched areas; reduce moist areas around the structure. See label for additional information and restrictions.
	lambdacyhalothrin DEMAND CS DEMAND PEST AB	See label. See label.	Treat cracks and crevices where scorpions may dwell. Follow label directions.
	permethrin FLEE (0.5%)	1.6 fl.oz.	Treat cracks and crevices where scorpions may dwell.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Scorpions (cont.)			
	pyrethrins + PBO DRIONE DUST PYRENONE	See label. See label.	Follow label directions.
	tralomethrin SAGA 40WP (0.06%)	0.2 oz.	Treat cracks and crevices where scorpions may dwell.
Silverfish and Firebrats			
<i>General Instructions: Discard potential dwelling sites such as cardboard boxes. Treat cracks, crevices, and similar areas. Attic treatment may be necessary.</i>			
	bendiocarb FICAM PLUS (0.25%) FICAM DUST (1%)	1 packet: 1 oz. 0.33-0.66 oz./sq. ft.	Treat cracks and crevices where silverfish and firebrats may dwell.
	cyfluthrin CB INTRUDER HPX (0.1%) TEMPO 20WP (0.1%)	Ready-to-use 0.33 oz.	For crack, crevice, spot, and void application. Can be sprayed on surfaces but not as a space spray. DO NOT spray on plastic, painted, or varnished surfaces or on electronic equipment. Use Tempo to treat cracks and crevices where silverfish and firebrats may dwell.
	deltamethrin DELTADUST	See label.	Follow label directions.
	DELTAGARD G	2-3 lb./1000 sq. ft.	Apply as perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
	SUSPEND SC	0.25-0.75 oz.	Apply to trails, around doors, windows, and other places where insects may be found.
	eugenol (2.5%) + 2-phenethyl propionate (3.75%) ECOPCO D	Ready-to-use	Shake well before using. For outside use ONLY .
	lambdacyhalothrin DEMAND CS DEMAND PEST AB	See label. See label.	Treat cracks and crevices where silverfish and firebrats may dwell.
	pyrethrin PT 150 XLO	Ready-to-use	Treat cracks and crevices where silverfish and firebrats may dwell.
	pyrethrins + PBO DRIONE DUST KICKER PYRENONE SYNEROL	See label. See label. See label. See label.	Treat cracks and crevices where silverfish and firebrats may dwell. Follow label directions.
	sumithrin PT 120 XLO	Ready-to-use	Treat cracks and crevices where silverfish and firebrats may dwell.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat cracks and crevices where silverfish and firebrats may dwell.
Spiders			
<i>General Instructions: Spiders are considered to be beneficials because they feed on pest insects. They are usually incidental invaders that can best be dealt with by vacuuming them up or sweeping them out the door. However, spiders have been known to build up in population inside buildings on occasion. Chemical control is appropriate, especially when dealing with the brown recluse or the black widow spider. Other spiders are known to come inside while stalking insect prey. Removing wood or mulch piles away from buildings can aid pest control. Insects that become food for spiders can breed in such materials. See Extension Circulars ANR-1039 and ANR-1043 for more information.</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Spiders (cont.)			
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.025-0.05%)	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Use as a coarse, low-pressure spray. Apply perimeter treatment to reduce the number of insects from entering the structure. Treat building foundations, walls, and around doors, windows, and soffits where pests are active or may enter and hide. See label for additional information and restrictions.
	cyfluthrin CB INTRUDER HPX (0.1%)	Ready-to-use	For crack, crevice, spot, and void application. Can be sprayed on surfaces, but not used as a space spray. DO NOT spray on plastic, painted, varnished surfaces or electronic equipment.
	TEMPO 20WP (0.1%)	0.33 oz.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.
	cypermethrin CYNOFF EC (0.2%)	1 fl.oz.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.
	CYNOFF 40WP (0.2%)	0.66 oz.	
	DEMON 36WP (0.2%)	0.66 oz.	
	deltamethrin DELTADUST	See label.	Follow label directions.
	DELTAGARD G	2-3 lb./1000 sq.ft.	Apply Deltagard G as a perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
	deltamethrin SUSPEND SC (0.03-0.06%)	0.75-1.5 fl. oz./gal.	Use as a coarse, low-pressure spot or crack and crevice spray to areas pests normally inhabit. Apply perimeter treatment to reduce the number of insects from entering the structure. See label for additional information and restrictions.
	eugenol (2.5%) + 2- phenethyl propionate (3.75%) ECOPCO JET	Ready-to-use	Shake well before using. For outside use ONLY .
	lambdacyhalothrin DEMAND CS	See label.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.
	DEMAND PEST AB	See label.	
	propoxur BAYGON 70WP (0.5%)	1 oz.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.
	tralomethrin SAGA 40WP (0.03%)	0.1 oz.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.
Springtails			
<i>General Instructions: Springtails are usually found in moist decaying vegetation and are incidental invaders inside buildings. There are a few reports of large populations invading homes. Drying out the surrounding landscape by watering in the morning rather than evening can aid pest control.</i>			
	deltamethrin DELAGARD G	2-3 lb./1000 sq.ft.	Apply as perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water.
	diazinon DIAZINON 4E	See label.	Treat cracks and crevices and points of entry into structures. Also check crawl spaces.
	Various Formulations	See label.	
	malathion Various Formulations	See label.	

Insect	Insecticide and Formulation	Comments
Termites		
	acetamiprid + bifenthrin TRANSPORT TERMITICIDE	Transport termiticide is available in 7.5 ounce water soluble bags. Use four bags per 100 gallons of water to make a 0.11 percent solution. Use as a soil treatment and follow directions on the label.
	diflubenzuron (Labyrinth bait) EXTERRA (0.25%E)	This toxicant is an insect-growth regulator which disrupts the normal molting process in termites. The application also consists of the same three-step process as stated under Sentricon. In-ground stations are installed at 20-foot intervals around the structure perimeter and at conducive sites. Inspect monitors on a continuing basis. The bait is placed inside the central chamber within the station when termite activity is detected. Diflubenzuron is highly toxic to aquatic invertebrates, so stations should not be placed close to ponds, streams, or rivers.
	OUTPOST TERMITE BAIT RESPONSE (0.25%)	Food material is installed as a thin lining against the interior in-ground stations. Bait is installed in the center cavity.
	hexaflumuron (Recruit II) SENTRICON Colony Elimination System (0.5%)	Sentricon is an insect-growth regulator which disrupts the normal molting process in termites. The system entails a three-step process: 1) initial monitoring to pinpoint termite activity; 2) replacing the monitoring wood with bait when termite activity is detected; 3) further monitoring to provide on-going protection. In-ground stations are installed at 10-foot intervals around the structure perimeter and at conducive sites. Inspect monitors on a continuing basis. Above-ground stations contain treated paper rolls (Recruit AG) and are positioned over active termite shelter tubes.
	hydramethylnon SUBTERFUGE TERMITE BAIT (0.3%)	This toxicant is a slow-acting stomach poison that interferes with the termite's energy production. In-ground stations are pre-baited and placed in areas of known termite activity. Subterfuge is labeled for use as a remedial treatment or a preventive treatment. It can also be used in conjunction with a soil treatment.
	noviflumuron (Recruit III) SENTRICON Colony Elimination System (0.5%)	This toxicant is an insect-growth regulator which disrupts the normal molting process in termites. The system entails a three-step process: 1) initial monitoring to pinpoint termite activity; 2) replacing the monitoring wood with bait when termite activity is detected; 3) further monitoring to provide on-going protection. In-ground stations are installed at 10-foot intervals around the structure perimeter and at conducive sites. Inspect monitors on a continuing basis. Above-ground stations contain treated paper rolls (Recruit AG) and are positioned over active termite shelter tubes.
	sulfuramid (FirstLine GT Plus) FIRSTLINE TERMITE DEFENSE SYSTEM (0.01%)	This toxicant is a slow-acting stomach pesticide that interferes with the termite metabolic process. The system entails a three-step process: 1) initial monitoring to pin-point termite activity; 2) replace monitoring wood with bait when termite activity is detected; and 3) subsequent monitoring to provide on-going protection. This is recommended in conjunction with localized conventional treatment. In-ground stations are installed at 10-foot intervals around the structure perimeter and at conducive sites. Inspect monitors on a continuing basis. Above-ground stations containing treated corrugated cardboard are positioned over active termite shelter tubes.
Termite Bait Products for use by Consumers		
	acetamiprid + bifenthrin TRANSPORT GHP	Transport GHP 50WP is available in 0.3 ounce water soluble bags. Use one bag per gallon of water to make a 0.11 percent solution. For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	sulfluramid SPECTRACIDE TERMINATE (0.01%)	Use this product in conjunction with mechanical alteration and soil treatment by a professional. Insert bait stakes in the ground and monitor them every 3 months. Once termites have been found, inspect stakes every month. Replace them if more than 50 percent has been eaten. Or, place two or more additional stakes within one foot of the infested stake.
	HOMECHOICE TERMITE DETECTOR STATIONS	Helps detect foraging termites before they attack and damage your home.
	TERMITROL BAIT SYSTEM	Uses TermiRid 613.
	sodium borate TERMIRID 613	Use TermiRid stakes in conjunction with Home Choice detection stations to reduce subterranean termite populations. Place a TermiRid stake inside the HomeChoice™ Detector Station when termite activity is detected.

Insect	Insecticide and Formulation	Amount to Use per Gallon of Water or as Specified	Comments
Termite Bait Products for use by Consumers (cont.)			
	barrier IMPASSE TERMITE SYSTEM		Impasse is a construction-grade, termite-proof sheet with the lambda-cyhalothrin "locked in" between outer polymer layers.
Ticks			
<i>Area Application</i>			
	bendiocarb FICAM PLUS (0.25%)	1 packet: 1 oz.	Treat areas that are in use.
	beta-cyfluthrin TEMPO ULTRA WP, SC (0.025-0.05%)	WP: 10-20 g (2-4 scoops)/ gal. SC: 0.27-0.54 fl. oz./gal.	Treat likely harborage areas along paths and in tall grass and other vegetation. Ticks may be reintroduced by host animals. See label for additional information and restrictions.
	cyfluthrin TEMPO 20WP (0.1%)	0.33 oz.	Treat areas that are in use.
<i>Area Application (cont.)</i>			
	deltamethrin DELTAGARD G SUSPEND SC	2-3 lb./1000 sq.ft. 0.25-0.75 oz.	Apply as perimeter or spot treatment. Use with care when applying in areas adjacent to any body of water. Apply to trails, around doors, windows, and other places where insects may be found.
	diazinon DIAZINON 4E Various Formulations	See label. See label.	
	isopropanol STERI-FAB	Containerized	Follow container label.
	permethrin FLEE (0.5%)	1.6 fl.oz.	See special restrictions on indoor treatments.
	propetamphos CATALYST (0.5%) (1%)	3.2 fl.oz. 6.4 fl.oz.	Treat areas in use.
	propoxur BAYGON 70WP (0.5%)	1 oz.	Treat areas in use.
	tralomethrin SAGA 40WP (0.06%)	0.2 oz.	Treat areas in use.
<i>On Person</i>			
	permethrin PERMANONE 0.5% SPRAY	Ready-to-use Aerosol	Apply to shoes, pant cuffs, and socks and allow to dry at least 2 hours before wearing.
	repellents containing DEET and other AIs	Aerosol, pump sprays, lotions	Apply to skin prior to exposure to tick-infested areas.
Wasps			
<i>See Bees, Hornets, and Wasps.</i>			

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For more information, call your county Extension office. It is listed in your telephone directory under your county's name.

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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