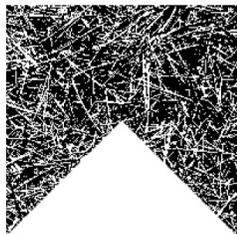


IPM



Households

Insect Control Recommendations for 2008

INSECT CONTROL

Household Insect Control

Insect	Insecticide and Formulation	Rate	Comments
Ants			
<p>General Instructions: <i>Ants are difficult to control because of the many individuals in a colony. Spraying foraging ants is the least effective method because the queen is left to produce more ants. Using baits is recommended over all other control methods. The foraging ants will take the bait into the nest to the queen. If baiting is not possible, find and treat the nest, which may be outside. If the nest is not treated, control will be slow or impossible.</i></p> <p><i>Sanitation inside the house will help control pests. Rather than spraying ant trails, wipe trails away using a cloth and warm soapy water. 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 more tips on ant control, see Extension Circular ANR-999, "IPM Tactics For Argentine Ant Control."</i></p>			
<i>Indoors—Aerosols</i>			
	permethrin (0.2%) + pyrethrin (0.2%) + PBO (0.5%) RAID ANT & ROACH KILLER	Ready-to-use	See General Instructions, above.
	tralomethrin (0.01%) + d-trans allethrin (0.05%) HOT SHOT	Ready-to-use	Direct spray at ant trails. Do not broadcast spray inside the house because it may fragment the colony, leading to a worse problem.
<i>Indoors—Baits</i>			
	boric acid OUTSMART ANT BAIT GEL (6.25%)	Ready-to-use	Direct thin lines along ant trail or to the point of ant entry. Remove baits with warm water and paper towel 24 hours after application. DO NOT treat porous or unfinished surfaces. Avoid contamination of feed and foodstuffs.
	CB441 Ant Starter Kit (1%)	Containerized baits	Install at entry points, ant trail, or close to colony nest.
	ANT X75 Ant Bait (7.5%)	Ready-to-use	For crack, crevice, and spot application. Remove all competing food sources. DO NOT use with other pesticides.
	fipronil (0.01%) COMBAT QUICK KILL FORMULA	Containerized baits	Follow maps on boxes for placing baits. Do not spray in the bait area because it will repel ants from the bait stations. Allow 1 to 2 weeks before expecting results. Generally, baits are a more complete and longer lasting control than spraying foraging ants because baits target the queen.
	OVER 'N OUT FIRE ANT KILLER GRANULES	Ready-to-use 2 bl./1000 sq. ft.	Distribute evenly in spring. Apply water to treated area immediately after application.

Insect	Insecticide and Formulation	Rate	Comments
Ants (cont.)			
<i>Indoors–Baits (cont.)</i>			
	MAXFORCE FC ANT GEL BAIT (0.001%)	Ready-to-use syringe applicator Use up to 1 g per spot.	APPLICATION IN FOOD/FEED HANDLING ESTABLISHMENT: Limit use in food/feed areas 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. Place gel where ants may be or have been seen entering structure. OUTDOOR: Place gel into, on, or adjacent to structure where ants have been seen and next to trails and suspected ant activity. Inspect gel placements and reapply as needed.
	hydromethylnon SIEFE-PRO (0.73%)	Ready-to-use	
	orthoboric acid NIBAN GRANULAR BAIT	Ready-to-use 4 oz./1000 sq.ft.	Food area application is limited to crack and crevice treatment ONLY . DO NOT contaminate with other pesticides.
	NIBAN-FG	Ready-to-use	For crack and crevice application.
	sulfluramid RAID MAX PLUS	Containerized baits	Follow maps on boxes for placing baits. DO NOT spray in the bait area because it will repel ants from the bait stations. Allow 1 to 2 weeks before expecting results. Generally, baits are a more complete and longer lasting control than spraying foraging ants because baits target the queen.
<i>Indoors–Liquids</i>			
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas, until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	chlorfenapyr PHANTOM (21.45%)	0.125-0.25%	Use low-pressure directed-spray equipment. Apply to breeding and nesting sites and where ants hide and infest.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.

Insect	Insecticide and Formulation	Rate	Comments
Ants (cont.)			
<i>Indoors–Liquids (cont.)</i>			
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply to trails, around doors, windows, and other places where insects may be found.
	permethrin (0.2%) HOT SHOT ANT KILLER PLUS	Ready-to-use	
<i>Outdoors–Baits</i>			
	hydramethylnon COMBAT GRANULES	4-8 oz./average-size house	Follow maps on boxes for placing baits. DO NOT spray in the bait area because it will repel ants from the bait stations. Allow 1 to 2 weeks before expecting results. Generally, baits are a more complete and longer lasting control than spraying foraging ants because baits target the queen. Scatter bait sparingly around perimeter of house.
	orthoboric acid NIBAN GRANULAR BAIT	6 oz./100 sq.ft.	Treat a 2- to 4-foot band around the perimeter of buildings and trees.
<i>Outdoors–Granular</i>			
	cyfluthrin BAYER ADVANCED POWER FORCE MULTI-INSECT KILLER READY TO USE (0.1%) GRANULE	2-3 lb./1000 sq. ft.	AROUND STRUCTURES: Apply granules in a 2- to 3-foot band around and up to the structure. Use a hand-held sprayer. See label for additional information and restrictions.
	fipronil OVER'N OUT FIRE ANT KILLER GRANULES (0.0103%)	Ready-to-use 2 lb. /1000 sq.ft.	Evenly distribute in spring. Apply water to treated area immediately after application.
<i>Outdoors–Liquids</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas, until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.

Insect	Insecticide and Formulation	Rate	Comments
Ants (cont.)			
<i>Outdoors—Liquids (cont.)</i>			
	carbaryl DIAZINON (25%) PROCARE PREMIUM LIQUID SEVIN INSECT SPRAY SPECTRACIDE SEVIN INSECT SPRAY	6 fl.oz./gal. water 17 fl.oz./gal. water 17 fl.oz./gal. water	Broadcast spraying outside is not recommended for ant control. Spraying may fragment the colony, causing an even worse ant problem. However, spot treatments where ants are known to be trailing may help prevent ant entry into homes. Spot treat around evident ant entry points such as window sills and door steps. DO NOT use diazinon to treat animals. DO NOT treat plants with diazinon at this rate. Read the label.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	TO CONTROL INSECTS AND PRESENT INFESTATIONS: Treat ant trails around doors and windows, along sidewalks, or in other areas where ants have been seen. Locate and treat ant nests by drench or injection if possible. Apply treatment outdoors as described on the label. Spray directly on target insect pest if possible. See label for additional information and restrictions.
	deltamethrin SUSPEND SC BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	1-2 oz./gal. water Ready-to-use	Apply to general surfaces, spots, or cracks and crevices. Can be used indoors and outside. Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where ants enter premises and where they crawl and hide. For effective control, locate and treat nests and surrounding areas. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply according to label instructions.
	permethrin SPECTRACIDE BUG STOP	6.67 fl.oz./qt. water	See Comments for carbaryl, above. Will cover 400 linear feet with a 6-inch spray band.
Imported Fire Ants			
<i>General Instructions: Broadcast spraying is not recommended for fire ant control. Only foraging ants are affected by the use of sprays, leaving the queen to produce more ants. See Extension Circular ANR-175, "Imported Fire Ants In Lawns, Turf, And Structures," for more tips on fire ant control.</i>			
<i>Broadcast Treatments—Baits</i>			
	abamectin B ₁ FIRE ANT ENDER	See label.	Applying broadcast baits is very different from applying contact insecticides. Baits should be spread at a rate of 1 to 1.5 pounds per acre. See label for specific rates for each bait. Do not apply immediately after or before a heavy rain. Apply baits in good weather—sunny and between 70° and 90°F. Expect a longer time before seeing results of control, but expect a longer lasting control.
	hydramethylnon AMDRO SIEGE	1-1.5 lb./acre	
<i>Mound Treatments—Baits</i>			
	abamectin 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. See label for specific instructions for each bait. Do not apply baits to the top of the mound. Do not apply immediately after or before a heavy rain. Apply baits in good weather—sunny and between 70° and 90°F. Expect a longer time before seeing results of control, but expect a longer lasting control.
	hydramethylnon AMDRO	See label.	

Insect	Insecticide and Formulation	Rate	Comments
Imported Fire Ants (cont.)			
<i>Mound Treatments—Contact Insecticides: Drenches</i>			
			GENERAL COMMENTS FOR DRENCHES: Lightly wet the top of the mound. Then, treat about 1 foot around the perimeter of the mound. Finally, pour the remaining liquid on the top of the mound to break open the crust and drench the galleries. Do not stir up the mound. Disturbances allow the queen to escape.
bendiocarb FICAM D (1%)		Stir 7 oz. into 2 gal. water.	See General Comments, above.
beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)		2 T. (1 fl. oz.)/gal.	To control fire ants in lawns and other outdoor home recreation areas, thoroughly drench the entire mound. Use a coarse spray and apply gently to avoid disturbing the ants. See label for additional information and restrictions.
carbaryl SEVIN Various Formulations		See label. See label.	See General Comments, above.
cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%) SPRAY		Ready-to-use	Thoroughly drench entire mound to control fire ants in lawns and other outdoor home recreation areas. Use a coarse spray and apply gently to avoid disturbing ants. See label for additional information and restrictions.
diazinon ORTHO FIRE ANT KILLER SPECTRACIDE LAWN & GARDEN INSECT CONTROL Various Formulations		See label. See label. See label.	See General Comments, above.
<i>Mound Treatments—Contact Insecticides: Dusts</i>			
			GENERAL COMMENTS FOR DUSTS: Dusts should not be used on windy days or when the soil is excessively wet or dry. Dusts should be applied when ants are foraging, either in mid morning or late afternoon. Do not stir up the mound. Disturbances allow the queen to escape.
bendiocarb NOR-AM BENDIOCARB HOMEOWNER DUST (1%)		See label.	
carbaryl SEVIN DUST Various Formulations		See label. See label.	Follow label directions.
<i>Mound Treatments—Contact Insecticides: Granular</i>			
cyfluthrin BAYER ADVANCED POWER FORCE FIRE-ANT KILLER READY TO USE (0.1%) GRANULE		0.25 C./mound	Sprinkle evenly on top of and around edge of mounds in lawns, flower beds, and ground covers and around trees and shrubs. Treat new mounds as they appear. Power force fire-ant killer is not labeled for use in and around fruits, vegetables, herbs, and edible plants. See label for additional information and restrictions.
diazinon Various Formulations		See label.	Follow label directions. Water in.

Insect	Insecticide and Formulation	Rate	Comments
Imported Fire Ants (cont.)			
<i>Outdoor–Granular</i>			
cyfluthrin BAYER ADVANCED POWER FORCE MULTI-INSECT KILLER READY TO USE (0.1%) GRANULE		2-3 lb./1000 sq. ft.	AROUND STRUCTURES: Apply granules in a band 2 to 3 feet wide around and up to the structure. Use a hand-held sprayer. LAWN: Broadcast granules evenly over lawn. See label for additional information and restrictions.
<i>Outdoors–Liquids</i>			
acetamiprid + bifenthrin TRANSPORT GHP 50WP		one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
Bed Bugs			
<i>General Instructions: Separate mattress from box springs. Steam cleaning mattresses will kill most bed bugs, depending on thoroughness of the cleaning. Pay close attention to the seams and buttons. Treat with a residual insecticide and inspect after two weeks. May require another treatment.</i>			
deltamethrin SUSPEND SC		1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
isopropanal STERI-FAB		---	Containerized. Follow label directions.
lambda-cyhalothrin DEMAND CS		0.2-0.4 oz./gal. water	Kills only adults.
pyrethrins Various Formulations		See label.	Lightly spray mattress several hours before use and allow to dry. Penetrate seams, tufts, and folds. Also treat bed frame and cracks in bedroom.
resmethrin Various Formulations		See label.	Airing mattress in full sunlight aids control and reduces odor. Material has a short residual effect; it usually requires several treatments, twice each week.
Bees			
<i>General Instructions: Consult a beekeeper or professional pest control operator. Using the following insecticides may drastically affect pollination of fruits and vegetables, depending on where the bees are a problem. See Extension Circular ANR-179, "Controlling Honey Bees Around The Home," for more information.</i>			
<i>Nests and Adjacent Areas</i>			
acetamiprid + bifenthrin TRANSPORT GHP 50WP		one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
bee/wasp aerosols Various Formulations		See label.	See label. Apply these insecticides after dark when insects have returned to nest. Retreatment may be necessary. Seal nest entrance to prevent reinfestation. If treating honey bees, remove comb and honey to prevent staining and infestation by stored product pests. Some materials are available in pressurized cans that can propel a stream up to 22 feet.
carbaryl SEVIN (5-10%) DUST		See label.	
resmethrin (0.25%) spray			
deltamethrin SUSPEND SC		1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
lambda-cyhalothrin DEMAND CS		0.2-0.4 oz./gal. water	Apply to walls, ceilings, window screens, and other resting areas.
Bees: Carpenter Bees			
<i>General Instructions: Consult a beekeeper or professional pest control operator. Using the following insecticides may drastically affect pollination of fruits and vegetables, depending on where the bees are a problem. For information specific to carpenter bees, contact your county Extension office for Timely Information Series T-14, "Carpenter Bee Damage Control," April 18, 1996.</i>			
acetamiprid + bifenthrin TRANSPORT GHP 50WP		one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.

Insect	Insecticide and Formulation	Rate	Comments
Bees: Carpenter Bees (cont.)			
	bendiocarb FICAM DUST	See label.	Dust holes. Leave holes open for 24 to 48 hours to allow bees access to the nest. Then, seal holes.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	Apply directly into gallery entrance holes. Leave entrance holes open 24 hours after treatment to be sure that returning bees are also killed. When no more activity occurs, seal the holes with a suitable sealant. See label for additional information and restrictions.
	carbaryl SEVIN DUST	See label.	
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	Apply directly into gallery entrance holes. Leave entrance holes open 24 hours after treatment to be sure that returning bees are also killed. When no more activity occurs, seal the holes with a suitable sealant. See label for additional information and restrictions.
	deltamethrin BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply directly into gallery entrance holes. Leave entrance holes open 24 hours after treatment to be sure that returning bees are also killed. When no more activity occurs, seal the holes with a suitable sealant. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply coarse spray to thoroughly wet wood surfaces to prevent and control insects.
	permethrin (0.2%) + pyrethrin (0.1%) + PBO (0.5%) spray SPECTRACIDE BUG STOP	See label.	
Booklice			
	pyrethrins Various Formulations	See label.	Dry out area before applying. For temporary relief only.
Boxelder Bugs			
<i>General Instructions: These harmless insects become nuisances in their search for hibernation sites. When found indoors, vacuum or sweep them up and immediately discard them outside. Vacuuming is the best method of indoor control. Also, treat areas where bugs are congregating or entering. Caulk around windowsills, cracks, and crevices where insects may enter. Eliminate seed-pod-bearing boxelder trees. Move rock or wood piles away from the house. Rake leaves and other debris away from house.</i>			
<i>Indoors</i>			
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply around doors and windows and other insect entry points or barrier treatments.
	pyrethrins Various Formulations	Ready-to-use	See General Instructions, above. Spray insects directly.
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	diazinon ORTHO DIAZINON PLUS Various Formulations	See label.	Look for a lawn or ornamental insect formulation. Make sure site and insect are listed on label. Not for indoor use.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply around doors and windows and other insect entry points or barrier treatments.
	malathion Various Formulations	See label.	Look for a lawn or ornamental insect formulation. Make sure site and insect are listed on label.

Insect	Insecticide and Formulation	Rate	Comments
Carpet Beetles			
<i>General Instructions: Carpet beetles are best controlled by sanitation. Vacuum rugs with a beater brush and dry clean articles that are infested, if possible. Vacuum around baseboards, cracks, and crevices with a crevice tool, making sure to remove lint and hair where beetles can breed. Some carpet beetles come into a house on flowers because they require pollen to complete their life cycle. See Extension Circular ANR-159, "Controlling Carpet Beetles And Clothes Moths," for more information.</i>			
<i>General</i>			
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply according to label instructions.
<i>On Fabrics</i>			
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces or spots. Can be used both indoors and outside.
	pyrethrins Various Formulations	See label.	Stain-test on inconspicuous area first.
	resmethrin Various Formulations	See label.	Stain-test on inconspicuous area first.
Centipedes			
<i>Indoors</i>			
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas, until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply around doors and windows and other insect entry points or barrier treatments.
	resmethrin (0.25%) Various Formulations	Ready-to-use	Centipedes usually infest mulches, wood piles, etc. Move these materials away from house to help prevent entry. When they are indoors, centipedes usually infest damp basements. Spot-treat cracks, crevices, and moldings where pests may crawl.

Insect	Insecticide and Formulation	Rate	Comments
Centipedes (cont.)			
<i>Indoors (cont.)</i>			
	tetramethrin + pyrethrins (1.2%) RAID HOUSE AND GARDEN BUG KILLER	Ready-to-use	Centipedes usually infest mulches, wood piles, etc. Move these materials away from house to help prevent entry. When centipedes are indoors, they usually infest damp basements. Spot-treat cracks, crevices, and moldings where pests may crawl.
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	carbaryl SEVIN (5-10%) DUST	See label.	See Comments for tetramethrin + pyrethrins, above.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Spray directly on target insect pest if possible. See label for additional information and restrictions.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply around doors and windows and other insect entry points or barrier treatments.
	malathion 50-57EC	4.5 fl.oz./gal. water	See Comments for tetramethrin + pyrethrins, above.
	resmethrin (0.25%) spray	See label.	See Comments for tetramethrin + pyrethrins, above.
Chiggers			
<i>On Person</i>			
	permethrin PERMANONE (0.5%) SPRAY	Ready-to-use aerosol	Apply to shoes, pant cuffs, and socks; allow to dry at least 2 hours before wearing. DO NOT apply to skin.
	repellents containing DEET or other active ingredients	Aerosol, pump sprays, lotions	Apply to skin prior to exposure to chigger-infested areas.

Insect	Insecticide and Formulation	Rate	Comments
Chiggers (cont.)			
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	diazinon SPECTRACIDE 25EC ORTHO DIAZINON PLUS INSECT SPRAY	2 oz./3 gal. water See label.	Apply to grass, bushes, and weeds in the infested areas. Repeat as needed every 4 weeks.
Clover Mites			
<i>General Instructions: These mites are considered occasional invaders. Vacuum up mites that come into the house, especially if they are in large quantities. Remove the vacuum cleaner bag immediately and discard it outside. When using the following chemical recommendations, focus treatment around points of entry such as foundations, windows, and doors.</i>			
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	diazinon DZN SPECTRACIDE 25EC	See label.	See General Instructions, above.
	malathion 50-57EC	7 t./gal. water	See General Instructions, above.
	permethrin SPECTRACIDE BUG STOP	6.67 fl.oz./qt. water	Follow label directions. Will cover 400 linear feet with a 6-inch spray band.
Cockroaches, German			
<i>General Instructions: German cockroaches are found only in association with man, usually indoors. These cockroaches are resistant to many of the liquid insecticides that are available. The best control is good sanitation. Vacuum thoroughly in cracks and crevices where cockroaches hide to eliminate feces. The feces contain an attractant to other cockroaches; also, cast skins serve as a food source to other cockroaches. Vacuuming can eliminate live cockroaches, as well. Discard the vacuum cleaner bag outside the house immediately. Wipe countertops and cabinets with warm, soapy water to remove as much oil from surfaces as possible. Oils decrease the effectiveness of insecticides. Liquids are ineffective on wooden shelves and paneling. Cockroach baits are most highly recommended to treat this pest. Baits also reduce insecticide exposure in the home. Cockroaches come into homes on paper items such as grocery bags; they breed prolifically in corrugated cardboard boxes. Eliminating items that harbor roaches helps control this pest. See Extension Circular ANR-1016, "IPM Tactics For Cockroach Control," for more information.</i>			
<i>Aerosols</i>			
	permethrin (0.2%) + pyrethrins (0.2%) + PBO (0.6%) HOT SHOT ROACH AND ANT KILLER RAID ANT AND ROACH KILLER	Ready-to-use	Follow label instructions. Use for temporary relief. See General Instructions for more lasting control.
	permethrin (0.25%) + hydroprene (0.39%) BLACK FLAG ROACH ENDER	Ready-to-use	Follow label instructions. Use for temporary relief. See General Instructions for more lasting control.
	tralomethrin (0.1%) + d-trans allethrin (0.05%) HOT SHOT	Ready-to-use	Follow label instructions. Use for temporary relief. See General Instructions for more lasting control.
<i>Baits</i>			
	fipronil (0.03%) COMBAT QUICK KILL FORMULA	Containerized baits (smaller roach stations)	Place child-proof feeding stations indoors in infested areas according to label instructions. Do not apply liquid insecticides in the vicinity of baits because they will repel roaches from the bait.
	COMBAT GEL BAIT	Gel baits in syringe- like tubes	Place gel bait in cracks and crevices where roaches are present. Many short dabs of bait are more effective than fewer long strips. DO NOT use in food preparation areas.

Insect	Insecticide and Formulation	Rate	Comments
Cockroaches, German (cont.)			
<i>Baits (cont.)</i>			
	isopropanal STERI-FAB	Containerized baits	Follow instructions on label.
	orthoboric acid ATTRAX PROTEINS ROACH BAIT	Ready-to-use gel bait	Food area application is limited to crack and crevice treatment only. Do not contaminate with other pesticides. Can be used indoors and outside.
	ATTRAX CARBOHY- DRATES ROACH BAIT	Ready-to-use gel bait	For crack and crevice application.
	CB ATTRAX ROACH BAIT SYRINGE	Ready-to-use	For crack and crevice application.
	NIBAN-FG NIBAN GRANULAR BAIT	Ready-to-use 4 oz./1000 sq.ft.	For crack and crevice application. For crack and crevice application.
	sulfluramid RAID MAX PLUS	Containerized baits	Place child-proof feeding stations indoors in infested areas according to label instructions. DO NOT apply liquid insecticides in the vicinity of baits because they will repel roaches from the bait.
<i>Liquids and Dusts</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	GENERAL COMMENTS FOR LIQUIDS AND DUSTS: Oil and grease decrease the effectiveness of liquid insecticides. Liquids on paneling or wood surfaces are ineffective. For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas, until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	boric acid powder BORACIC HOT SHOT ROACH POWDER ORTHOBORIC ROACH PRUFE (80%) PLUS	See label. See label. See label. See label.	Material is slower acting but can give longer lasting control in conjunction with appropriate sanitation. Force small amounts into all hidden nesting areas with dust applicator. Be sure treated areas are inaccessible to children and pets. These roaches typically prefer spaces about 0.375 inch or smaller. DO NOT use medicinal grade material. Package MUST have directions for roach control. Use indoors only. Boron is toxic to plants.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.

Insect	Insecticide and Formulation	Rate	Comments
Cockroaches, German (cont.)			
<i>Liquids and Dusts (cont.)</i>			
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	disodium octaborate tetrahydrate NIBOR-D	See label.	Apply as a spray or dust.
	hydroprene GENCOR (0.6%) SPRAY	See label.	Gencor is an Insect Growth Regulator (IGR) that causes roaches to become sterile. Evidence of sterilization is twisted wings in adults. IGRs are slower acting but longer lasting. They may be preceded by a faster acting chemical to reduce the population. Then, the IGR can sterilize the remainder of the population, breaking the roach life-cycle. Do not apply in the vicinity of baits.
	lambda-cyhalothrin DEMAND CS	<i>For maintenance:</i> 0.2-0.4 oz./gal. water <i>For clean-out:</i> 0.8 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices.
Cockroaches, Peridomestic (Americans, Smokybrowns, etc.)			
General Instructions: <i>These large "palmetto bugs" are normally found outside; therefore, chemical control should be concentrated outside. Their preferred breeding habitats are treeholes and pine straw mulch. They are incidental invaders into houses. To control these roaches, treat the habitat. Locate nesting sites in treeholes and do not use pine straw mulch close to the home. See Extension Circular ANR-1016, "IPM Tactics For Cockroach Control," for more information.</i>			
<i>Baits</i>			
	abamectin (0.05%) bait ROACH ENDER	See label.	
	hydramethylnon COMBAT ROACH BAIT STATIONS	Containerized baits (larger bait stations)	Place child-proof feeding stations indoors in infested areas according to label instructions. Do not apply liquid insecticides in the vicinity of the baits because they will repel roaches from the bait.
	COMBAT GEL BAIT	Gel baits in syringe-like tubes	Place gel bait in cracks and crevices where roaches are present. Many short dabs of bait are more effective than fewer long strips. DO NOT use in food preparation areas. Do not apply liquid insecticides in the vicinity of the baits because they will repel roaches from the bait.
	orthoboric acid NIBAN GRANULAR BAIT	Ready-to-use 4 oz./1000 sq.ft.	Can be used indoors or out. Food area application is limited to crack and crevice treatment ONLY . DO NOT contaminate with other pesticides.
	ATTRAX PROTEINS ROACH BAIT ATTRAX CARBOHYDRATES ROACH BAIT	Ready-to-use gel bait Ready-to-use gel bait	Can be used indoors and out. For crack and crevice application.

Insect	Insecticide and Formulation	Rate	Comments
Cockroaches, Peridomestic (Americans, Smokybrowns, etc.) (cont.)			
<i>Liquids and Dusts</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas) until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	boric acid powder BORACIC ORTHOBORIC ROACH PRUFE (80%) PLUS	See label. See label. See label.	Material is slower acting but can give longer lasting control when used with proper sanitation. Force small amounts into all hidden nesting areas with dust applicators. DO NOT use medicinal-grade boric acid. Look for directions for roach control on package. Use indoors only. It is toxic to plants.
	chlorfenapyr PHANTOM (21.45%)	0.125-0.25%	Use low-pressure directed-spray equipment. Apply to breeding and nesting sites, hiding and infesting places.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices. DO NOT exceed 0.4 ounces per gallon.

Insect	Insecticide and Formulation	Rate	Comments
Crickets			
<i>General Instructions: Seal cracks and crevices that may serve as entry points to house. Use chemicals as spot treatments, targeting plumbing areas, door thresholds, window sills, or other entry points into a house. Do not touch surfaces until dry. Crickets are often found in basements.</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas, until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Apply to general surfaces, spots, or cracks and crevices. Can be used both indoors and outside.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	diazinon DZN (0.5%) SPRAY	See label.	Spot-treat entrance points into house.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices. DO NOT exceed 0.4 ounces per gallon of water.
	malathion 50-57EC	7 t./qt. water	Material has a strong odor. Use in basement, crawlspace, or outdoor locations ONLY .
	orthoboric acid NIBAN GRANULAR BAIT	Ready-to-use 4 oz./1000 sq.ft.	Can be used indoors and outside. Food area application is limited to crack and crevice treatment ONLY . DO NOT contaminate with other pesticides.
	permethrin SPECTRACIDE BUG STOP	6.67 fl.oz./qt. water	Follow label directions. Will cover 400 linear feet with a 6-inch spray band.
	8-INSECT CONTROL	Ready-to-spray	DO NOT enter treated areas until spray has dried.

Insect	Insecticide and Formulation	Rate	Comments
Earwigs			
<i>General Instructions: Earwigs are incidental invaders in houses. They usually dwell in leaf litter, mulch, and wood-piles and are common "hitchhikers" on vegetables harvested from home gardens. Moving compost piles or mulch away from the house will aid pest control. Sweeping the occasional earwig from the house is usually all the control that is needed. Insecticidal control is usually unnecessary for this insect. When necessary, follow the rates and directions listed on the container label.</i>			
<i>Indoors</i>			
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	deltamethrin BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide, especially around sinks and storage areas, behind baseboards, and around doors and windows. Cover all food handling surfaces and cover or remove all food and cooking utensils or wash thoroughly after treatment. Cover or remove exposed food. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices. DO NOT exceed 0.4 ounces per gallon of water.
	resmethrin (0.25%) spray	See label.	Spot-treat where insects are a problem.
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. Spray directly on target insect pests if possible. See label for additional information and restrictions.

Insect	Insecticide and Formulation	Rate	Comments
Earwigs (cont.)			
<i>Outdoors (cont.)</i>			
	carbaryl SEVIN 50WP SEVIN (5-10%) DUST	See label. See label.	Find where earwigs are nesting, usually in mulch, and spot-treat.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. Spray directly on target insect pest if possible. See label for additional information and restrictions.
	deltamethrin BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices. DO NOT exceed 0.4 ounces per gallon of water.
	permethrin 8-INSECT CONTROL	Ready-to-spray	DO NOT enter treated areas until spray has dried.
Fleas			
<i>General Instructions: Prevention is the key to proper flea control. If you had a problem the past year, consider calling a professional pest control operator no later than the end of March to initiate a program. If not using a professional, homeowners should also begin their own flea control program no later than the end of March to avoid heavy flea populations. Proper control of fleas on pets, as well as on pet bedding and resting areas on the same day, is a must for lasting control. Vacuum carpets thoroughly with a beater-brush attachment to take up eggs and larval food source in carpet before treating it. Dispose of vacuum cleaner bag outside the house immediately. Vacuum at least twice a week until flea populations subside. Steam cleaning carpets will also help decrease flea populations, especially in the absence of pets. Concentrate treatment on pet and pet resting areas. See Extension Circular ANR-997, "IPM Tactics For Flea Control," for more information.</i>			
<i>Indoors</i>			
	borates AVEHO DUST MITE & FLEA CONTROL	8 oz./200 sq.ft. 2 lb./800 sq.ft.	Follow the label to mix with water.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	Thoroughly apply broadcast spray on furniture and all floor surfaces.
	isopropanal STERI-FAB	Containerized	Follow directions on label.
	methoprene PRECOR	See label.	Controls immature fleas only.
	nylar (0.01%) + permethrin (0.25%) ENFORCER FLEA SPRAY FOR HOMES	See label.	Nylar is an insect growth regulator that can help extend control.
	pyrethrins CESSCO 5E (0.5%) CESSCO 7C (0.7%)	10 sq.ft./second 10 sq.ft./second	Close windows and doors. Hold container 36 inches above floor; direct fog toward floor and lower walls. Make sure that all floor, sofa, and chair surfaces are contacted. Repeat as necessary.
<i>On Pets</i>			
	fipronil FRONTLINE TOP SPOT or spray	Available ONLY by prescription through veterinarians	Apply between the shoulder blades of the cat or dog or as a spray treatment. Lasts about 30 days.

Insect	Insecticide and Formulation	Rate	Comments
Fleas (cont.)			
<i>On Pets (cont.)</i>			
	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	An insect growth regulator (IGR) given in a monthly pill. The IGR is circulated through the dog's or cat's blood. When adult fleas feed on treated blood, subsequent generations of fleas are not able to develop properly, thus breaking the flea life-cycle.
	Various flea powders and shampoos	See label.	See General Instructions for Fleas, above.
<i>Under Buildings and Outdoors (when specified on label)</i>			
			GENERAL COMMENTS: Repeat treatments, if needed, after about two weeks. Concentrate on pet resting areas. Fleas are obligate ectoparasites, meaning they must stay close to the host in order to survive. Fleas will not stray far from pet resting areas.
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	borates AVEHO DUST MITE & FLEA CONTROL	8 oz./200 sq.ft. 2 lb./800 sq.ft.	Follow the label to mix with water.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.
	diazinon DZN SPECTRACIDE 25EC	See label.	See General Comments, above.
	lambda-cyhalothrin DEMAND CS	0.4 oz./gal. water	For outside use ONLY . DO NOT allow animals and people access to treated areas until the deposit has dried.
	malathion 50-57EC	See label.	See General Comments, above.
	permethrin 8-INSECT CONTROL	Ready-to-spray	DO NOT enter treated areas until spray has dried.
Flies			
General Instructions: Permanent fly control requires sanitation and proper waste disposal. If trash is removed twice a week, fly populations can be reduced. Aerosol applications can only give temporary relief. Many pesticides can be purchased in discount and home and garden supply stores as ready-to-use fly kill stations, fly sticky traps, fly light traps, and window traps. If using one of these insecticides, carefully follow the instructions and restrictions for installation.			
<i>Indoors</i>			
	deltamethrin SUSPEND SC	1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.
	diazinon (0.5%) spray	See label.	See General Instructions, above.
	isopropanal STERI-FAB	Containerized.	Follow application instructions on container label.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply to walls, ceilings, window screens, and other resting areas.

Insect	Insecticide and Formulation	Rate	Comments
Flies (cont.)			
<i>Indoors (cont.)</i>			
	pyrethrins CESSCO 5E (0.5%) CESSCO 7C (0.7%)	See label. See label.	Close all doors and windows. Point nozzle upward and direct aerosol mist to all parts of the room, especially around windows and other light sources which attract these insects. Keep area closed for 15 minutes after each treatment. DO NOT remain in treated area. Ventilate room when treatment is complete. To avoid possible staining of fabrics and surfaces, do not spray at close range.
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Apply as a general surface spray with attention to entry points. Spray around doors and other areas where flies rest before entering home. Repeat as necessary but not more than once per week. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Apply as a general surface spray with attention to entry points. Spray around doors and other areas where flies rest before entering home. Repeat as necessary but not more than once per week. Spray directly on target insect pest if possible. See label for additional information and restrictions.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.
	BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. 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 scatter bait, paint-on, or in fly bait stations around the outside of commercial facilities or agricultural production facilities, such as broiler houses, feedlots, livestock housing structures, and horse stables. See label for additional site information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply to walls, ceilings, window screens, and other resting areas.
	permethrin ATROBAN CESSCO 5E CESSCO 7C ECTIBAN PERMECTRIN	See label. See label. See label. See label. See label.	Apply to outdoor surfaces where flies rest. Apply Cessco at a rate of 100 square feet per 10 to 20 seconds. Spray along ground and around bushes and trees. DO NOT spray ornamental shrubbery. Frequent repeated applications may be necessary.
	pyrethrins CESSCO 5E (0.5%) CESSCO 7C (0.7%)	Ready-to-spray. Ready-to-spray.	Spray along ground and around bushes and trees at a rate of 10 to 20 seconds per 100 square feet. DO NOT spray ornamental shrubbery. Frequent repeated applications may be necessary.

Insect	Insecticide and Formulation	Rate	Comments
Flies (cont.)			
<i>Outdoors (cont.)</i>			
	FLIES BE GONE/ ULTRA BIOMASS BAIT	See Comments.	Use one trap per 50- to 100-meter radius. Hang trap outside in direct sunlight, 5 feet off the ground, and at least 30 feet away from the area you want to protect.
	FLIES BE GONE OUTDOOR FLY TRAP	Ready-to-use	Hang trap 5 feet off the ground and at least 30 feet away from the area you want to protect.
Drain Flies			
	Bacillus spp. DRAIN GEL VECTOR BIO-5	Ready-to-use	Treat drain.
	hydroprone GENTROL AEROSOL	Ready-to-use	Treat drain.
Gnats			
<i>See Mosquitoes and Gnats.</i>			
Hornets			
<i>See Yellow Jackets, Wasps, Hornets, and Mud Daubers.</i>			
Lice (Body, Head, Crab)			
<i>General Instructions: Wash infested clothing and bedding with strong soap and very hot water; tumble dry on high heat. Dry-clean woolens. Do not share hair brushes, caps, etc. See Extension Circular ANR-798, "Controlling Head Lice," for more information.</i>			
	permethrin NIX	See label.	Shampoo thoroughly; treat infested areas of body with lotion. Repeat treatments may be necessary.
	pyrethrins (0.3%) + piperonyl butoxide (3%) A-2000 R & C RID TRIPLE X	See label. See label. See label. See label.	Shampoo thoroughly; treat infested areas of body with lotion. Repeat treatments may be necessary.
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 to tremendously large populations in certain areas. In these plague-like situations, non-chemical control methods are more effective, such as detaching heavily thatched lawns and watering lawns in the morning so that grass (and millipedes) have time to dry out. For more information, see Extension Circular ANR-1075, "Millipedes."</i>			
<i>Indoors</i>			
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Spray around baseboards, into cracks and crevices, and in other places where insects hide, such as under sinks, cabinets, refrigerators, or damp areas, until surfaces are wet. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	deltamethrin BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a spot and crack and crevice treatment to areas where pests crawl and hide. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal.	Apply around doors and windows and other insect entry points or barrier treatments.

Insect	Insecticide and Formulation	Rate	Comments
Millipedes (cont.)			
<i>Outdoors</i>			
			GENERAL COMMENTS FOR OUTDOORS: Pulling mulch away from house and watering during the morning hours will help decrease millipede populations.
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. Spray directly on target insect pests if possible. See label for additional information and restrictions.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Spray directly on target insect pest if possible. See label for additional information and restrictions.
	deltamethrin BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
	diazinon DZN SPECTRACIDE 25EC	2.5 fl.oz./gal. water	High rates may damage plants.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply around doors and windows and other insect entry points or barrier treatments.
	malathion 50-57EC	4.5 fl.oz./gal. water	High rates may damage plants.
	permethrin HOT SHOT ANT KILLER PLUS	Ready-to-use	
Mosquitoes and Gnats			
<i>General Instructions: Mosquitoes breed in tree holes and containers of stagnant water, such as old tires, planters, and cans. Destroying breeding sites is the best method of control. For temporary relief, the following chemical recommendations may be used.</i>			
<i>Indoors</i>			
			GENERAL COMMENTS FOR INDOORS: Installing or repairing screens on windows and doors or other entrance points into houses will aid pest control.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply to walls, ceilings, window screens, and other resting areas.
	pyrethrins (0.05-0.5%) spray RAID HOUSE & GARDEN BUG KILLER	See label.	Use for temporary relief.
	CESSCO 5E (0.5%) CESSCO 7C (0.7%) Various Formulations	10 sq.ft./second 10 sq.ft./second See label.	Close windows and doors. Point nozzle upward and direct aerosol mist to all parts of the room, especially around windows and other light sources which attract these insects. Keep area closed for 15 minutes after each treatment. DO NOT remain in treated area. Ventilate room when treatment is completed. To avoid possible staining of fabrics or surfaces, do not spray at close range.

Insect	Insecticide and Formulation	Rate	Comments
Mosquitoes and Gnats (cont.)			
<i>Indoors (cont.)</i>			
	resmethrin (0.25%) spray Various Formulations	See label.	Use for temporary relief.
<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 or other AIs	See label.	Apply to skin according to label instructions.
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	GENERAL COMMENTS FOR OUTDOORS: Eliminate containers of standing water. For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)	2 T. (1 fl. oz.)/gal.	Apply as a general surface spray with attention to entry points. Apply around doors and window, under decks, and in other places where pest may land before entry into structure. See label for additional information and restrictions.
	borates AVEHO DUST MITE & FLEA CONTROL	8 oz./200 sq.ft. 2 lb./800 sq.ft.	Follow the label to mix with water.
	cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)	Ready-to-use spray	Apply as a general surface spray with attention to entry points. Apply around doors and windows, under decks, and other places where pests may land before entry into premises. See label for additional information and restrictions.
	deltamethrin BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)	Ready-to-use	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. See label for additional information and restrictions.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Refer to bee control.
	malathion 50-57EC	4.5 fl.oz./gal. water	Spray shady damp areas.
	naphthalene (4.5%) + butoxypropylene glycol (0.5%) MOSQUITO BEATER Granules	0.5 cup/100 sq.ft.	DO NOT enter treated areas within one hour of application.
	permethrin 8-INSECT CONTROL	Ready-to-spray	DO NOT enter treated areas until spray has dried.
	permethrin (0.0225%) + 2 hydroxyethyl-n-octyl-sulfide (0.475%) + related compounds (0.025%) + d-cis/trans allethrin (0.1425%) OFF YARD & DECK AREA REPELLENT	Ready-to-use	Spray with the wind. Spray 4 to 6 feet away from ornamentals. Follow label directions.
	pyrethrins (0.05-0.5%) spray	See label.	Use for temporary relief as aerosol or fogger.
	pyrethrins CESSCO 5E (0.5%) CESSCO 7C (0.7%)	Ready-to-spray Ready-to-spray	Spray along ground and around bushes and trees at a rate of 10 to 20 seconds per 100 square feet. DO NOT spray ornamental shrubbery. Frequent repeated applications may be necessary.

Insect	Insecticide and Formulation	Rate	Comments
Mosquitoes and Gnats (cont.)			
<i>Outdoors (cont.)</i>			
	tetramethrin (0.2%) + related compounds (0.027%) + permethrin (0.05%) + PBO (1.0%) CUTTER DECK & PATIO AREA REPELLENT	Ready-to-use	For temporary relief only. Follow label directions.
	HOT SHOT YARD FOGGER	Ready-to-use	
Mud Daubers			
<i>See Yellow Jackets, Wasps, Hornets, and Mud Daubers.</i>			
Pantry Pests			
<i>General Instructions: Discard infested material. Vacuum cracks and crevices and wipe down pantry before insecticidal application. Treat only cracks and crevices in the pantry, if desired. Overall treatment of storage shelves is not effective. Do not wash off insecticide residue. Cover with shelf paper, if desired.</i>			
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Controls beetles only. Apply to cupboards, shelving, and storage areas. DO NOT contaminate utensils and foodstuffs. Allow to dry before replacing items.
	permethrins PT-CYKZCK Aerosol		Comes with a special injector tube for easy application. Follow label directions.
	pyrethrins CESSCO 5E CESSCO 7C	10 sq.ft./second 10 sq.ft./second	Keep area closed for 15 minutes after treatment. DO NOT remain in treated area. Ventilate room when treatment is complete.
	resmethrin (0.25-0.5%) spray	See label.	Treat cracks and crevices only.
Scorpions			
<i>See Spiders and Scorpions.</i>			
Silverfish			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	diazinon DZN (0.5%) SPRAY	See label.	Treat cracks, crevices, and similar areas. Attic treatment may be necessary.
	disodium octaborate tetrahydrate ARMOR-GUARD (98%) NIBOR-D	0.5 oz./sq.ft. See label.	Apply as a dust.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices. DO NOT apply more than 0.4 ounce per gallon of water.
	orthoboric acid NIBAN-FG	Ready-to-use	For crack and crevice application.
Sowbugs and Pillbugs			
<i>General Instructions: Sowbugs and pillbugs are incidental invaders into houses. They usually dwell in leaf litter, mulch, and woodpiles and are common "hitchhikers" on vegetables harvested from home gardens. Moving compost piles or mulch away from the house will aid pest control. Chemical control is usually unnecessary for this pest. Non-chemical methods are more effective, such as watering during the mornings so that vegetation and the sowbugs or pillbugs have time to dry out. If these pests are found indoors, simply sweep or vacuum them up and immediately discard them outside the house.</i>			
	carbaryl PROCARE PREMIUM SEVIN INSECT SPRAY SEVIN 50WP SEVIN (5%) DUST SPECTRACIDE SEVIN INSECT SPRAY	See label. See label. See label. See label.	For outside use only. Apply to breeding areas.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.

Insect	Insecticide and Formulation	Rate	Comments
Sowbugs and Pillbugs (cont.)			
diazinon DZN SPECTRACIDE 25EC		2 t./gal. water See label.	For outside use only. Apply to breeding areas.
lambda-cyhalothrin DEMAND CS		0.2-0.4 oz./gal. water	Apply around doors and windows and other insect entry points or barrier treatments.
malathion 50-57EC		7 t./qt. water. See label.	Apply to breeding areas.
permethrin SPECTRACIDE BUG STOP		6.67 fl.oz./qt. water	Follow label directions. Will cover 400 linear feet with a 6-inch spray band.
Spiders and Scorpions			
<i>General Instructions: Spiders and scorpions are considered beneficial insects 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 and scorpions have been known to build up in population inside homes on occasion. Chemical control is appropriate, especially when dealing with the brown recluse or black widow spider. Other spiders are known to come into houses while stalking insects for food. These pests can breed in mulch, woodpiles, and similar places. Removing wood or mulch piles away from the house can help control them. See Extension Circulars ANR-1039 and ANR-1043 for more information on controlling the black widow and brown recluse spiders.</i>			
acetamiprid + bifenthrin TRANSPORT GHP 50WP		one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
beta-cyfluthrin BAYER ADVANCED POWER FORCE CARPENTER AND TERMITE KILLER PLUS CONCENTRATE (2.5%)		2 T. (1 fl. oz.)/gal.	TO CONTROL INSECTS AND PREVENT INFESTATIONS: Use 3 gallons per 1,000 square feet. Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Spray directly on target insect pest if possible. See label for additional information and restrictions.
cyfluthrin BAYER ADVANCED HOME PEST CONTROL INDOOR/ OUTDOOR INSECT KILLER READY TO USE (0.1%)		Ready-to-use spray	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Spray directly on target insect pest if possible. See label for additional information and restrictions.
deltamethrin SUSPEND SC		1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.
BAYER ADVANCED POWER FORCE CARPENTER ANT AND TERMITE KILLER PLUS READY TO USE (0.02%)		Ready-to-use	Apply as a general surface spray with attention to entry points. Apply around doors and windows and other places where pests enter premises and where they crawl and hide. Repeat as necessary but not more than once per week. See label for additional information and restrictions.
diazinon DZN (0.5%) SPRAY		See label.	See Comments, above.
lambda-cyhalothrin DEMAND CS		0.2-0.4 oz./gal. water	Apply as a coarse, low-pressure spray to areas where insects hide. Pay particular attention to cracks and crevices.
resmethrin (0.25%) spray		See label.	Treat infested areas such as crawl spaces and similar areas. Scorpions will fluoresce under a black light, so they and their breeding sites can easily be seen at night.
tralomethrin (0.03%) + allethrin (0.05%)		Ready-to-use	

Insect	Insecticide and Formulation	Rate	Comments
Springtails			
<i>General Instructions: Springtails are usually found in moist decaying vegetation and are incidental invaders into houses. There are a few reports of large populations invading homes. They may be carried inside in potted plants where they breed. To prevent this, allow potting mixture to dry and "sun" before carrying pots indoors. Drying out the surrounding landscape by watering only in the morning can aid pest control. If large numbers of these pests do get into the house, vacuum them up and immediately discard the vacuum cleaner bag outside.</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	diazinon DZN (0.5%) SPRAY	See label.	See General Instructions for Springtails, above. Treat sills, foundations, soil, and cracks where insects are found.
	malathion 50-57EC	7 t./qt. water See label.	See General Instructions for Springtails, above.
Stinging Caterpillars			
<i>General Instructions: Avoid contact with these caterpillars. Hairs and bristles may cause the skin to itch, sting, and blister.</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	carbaryl SEVIN Various Formulations	See label. See label.	
Termites			
<i>General Instructions: Homeowners should contact a professional pest control operator, especially if subterranean termites are suspected. Alabama has several different termites that all require specialized methods of treatment. See Extension Circulars ANR-1022, "IPM Tactics for Termite Control," and ANR-1035, "Formosan Subterranean Termite."</i>			
<i>Bait Stations</i>			
	B&G TM	Bait station, in ground	Apply according to label instructions.
	FIRSTLINE TM	Above ground	Apply according to label instructions.
	NEW FIRSTLINE TM GT PLUS	Bait station, in ground	Apply according to label instructions.
	TERMINATE TM	Bait stake, in ground	Apply according to label instructions.
	diflubenzuron OUTPOST BAIT	Bait station	Install bait stations around buildings or structures where termite activity is confirmed or suspected. Use as a supplemental or remedial treatment.
	hydramethylnon SUBTERFUGE TERMITE BAIT (0.3%)	Bait station	Install bait stations around buildings or structures where termite activity is confirmed or suspected. Use as a supplemental or remedial treatment.
<i>Soil Treatment</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	chlorfenapyr PHANTOM (21.45%)	0.125-0.25%	For post-construction soil treatment and above-ground void treatment. Be extremely cautious if treating structures with wells or cisterns.
	sulfluramine TERMINATE TM SPOT TREATMENT CONCENTRATE	See label.	For spot treating localized infestations.
<i>Wood Treatment</i>			
	d-limonene (orange oil) XT-2000 (92%)	Ready-to-use	Spray or brush onto wood.
	disodium octaborate tetrahydrate BORA-CARE (40% liquid)	See label.	Apply to bare wood to prevent insect infestation.

Insect	Insecticide and Formulation	Rate	Comments
Termites (cont.)			
<i>Wood Treatment (cont.)</i>			
	TIM-BOR	10-15%	Can be applied as a solution, foam, or dust.
	sulfluramine TERMINATE TM SPOT TREATMENT CONCENTRATE	See label.	For spot treating localized infestations.
Ticks			
General Instructions: <i>Creating a tick-free environment for pets is essential to lasting tick control. Wildlife, such as deer, must be excluded from the areas where the pet will be held. On the same day that the pet is treated with appropriate shampoos, treat pet beds and resting areas, including cracks and crevices where ticks may hide. If ticks are found indoors, steam cleaning carpets and furniture will kill those that contact the steam. For more information, see Extension Circular ANR-1070, "IPM Tactics For Tick Control."</i>			
<i>On Pet</i>			
	fipronil FRONTLINE TOP SPOT	Available ONLY by prescription through veterinarians	Apply between the shoulder blades of the cat or dog or apply as a spray treatment. Lasts about 30 days.
<i>Outdoors</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	carbaryl PROCARE PREMIUM LIQUID SEVIN INSECT SPRAY SPECTRACIDE SEVIN INSECT SPRAY	3 fl.oz./qt. water 3 fl.oz./qt. water	For pressure sprayers. See label to use with hose-end sprayers.
	diazinon DIAZINON (25%)	1 T./gal. water	Will cover 125 square feet.
	isopropanal STERI-FAB	See label.	Follow container label.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	For outside use only.
	permethrin 8-INSECT CONTROL	Ready-to-spray	DO NOT enter treated areas until spray has dried.
	tralomethrin SPECTRACIDE FLEA & TICK	See label.	
Wasps			
<i>See Yellow Jackets, Wasps, Hornets, and Mud Daubers.</i>			
Wood-Destroying Beetles			
General Instructions: <i>Homeowners are advised to contact a professional pest control operator, especially if serious infestations are suspected. Serious infestations require fumigation, available only through specially licensed pest control operators. See Extension Circular ANR-825, "Controlling Wood-Boring Beetles In Houses," for more information.</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	disodium octaborate tetrahydrate BORA-CARE (40% liquid)	See label.	Apply to bare wood to prevent insect infestation.
	TIM-BOR (10-15%)	See label.	Can be applied as a solution, foam, or dust.
Yellow Jackets, Wasps, Hornets, and Mud Daubers			
<i>Indoors</i>			
	deltamethrin SUSPEND SC	1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	Apply according to label instructions.

Insect	Insecticide and Formulation	Rate	Comments
Yellow Jackets, Wasps, Hornets, and Mud Daubers (cont.)			
<i>Indoors (cont.)</i>			
	pyrethrins (0.05-0.5%) spray	See label.	Stand back and direct toward insect for quick knockdown
	resmethrin (0.25-0.5%) spray	See label.	Stand back and direct toward insect for quick knockdown.
<i>Outdoors—Dusts, Wettable Powders</i>			
	carbaryl SEVIN 50WP	See label.	Apply in the evening when insects have returned to the nest. Twenty-four hours later, destroy nest to prevent reinfestation by other wasps. Retreatment may be necessary. CAUTION: Carbaryl is extremely toxic to honey bees.
	SEVIN (5-10%) DUST	See label.	
<i>Outdoors—Pressurized Liquids</i>			
	allethrin (0.05%) HOT SHOT WASP AND HORNET KILLER	Ready-to-use	Several materials are packaged as bee and wasp killers. Most are in pressurized containers that direct an insecticide stream up to 22 feet. Apply in the evening when insects have returned to the nest. Twenty-four hours later, destroy nest to prevent reinfestation by other wasps.
	SPECTRACIDE WASP AND HORNET KILLER	Ready-to-use	
	diazinon (0.5%) + pyrethrins (0.5%) ORTHO HORNET AND WASP KILLER	Ready-to-use	See Comments for allethrin, above.
	tetramethrin (0.2%) + related compounds (0.125%) ENFORCER	Ready-to-use	See Comments for allethrin, above.
<i>Outdoors—Sprays</i>			
	acetamiprid + bifenthrin TRANSPORT GHP 50WP	one 0.3 oz. bag/ gal. water (0.11% solution)	For outdoor use only as a perimeter spray or spot treatment. Apply as a foam or liquid to cracks and crevices.
	deltamethrin SUSPEND SC	1-2 oz./gal. water	General surface, spot, or crack and crevice application; indoor and outside treatment.
	diazinon DZN (0.5%) Spray	See label.	Apply in the evening when insects have returned to the nest. Twenty-four hours later, destroy nest to prevent reinfestation by other wasps. Retreatment may be necessary. CAUTION: This product is extremely toxic to honey bees.
	lambda-cyhalothrin DEMAND CS	0.2-0.4 oz./gal. water	
	pyrethrins CESSCO 5E (0.5%) CESSCO 7C (0.7%)	Ready-to-spray Ready-to-spray	Spray along ground and around bushes and trees at a rate of 10 to 20 seconds per 100 square feet. DO NOT spray ornamental shrubbery. Frequent repeated applications may be necessary.
	resmethrin (0.25-1%) spray	See label.	See Comments for diazinon, above.

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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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