

## ANIMAL INSECT CONTROL

Animal	Pest Problem	Insecticide Formulation	Method and Rate	Restrictions/Remarks
POULTRY	<b>Litter Treatments for Fleas, Lice and Mites</b> (including northern fowl mites)	<b>Sprays</b> Rabon 50% WP (tetrachlorvinphos)	For floor management/roost paint, make 1% solution (1/2 lb Rabon 50% per 3 gal water). Spray finished solution into cracks and crevices at rate of 1 pt solution per 100 ft.	No withholding period from last application to slaughter. Read label directions carefully.
		Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	Mix 1 gal of Ravap in 50 gal water. Use 1-2 gal of finished spray per 1,000 sq ft. Spray evenly for penetration to litter surface. Spray walls, roosts, cracks, crevices and interiors thoroughly. Spray birds lightly. Mix EC with water as directed on label.	
		<b>Dusts</b> Rabon Beetle Shield (3% tetrachlorvinphos)	For roost paint, mix 1 lb of Rabon Beetle Shield with 1 pt of water to make a slurry (will treat 100 ft).	Check label. No waiting period between application and slaughter.
		Rabon 50% WP (tetrachlorvinphos)	Mix evenly throughout top layer of box using 2.5 oz per 50 birds.	No waiting period between application and slaughter.
	<b>Litter Beetles</b> (Darkling beetles, black bugs, lesser mealworms)	A litter beetle treatment/monitoring program should be maintained year round to reduce litter beetle populations and damage caused by this pest. Frequent removal of litter and replacement with fresh shavings in poultry houses can help reduce beetle populations. Litter beetle populations at outbreak levels are difficult to control. Loss of insecticide susceptibility has been observed in some parts of the country; therefore, periodic rotation of insecticides from different insecticide classes should be considered.		
		<b>Sprays</b> Tempo 20 WP (cyfluthrin) 9.5 gram packet or 50 gram powerpack or	Two 9.5-gram packets (19 grams) or two Tempo scoopfuls of 20 WP in a water-based spray per 1,000 sq ft. Four level teaspoonfuls also equals 9.5 grams.	Do not apply while birds are in house. Do not make application to feeding or watering equipment. When applications are made with existing manure and litter on the floor, allow that accumulation to dry enough to form a crust before applications are made.
		Tempo SC Ultra (11.8% beta-cyfluthrin)	Mix 15 mL per gallon of water. Apply as a general spray or to cracks and crevices.	Do not apply when birds are present. Do not contaminate feed, water or feeding and watering equipment with spray.
		Grenade ER, OxyFly (9.7% lambda-cyhalothrin)	Mix 0.8 oz. (24 mL) per gallon of water. Apply to walls and floors following cleanout.	Also helps in fly control if applied to fly resting areas. Apply only when birds are NOT present. Do not contaminate feed, water or feeding and watering equipment with spray.
		StandGuard (5.9% gamma-cyhalothrin)	Mix according to label. Apply to walls and floor following cleanout or growout.	Follow label directions. Apply only when birds are NOT present. Do not contaminate feed, water or feeding and watering equipment with spray.
		ActiShield (7.9% bifenthrin)	Mix according to label. Apply to walls, floors and post following cleanout or after growout.	Follow label directions. Apply only when birds are NOT present. Do not contaminate feed, water or feeding and watering equipment with spray.
	Pyri-Shield EC (1.3% nylar)	One ounce Pyri-Shield EC per 1,000 square foot space in sufficient volume water to wet litter. General broadcast, spot and crack and crevice treatment.	FOR LARVAL CONTROL ONLY. Pyri-Shield is an insect growth regulator that will alter the development of larval forms. Can be used in conjunction with an adulticide to provide immediate control of adults. For best results, apply following cleanout. Remove birds from immediate treatment area. Do not contaminate food or water.	
	Rabon 50% WP (tetrachlorvinphos)	Mix 2 lb of 50% WP in 25 gal of water.	Treat evenly and thoroughly using 3/4 oz/100 sq ft.	

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<b>POULTRY</b>	<b>Litter Beetles</b> (cont.) (Darkling beetles, black bugs, lesser mealworms)	A litter beetle treatment/monitoring program should be maintained year round to reduce litter beetle populations and damage caused by this pest. Frequent removal of litter and replacement with fresh shavings in poultry houses can help reduce beetle populations. Litter beetle populations at outbreak levels are difficult to control. Loss of insecticide susceptibility has been observed in some parts of the country; therefore, periodic rotation of insecticides from different insecticide classes should be considered.		
		<b>Sprays</b> Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	Mix as directed on label. Use as a residual spray.	Apply 1 gal of dilution/500-1,000 sq ft.
		Credo SC (42.8% imidacloprid)	Mix as directed on the label. Apply 3 fl oz Credo SC diluted in water per 1,000 sq ft.	Apply between flocks, following de-caking/sanitation procedure. Apply a 3-ft band to litter under feed and/or water lines and a 3-ft band to litter adjacent to walls including 1 ft up the wall above the foundation. Follow all other application directions on the label.
		Elector PSP (44.2% spinosad)	Use 8 oz/20,000 sq ft (for heavy infestations, use up to 16 oz). Mix enough water to ensure coverage of treated area. Treat litter along feed and water lines, walls and support beams.	Do not apply premise treatment directly to poultry. Read and follow label precautions.
<b>POULTRY CAGED LAYER TREATMENTS (directly on birds)</b>	<b>External Parasites: Lice and Mites, including northern fowl mite</b>	<b>Sprays and Dusts</b> Rabon Litter Shield 3% insecticide dust (3% tetrachlorvinphos)	Apply 1 lb per 300 birds. Direct dust application to vent and fluff areas.	Do not repeat more often than every 14 days. No withdrawal from last application to slaughter.
		Rabon 50% WP (tetrachlorvinphos)	8 lb of 50% WP/100 gal of water. 1 gal/100 birds. Apply directly to birds; spray vent and fluff areas from below. Repeat when necessary.	Do not repeat more often than every 14 days.
		Ectiban, Insectrin or Permaban 5.7% or 11% EC (permethrin)	0.05% spray. Mix 1 qt 5.7% EC or 1 pt 11% EC in 25 gal water.	Apply 1 gal diluted spray to 100 hens using high pressure. Apply to vent area for best results.
		Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	Mix 1 gal Ravap/50 gal water. 1 gal of finished spray per 100 birds. Apply directly to birds. Spray vent and fluff areas from below. For chickens on litter, spray as above and apply 1-2 gal of dilution/1,000 sq ft of litter surface. Also spray walls, roosts, cracks and crevices.	Do not repeat more often than every 14 days. Spray birds lightly.
		Permethrin II 10% EC (permethrin)	1 qt/50 gal water. 1-2 oz per bird sprayed at vent area. Cover or remove feed and water.	Repeat at 7-10 weeks if necessary. 14 days between last application and slaughter.
		GardStar 40% EC (permethrin)	1-4 oz/3.75 gal water. Treats 1,500 birds.	Use high pressure spray. 1 gal coarse spray per 100 birds. Pay particular attention to vent area.
		Atroban 11% EC (permethrin)	1 pt/25 gal water. Use 1 gal of finished spray per 100 birds.	One application should eliminate an infestation.
		Permethrin strips (permethrin)	Hang 1 strip inside cage.	Read label.
		Ectiban or Permethrin 0.25% D (permethrin)	Use 1 lb/100 birds.	0 days. Apply with shaker or hand duster.

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<b>POULTRY HOUSES</b> (for treatment of poultry facility)	<b>Bed Bugs, Fowl Ticks</b>	ActiShield (7.9% bifenthrin)	Mix according to label. Apply to cracks, crevices, walls, posts, nest boxes and mobile side curtains.	Follow label directions. Do not apply directly to birds. For occupied areas of poultry facility, apply to cracks and crevices ONLY. Do not contaminate feed, water or feeding and watering equipment with spray.
		Grenade ER, OxyFly (9.7% lambda-cyhalothrin)	Mix according to label. Apply to cracks, crevices, walls, posts, and cage frames.	Follow label directions. Do not apply in areas where birds are present. Do not contaminate feed, water or feeding and watering equipment with spray.
		Tempo 20 WP (cyfluthrin) 9.5-gram packet or 50-gram powerpack	Mix according to label. Apply to cracks and crevices.	Follow label directions. Do not apply when birds are present. Do not contaminate feed, water or feeding and watering equipment with spray.
		Tempo SC Ultra (11.8% beta cyfluthrin)	Mix according to label. Apply to cracks and crevices.	Follow label directions. Do not apply when birds are present. Do not contaminate feed, water or feeding and watering equipment with spray.
		Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	Mix according to label. Apply to cracks and crevices.	Follow label directions.
		Rabon 50 WP	Mix according to label. Apply to cracks and crevices.	Follow label directions.
		Permethrin (various formulations)	Mix according to label. Apply to cracks and crevices.	Follow label restrictions and directions.
	<b>House Flies and Flies around the premises</b>	<b>Sanitation, Biological Control and Integrated Pest Management (IPM)</b>	Sanitation is critical to any fly control program in poultry facilities. IPM includes sanitation, insecticides (baits, contact insecticides, etc.), surveillance (monitoring and/or trapping) and biological control (conserving natural enemies and/or releases). Use insecticides judiciously to minimize impact on natural enemies and to prevent or delay insecticide resistance. Use a combination of management methods.	Waste removal and management is the first line of defense in any filth fly management program. Waste management includes both removal and moisture control. Minimizing the amount of moisture in waste will reduce fly breeding potential. Some producers have experienced reduced fly populations with releases of parasitic wasps. <b>Parasite and/or insecticide use are not a substitute for a good sanitation and moisture control program.</b>
	<b>Fly Maggots</b> (in droppings under caged layers)	<b>Larvicides</b> Vapona Concentrate Insecticide (40.2% dichlorvos) or Prozap Vapona 400E (41.4% dichlorvos)	Mix 2 oz in 1.5 gal water. Apply 1-2 qt per 100 sq ft of manure.	Larvicides used on accumulated droppings will give some control, but removal or controlling the moisture in the droppings is preferable. Keep spray away from birds. Do not contaminate feed, poultry litter or feed troughs. Do not apply to poultry or cages. Well-timed spot treatment of heavy maggot infestations should eliminate the need for “blanket” applications on a routine basis. Repeat applications as needed. Sanitation, such as cleanup of spilled feed outside poultry houses, should not be overlooked. <b>KEEP MANURE DRY. STOP WATER DRIPS. MOW WEEDS NEXT TO HOUSE.</b>

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<b>POULTRY HOUSES (for treatment of poultry facility)</b>	<b>Fly Maggots</b> (in droppings under caged layers)	<b>Larvicides</b> (cont.) Larvadex 1% premix (cyromazine)	Mix 1 lb of Larvadex 1% premix per ton of feed. Feed Larvadex continuously as directed for 4 to 6 weeks. Read label thoroughly before use.	<b>Do not feed Larvadex-treated feed to broiler poultry.</b> Larvadex-treated feed must be removed from layers at least 72 hours before slaughter.	
		Rabon EC or WP (tetrachlorvinphos)	4 gal of 24.3% EC or 16 lb of 50% WP/100 gal of water. Apply to droppings at rate of 1 gal per 100 sq ft.		
		Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	Mix 1 gal Ravap EC in 25 gal water. Apply 1 gal of finished spray per 100 sq ft of manure.		
	<b>Adult House Flies (and other premise flies)</b>		<b>Baits</b> (Ready-to-use) QuickBayt (0.05% imidacloprid)	Scatter 6 oz of bait/1,000 sq ft around the outside of poultry houses and inaccessible areas of animal housing, or mix 1.5 oz/1 oz of water, mix thoroughly, let stand for 15 minutes or until a paste consistency and paint non-dusty fly resting areas inaccessible to animals.	Use only around the outside of poultry houses. In caged layer houses, apply only on the outside and in the walkways. Place bait in areas inaccessible to animals. Do not allow bait to contact food or water.  Can be used inside horse stables, broiler, turkey and caged layer houses, swine confinement buildings, dairy barns and milking parlors <b>ONLY</b> if used in bait stations. Bait stations must be placed at least 4 feet above ground level and in areas inaccessible to animals, pets or children.
			QuickBayt Spot Spray (10% imidacloprid and 0.1% tricosene)	Mix 16 oz per gallon of water.	For use in and around poultry, turkey and chicken houses. Do not apply to surfaces accessible to children or pets. Do not apply where animals can ingest product.
			QuickBayt Disposable Fly Bait Strip (0.5% imidacloprid and 0.1% muscalure)	Ready-to-use strip. Use 1 bait strip/250 sq ft.	Do not use in areas accessible to food-producing animals or allow to contact food or water.
			Golden Malrin (1.1% methomyl)	Scatter 4 oz/500 sq ft of fly breeding area or use bait in any commercial bait station.	Use as a scatter bait only around the outside of animal housing areas or poultry facilities. Can be used on walkways in caged layer houses. Bait stations must be hung at least 4 feet from ground level. Scatter baits and bait stations must only be used in areas inaccessible to animals, pets or children.
			Elector Bait (0.5% spinosad and 0.04% (z)-9-tricosene)	Scatter 12-16 oz of Elector Bait per 2,000 sq ft. Elector Bait can also be used in bait stations or applied to hang boards/cards. Use 8-10 bait stations or hang boards/cards per 2,000 sq ft. See label for more detailed instructions on bait station and hang board/card use.	Do not allow Elector Bait to contact food, feedstuffs or water. When using Elector in bait stations, hang stations in areas inaccessible to children, livestock and pets. Elector Bait stations or hang cards must be located at least 4 feet above the ground.
			Apache or Blue Streak Fly Bait (methomyl) 1.0% Contains an attractant or	Ready to use. Scatter on floors, walkways, etc., throughout the house. Use 4 oz/500 sq ft of fly feeding area. (Use only on the <b>outside</b> of broiler houses.)	Use according to manufacturer's directions. Producers can make their own baits, dry or liquid, by following directions on the label of some concentrate formulations. When using baits, do not contaminate equipment, feed or water. Keep baits out of reach of birds, pets or children.
			QuikStrike (1% nithiazine) fly abatement strip	Ready-to-use strip.	Hang 1 strip per 100-300 sq ft in enclosed area protected from rain. Observe safety restrictions.

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POULTRY HOUSES	Adult House Flies (and other premise flies)	<b>Space Treatments</b> Pyrethrins 0.3% to 5% plus Piperonyl Butoxide 1.5% to 25%	Ready-to-use oil sprays, aerosols, ULV concentrates and concentrates for dilution are available. Follow directions on label. Saturate the atmosphere with electric fogging gun for quick kill when adult flies are numerous.	Follow manufacturer's directions, ESPECIALLY FIRE HAZARD PRECAUTIONS. Can be used while birds are in houses.
		Vapona Concentrate Insecticide (40.2% dichlorvos and 3% related compounds equivalent to 43.2% Vapona)	Apply 1 pt of 1% spray/8,000 cu ft as mist or fog. To make a 1% solution, mix 1 gal concentrate to 50 gal water or 5 oz concentrate to 2 gal water.	Reduce air movement as much as possible. Do not apply directly to birds. Do not contaminate eggs, feed or water.
		<b>Residual Surface Sprays</b>	Apply to walls and ceilings.	
		Grenade ER (9.7% lambda-cyhalothrin)	Mix 0.2 to 0.4 oz/gal water to make a 0.015% to 0.03% dilution. Rates can be increased to a 0.06% dilution (0.8 oz/gal of water) if environmental conditions are severe or populations are high.	Apply dilution to horizontal and overhead surfaces where flies rest. Do not make applications in areas where birds are present. Allow to dry before reintroducing birds. Do not contaminate bird food, feed or water during application.
		Rabon 50% WP (tetrachlorvinphos)	Use 16 lb 50% WP/100 gal water. 1 gal/500 sq ft.	No need to remove birds from house. Do not apply to chickens.
		Pounce 3.2 EC (permethrin)	4 oz/12.5 gal water.	Apply 1 gal solution/750 sq ft.
		Atroban 11% EC (permethrin)	1 pt 11% EC to 10 gal water. 1 gal/750-1,000 sq ft.	Avoid contamination of feed and water.
		Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	1 gal Ravap EC to 25 gal water.	Apply 1 gal diluted spray/1,000 sq ft.
		Also Permethrin (Ectiban, Insectrin, Permethrin Overtime)	Follow label mixing instructions.	Do not apply more often than once every two weeks.
		Fire Ants	Amdro Pro (hydramethylnon) (outside use only)	2-5 T/mound broadcast. 1-1.5 lb/A.
Extinguish (methoprene) (outside use only)	3-5 T/mound broadcast. 1-1.5 lb/A.			
Extinguish Plus (methoprene and hydramethylnon) (outside use only)	3-5 T/mound broadcast. 1-1.5 lb/A.			
Esteem Ant Bait (pyriproxyfen) (outside use only)	2-4 T/mound or 1.5-2.0 lb/A if broadcast.			
Award (fenoxycarb) (outside use only)	1-3 T/mound broadcast. 1-1.5 lb/A.			