

ANIMAL INSECT CONTROL

Animal	Pest Problem	Insecticide Formulation	Method and Rate	Restrictions/Remarks
HORSES	Bots	Ivermectin (Zimecterin, Eqvalan, Equimectrin) 1.87% paste	Oral paste.	Treat horses after second killing frost.
		Quest Plus Equine Oral Gel (moxidectin/praziquantel)	Oral paste.	
		Equinox Dewormer (ivermectin/praziquantel)	Oral paste.	
		Quest Equine Oral Gel (moxidectin)	Oral paste.	
	Manual Controls		Sponge animal with warm water (120 degrees F) to initiate egg hatching.	Firmly sponge horse's forelegs, chest, neck and belly on cool days (below 60 degrees F) so that larva will hatch and die of exposure. Manual control may limit bot infestations but may NOT eliminate infestations.
Lice, Ticks		Co-Ral Fly and Tick Spray (6.15% coumaphos)	For horn flies and lice, use 5 oz in 4 gal water. For ticks, use 10 oz in 4 gal water.	Follow label directions. DO NOT use on horses intended for slaughter. Co-Ral is a cholinesterase inhibitor. DO NOT treat sick, stressed or convalescent animals. DO NOT use on animals less than 3 months of age. Use 2 qt spray per animal.
		Atroban 11% EC (permethrin) Horse Lice Duster III and other permethrin dust formulations (0.25% permethrin)	Mix 1 pt in 25 gal water. Apply 2 oz over the head, shoulders and back.	
		Clean-Up pour-on (5% diflubenzuron and 5% permethrin)	Apply 3 mL/100 lb body weight as a spray or wipe-on only. DO NOT apply more than 30 mL to any one animal.	
Horn Flies Stable Flies Horse Flies Mosquitoes Black Flies Deer Flies Biting Gnats House Flies Face Flies		Atroban 11% EC (permethrin)	Mix 1 pt 11% EC with 25 gal water. Horn flies require only 1 pt 11% EC/50 gal water.	Use 2 qt finished spray per animal.
		Permethrin II and generics (10% permethrin)	For high-pressure sprayers: Mix 1 qt in 200 gal of water; 8 oz in 50 gal of water. For hand or garden sprayers and low-pressure sprayers: Mix 8 oz in 3 gal of water; 2.5 oz (5 Tbsp) in 1 gal of water; or 20 mL (4 tsp) in 1 qt of water.	Spray to thoroughly cover entire animal. Apply from 1/2 to 1 gal of spray per head. For lice or mites, a second treatment is recommended 14-21 days later. Spray each animal with up to 8 oz of mixed spray. For lice and mites, a second treatment is recommended 14-21 days later.
		Spray-N-Repel (pyrethrins)	Pyrethrin mist spray.	2 oz/animal.
		Flypel, Flysect, Equi-Spot, Fly Rid Plus (permethrin or pyrethrin)	Ready-to-use sprays and spot-ons.	Follow label directions.
		GardStar 40% EC, Tengard SFR (permethrin)	0.25 oz/1 pint of water. Low-pressure spray.	1-2 fl oz of spray per animal. Spot treat back, face, legs, tail and ears.
		Co-Ral Fly and Tick Spray (6.15% coumaphos)	For horn flies and lice, use 5 oz in 4 gal water. For ticks, use 10 oz in 4 gal water.	Follow label directions. DO NOT use on horses intended for slaughter. Co-Ral is a cholinesterase inhibitor. DO NOT treat sick, stressed or convalescent animals. DO NOT use on animals less than 3 months of age.
		Flypel, Flysect (permethrin or pyrethrin)	Ready-to-use sprays and spot-ons.	
Tri-Tec 14 (cypermethrin + pyrethrin)	Fly repellent and killer. Ready to use in dispenser.	Also kills ticks.		

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HORSES	Horn Flies Stable Flies Horse Flies Mosquitoes Black Flies Deer Flies Biting Gnats House Flies Face Flies	Tri-Tec Concentrate Fly Spray for Horses (cypermethrin, pyrethrin, piperonyl butoxide, Di-n-propyl isocinchomeronate, butoxy polypropylene glycol)	Mix 1 part Tri-Tec Concentrate to 3 parts water. Use spray or wipe-on solution.	DO NOT allow solution in horse's eyes, nose or mouth. Wear protective gloves when using as a wipe-on.	
		Equi-Spot Spot-on Fly Control and generics (permethrin)	Ready to use. Follow label directions.		
		Brute pour-on, Tuttle's Brute Insecticide for Horses (10% permethrin)	Ready to use. Apply 3-6 mL per 200 lb body weight (do not exceed 30 mL).	Apply as a whole body wipe with a cloth or insecticide application mitt. For horn flies, pour 3-6 mL per 200 lb body weight over the withers and down the back. DO NOT treat more often than once every 7 days. DO NOT treat foals under 12 weeks of age.	
		Permethrin CDS, Buzz Off pour-on, Martin's Fly Ban pour-on (7.4% permethrin and 7.4% piperonyl butoxide)	Ready to use. Apply 8-16 mL as a pour-on spray or wipe.	Apply as a whole body wipe with a cloth or insecticide application mitt. For pour-on application, pour over the withers and down the back. For spray application, apply with a mist sprayer in undiluted form after riding or exercise.	
		Python Dust (0.075% zeta-cypermethrin and 0.150% piperonyl butoxide)	Ready-to-use dust. Apply up to 2 oz per animal.	DO NOT apply more often than every 3 days. Also controls ticks.	
		A number of wipe-on towels and roll-on products are available in ready-to-use formulations for horses. These products can be useful, particularly on equines that become restless or agitated when attempting to apply insecticide spray formulations or to treat sensitive areas of the animal.			
		Roll-Ons			
		Endure Roll-On for Horses (0.15% cypermethrin, 0.02% pyrethrins, 1.63% piperonyl butoxide, 0.05% di-n-propyl isocinchomeronate and 4.85% butoxy polypropylene glycol)	Ready to use. Follow label directions.	DO NOT use on horses or foals intended for slaughter.	
		Flysect Roll-On fly repellent face lotion or Farnum Roll-On fly repellent (0.40% pyrethrins, 1.0% piperonyl butoxide, 1.0% di-n-propyl isocinchomeronate and 0.4% n-octyl bicycloheptene dicarboximide)	Ready to use. Follow label directions.	DO NOT use on animals less than 12 weeks of age. May also be used on dogs.	
		Paste			
War Paint Insecticide Paste (7% permethrin, 1% piperonyl butoxide)	Ready to use. Follow label directions. Applications can be directed to specific body areas to kill and repel specific fly species	DO NOT apply to wet animals because the product does not adhere to wet surfaces.			
Towels					
Absorbine UltraShield Towelettes (0.40% permethrin, 0.08% pyrethrins and 0.79% piperonyl butoxide)	Ready to use. Follow label directions.	May also be used on dogs.			

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HORSE BARNs	Flies	Sanitation, Biological Control and Integrated Pest Management (IPM)	Sanitation is critical to any fly control program in horse barns and animal housing 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 (spilled feed, wet feed, manure, bedding) removal and management are the first lines of defense in any filth fly management program. Prompt removal and disposal (such as spreading on pastures) of waste will reduce filth fly breeding sites and break the house fly life cycle. Some producers have experienced reduced fly populations with weekly releases of parasitic wasps beginning in April or May. Releases should be made in dry areas out of traffic and in areas where flies reproduce. Parasite and/or insecticide use are not substitutes for a good sanitation program.
		Bait Mixtures		
		QuickBayt, Martin's Quick Draw and Bonanza Fly Bait (0.5% imidacloprid and 0.1% muscalure (z)-9-tricosene) Ready-to-Use Fly Bait	Ready-to-use fly bait. Scatter 6 oz of bait/1,000 sq ft around the outside of horse barns in areas inaccessible to horses. Can also be mixed with water and painted on fly resting areas. See label directions.	Use only in fly bait stations inside horse stables. Place bait stations in areas inaccessible to animals.
		QuickBayt Disposable Fly Bait Strip (0.5% imidacloprid and 0.1% muscalure (z)-9-tricosene)	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.
		QuickBayt Spot Spray (10% imidacloprid and 0.1% muscalure (z)-9-tricosene)	Mix 16 oz/gal water.	For use in and around agriculture production facilities such turkey and chicken houses, cattle, sheep and goat facilities, feedlots, dairy barns, swine confinement buildings, dog kennels and horse stables. DO NOT apply on surfaces accessible to children or pets. DO NOT apply where animals can ingest the bait.
		Golden Malrin (1.1% methomyl and 0.049% (z)-9-tricosene)	Ready to use. Scatter 4 oz/500 sq ft of area where flies congregate, rest or feed, or use bait in any commercial bait station.	Use as a scatter bait only around the outside of animal housing areas. Can be used in horse stables ONLY if used in bait stations. Bait stations must be hung at least 4 ft from ground level. Scatter baits and bait stations must only be used in areas inaccessible to animals, pets or children.
		QuikStrike Fly Scatter Bait (0.5% dinotefuran and 0.04% (z)-9-tricosene)	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. Bait stations must be hung at least 4 ft from ground level. Scatter baits and bait stations must only be used in areas inaccessible to animals, pets or children.
		QuikStrike Fly Bait Spray (0.5% dinotefuran and 0.04% (z)-9-tricosene)	To spray on, mix 2 oz product with 16 oz of water to treat 250 sq ft. To paint on, mix 2 oz product with 3 oz of water to treat 250 sq ft.	Apply to fly resting areas such as walls, fences, window sills, posts, etc., typically 4 feet above the floor surface.
		Zyrox Fly Granular bait (0.5% cyantraniliprole)	Ready-to-use granular fly bait. Apply from 3.2-6.4 oz granular bait/1,000 sq ft. Depending upon application site, product can be scattered or placed in bait stations.	DO NOT place bait in areas accessible to food-producing animals or animals being grown for food. DO NOT place bait in areas accessible to children and pets. Bait stations must be used if bait is applied inside residential structures, commercial establishments, food processing plants, restaurants and animal housing units. DO NOT apply bait outdoors when raining.
Nithiazine strip (QuikStrike)	Ready to use.	DO NOT use in areas accessible to animals.		

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HORSE BARNs	Flies	Automatic Spray Systems Resmethrin, pyrethrin and piperonyl butoxide		Follow label directions.	
		Residual Sprays Rabon 50% WP (tetrachlorvinphos)	3 lb 50% WP in 7.5 gal water. Spray 1 gal/500-1,000 sq ft to wet all surfaces. Repeat every 3 or 4 weeks.	<p>General Precautions for All Insecticides Are:</p> <ol style="list-style-type: none"> 1. Apply where flies congregate; i.e., ceilings, light fixtures, walls, windows, etc. DO NOT apply within 1 week of applying whitewash. 2. DO NOT contaminate feed or water supplies. Cover them when spraying. 3. Remove animals before spraying. 4. Keep out of reach of animals and children. 5. DO NOT mix a combination of compounds. <p>Wear protective clothing—jacket or coveralls, cap or hat, rubber gloves, and preferably a respirator. Wash protective clothing after using. Wash with soap and water after spraying.</p>	
		Ravap EC (23% tetrachlorvinphos and 5.3% dichlorvos)	1 gal Ravap EC/25 gal water. Allow 4 hours to dry before returning animals to barn. Apply 1 gal spray solution/1,000 sq ft.		
		Atroban 11% EC (permethrin)	1 pt/10 gal clean water. Apply 1 gal/750-1,000 sq ft. Provides up to 8 weeks of control.		
		Atroban 42.5% EC (permethrin)	4 oz/10 gal water. Apply 1 gal/750-1,000 sq ft.		
		Permethrin 3.2 EC, Tengard SFR (36.8% permethrin)	4 oz/12.5 gal water. Apply 1 gal/750 sq ft.		
		Vapona Concentrate Insecticide (R) (40.2% dichlorvos)	2 oz/1.5 gal water (0.5% dilution) 5 oz/2 gal water (1.0% dilution)		Apply 0.5% dilution as a space spray mist; spray at the rate of 1 qt per 8,000 cu ft or at 1 qt per 1,000 sq ft for a coarse surface spray. For the 1.0% dilution, apply as above but only half the total volume of mixture. DO NOT use this product in areas where animals have received a direct organophosphate application within 8 hours. If animals are present, ventilate treated area immediately following application. DO NOT contaminate water, feed or foodstuffs, milk or milking utensils.
		Annihilator (0.02% deltamethrin)	Ready to use		Wet surfaces where flies rest. DO NOT spray animals, humans, animal feed or water. DO NOT apply more than once per week.
Grenade ER, Oxyfly, Cyonara 9.7 (9.7% lambda-cyhalothrin)	Mix 0.2-0.4 oz/gal water to make a 0.015% to 0.03% dilution.	Apply dilution to horizontal and overhead surfaces where flies rest. DO NOT make applications in areas where animals are present. Allow to dry before reintroducing animals or birds. DO NOT contaminate animal food, feed or water during application.			
Permethrin II (10% permethrin)	1 qt 10% permethrin/25 gal water. Use 1 gal/750 sq ft.	Other similar permethrin formulations are registered as surface sprays.			

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HORSE BARNS	Flies	Residual Sprays (cont.) GardStar 40% EC (permethrin)	4 oz/10 gal of water (surface spray).	1 gal covers 1,000 sq ft. DO NOT use in milk rooms.
		Talstar, Bifenthrin I/T 7.9F, Optashield CS (7.9% bifenthrin)	Mix with water and apply 0.33-1.0 oz product per 1,000 sq ft.	Target areas where flies rest such as ceilings, trusses, rafters, supports, walls, windows and vegetation.
		StandGuard 5.9 (5.9% gamma-cyhalothrin)	Mix 0.16 oz (5 mL)/gal of water.	Spray 1 gal of diluted spray to treat 500-1,000 sq ft fly resting surfaces.
	Fly Maggots (developing in manure and/or moist spilled feed)	Neporex 2 SG (2% cyromazine)	Spray: Mix 1 lb Neporex 2 SG per gal of water. Apply as a coarse low-pressure spray on fly breeding sites with suitable spray equipment (hand-pressurized or power-operated sprayers). One gal of finished solution will treat 200 sq ft. Scatter: Apply 1 lb Neporex 2 SG per 200 sq ft. Apply after cleaning underneath bedding on stall floors.	DO NOT apply directly to livestock or livestock feed. DO NOT feed treated manure to animals. (ONLY FOR HORSES NOT INTENDED FOR SLAUGHTER OR FOOD.)
		Feed-Through SimpliFly LarvaStop Fly growth regulator (0.24% diflubenzuron)	FOR HOUSE AND STABLE FLIES ONLY. Feed daily to horses. Rate is dependent on weight of the horse.	Read and follow labeled rates. DO NOT use on horses intended for slaughter. Prevents the development of house and stable fly larvae in treated manure.
		Equitol II (diflubenzuron)	Feed-through house fly control for horse barns and stables. Add specified amount of Equitol to your horse's daily ration.	DO NOT use on horses intended for slaughter.
	Prairie Pride Rabon Supplement Block (0.3% tetrachlorvinphos)	Follow label directions. Feed blocks at the rate of 0.88 oz per 100 lb of bodyweight per day.	Not to be used on horses destined for slaughter. PRECAUTIONS FOR HORSE USE: This product contains tetrachlorvinphos, a cholinesterase inhibitor. The most frequently reported clinical signs of cholinesterase inhibition in the horse are abdominal pain, lethargy, sweating, tearing and excessive salivation. If these signs are seen in horses, consult your veterinarian immediately. DO NOT use this product simultaneously or within a week before or after treatment with cholinesterase-inhibiting drugs, pesticides or chemicals. Consult a veterinarian before using this product on debilitated, aged, pregnant or nursing animals. This product has not been tested in breeding horses.	
	Solitude IGR feed-through (2.12% cyromazine)	Daily Dosage: Using 1/2 oz scoop supplied with the product, mix one (1) scoop of Solitude IGR in the horse's ration every day . Alternate Day Dosage: Using 1/2 oz scoop supplied with the product, mix two (2) scoops of Solitude IGR in the horse's ration every other day .	DO NOT USE ON HORSES INTENDED FOR SLAUGHTER. Follow precautions on label.	