

INSECT CONTROL FOR HORSES, HORSE BARN AND STABLES - 2019

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This publication contains only a portion of the important information included on pesticide labels. Always read the product label carefully before buying and using any pesticide. Also, pesticide labels and registrations may change at any time. Disregard any statements in this publication that disagree with the label. Many insecticides are sold under brand names that are not listed in this publication. No endorsement is intended for products mentioned, nor is criticism meant for products not listed.

Insecticides have been placed into numbered Insecticide Mode of Action groups (MOA) based on how they work. Continual use of products from a single group against a pest species can lead to reduced control (resistance) by all products in the group. To minimize control failures due to insecticide resistance, do not apply insecticides within the same group repeatedly, even when using different application methods (baits, residual sprays, knockdown sprays, etc.). Rotate among groups frequently.

Several species of nuisance and blood-feeding flies, lice, and ticks attack horses from spring through fall. Key pests can vary regionally and with seasonal weather. In many cases, the breeding sites or sources cannot be managed so efforts must be directed at protecting the animals. Many products are available but most contain only one or two common active ingredients. This publication provides representative types of products and points to consider in selecting control measures.

While there seems to be a bewildering array of products, the list of active ingredients on each label will allow you to sort through them and look for similarities and differences. This information appears in a box below the brand name and includes the common name of the active ingredients (a.i.) and its % concentration. Each insecticide active ingredient has a common name (e.g. pyrethrins) that will let you recognize exactly what the product contains. Most have one or more of 3 main active ingredients. Often, additives are included to extend the length of protection or to provide some other feature to set the product apart from competitors.

The most common active ingredients in products labeled for pest control on horses are pyrethrins and pyrethroids. Pyrethrins are chemicals with insecticidal properties that are extracted from the flowers of some species of *Chrysanthemum*. Pyrethrins provide very quick knockdown of insect pests and are safe for use on animals. Piperonyl butoxide is a synergist that is included in products to increase effectiveness; however, sunlight breaks down pyrethrins so the residual protection lasts for only a few hours. The pyrethroids cypermethrin, permethrin, and resmethrin are synthetic forms based on natural pyrethrins. They are more stable than pyrethrins so protection from an application typically lasts for several days. Pyrethrins and pyrethroids work against a wide range of horse pests from flies and gnats to ticks and lice. They affect the nervous system of these arthropods, sometimes causing them to leave before they finish feeding.

Representative products in this publication are grouped by application method and listed in increasing concentration of active ingredient. In general, the higher the concentration of active ingredients in a product, the longer the protection it affords. Products listed as concentrates must be diluted before use but may provide a more economical means of pest control in some situations. Check to be sure that the pests you want to control are listed on the label.

Dusts	Fine particles of talc or clay that carry the insecticide. They may be useful in specific instances, such as louse control.
Sprays and Wipe-Ons	Often come ready-to-use in pump-spray bottles. The ingredients may be misted on or applied with a sponge, cloth, or glove wipe.
Spot-Ons	Concentrated products that applied in small amounts to specific sites on the horse. The active ingredient becomes distributed over the animal and protection may last longer than sprays or wipes.

Thoroughly brush horses before treatment to remove excess dirt and dust. Then, apply products over areas to be protected while brushing lightly against lay of the hair. Pay special attention to legs, belly, shoulders, neck, and face. Follow label instructions to protect yourself from exposure to the product when treating. Always apply to the face as a wipe and keep the insecticide away from eyes and mucous membranes. Check the label directions for re-treatment intervals. In addition, look for age restrictions, some products should not be applied to foals under 3 months of age. Reapply each time the animal is washed or exposed to heavy rain.

Sensitivity (reddening or flaking of skin or hair loss) may occur after using any insecticide on animals. If this occurs, bathe your horse with a mild, non-insecticidal shampoo, and rinse with large amounts of water. Call your veterinarian immediately if signs continue.

Insecticide active ingredients labeled for topical application to control biting gnats (black flies, no-see-ums), non-biting gnats (eye gnats), deer flies, face flies, horse flies, horn flies, mosquitoes, stable flies, and ticks.

Method of Application	Insecticide active ingredients
Dust	Cypermethrin 0.075%
Spray	Coumaphos 6.15% (horn flies only) Permethrin 0.5% Permethrin 0.20% + 0.13% Prallethrin
Spray or wipe	* <i>Cypermethrin 1%</i> * <i>Cypermethrin 0.15% + Pyrethrins 0.20%</i> Permethrin 10% to 40% - dilute before using * <i>Permethrin 1.0% + 0.50% Pyrethrins</i> * <i>Permethrin 0.90% + Tetramethrin 0.25% + Cypermethrin 0.10%</i> * <i>Permethrin 0.10% to 0.50% + Pyrethrins 0.05% to 0.50%</i> Pyrethrins 0.10% to 0.20%
Pour-on or Wipe	Permethrin 7.4% to 10% Permethrin 5% + 5% Diflubenzuron
Spot-on	* <i>Permethrin 45%</i>

**Do not use on foals under 3 weeks old*

Be familiar with pest feeding sites and thoroughly treat those areas: Black flies - wipe the inside of the ears, under chin, throat and midline of belly. Black flies generally feed during daylight and are most problematic in the spring. Providing shelter or keeping horses up when populations of these flies are high may be a practical way of providing protection. Ear nets can be used to protect against ear feeding by black flies.

Biting midges and mosquitoes feed on back, sides and the underbelly, which is difficult to protect with insecticides or repellents. Eye gnats - apply to face and around eyes, being careful not to get product in the eyes.

Protective fly sheets may be useful in protecting pastured horses from biting gnats, deer flies, horse flies, and mosquitoes.

Insecticide active ingredients for topical application for biting and sucking lice (where stated), mites, and ticks

Method of Application	Insecticide active ingredients
Dust	Cypermethrin 0.075% Permethrin 0.25% (lice only)
Spray	Coumaphos 6.15% (lice only) Permethrin 0.5% Permethrin 0.20% + 0.13% Prallethrin
Spray or wipe	Coumaphos + piperonyl butoxide 7.4% + 7.4% * <i>Cypermethrin 1%</i> * <i>Cypermethrin 0.15% + Pyrethrins 0.20%</i> Permethrin 10% to 40% - dilute before using (mites) * <i>Permethrin 1.0% + 0.50% Pyrethrins</i> * <i>Permethrin 0.90% + Tetramethrin 0.25% + Cypermethrin 0.10%</i> * <i>Permethrin 0.10% to 0.50% + Pyrethrins 0.05% to 0.50%</i> Pyrethrins 0.10% to 0.20% (mites)
Pour-on or Wipe	Permethrin 7.4% to 10% Permethrin 5% + 5% Diflubenzuron
Spot-on	* <i>Permethrin 45%</i> (not for lice)

*Do not use on foals under 3 weeks old

Sucking lice are most numerous in the mane, base of the tail, on the fetlocks, and upper and inner thighs. Chewing lice are commonly found on the forehead, neck, and dorso-lateral trunk. However, both can occur over larger areas in cases of heavy infestation.

Chorioptic mites cause leg mange of horses and usually are found in feathered area of fetlock on draft horses. *Psoroptes (cuniculi) ovis* is commonly found in ears of horses. *Sarcoptes* mites are tunneling mites and cause intense burning pruritus; there is dry mange on sides, back, and shoulders. Removing all crusts, scales, and other skin debris before the application will increase the efficacy of control measures.

Ticks often attach to soft tissue with a sparse hair coat. However, most are picked up on the legs as the horse moves through tall grass or scrub areas. Preventive treatment should include the legs.

Insecticide Active Ingredients Labeled for Topical Application

Insecticide active ingredients	Brand Names
coumaphos	Buzz Off (7.4%) Co-Ral Fly and Tick Spray (6.15%)
cypermethrin	Bite Free Biting Fly Repellent (0.15%) + 0.20% pyrethrins Endure Sweat-Resistant Fly Spray for Horses (0.15%) + 0.20% pyrethrins Repel-X Lotion (0.15%) + 0.20% pyrethrins Tri-tec 14 Spray (0.15%) + 0.20% pyrethrins *Tri-Tec Concentrate Fly Spray for Horses (0.60%) + 0.8% pyrethrins
permethrin	Bronco Equine Fly Spray (0.10%) + 0.05% pyrethrins Repel-35 RTU (0.50%) Flysect Water-Based Repellent Spray (0.15%) + 0.075% pyrethrins Flysect Super 7 (0.20%) + pyrethrins Bug Block (0.20%) + 0.10% pyrethrins DuraGuard (0.20%) + 0.10% pyrethrins Mosquito Halt Repellent Spray for Horses (0.20%) + 0.13% Prallethrin Manna Pro Equine Fly & Mosquito Spray (0.25%) UltraShield (0.40%) + 0.10% pyrethrins Repel 35 Insect Spray Bio-Groom (0.50%) Zonk-It! 35 (0.5%) *Adams Concentrate (1%) + pyrethrins *Solitude Wipe-On Fly Repellent (1%) *Flysect Super-C Concentrate (1%) + 0.5% pyrethrins
pyrethrins	Equisect Fly Repellent (0.10%) Fly Gone 7000 (0.10%) Flysect Citronella Spray (0.10%) Flys-X (0.10%) FlySpray 44 (0.10%) + citronella Pyranha Wipe n'Spray for Horses (0.10%) Wipe II Fly Spray with Citronella (0.10%) Flysect Repellent Spray (0.15%) Endure Sweat-Resistant Fly Spray for Horses (0.20%) Wipe Original Fly Protectant (0.20%) Super Shield Red Fly Repellent (0.25%) *Repel-Xp Concentrate (0.40%) * Horse & Stable Spray (0.5%)
Spot-ons	Brute Pour-on Insecticide (10%) Celebration Spot-on for Horses (45%) Durvet Fly Rid Plus (45%) Equi-Spot Spot-on Fly Control (45%) Freedom 45 Spot-on (45%) UltraSpot (45%)

Dusts	Co-Ral Zipcide Equine & Livestock Dust (1 % coumaphos) Python Dust (0.075 % cypermthrin) Horse Lice Duster III (0.25 % permethrin %) Prozap Insectrin Dust for Livestock & Poultry (0.25% permethrin)
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Horse bots are bumble-bee like flies that glue their eggs (nits) primarily to hairs on the forelegs or under the jaw. The flies are active from mid-June until frost. They do not bite but can frighten horses and cause them to run. The eggs hatch in response to moisture and friction as horses lick or nibble at areas where the eggs are attached. The larvae (maggots) attach in the stomach or intestine and remain there as parasites until the following summer. Several hundred larvae can be present and cause enough irritation to interfere with digestion. Mature larvae will pass out in the feces. They will dig into the soil, pupate, and emerge as adults. There is one generation each year, Adult bot flies die following a killing frost.

Physical control options during the summer include trimming or removing hairs with nits using clippers or a bot egg knife. This must be repeated as eggs are noticed again on the animals.

Several formulations of ivermectin, a dewormer and bot control product, are available for use after fly activity ends for the season. Examples include Agri-Mectin, DuraMectin Paste, Equimectrin, Ivermectin Paste, IverCare, and Iverease. Quest Equine Gel (moxidectin) also is registered for control of bots and other internal parasites.

FLY CONTROL AROUND HORSE BARN AND STABLES

House flies and stable flies are common pests around horse barns and corrals. The persistence of house flies makes them very annoying; as potential carriers of human and animal pathogens, they also are a health threat. Stable flies give painful bites to animals and humans, making activities unpleasant and potentially making horses nervous and difficult to manage.

House flies visit most any moist material from manure and decaying organic matter to garbage to blot up a liquid meal with their sponging mouthparts. They can carry a range of pathogens (causing intestinal disorders, eye infections, etc.) on their seemingly restless journey. Females may deposit batches of eggs as they feed on a variety of moist, fermenting organic matter, manure, rotting hay, feed silage, or garbage. The cycle from egg to adult takes from 7 to 14 days, depending on environmental conditions. Mature larvae will crawl to drier sites to pupate and emerge as adults.

The stable fly resembles a house fly but has a distinct piercing mouthpart that projects from the front of its head. Males and females are blood feeders, usually attacking the flanks or below the knee causing horses to stamp or kick themselves. The fly is on the animal for only a few minutes; after feeding it moves to walls, fences, or other surfaces to digest its meal. Stable fly maggots develop in decaying organic matter. A fermenting mixture of straw, spilled feed, or hay, and urine or water is ideal. Horse manure is usually too dry but becomes suitable if moistened. Females lay several batches of 40 to 80 eggs. Development from egg to adult takes 21 to 25 days during the summer.

Elimination of breeding site is the key to a successful fly control program. Barns and corrals should be cleaned once a week to break fly life cycles. Removed manure and other fly breeding materials should be spread thinly over appropriate area or composted, as practical. Maintain good drainage to eliminate wet manure, spilled feed, and hay or straw. Check for and correct wet areas around animal waterers. Dry manure and accumulated organic matter are not good breeding sites.

<p>House flies and stable flies need ▪ breeding material, ▪ optimum moisture, and ▪ adequate warmth to develop. A successful fly control program must rely on timely elimination of breeding sites and moisture control. Insecticides can help to provide some temporary reduction of house fly and stable fly populations but cannot be the basis of fly management.</p>

Mechanical Control and Biological Control

- Screening is an excellent way to keep flies out of feed and tack rooms and box stalls.
- Fans that direct a downward and outward air flow will keep flies from entering barns.
- Fly traps and sticky paper will capture flies. They may be most useful as a means of documenting fly numbers over time. A significant increase in catch from one week to the next can be a warning to check on sanitation and to increase fly control measures.
- Several commercial firms offer a fly parasite (predator) release program that can be used to supplement fly control. Aspects of using biological control are covered in Entfact 502, Biological control of flies.

Insecticides as Supplements to Fly Control

Insecticides generally are used to kill adult flies after a problem has developed. While they can help to reduce fly numbers, they do not address their source – moist breeding materials. There are many alternatives for fly control but they should be viewed as a temporary solution until the root cause of the problem can be corrected. Large numbers of flies mean lots of breeding sites and a situation that cannot be corrected by insecticides alone.

Residual insecticides are applied to walls, ceilings, and rafters of barns and sheds where flies rest. General observations and accumulations of fly specks (waste drops) will help to identify these spots. Be sure to protect water and feed when making applications. In order to minimize control failures due to insecticide resistance, do not apply the same insecticide or insecticide within the same chemical class repeatedly throughout an entire season.

Residual Insecticides

Active Ingredient	MOA Group	Brand Name
coumaphos	1B	Buzz Off
stirofos	1B	Rabon
cyfluthrin	3A	Countdown
cyhalothrin	3A	Grenade
permethrin	3A	Atroban EC, Gardstar, Permethrin II, Prozap Insectrin
spinosad	5	Elector PSP

Space sprays, fogs, and mists can provide a quick knockdown of flies, especially in enclosed areas. Systems vary from foggers to timed release aerosols. Usually, these are pyrethrins, available as ready-to-use and concentrate formulations, with very short residues so treatments have to be repeated.

Fly baits can be placed in bait stations. They are most effective when there are few competing food sources in an area. Baits attract and kill house flies but are not effective against blood-feeding stable flies. Animals must not have access to these materials.

Fly Baits

Active Ingredient	MOA Group	Trade Names
methomyl	1A	Apache, Blue Streak Fly Bait, Fatal Attraction, Golden Malrin, Tailspin
dinetofuran 0.5%	4A	Starbar QuickStrike
imidacloprid 0.5% to 10%	4A	QuickBayt

Larvicides are insecticides that can be applied to breeding sites where large numbers of maggots are present and the area cannot be cleaned in a timely manner. Rabon (stirofos) is labeled as a manure spray to kill maggots.

Feed through insecticides are administered specific levels in animal feed and pass out in the feces making the manure toxic to developing maggots. Each animal must get the correct amount every day. While they can reduce fly production from manure, they do not address problems with wet spilled feed and straw.

Feed Through Insecticides

Active Ingredient	MOA Group	Trade Names
cyromazine	17	Serene, Solitude IGR
diflubenzuron	15	Equitrol II Feed-Thru Fly Control, SimpliFly with LarvaStop Feed-Thru Fly Control