

Managing Insect Pests of Horses

A sound internal and external parasite control program is very valuable to horse owners. Parasite control is an important part of a complete horse health program, which should also include good feed, shelter, regular exercise, foot care, vaccinations, and protection from accidents and contagious diseases. Such a health program requires an investment of time, money, and management skills, but it can result in strong, bright-eyed, glossy-coated, and economically desirable horses. This publication discusses and illustrates common insect pests of horses.

Parasites cause direct and indirect damage to horses. They can spread diseases and cause digestive upsets, poor condition, retarded growth, and death. Fright and irritation caused by egg-laying adult bot flies may cause animals to inflict damage to themselves or to anyone handling them.

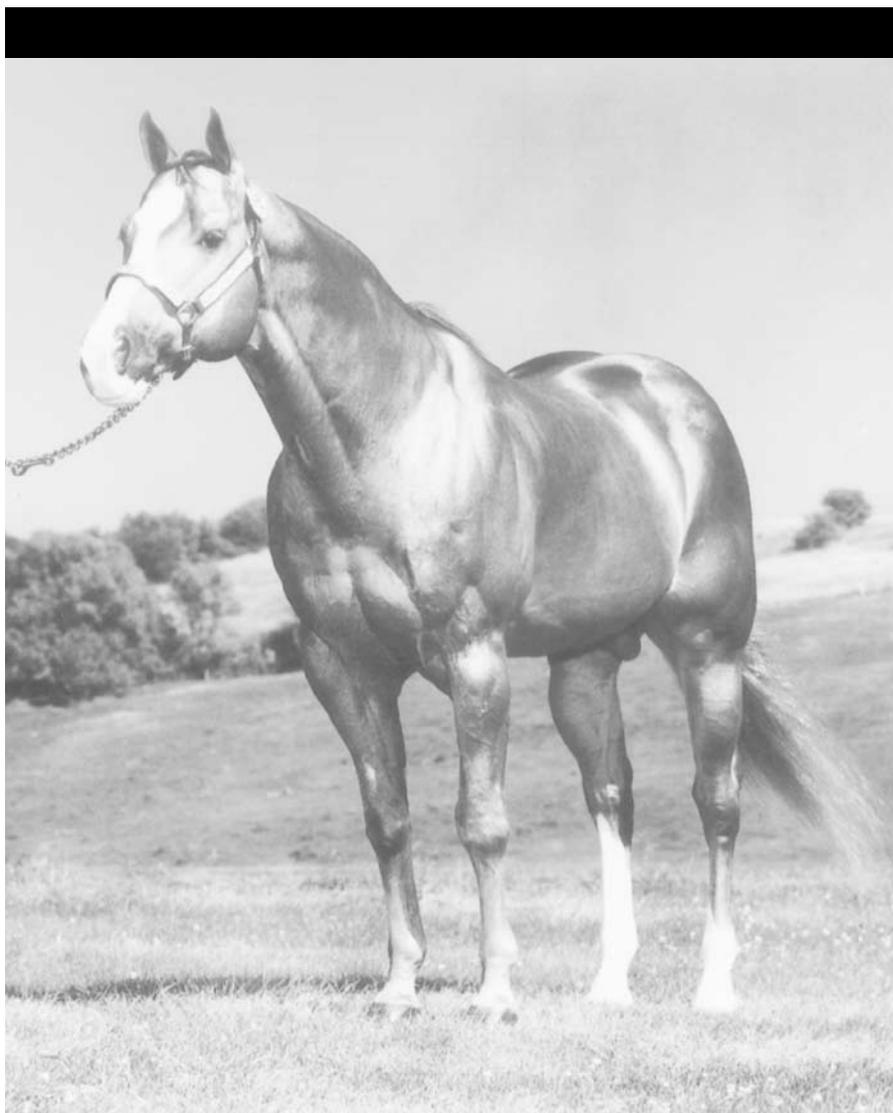


Photo of Scotch Bar Time courtesy of Stauffer Farms, Bearneveld, Wisconsin.

Organizations that sponsor horse shows, fairs, sales, or breeding sheds should encourage and use strong parasite control programs.

Horse owners often depend on veterinarians for the latest technical information and the most efficient means of managing internal parasites. Managing external parasites on

horses requires a good understanding of the life cycles and biology of insect pests.

Flies

There are several species of flies that are pests of horses. Flies typically have only one pair of wings and have a complete metamorphosis

(life cycle) characterized by four life stages—egg, larva, pupa, and adult (Figure 1).

Flies may have one of three basic types of mouthparts (Figure 2). Sponging mouthparts, found on house flies and face flies, are used to sponge or sop liquid foods. Stable flies, horn flies, and mosquitoes use their mouthparts to pierce the animal's skin so the flies can feed

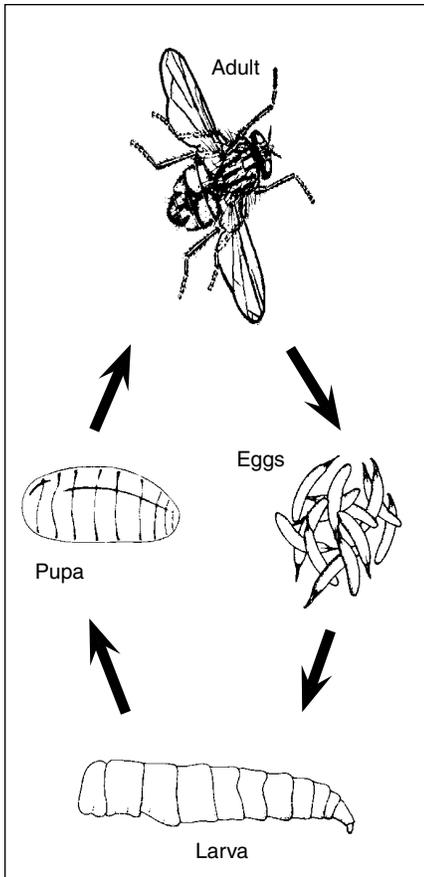


Figure 1. Typical fly life cycle

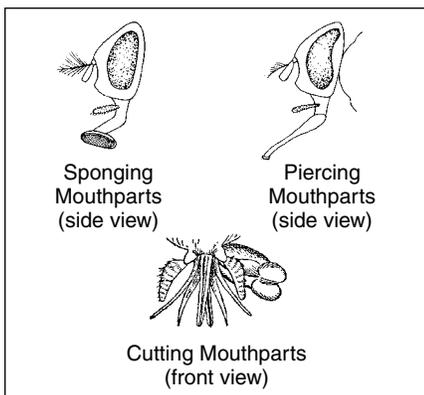


Figure 2. Three basic types of fly mouthparts

on blood. Horse flies and deer flies have cutting and slicing mouthparts that they use to cut through the skin and tissue to the blood. After introducing an anticoagulant, these pests suck the blood as it oozes from the wound. However, some flies, such as bots and cattle grubs, have no mouthparts as adults.

Flies breed in a wide variety of habitats, ranging from manure and garbage to the living tissue of animals.

Horse Bots

Bots are the larvae of bot flies (gad flies) and are the most damaging stage in the life cycle. The adult flies are only superficially irritating while laying eggs. Contrary to popular belief, adult flies have under-developed mouthparts and cannot feed or bite. They are about the same size as honeybees ($\frac{1}{2}$ to $\frac{3}{4}$ inch long) but are covered with either black and yellow or all black hairs (Figure 3).

Adults are active in Alabama from June until frost in October or November. Females lay 150 to 500 eggs in a life span of 7 to 10 days. The location on the horse where the eggs are glued indicates which type they are of three species that are found on horses. The eggs can be readily seen on individual hairs (Figure 4).

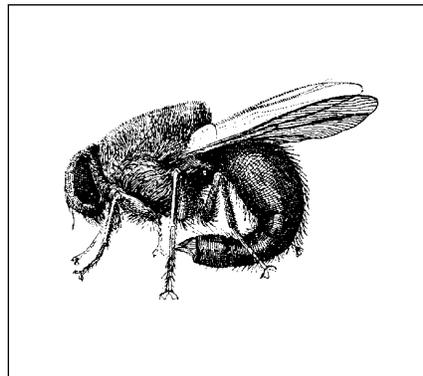


Figure 3. The horse bot fly

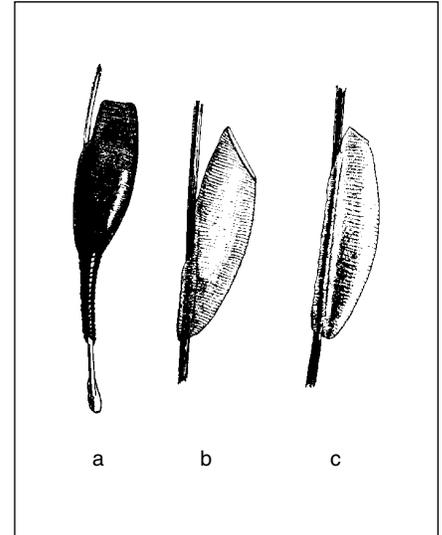


Figure 4. Eggs of horse bots: (a) the nose bot fly, *G. hemorrhoidalis*; (b) the common bot fly, *G. intestinalis*; (c) the throat bot fly, *G. nasalis*

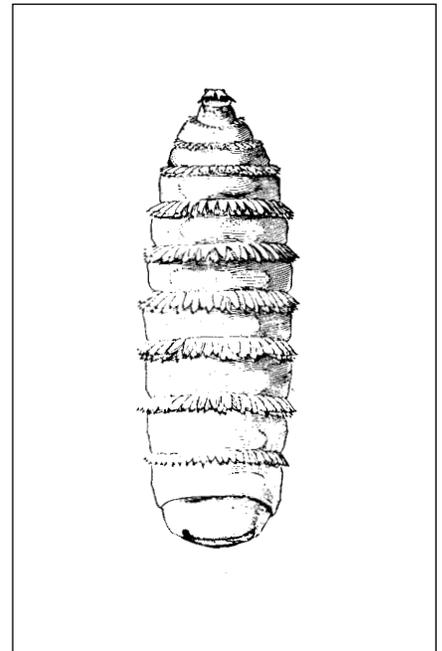


Figure 5. Larva of the horse bot fly

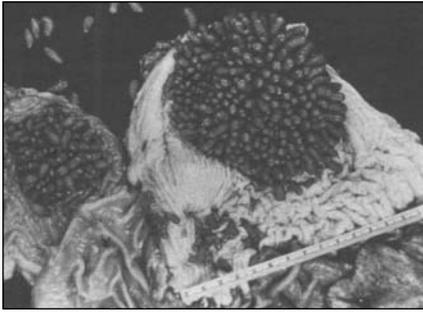


Figure 6. Stomach and duodenum of horse with clusters of larvae of *G. intestinalis* and *G. nasalis*, respectively



Figure 7. Bot fly eggs on leg of horse

The female common bot fly, *Gasterophilus intestinalis*, lays yellow-white eggs on the hairs of the horse's forelegs, chest, neck, belly, and sometimes on the hind legs and flanks (Figure 7). The eggs incubate in 1 to 2 weeks and hatch only if they are licked or eaten. Young bot larvae begin their migration in the mouth of the horse. They burrow into the front of the tongue and 3 to 4 weeks later emerge out of the rear of the tongue before migrating and attaching to the stomach wall (Figure 8).

The female throat bot fly, *G. nasalis*, lays her eggs on the hairs under the jaw and throat. Incubation takes 4 to 6 days and the larvae hatch without stimulation. This pest penetrates the gum margins around the cheek teeth for 1 month before migrating to the stomach, pylorus,

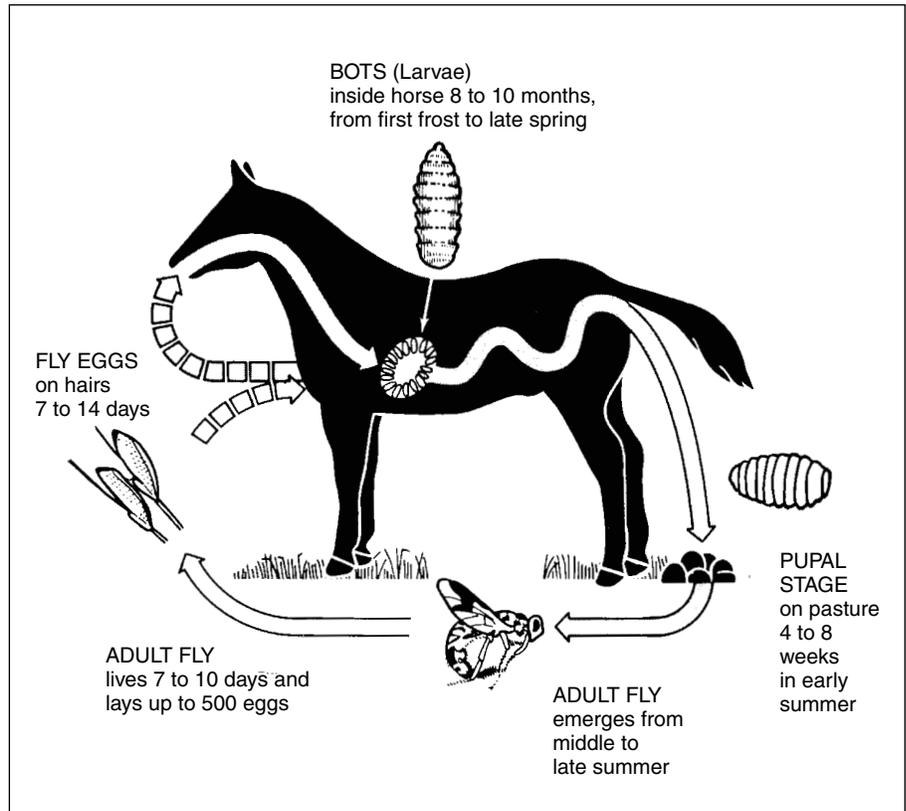


Figure 8. Life cycle of the common horse bot fly, *Gasterophilus intestinalis*

and duodenum. Large numbers of larvae in the gums may cause pus pockets and mouth irritation.

The female nose bot fly, *G. hemorhoidalis*, deposits black eggs on the hairs of the lips. The larvae hatch in 2 to 4 days and penetrate the inner lip membranes in front of the incisors. After 5 to 6 weeks, they migrate and attach themselves to the stomach wall.

Full-grown horse bots are thick, tough-skinned maggots, blunt at the posterior end and tapering in front to the two strong mouth hooks. They have a circle of prominent spines around each body segment, giving them a screw-like appearance (Figure 6).

They can become so numerous that they block the stomach outlet, resulting in colic. This blockage may also cause rupture of the stomach

wall and eventually death.

When the bot larvae are mature, they detach themselves, change into the non-feeding prepupal stage as they move through the intestines, and pass out with the droppings. They will then burrow into the ground where they remain for 1 to 2 months. Adult flies develop within the pupal cases and emerge during warm summer months. The life cycle from egg to adult fly takes 1 year.

Controlling Bots

The effective control of bots depends on the treatment of the horse or the interruption of the bot's life cycle by other means. (Table 1) *G. intestinalis* eggs accumulate until frost but can survive for several months. Egg cases are difficult to

Table 1. Treatment for Bot Control

Trade Name	Active Ingredient	Method of Administration
EgValan, Zimecterin	Ivermectin	oral paste
Quest	Melbemycin	oral gel

remove from the hair coat, but infective larvae can be lured from cases by sponging with warm (104° to 118°F) water. Sponging horses on cool days (below 60°F) will ensure that larvae quickly die of exposure.

Warm water can be applied with an insecticide if the treatment is done on a warm day. The number of hatched *G. intestinalis* larvae reaching the stomach can be reduced by treating the areas where bot flies glue their eggs. These areas should be treated on a weekly basis, using insecticide wipes or sprays.

Horse Flies and Deer Flies

Horse flies, *Tabanus* sp., and deer flies, *Chrysops* sp., are serious pests of horses. These heavy-bodied, brown, black, or yellow flies are strong fliers and vicious biters. They may fly 15 to 20 miles for a blood meal or to deposit eggs. Depending on the species, they are from 1/3 to 1 1/2 inches long and have clear or striped wings (Figure 9).

These insects feed by piercing the skin of the horse with cutting mouthparts and then drinking the blood as it wells up from the wound. Only the adult females are blood feeders, and they feed only during the daylight hours. Horse flies and deer flies can be found feeding on the head, neck, legs, shoulders, and back. Horse flies have been blamed for the transmission of swamp fever (equine infectious anemia) in horses.

Most horse flies and deer flies have only one generation per year. The female lays her eggs on vegetation around moist, swampy places. The larvae burrow into the mud after hatching and spend the next year feeding on small animals such as earthworms, insects, small crustacea, and even other horse fly larvae. They pupate in the spring and emerge as adults during the summer.

Controlling Horse Flies and Deer Flies

The control of horse flies and deer flies is very difficult. They are large, robust insects that are able to take a blood meal quickly, before insecticides used for their control become effective. Some of the synthetic pyrethroid insecticides are repellent, and other insecticides that include repellents give limited control of these pests (Table 2).

Stable Flies

Stable flies, *Stomoxys calcitrans*, are some of the most harmful flies that attack horses. They are about the same size as the common house fly (Figure 10), and both sexes feed on blood.

Stable flies are usually found feeding on the lower legs or flanks of the horse. Their bite is very painful and causes horses to stamp and kick. When present in large numbers, stable flies can cause blood loss as well as severe irritation. They stay on the animal only while feeding. After feeding, they seek a sheltered area in which to digest their meal.

Stable flies are strong flyers and may fly several miles for a blood meal. The control of breeding sites may require a community-wide effort.

Stable flies breed in decaying organic matter. A fermenting mixture of straw, manure, and urine is ideal for breeding. Although horse manure is usually too dry to support their development, it becomes a good breeding ground when it accumulates in stalls or barns where it becomes moistened with urine or water. Round bale cattle feeding areas breed very large populations of stable flies. Decaying straw, grass clippings, hay, and silage are also suitable breeding materials for stable flies.

The life cycle of stable flies is 21 to 25 days. Females must have a blood meal each time they lay eggs. They lay from 40 to 80 eggs per

batch and each female can lay up to 20 batches. Large populations build up when conditions are good. They may become a serious problem early in the spring, and outbreaks can occur in mid-winter during several weeks of warm weather.

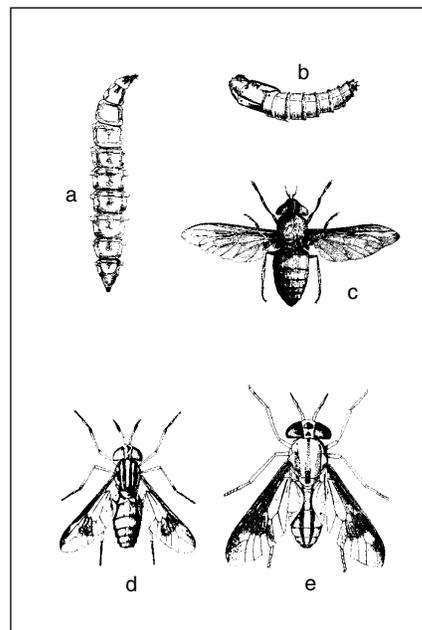


Figure 9. Black horse fly, *Tabanus atratus*: (a) larva; (b) pupa; (c) adult. Deer flies (*Chrysops* sp., d & e), irritate horses.

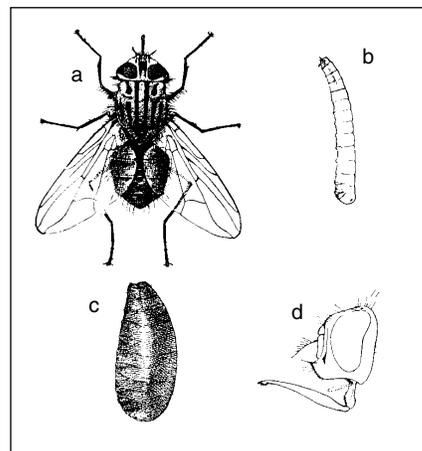


Figure 10. (a) Stable fly, *Stomoxys calcitrans*; (b) adult larva; (c) puparium; and (d) side view of the head detailing the mouthparts

Table 2. Insecticides For External Parasite Control

Pest	Insecticide & Trade Names	How Applied
Biting flies	Permethrin (Permethrin, Ectiban, Atroban)	Spray, wipe-on, dust
horse flies, deer flies, stable flies, horn flies	Fenvalerate (Ectrin)	Spray
	Pyrethrins, PBO	Spray, wipe-on
	Resmethrin (Super Shield Fly Repellant)	Wipe-on
Mosquitos, biting gnats (black flies, buffalo gnats, punkies)	Permethrin (Permethrin, Ectiban, Atroban)	Spray, wipe-on, dust
	Fenvalerate (Ectrin)	Spray
	Coumaphos (Co-Ral)	Spray, dust
	Resmethrin (Super Shield Fly Repellant)	Wipe-on
Face flies	Permethrin (Permethrin, Ectiban, Atroban)	Spray, dust, wipe-on, strip
	Fenvalerate (Ectrin)	Spray, treated strip on collar
	Pyrethrins, PBO	Spray, rub-on
	Resmethrin (Super Shield Fly Repellant)	Wipe-on
Ticks	Permethrin (Permethrin, Ectiban, Atroban)	Spray, dust, or wipe-on
	Fenvalerate (Ectrin)	Spray
	Coumaphos (Co-Ral)	Spray
Lice	Permethrin (Permethrin, Ectiban, Atroban)	Spray
	Fenvalerate (Ectrin)	Spray
	Coumaphos (Co-Ral)	Spray

Controlling Stable Flies

Some insecticides are repellent and can be effective for the control of stable flies on horses (Table 2). These materials should be applied generously to the legs of the horse. They should be reapplied when they begin to lose their effectiveness.

The best method for controlling stable flies off the animal is by spraying the barn walls, posts, and overhead. Nearby fences should also be sprayed. Equally important is the removal of breeding sites where possible.

Since stable flies and house flies have similar resting habits and are found in some of the same breeding sites, their control off the animal is discussed with house fly control.

House Flies

House flies, *Musca domestica*, are not serious parasites of horses, but they often build troublesome populations around horse barns, and they also carry diseases. These flies are about ¼ inch long and dull black or dark gray in color (Figure 11). House flies will use their sponging mouthparts to feed on liquids associated with all manner of filth, animal feeds, and human foods.

House flies breed in a wide variety of rotting organic matter including garbage, all types of excrement, wet and rotting hay, grass, straw, grain, or silage. But house flies seem to prefer horse manure. They have a short life cycle, taking from 6 to 14 days to complete development, and they can build very high populations around stables if not controlled.

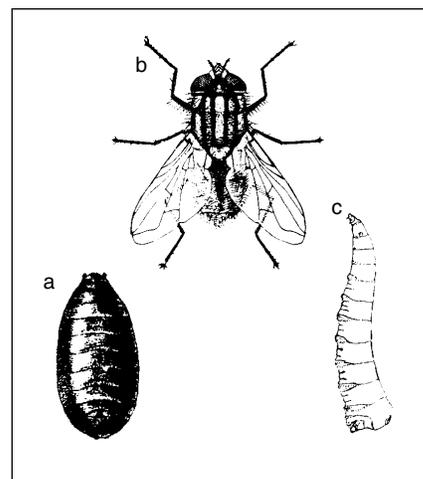


Figure 11. House fly, *Musca domestica*, (a) puparium; (b) adult; and (c) larva

Controlling House Flies and Stable Flies

House flies and stable flies have three requirements for the successful completion of their life cycles—appropriate breeding materials, adequate moisture, and adequate warmth.

The elimination of any one of these three factors will prevent fly breeding. A successful house fly and stable fly control program should, therefore, include the following elements:

Elimination of Breeding Materials. Good sanitation is the key to any successful house fly control program. In most cases, removal of breeding materials is the most effective way to break the life cycle.

Corrals, run-in sheds, and barns should be designed to allow for the rapid and efficient removal of manure and other fly-breeding materials. Feed mangers should be built to minimize feed waste and to prevent manure and wasted feed from collecting beneath them. Fly-breeding materials should be removed and disposed of at least once a week to break the life cycle.

Sanitation should be thorough if fly breeding is to be controlled. Areas missed when cleaning up with front end loaders or scrapers are usually prime areas for fly breeding.

Breeding materials missed in these areas can produce many flies.

Areas commonly missed in cleanup include those around fence posts, outside and under fences, outside and under feed troughs or hay racks, corners in barns or other buildings, stalls and sick pens, around silos or other feed storage areas, garbage cans, and around waterers and water tanks.

Manure and other fly breeding materials are most easily disposed of by spreading them thinly on cropland. A flail-type manure spreader will ensure that the manure is broken up into small pieces so that it will dry rapidly and kill developing fly larvae (Figure 12). Storage facilities should be available when it is not possible to spread the manure on fields. Manure stored in liquid manure pits or manure lagoons should be mixed with enough water to discourage fly breeding. Agitating the manure-water mixture will eliminate the accumulation of floating solids where flies can breed.

Manure can also be stockpiled in non-liquid storage areas. Fly breeding is minimized by placing manure and other breeding materials in one area; however, flies can still develop in the outer few inches of stockpiled manure. Stored breeding materials should be spread thinly on cropland as soon as possible. Large amounts of composting manure can reduce fly breeding problems and create a useful and valuable by-product.

Control of Moisture. Fly development can be discouraged if manure and other fly breeding materials are kept dry. Corral areas should be designed to promote adequate drainage and to eliminate wet spots where fly breeding is more likely to occur. Good drainage away from areas where manure is stockpiled will promote drying and also help reduce fly breeding. Automatic waterers should be properly adjusted and maintained to prevent leaking.

Use of Insecticides. Sanitation and moisture control are key ele-



Figure 12. Spreading manure discourages fly larvae development.

ments in fly control, but they are seldom completely successful. Insecticides are usually needed to round out a complete fly control program; however, insecticides should never be the only means of control.

Residual insecticides applied to the walls, ceilings, and rafters of horse barns, run-in sheds, and vegetation such as hedges or windbreaks will control adult flies that use these locations as resting sites for up to

6 weeks (Table 3). Residual insecticides should be applied early in the spring when the first flies appear and should be reapplied whenever flies are no longer being killed.

Insecticidal space sprays, fogs, and mists are used to control large numbers of adult flies, especially in enclosed areas such as barns. These chemicals have a short residual effect and must be applied on a daily basis (Table 3).

Table 3. Insecticides For Control Of Pests On Structures

Pest	Insecticide & Trade Names	Remarks
House flies, stable flies	Permethrin (Permethrin, Ectiban)	Spray walls, ceilings, and fences where flies rest.
	Fenvalerate (Ectrin)	
	Stirofos + dichlorvos (Ra-Vap)	Spray ONLY .
Mosquitoes, gnats	Methomyl (Golden Maldrin) and other commercial fly baits	For house flies ONLY . CAUTION: This sugar bait is toxic to children and domestic animals.
	Permethrin (Permethrin, Ectiban)	Spray or fog mosquito and gnat resting areas, walls, ceilings, foundations. Spray ONLY outside of barn.
Fenvalerate (Ectrin)		
Ticks	Stirofos + dirchlorvos (Ra-Vap)	Spray only.
	Stirofos + dichlorvos (Ra-Vap)	Spray ground and low-growing vegetation in heavily infested areas where animals rest.
Permethrin (Permethrin, Ectiban)		
Wasps	Fenvalerate (Ectrin)	Use on nests around barns, gates, etc. Drench nest after dark when wasps are quiet.
	Stirofos + dichlorvos (Ra-Vap)	
Spiders	Stirofos + dichlorvas (Ra-Vap)	Use in barns, tack rooms, stables, etc. Spray areas where spiders are found.

Insecticidal baits are an effective supplementary means of controlling adult houseflies. Baits are available in dry or wet formulations and should be spread in areas where flies gather. Baits should be used daily to maximize fly control capabilities. Be careful to keep baits away from children and domestic animals (Table 3).

Larvicides can be applied to areas of intense larval development to kill the larvae before they become adults. Larvicides can also be useful for controlling larvae in manure stockpiles.

It is important to **read and follow directions** and to observe proper safety precautions whenever using any insecticide. It is especially important to avoid contaminating feed, water, and equipment.

Mechanical Control. More traditional methods of fly control should not be ignored when beginning a fly control program. Screening is an excellent way to keep flies out of areas such as feed rooms, tack rooms, and box stalls. Fans directing an air blast downward and outward above doors will help prevent flies from entering barns.

Face Flies

Face flies, *Musca autumnalis*, are occasional pests of horses, especially when the horses are pastured with or near cattle. These flies have sponging mouthparts, and both the males and females feed on the mucous secretions of the eyes and nostrils as well as on blood oozing from wounds caused by horse flies or stable flies. Their feeding around the eyes causes eye irritation (Figure 13). The face fly has sponging mouthparts with a toothed area that causes irritation and tearing.

Face flies are about the same size and color as houseflies. The female lays from 30 to 230 eggs in very fresh cattle manure. The entire life cycle takes from 15 to 25 days. Face flies are found only in the northern half of Alabama and usually are a

serious problem only in the northern third of the state.

Controlling Face Flies

Face fly control is difficult. First, these flies feed on the animal's head where it is difficult to apply insecticide. Second, face flies are strong flyers and may fly several miles to infest horses and only stay on the animal for a short time each day. They spend the remainder of their time on vegetation, fence posts, or other objects.

The use of spray or wipe-on insecticides applied to the head or neck of the horse is the most effective way to control these pests (Table 2). Insecticide-treated strips and collars are labeled for face fly control on horses and are effective for 60 to 70 days. Wounds should be protected with dressings or repellents. Fly shakes attached to the halter provide protection for the eyes. The use of dustbags or face rubbers and insecticide-treated ear tags on cattle are useful and help to reduce the overall population.

Horn Flies

Horn flies, *Haematobia irritans*, are blood-sucking pests and are a major pest to cattle. Horn flies will also attack horses if they are pastured or ridden near infested cattle.

Horn flies are gray to black in color and resemble the housefly but are about half as large. They commonly hang upside down when feeding and are usually found on the backs, sides, and bellies of cattle and horses. They remain on the host animal day and night, leaving only to transfer to other animals or to lay eggs (Figure 14).

Horn flies breed in fresh cattle manure. Eggs hatch in less than 24 hours and require moisture for survival. The life cycle may be as short as 10 days in hot weather and up to 1 month in the spring and fall. This species is not known to transmit any horse diseases.

Controlling Horn Flies

Horn flies are controlled on cattle by using insecticide-treated ear tags, forced-use dustbags, or regular sprays. Some of these methods can also be used for horses. The best control for horses is to prevent horn flies from infesting cattle. Sprays and wipes help provide control on horses.

Biting Gnats

Other blood-sucking flies that often attack horses are biting gnats (sand flies, buffalo gnats, punkies, black flies), which belong to the *Simuliidae* family and are represented by many different species.



Figure 13. Face flies are irritating eye pests on horses.

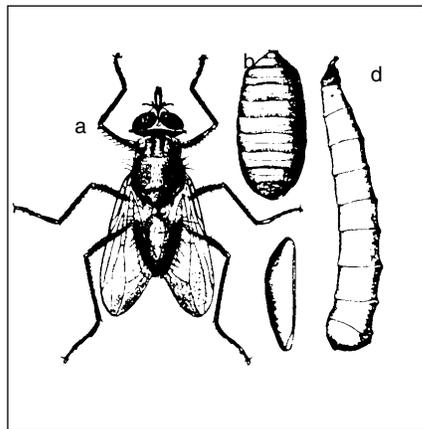


Figure 14. Horn flies are sometimes found feeding on horses. (a) adult fly; (b) puparium; (c) egg; and (d) larva

Another closely related group of biting gnats are the *Culicoides* (called no-see-ums because they are so small).

Some species of biting gnats feed on blood in large numbers on the inside of horses' ears while others feed on the legs, head, neck, or belly. Large numbers are often found feeding on horses. All species breed in moist or running water habitats.

Controlling Biting Gnats

Biting gnats are difficult to control because they are strong fliers and are able to fly as far as 10 miles for a blood meal. Also, they breed in many different types of watery habitats, from swiftly running streams to tree holes or mud.

Insecticides that are repellent or combinations of repellents and insecticides are the most effective treatment when applied to the animal's body (Table 2 and Table 3). The synthetic pyrethroid insecticides have good residual action and are repellent to most insects. When used at close intervals (5 to 7 days), these insecticides are effective as a direct application for several species of flies as well as gnats and mosquitoes.

Mosquitoes

Several different species of mosquitoes will feed on horses. Mosquitoes are slender-bodied, long-legged flies that can be as large as ½ inch long. They have delicate wings and under the right conditions can build large populations.

Mosquitoes breed in standing or slow-moving water. They also breed in water in cans, bird baths, old rubber tires, or clogged gutters. They have a short life cycle—10 days to 2 weeks (Figure 15).

Only female mosquitoes feed on blood. They require one or more blood meals for egg development. The males are mostly nectar-feeders.

Large populations of mosquitoes can be damaging to horses. Bites

are irritating to the animals, and large numbers of mosquitoes can take large amounts of blood. They are also the carriers of several of the encephalitides that are transmitted to horses and humans. These diseases are usually fatal to horses.

Controlling Mosquitoes

Mosquito control is most effective as a community wide project. Eliminating breeding sites is one of the best ways of controlling mosquitoes. The regular use of insecticide sprays or wipe-ons are effective on horses (Table 2). The space sprays, fogs, and insecticide strips used for fly control in stables also provide good mosquito control inside structures (Table 3).

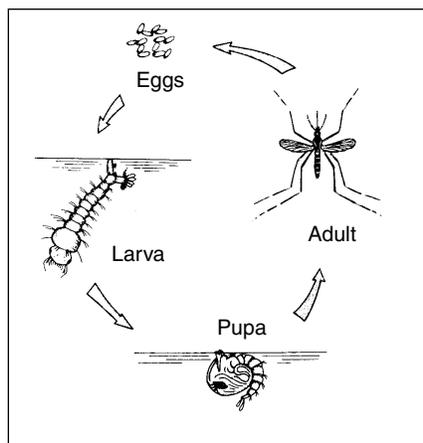


Figure 15. Mosquito life cycle

Cattle Grubs

Two species of cattle grubs will parasitize horses if they are pastured near cattle. Cattle are the normal host for cattle grubs. These large, hairy flies resemble honey bees in size (½ to ¾ inch) and appearance. Bomb flies, *Hypoderma bovis*, are banded with yellow and black strips while heel flies, *Hypoderma lineatum*, are smaller and more orange than yellow (Figure 16).

Adult cattle grubs are prevalent during March, April, and May. Adults do not bite or sting, but animals are frightened by the buzzing sound they make during egg laying. Females deposit their eggs on the hair of the animal's legs and lower

portions of the body. These eggs hatch in less than 1 week. Larvae penetrate the skin and begin migrating through connective tissue. Larvae of *H. lineatum* congregate in the esophageal tissue after 5 months of wandering and remain there for 3 months.

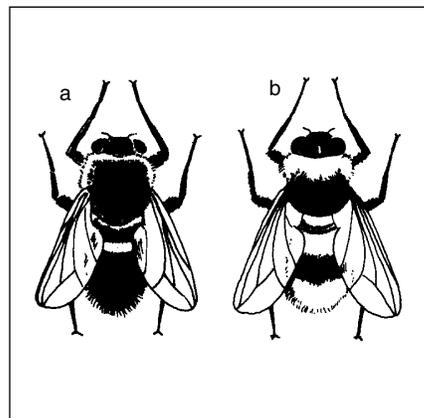


Figure 16. Adult cattle grub flies: (a) the heel fly or common cattle grub; (b) the bomb fly or northern cattle grub

Hypoderma bovis larvae tend to gather in the area around the spinal canal. Finally, larvae of both species migrate to the tissue under the skin of the back where they cut breathing holes into the hide. They grow rapidly and eventually create a large, pus-filled cavity under the hide. When mature, they widen the breathing holes to escape, fall to the ground, and pupate. During the first warm days of spring, adult flies emerge, mate, and are ready to lay eggs immediately (Figure 17). There is one generation per year.

Cattle grubs are on the wrong host when they parasitize a horse and are not able to complete development. They make uncharacteristic migrations to the head, neck, withers, and rib cage areas. They remain just under the skin and form hard bumps that may become sores if the horse or the saddle rubs the affected part. They may be surgically removed by a veterinarian.

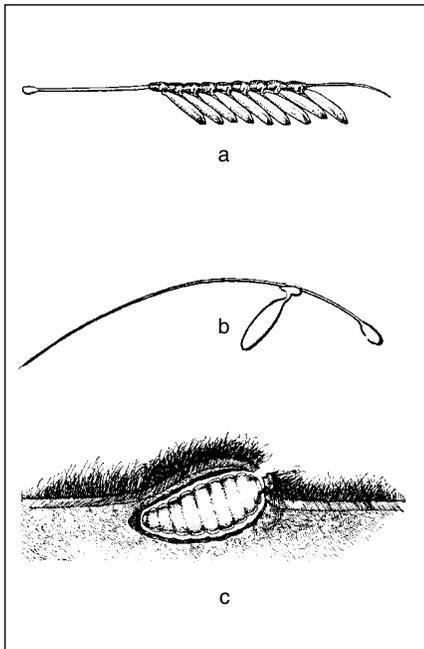


Figure 17. Cattle grubs: (a) eggs of the heel fly are often laid in a row on the hairs; (b) eggs of the bomb fly, are usually laid one to a hair; (c) larva in last instar in the tumor beneath skin of back

Controlling Cattle Grubs

The control of grubs in horses is best achieved by controlling them in cattle. This reduces the total cattle grub adult population. The widespread use of currently labeled medications for internal parasite control in cattle has greatly reduced cattle grub populations. Treatment with systemic organophosphorus insecticides applied as a pour-on, spot-on, injectable, or spray is also effective for cattle. Control should be applied soon after the fly season is over (June in Alabama) but may also be made until the end of October.

Lice

Signs of lice include scurfy skin, an unkempt coat, and excessive rubbing and scratching. Lice can be found on all body regions but are usually noticed first on the head, neck, mane, and tail because of the horse's self-grooming. Lice reproduce all year but are more of a problem during winter under the

protection of a heavy hair coat and drier skin. The entire life cycle is spent on the horse (Figure 18).

There are two very different species of lice that are occasionally a problem on horses. One species, the horse-biting louse, *Bovicola equi*, is about $\frac{1}{10}$ inch long. These lice are chestnut brown except for the abdomens, which are yellow with dark crossbands. They are very flat with broad, rounded heads and slender legs (Figure 19).

These pests have chewing mouthparts and feed on dry skin, skin secretions, and hair. Eggs are glued to the hair close to the skin, especially around the angle of the jaw and on the flanks. The eggs hatch in 5 to 10 days. Nymphs begin feeding immediately, reaching maturity in 3 to 4 weeks.

The other species, a blood-sucking louse, *Haematopinus asini*, is about $\frac{1}{8}$ inch long and is a dirty gray color. These lice have very broad abdomens that contrast with their long, narrow heads. Sucking lice are more common, as well as more irritating, than biting lice. They have piercing, sucking mouthparts and, when present in large numbers, can cause the horse to become anemic. They are also very irritating and cause the horse to rub excessively, often rubbing off patches of hair (Figure 20).

Eggs are glued to the hair and hatch 11 to 20 days later. The newly emerged nymphs begin to suck blood immediately. They complete development in 2 to 4 weeks.

This species is host-specific, transferring from one horse to another during close contact. Some animals are particularly susceptible to louse infestation and are known as carriers. They should be routinely inspected and treated if infested.

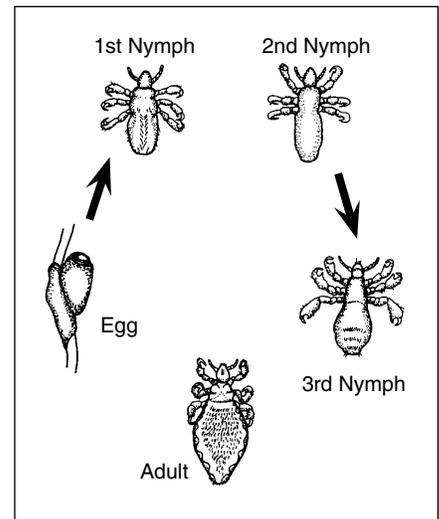


Figure 18. Horse louse life cycle

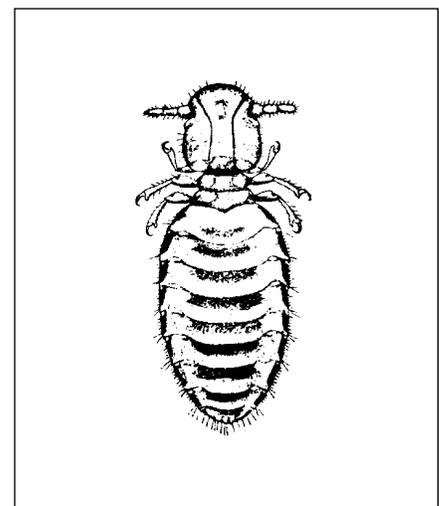


Figure 19. Horse-biting louse

Controlling Lice

Proper grooming and feeding are important elements of lice control. Grooming does not remove or kill lice, but it does give the horse's owner the opportunity to spot the problem early before it becomes harmful to the animal. Proper nutrition allows the animal to better withstand the blood loss or irritation of a severe louse infestation.

Insecticidal sprays are effective in controlling lice (Table 2). Wettable powder (WP) formulations are generally preferred over emulsifiable concentrates (EC), because some horses are more sensitive to skin burns from solvents in EC formulations. Problems should not occur if the insecticide is labeled for use on horses for lice and if it is used according to the label directions.

Ticks

Ticks are generally a major problem on horses only in heavily infested wooded pastures. However, in the spring, large numbers of several species of ticks may be found infesting horses and cattle. Ticks are blood-sucking arthropods closely related to insects. When present in large numbers, ticks can withdraw much blood and cause anemia in the animal. Also, ticks often infest

horses' ears, causing soreness and making it difficult to halter or bridle the animals. Ticks can be controlled on horses with insecticides (Table 2).

Using Insecticides

When using an insecticide, carefully follow the label directions. If these directions are not clear, contact someone who can better understand them. The chemicals in Table 2 and Table 3 are those labeled for use on horses or in stables. They are the best suited for the applications recommended. There may be others not listed that are also effective.

NOTE—The instructions for the use of the recommended pesticides are not complete and are intended to be used as guidelines. Before using any pesticide, read the label for more specific instructions. Many insecticides are sold under brand names not listed in this publication. Check labels for the names of recommended active ingredients.



Figure 20. Horse-sucking lice cause horses to rub off patches of hair.



Your Experts for Life

ANR-464

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