



The Battle of the Bugs - External Parasites

Guest Article

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External Parasites Responsible for Numerous Diseases

Isn't it funny how even those of us quite accustomed to finding the odd flea traversing the tummy of a barn cat or Jack Russell, react with the utmost horror to the sight of something crawling on our horses? We don't tend to give external parasites - creepy little critters like mites, lice and ticks - a lot of consideration in our day-to-day horse management, but they can have just as much impact on our equine's health as the internal parasites we're so much more used to dealing with.

External parasites need a little more press - and not only because they give us the willies. They can be responsible for a host of symptoms ranging from mild (skin itching or hair loss) to severe (spasms, seizures and blood loss). But there's another serious consideration as well - many external parasites are disease carriers, and some of those diseases are deadly. So let's delve into the secret world of multi-legged crawlers and find out a little about how they live and how to combat them.

Know Thine Enemy

Although flying insects, like warble flies and bot flies, can be considered in certain life stages to be external parasites of horses, for our purposes we'll be talking about the non-flying variety: mites, ticks, lice and chiggers. All of these have certain traits in common - they're crawlers who are transmitted to horses from other 'hosts' or from the environment; they feed on skin, blood or secretions; and they're small (ranging from about the size of a raisin down to microscopic). Not all are insects. Mites and ticks, which possess more than six legs, are categorized as arachnids - closely related to spiders. These arachnids move from the tips of grass blades by grasping the hair of a passing horse.

Most external parasites have life cycles that include several stages and not all of those stages necessarily are spent living on the horse. In some cases, external parasites go through several hosts as they progress from egg to larva to nymph to adult - these varieties are usually a problem for horses only in warm weather. Others, who spend their entire lives buried in equine hair, can be troublesome even in winter or early spring.

Where can you find external parasites on Friesian horses? They are found chiefly in the region of the mane and tail, which are favorite spots for burrowing and munching on sebaceous secretions. But these critters also can make themselves at home

in the belly hairs, on the underside of the neck, in the fetlockhair, in the inner thigh, along the withers - and even the ears. The signs of infestation vary from species to species of parasite and a definitive diagnosis sometimes can be a challenge. Even an experienced veterinarian might not be able to distinguish one type of parasite from another with the naked eye because of their small size. Thus you might have to resort to a skin scraping. This involves using a dull blade to collect dead surface skin cells and related debris, often from the base of the mane, root of the tail, or under the fetlock hair, and then examining the collection under a microscope. Secretions, eggs and insect parts observed there usually will lead to an identification of the perpetrator. Should your veterinarian not consider himself or herself an arthropod expert, you might have to seek an entomologist at your nearest university or agricultural extension service to put a name to your Friesian's freeloading guests. (If your skin scraping turns up no obvious signs of critter infestation, your veterinarian might want to rule out other causes by doing bacterial or fungal cultures, allergy tests, or even a skin biopsy.)

The Rundown of Common Parasites

Lice

Probably the most common of equine external parasites (especially in temperate climates), lice come in two varieties: chewing or biting lice (*Bovicola equi*), which feed on skin cells and sebaceous secretions AND sucking lice (*Haematopinus asini*), which feed on blood.

If your horse has lice, it's likely he will have heavy dandruff and greasy skin. Bloodsucking lice tend to congregate in the mane and tail, along the head and neck and on the inner thighs, where they might eventually cause bald spots with raw, red centers. If present in sufficient numbers, they can even cause anemia. Part the hair at the base of the mane and you will see lice moving about at the hair roots, looking like small, dirty specks. You'll have to look closely though, because even the adults average only one-tenth of an inch long.

Infestations of lice are often worse in the early spring, when accumulated dirt in the barn and tack room, plus an abundance of dander from horses shedding their winter coats, provide an ideal environment for them. Horses cannot contract them from cattle or poultry - nor do equine lice transfer themselves to people (Whew!). Lice are extremely host specific.

Mites

These are almost microscopic creatures that live practically everywhere - but, again, the species of mite that infests horses is not transmitted from hay or from birds. They can be transmitted from other animals. Papular eruptions (like small pimples) on the neck and withers are one sign of an infestation of mites - the bumps might or might not be itchy. Dandruff and hair loss, especially in the mane and tail. At their worst mites cause mange, a miserable skin condition that can include body-wide papules, patchy baldness and moist, bloody crusts on the mane, tail and forelock areas. There are three kinds of mange mites:

1) Sarcoptic mites - circular in shape with short legs. They usually cause small skin nodules with hair loss, where eventually scabs develop as the mite burrows into the skin. They can be found on the head and neck, shoulders, flanks and abdomen.

2) Psoroptic or scab mites - oval bodies with longer legs and segmented pedicels. These can be seen on the skin surface, where they cause the moist, gooey scabs and crusts described above.

3) Chorioptic mites - the most common mite type and the most common on Friesian horses. They resemble the psoroptic variety quite closely, but have unsegmented pedicels. They also can be found on the skin where they cause scaling, especially on legs with heavy fetlock growth. They cause a condition sometimes called "Clydesdale itch."

Transmissions of mites is made by casual contact, so an infested horse should be isolated from his neighbors and treated promptly (more on treatment in a moment). It also might be necessary to dispose of any bedding you suspect of harboring mites and use separate grooming tools on each horse.



Chorioptic mites are particularly fond of the environment created by long, dense fetlock hair, and this hair can make it hard to find other external pests, like ticks.

*Healthy, clean turnout areas are part of a total management plan.
Photo by Patricia Stanton*



Focusing in On the Tenacious Mite

It is easy to see that Friesian horses provide a prime habitat for external parasites due to their characteristic heavy manes, tails, forelocks and fetlock hair. It is easy to miss early telltale signs of infestation when abundant hair covers the areas involved - until it gets to the point of frantic stomping, rubbing, chewing on the fetlock and legs, hair loss, and even raw sores. The chorioptic mite certainly falls into the category of easy to miss or misdiagnose early on.

Chorioptic mites are communal arachnids - they exist in colonies on the horse, where they tunnel into the skin, lay eggs in the skin layers, and feed on the secretions created by their irritation. As the colony increases, they tunnel out from the central community, expanding the areas of sores. Detritus builds up, most noticeably under the fetlock hair since these mites congregate typically in the fetlock and around the ergot. The detritus is the accumulation of pus from the sores and the excrement of the mite - it appears as a grayish, slightly sticky mess of flaky substance throughout the fetlock hair. Initially, mites are easy to overlook - after all they are microscopic. Once the first signs of hair loss, rubbing, and detritus are found, they can be mistaken for "scratches" - a dermatitis that causes cracked skin and sores. Often scratches and mites can go hand-in-hand, with the mite creating the initial sores that pave the way for secondary bacterial infections. If mites are present, treating only for scratches will not eliminate them - a miticide must be used.

Chorioptic mites are fairly common on horses throughout the U.S, but they are often overlooked if the population on the horse is not high enough to show evident sores or hair loss. Biting lice are actually very common on equines, so you can see that the incidences of chronic mite problems may not be very high. Unfortunately, for those chronic cases - where the mites are always present and attracted to a certain individual horse - the management can be on-going and very frustrating. If mites are left untreated, or only nominally treated, they can cause serious health problems for the horse. The horse will



become rundown, and take on an unhealthy demeanor. In this condition, the horse is susceptible to numerous diseases and attracts even more parasite infestations. His nutrition will decline. One positive management control is to maintain nutritionally sound, healthy horses, since they will be better able to fend off the consequences of parasite damage.

A confirmed case of chorioptic mites - the spot on the lower leg began as a spot of dandruff that, when rubbed, rolled off the hair to reveal small red sores beneath.



In suspected cases of mite infestation, ask your veterinarian to take a skin scraping - it is the only way to find mites on the horse! These slide samples can be sent to an entomology lab for verification of the mite species. Treatment recommendations will vary widely. There is no label treatment for horses in the U.S., although studies have been conducted with several formulas marketed for canines. It is not necessarily that the chemical companies don't already have products that would be effective against chorioptic mites - they probably do - but rather that it isn't economically sound for them to put the products through the testing and registration necessary to label them for horses. The Bayer Company does indeed market a product for equines in Europe for mites, but this product is not registered in the U.S. Check with your veterinarian for all recommendations. For chronic cases of mites, treatments are best alternated after a period of usage. This halts the development of resistance to one class of chemical, rendering it ineffective and a drain on the pocketbook. Miticide treatments are best "sponged" onto the legs or other affected areas, rather than sprayed or rubbed. Small sponges and hands protected with surgical gloves can place the chemical on the skin with less waste than sprays. If the horse will tolerate it, an even better mode of delivery is to soak the horse's fetlock and lower leg in the product for approximately 5 minutes. Removing the fetlock hair may not be necessary if the product can be sponged or soaked onto the horse at the skin level.



Gray detritus under the fetlock hair at the back of the pastern show up in these photos as lighter spots. The ergot is visible in both pictures near the assistant's hand. This Friesian is a chronic mite sufferer.



Chiggers

These actually are the larval form of various Trombidium species of mites, sometimes called harvest mites. They are microscopic, orange-colored critters that can be identified in skin scrapings. Horses infested with chiggers suffer from small, itchy bumps, particularly on the head, chest and neck, which result from the chigger burrowing into the epidermal tissue. The itching might be so severe that the horse rubs large areas raw. Chiggers don't hang around - they tend to infest one equine for about a week, then move on to another equine. This means they can go through an entire herd in the space of a summer. Since they are found in short grass, rotting wood and hay, it can be difficult to control chiggers in the environment. So if you have an established problem you might be forced to keep the horses inside while you investigate possible treatments of fields with your agricultural or extension agent.

Fleas

We don't tend to think of fleas as an equine problem, and generally they aren't - but it is quite possible for horses to pick up a flea population from barn cats or dogs who have bad cases themselves. The sign of flea infestation are very similar to those we'd expect from a dog or a cat - local itching, skin inflammation and irritation, and possible anemia.

Ticks

Sudden, frantic summer itching of the mane and tail most often indicates an infestation of ticks. Although they only spend a brief part of their life cycle on the horse, these probably are the nastiest of the external parasites because ticks are responsible, or suspected of being responsible, for carrying an alarming array of diseases, including Rocky Mountain spotted fever, encephalomyelitis (sleeping sickness), Colorado tick fever, tularemia, Powassan encephalitis virus, anaplasmosis, EIA (swamp fever), tick paralysis, piroplasmosis, equine granulocytic ehrlichiosis (EGE) and Lyme disease.

Lyme disease is a big concern for horse owners (**at present, the largest concern is West Nile Virus - see the April/May issue for the article on WNV and mosquitos**). It is caused by the spirochete, *Borrelia burgdorferi*, which is transmitted from animal to animal by ticks. White-footed mice and white-tailed deer are two identified hosts. Lyme disease was first thought to not affect horses - but unfortunately, that has turned out to be untrue. In fact, the incidence of Lyme disease in equines is on the rise throughout the Northeastern U.S. where the carrier tick is prevalent. A large number of exposed horses do not display symptoms; but those who do might suffer fever, a subtle, shifting lameness, swelling of the limbs, a reluctance to move, laminitis, inflamed eye tissues, lethargy, and skin and muscle hypersensitivity. If left untreated, equines can develop a blue-green discoloration of the cornea and yellowing of the eye's normal white sclera, as well as eventual hepatitis and chronic arthritis. The disease can cause abortion in broodmares and be transferred across the placenta to foals in utero.

Ticks are a serious nuisance even without the risk of disease; they latch onto a horse's tissues with bulldog tenacity with their long, strong mouth parts, and easily can cause a horse to rub long, strong mouth parts, and easily can cause a horse to rub his tail bald with itchiness and frustration. Even long after the tick has drunk his full and dropped off, the itchiness lingers. If you part the tail hairs, you might see the tick's calling card - bits of dry serum and little crusty granules among the roots. A severe tick infestation can cause anemia, poor condition, and a fluid buildup in the abdomen. Tick bites can become infected, producing large, dark scabs with creamy yellow pus lurking underneath!

Of the many types of ticks, one of the most insidious is the spinous ear tick (*Otobius megnini*). The larvae of these little nasties burrow deep into the ear canal and incubate there for one to seven months, creating a bizarre array of symptoms,

including sweating, pawing, head-tilting or shaking, ear shyness, inexplicable stiffness or reluctance to move, and muscle spasms so severe they may appear as seizures. Summer and early fall are the most common times for horses to develop these symptoms.

Eradicating 'Em

Dealing with external parasites requires a two-pronged approach. Not only must you exterminate them on your horse, you must find a way to simultaneously control them in the surrounding environment if possible. There are available products specifically formulated to kill lice, mites, and ticks; the best have both an insecticide and an insect growth regulating chemical that helps interrupt the critter's life cycle. The combination kills adults and inhibits egg hatching and/or the development of the larvae, a necessary step when you have a heavy infestation to deal with. Look for an insecticide formula that contains pyrethrins - this chemical, made from chrysanthemums, is biodegradable and has a wide safety margin. Pyrethroids are also made for horses - these are synthetic pyrethrins. It is always best to contact your veterinarian for the appropriate treatment in your own particular case and for your own horse.

Even with the use of pesticides, it's important to keep a constant patrol against parasitic pests. Each time you groom your Friesian horse, keep an eye out for signs of infestation - dandruff, itchiness, bald spots, scabs or bumps. To help control ticks, in particular, keep fields mowed and clear around the barn and pastures. Discourage tick hosts, such as mice and other rodents, by keeping grain locked securely away in rodent-proof containers.

Still get the heebie-jeebies after reading all of this? Take heart. Equine external parasites aren't all that common. But if your horse should come home with some freeloaders, early detection and confirmation by a veterinarian can do much to safeguard your best friend's health, comfort and well-being.

