

# Disease Control Yearly Planner

*Guard against diseases on your farm  
year-round by employing these seasonal tips*

To perform to the utmost capacity, a horse must be healthy and sound throughout the year. The smallest details of farm management often have the greatest impact on a horse's general wellness, and such strategies provide a critical template for minimizing the risk for contracting disease. By being proactive and implementing disease-reducing programs based on risk, season, and climate, a horse owner can make a major difference in controlling horse health on a farm.

## **CONTAGIOUS DISEASE ISSUES**

As winter thaws and the days lengthen into spring, owners are preparing and conditioning horses for competitions and events that take them off the property. This places them in proximity to other horses, with increased likelihood of exposure to disease. Spring immunizations are an essential part of any disease control program, particularly against mosquito-borne viruses (West Nile virus and other types of encephalitis) and contagious respiratory viruses (influenza and rhinopneumonitis due to equine herpesvirus). Annually, owners should vaccinate against tetanus and rabies in endemic areas.

In addition to the incentive to travel more with your horse in the spring, there is more activity around the farm as well. Dr. Josie Traub-Dargatz, a professor of equine medicine at Colorado State University's College of Veterinary Medicine & Biomedical Sciences, has been instrumental in developing prevention and recognition programs to protect against contagious equine diseases. Traub-Dargatz recommends segregating new arrivals and monitoring for disease as critical elements of disease control on a property. She stresses that additional biosecurity efforts should include disinfection of all equipment that might have been contaminated



The stress associated with travel often makes horses more susceptible to contagious diseases

with disease-causing agents. One such example (and only one of many possibilities) would be the inside of a horse trailer, particularly one in which horses from other farms have been hauled.

Traub-Dargatz pointed out that the expense of tractors, horse trailers, and other wheeled equipment makes equipment sharing on the farm tempting, a practice that could spread disease if precautions are not taken. Traub-Dargatz suggested, "If a contagious disease is occurring on a farm, then either dedicated equipment should be used for the sick horses or the equipment would need to be cleaned and disinfected between uses, such as the wheels and tires of tractors, and the bed and wheels of wheelbarrows." She also suggested using a separate transport system for feed and soiled bedding to avoid contamination of feed.

## **INTERNAL PARASITE CONTROL**

Manure and mud create habitats for insect proliferation and parasitic larval or egg maturation. Correct disposal and composting of manure are essential to limiting disease risk. In spring, larvae of internal parasites begin to mature into their infectious stages. Early spring is the time to get your horse back onto a strategic deworming plan, which is integral to a sound health program.

Dr. Ray Kaplan, an associate professor at the University of Georgia's College of Veterinary Medicine, has a focused interest in the area of infectious disease. He commented, "With few exceptions, every horse on every farm/stable should have a fecal egg count performed at least once per year; how often depends on a number of factors. However, when a stable first starts a FEC surveillance program, it may require two to



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four checks per year per horse. Deworming with a drug that is ineffective because the worms are resistant to it is a waste of money and threatens the health of the horse. But unless you are performing FECs at the time of treatment and again 14 days later (to detect parasite resistance to drugs), there is no way to tell if the treatment was effective.”

Kaplan is also a champion of formulating deworming programs to avoid drug resistance. “Resistance concerns exist for all anti-parasite drugs,” he said. “In the future, resistance problems will only worsen unless a new attitude and approach are taken where parasite control is viewed as it should be—as a medical issue that requires input from veterinarians.”

“Rotation is an outdated concept,” Kaplan continued. “There is a lot of drug resistance in worms, so rotating to a drug that does not work is illogical. Also, different drugs have different levels of effectiveness against different parasites and even different stages of the same parasites. And, many horses will consistently have very few or even no worm eggs in their feces, even if not treated.”

He said you need to “choose the right drug for the right horse at the right time. Blindly choosing a drug without knowing if it will work, or changing from a drug that works to one that doesn’t, does not make any sense.”

He stressed the only thing that slows resistance is treating less often, and what especially helps slow down the development of resistance is the avoidance of treat-

ing horses with low FECs that do not need treatment. Pasture management and at least twice weekly manure pickup in paddocks and pastures can minimize exposure to infective larvae.

Historically, a deworming program has centered on purge deworming pastes given at six- to eight-week intervals, or it’s involved use of a daily dewormer product. Kaplan recommended tailoring a deworming program for each horse. “How frequently a horse should be dewormed depends on many factors,” he explained. “People have become trained to think they can follow a simple recipe and the worm problems are gone. Unfortunately, the traditional approach to worm control in horses does not address the essential biology of the worms, and, therefore, quite often does a poor job controlling them. Furthermore, the need for treatment varies greatly between horses.”

He emphasizes that some horses with good immunity will remain healthy on a minimal deworming schedule, while other horses sharing the same pasture may have less immunity and require frequent deworming.

Tapeworms are best eliminated once or twice yearly with praziquantel in spring and fall. Kaplan explained, “Available information suggests that most transmission in most areas of the country occurs in the summer and fall. So, I recommend a treatment in late fall to clean out the tapeworms. If tapeworms are not noted as being a problem on a farm, then once-a-year treatment is probably all the horses need. However, if tapeworms are a known problem, then a second treatment in the spring is warranted.”

## INSECT CONTROL

With late spring and summer come insects, which can be vectors for disease. In particular, mosquitoes transmit viral neurologic diseases such as equine encephalomyelitis and West Nile virus.

Jessica Schurich is manager for a satellite office of Colorado Mosquito Control located in Loveland, Colo. She recommends using residential biological controls, such as fish that consume mosquito larvae and are practical for ornamental ponds, irrigation ditches, and watering ponds. In some Midwestern states, fathead minnows are the fish of choice, whereas *Gambusia* species are used in many Eastern states. Schurich encourages horse owners to contact local bait and tackle shops, or your state department of natural resources, to see which mosquito-eating fish species are native to your area.

“This way,” she said, “you don’t end up with non-native fish that prey on native populations, thereby disrupting the ecological balance of the community.”

She recommends stocking fish in May or June when mosquito activity begins to increase.

Different *Culex* species of mosquitoes prefer different habitats for laying eggs; in the western United States *Culex tarsalis* prefers tailwaters that are the result of irrigation practices, while in Eastern states one is likely to find *Culex pipiens*, a “container breeder.”

Eliminate any open containers that can hold even the smallest amount of water prior to mosquito season, and continually check throughout the spring, summer, and fall for others with standing water. Install gutters on barns and sheds and aim downspouts into an area with good runoff, and confer with experts on the best method of establishing good drainage in low-lying areas of your property that collect water.

Mosquito larvae develop as filter feeders, consuming bacteria and algae. Some female mosquitoes prefer a habitat with substantial organic debris.

“Any area that holds water, even as shallow and small as a hoof print, is capable of providing a viable habitat for mosquito larvae to develop,” she stressed.

*Culex* mosquitoes oviposit egg rafts on top of standing water. Schurich urges horse owners to clean water tanks regularly, as hay that remains in the tank after a horse drinks can create an attractive microhabitat for mosquito larvae. “So,” she said, “it is good sense to flush away stagnant water regularly to freshen it and to physically remove the egg rafts.”

Even if all containers of standing water are eliminated, there often still remain standing bodies of water in the ground that can be managed with mosquito “dunks” and “bits,” biological products containing

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*Bacillus thuringiensis* sub. *israelensis* (also referred to as BTi). BTi is a soil bacterium that can be applied in a granular form to the water surface to control mosquitoes. "Horse owners should reapply BTi weekly," Schurich urged. "If using dunks, it is best to break them into cereal-size pieces so they disperse better in the water." Larval mosquito control treatments are best continued until the first killing frost.

Permethrin insecticides are another useful tool to mitigate mosquito and fly populations. Spray all vegetation surrounding the stable and fences as a barrier treatment. Apply it with a thermal fogger, a boom sprayer, or a hand-held sprayer. Follow the label directions for application.

In the more hot and humid U.S. climates, median temperatures of 100°F along with high humidity shorten the mosquito life cycle from seven to 10 days to just three to four days. "While adult mosquito control spraying may be scheduled on a weekly basis in some regions or not at all in other areas, horse owners can use permethrin to decrease mosquitoes around their properties and thereby reduce the development of successive generations of mosquitoes," Schurich commented.

Continue fly and mosquito control in the summer. The use of insect repellents, fly



For effective deworming, choose the right drug for the right horse at the right time

sheets, and face masks minimizes the impact of biting insects and the diseases they might carry, including the aforementioned encephalitides and Lyme disease (carried by ticks). Some equine shampoos are designed to deter ticks, and tick powders are available.

Companies sell nonstinging wasps called parasitoids or fly predators that feed on in-

sect larvae. These control fly populations by reducing the number of flies developing to adult form. Owners or managers release fly predators on a monthly basis throughout the fly season until the first killing frost. Most adult mosquitoes overwinter in barns. Toward the end of autumn, Schurich recommended, "Check screens for holes and close up areas where mosquitoes could

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# ANNUAL CHECKLIST

In addition to the checklist below of concerns that require attention at different times of the year, plan on having monthly meetings with farm personnel and all boarders/owners to discuss protocols for bringing horses on and off the property and for minimizing commingling of different groups of horses on the property. Post signs (in both English and Spanish, when appropriate) explaining the specifics of these procedures.

## December/January/February

Optimize barn ventilation to minimize horses' exposure to respiratory irritants and allergens.

Water down hay to reduce dust and mold spores, if necessary.

Provide shelter or blankets in very cold and inclement weather to avoid chills.

Implement management practices to reduce rodents in and around the barn, and continue this throughout the year.

Keep tack, equipment, and blankets clean and avoid sharing these items to prevent spread of disease.

## March/April

Schedule an appointment with your veterinarian for spring immunizations, an annual Coggins test (for equine infectious anemia, or EIA), dental care, and sheath cleaning (or, clean the sheath yourself).

Implement a regular deworming program, assess its effectiveness with fecal egg counts, and consult with your veterinarian as to the best treatment strategy.

Clean regularly or remove any containers or vessels that can hold water where mosquitoes might propagate. Use mosquito "dunks" or mosquito larvae-eating fish in bodies of water.

Improve drainage of low-lying areas to deter water accumulation/mud that could be an insect habitat.

Set up manure composting areas to use prior to spreading manure on pastures; this will eliminate pastures as insect breeding grounds.

Order fly predators to arrive in monthly installments throughout the spring, summer, and fall.

Twice a week remove manure from paddocks and pastures to minimize parasite exposure.

Clean the barn and stable areas regularly and clean and disinfect after a

contagious disease has occurred and before using the barn again.

Clean and disinfect all tack, equipment, and horse trailers between uses with different horses.

## May/June

Stock ponds with mosquito-eating fish (e.g., fathead minnows or *Gambusia* species).

Clean water tanks weekly to remove rotting organic debris and deter insect breeding until a killing frost.

Use fogging/misting insecticide sprays in the barn and stable areas. Be sure to read and follow label directions for safe use of these products.

Cover your horse with a fly sheet and fly mask when necessary.

Trim ear hair to minimize insect irritation in horses.

Bathe your horse with a medicated shampoo to repel ticks, lice, and prevent/combat fungal infections. Repeat once or twice monthly during the summer months, if needed.

## July/August

Continue with deworming programs based on fecal egg counts and veterinary counsel.

Continue with manure management and insect eradication strategies.

When purchasing newly cut hay, evaluate for quality, and provide storage areas free of moisture and dust.

Check property (and hay) for decomposing organic matter or dead animals that could introduce botulism.

## September/October/November

Call your vet to arrange for fall immunizations.

Deworm against tapeworms, and again in the spring where necessary.

Ensure that hay is protected from the elements to avoid sun damage, mold, and dust.

It is important to remove attractants for rodents, as these creatures can carry bacteria and parasites on their bodies. To discourage their presence, make sure all feed containers are rodent-proof, using either metal or heavy plastic containers with lids. Sweep up daily to remove debris and feed spillage a rodent might eat or use for nesting. Secure garbage and discard it regularly. Eliminate any places in and around the barn that could serve as hidden nesting sites. Set out traps and/or have barn cats to keep rodent populations in check. —Dr. Nancy Loving



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hide out for the winter. It could also help to apply permethrin around the eaves and corners of the stabling area."

## WINTER-SPECIFIC CONCERNS

The cold air and frozen ground of deep winter help reduce disease risk in temperate climate zones. Because soil is often wet or frozen this time of year, avoid spreading manure on pastures where it will freeze or retain additional water that will add to runoff. Still, there are a few active parasites to consider: internal parasitic larvae are not likely to emerge at frigid temperatures, and horses aren't traveling as much and commingling at events and shows. But, a common consideration this time of year is the likelihood of viral respiratory infections. Autumn boosters are your horse's best protection against influenza and rhinopneumonitis viruses.

Dr. Ann Davidson, an assistant professor in the equine field service at Colorado State University's College of Veterinary Medicine, remarked, "It is often our inclina-

tion to close up stalls and barns in an effort to keep horses sheltered from cooler temperatures. However, ammonia accumulation from stalls and dusts and molds can lead to irritation of respiratory membranes. Good ventilation removes ammonia, stale air, and humidity. Simple management changes may decrease the incidence of respiratory problems.”

Davidson also mentioned common winter skin problems like rainrot, ringworm, scratches, and lice. “Some of these diseases are contagious, such as ringworm and lice,” she noted. “It is important to keep blankets, grooming equipment, and tack clean to help decrease the chances that diseases will be spread from horse to horse.”

### BRINGING IN NEW HORSES

Regardless of the time of year, horses are quite mobile, traveling between barns, counties, states, and countries. Certain steps can be instrumental in minimizing disease outbreaks where a new horse is introduced to a property with resident horses or at events where horses come from all over and commingle.

For a horse to be admitted to a farm or an event, it should have a current negative test (often called a Coggins test) for equine infectious anemia (EIA). The incoming horse should also have a certificate of veterinary inspection within the immediate time period prior to his transport. All incoming horses should be current on immunizations recommended by the attending veterinarian and up-to-date on parasite control.

If other diagnostic testing is required, it should be performed prior to the horse's entering the farm, especially if the animal has an unknown medical background or has a recent history of exposure to a disease. Examples include testing for *Streptococcus equi* (the bacterium that causes strangles), which can detect carrier horses, or requiring that a breeding stallion be tested for equine viral arteritis.

Traub-Dargatz encourages isolating all newcomers for a minimum of two to three weeks at a sufficient distance from resident horses. “The distance necessary is disease-dependent, and for some diseases we don't know how far is far enough, but make our best recommendations based on what is known,” she said.

Designate boundaries with clear signs and markings. Prevent contact between horses in isolation and others on the farm, not only by physical separation, but also by considering anyone or anything that might move between isolated and nonisolated horses, such as feeding and cleaning equipment, tack, and grooming tools.

Horses in isolation or those returning after commingling with outside horses should be monitored carefully for any signs of disease. Take rectal temperatures twice



Dunks are a good way to manage standing ground water

daily and inspect horses daily for signs of disease, such as cough, nasal discharge, loose feces, or fever. All findings should be recorded in a daily log. Traub-Dargatz recommended, “If there are any abnormal signs, contact the attending veterinarian as soon as possible in order to make immediate management decisions.”


All equipment, tools, bedding, and feed

containers used for newcomers should be kept separate from resident horses. Feed, water, and care for resident horses first each day, leaving the new horses until last, or, better yet, assign specific caretakers to handle only the incoming horses or those in isolation. Water sources should be separate, and contaminated cleaning solutions and bedding disposed of such that no further contamination of the premises can occur. Exercise newcomer horses after the resident horses have done their work; preferably, exercise the horses in separate areas entirely. Communication is paramount to the control of disease on a farm, so be sure that all biosecurity measures are clearly communicated to all personnel and signs are posted in both English and Spanish, when appropriate.

### TAKE-HOME MESSAGE

All the little details of horse management are combined to create a comprehensive disease program that provides the most healthful environment for your horse. Consult with your veterinarian about even the most basic of preventive care strategies, as ever-evolving scientific findings might continually modify methods of providing general equine health care to achieve the best results.

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