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A Series for Small-Scale Producers and Hobby Owners

Diseases that Affect Horses, Ponies, Mules, and Donkeys

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Zoonotic diseases are diseases that are transmitted from animals to humans. Foreign animal diseases are those that are not currently in the U.S.

These diseases can harm U.S. agriculture, farming and ranching, and the human population.

This document provides an overview of equine diseases and ways to prevent their spread. It includes recommended Best Management Practices. In this document, the term horse includes horses, ponies, donkeys, mules, and other equines.

Diseases and Their Prevention:

- **Tetanus (Lockjaw)**: Any time the skin or hoof is damaged, horses are at risk of developing tetanus. The tetanus organism lives in the horses' intestinal tract. If a horse is injured or has surgery without a prior or recent vaccination against tetanus, it may contract tetanus or lockjaw. A horse that has tetanus or lockjaw will die. **Prevention**: Annual vaccination of tetanus toxoid vaccine and/or a tetanus antitoxin injection within 24 hours following the injury or surgery.

- **Rabies:** Rabid horses may bite and strike viciously and be savage; people have been killed by rabid horses. Rabies is a zoonotic disease that affects the brain. It is transmitted by a bite from a rabid animal (skunks, raccoons, foxes, dogs, cats, and other animals). Humans can catch the disease if they are bitten by a rabid horse and must immediately undergo treatment for several weeks. A rabid horse will die. **Prevention**: Annual vaccination. Broodmares should be vaccinated before breeding.

- **Encephalomyelitis:** EEE (Eastern equine encephalomyelitis), WEE (Western equine encephalomyelitis) and VEE (Venezuelan equine encephalomyelitis) These zoonotic diseases attack the brain and spinal cord. Mosquitoes pass the disease from birds and rodents to horses and humans. Humans do not get EEE or WEE from horses, but humans can get VEE from mosquitoes carrying the disease from horses. If the horse is infected with the disease, it may die or have permanent damage to the nervous system. **Prevention**: Annual or semi-annual vaccination against EEE and WEE. Vaccinate against VEE as recommended by your veterinarian.

- **West Nile Virus**: This zoonotic disease affects the brain. It is passed by a mosquito bite from birds to horses, other birds and other animals. Infected horses may die or have permanent damage to the nervous system.
Prevention: Annual vaccination.

- **Flu (Equine influenza)**: This causes a high fever, dry, hacking cough, depression, and weakness. The horse

stops eating and has a "snotty" nose. Horses are usually better in 3 days, but may have symptoms up to 6 months. It is generally only fatal to donkeys and zebras, but horses may have complications including bronchitis and pneumonia. **Prevention**: Vaccinate every 3-6 months.

• **Rhino (Rhinopneumonitis) or Virus Abortion**: Equine Herpes Virus: This disease is characterized by a pus-like, yellowish "snotty" nose", affected foals may have a dry cough, infected broodmares may abort. Often infected foals develop pneumonia and may die from that. Horses on breeding farms and performance horses are at high risk of getting this disease. **Prevention**: Vaccinate every 6 months, particularly if the horse is under 5 years old. Pregnant broodmares should be vaccinated against Virus Abortion in their 5th, 7th, and 9th month of pregnancy.

• **Potomac Horse Fever**: Symptoms of infected horses include violent diarrhea, colic, dehydration, depression, and the horse stops eating. Horses are exposed to the disease when they ingest (eat or drink) parts of insects, particularly mayflies, dragonflies, caddis flies, damselflies, stoneflies, snails, or their larvae. Vaccinated horses that contract the disease usually live, unvaccinated horses may die. **Prevention**: Annual vaccination. Do not let horses drink from ponds and streams. Keep water buckets and water tanks clean and free of dead insects or insect larvae. In July and August when these insects are flying around, turn lights off at night, cover the grain and hay, and verify there are no dead insects on feedstuffs before feeding.

• **EVA (Equine Viral Arteritis) for breeding horses**: This disease is spread through breeding stallions, fresh-cooled, or frozen semen. **Prevention**: Test stallions 28 days before the breeding season. Breed only to "clean" mares or stallions. Test AI (artificial insemination) semen, especially if it is imported and ask AI stallion owners if the stallions have been tested for EVA. Annually vaccinate breeding stallions and open mares. Note: vaccinated mares may shed the virus for a short time, so be sure they are quarantined from pregnant mares. Do not vaccinate mares in the last 2 months of pregnancy or foals under 6 months.

• **Rotavirus A for foals:** The symptoms of this disease is severe diarrhea in foals under 5 months old. Untreated foals may die. **Prevention**: Vaccinate pregnant broodmares at 8, 9 and 10 months. Keep visitors away from young foals, wash your hands and sterilize your boots when handling young foals.

• **Strangles (distemper)**: Infected horses commonly cough, have a yellow "snotty nose", and swollen throat glands with pus draining. Otherwise healthy horses usually survive a strangles infection. Pastures used to house infected horses will remain contaminated for months. **Prevention**: Annual vaccination for mature horses and administer a nasal spray vaccination for 4 week old foals. Quarantine incoming horses and isolate those who appear sick. Wash your hands, clean and disinfect your boots, wear latex or plastic gloves, and change clothes between handling quarantined horses and resident horses.

• **Botulism (food poisoning)**: Horses become infected by eating bad, rotten, or moldy grain, hay, silage, or dead animals that are in the grain or hay. Most affected horses die within 2-3 days. Shaker foals may result when lactating broodmares eat small amounts of bad grain or hay. **Prevention**: Verify that all grain and hay is free of mold, rotten spots, or dead animals. Be careful, or avoid, feeding rolled hay bales or silage to horses – if you must feed these, check them closely. Vaccinate all broodmares against botulism and ask your veterinarian about vaccinating foals.

• **EPM (Equine Protozoal Myeloencephalitis or the "Opossum Disease")**: Horses become infected with this zoonotic disease by eating opossum "poop" or feces on or in the grain, hay, or grass. Infected horses often have a lack of limb coordination or hind limb lameness. Infected horses may die. **Prevention**: Trap and remove all opossums and place barriers around stored grain and hay. Be sure that opossums have not touched the horse's hay, grain, water, or feeding equipment. Do not use feed or hay that has "poop" or feces on it.

• **Adenovirus**: The disease presents as a mild cough and breathing disorder in newborn foals that can lead to a serious illness in foals who do not receive antibodies from their dam. It can cause pneumonia in Arabian foals that have CIDS. **Prevention**: Washing hands, foot baths and cleanliness around newborn foals.

• **Clostridial Enterocolitis**: This disease affects horses that have had a change of diet, been on antibiotics, or have not eaten hay or grass for a long time. Symptoms include severe or bloody diarrhea, colic, and a swollen abdomen (belly). **Prevention**: Avoid sudden feeding changes and provide ample forages in the horse's diet. Administer oral probiotics to foals soon after birth.

• **Pigeon Fever (Dryland Heaves or Dryland Strangles)**: Infected horses have draining pus, and/or deep sores or abscesses along the midline. The chest looks like a pigeon's breast because of the swelling, sores and abscesses in the "V" or pectoral muscles. Cattle can have the same form of this zoonotic disease, so it may spread between

cattle and horses that are in the same pasture. The horse can get the disease through wounds, broken skin, mucous membranes, and possibly houseflies and horn flies. The disease is found in most of the western U.S. **Prevention**: Consult your veterinarian. Isolate sick horses, disinfect their stalls and equipment, and collect and disposed of all pus as biohazardous material. After handling infected animals, wash your hands, clean and disinfect your boots, and change clothes.

Report any incidence of the following Zoonotic or Foreign Animal Diseases to your Veterinarian who will notify your State or Federal Veterinarian

- **Brucellosis**: The infected horse has fistulous withers or poll evil. Affected horses probably do not give this disease to other animals or humans, but it can be spread by cattle, goats, wild pigs, sheep, deer, and related animals to horses or humans. **Prevention**: Keep horses away from infected cattle, sheep or goats. Fence pastures against wild pigs if they are in your area. In the U.S., cattle that test positive are destroyed.

- **EIA or Swamp Fever (Equine Infectious Anemia, the "Coggins Test" disease)**: This disease is spread by mosquitoes, horse flies, deer flies, blood, saliva, milk, body fluids, and re-using needles and syringes. **Prevention**: Perform an annual Coggins Test. Only take your horse(s) to events and facilities that require proof of current negative Coggins tests. Dispose of all used syringes and needles in a sharps (medical waste) container. Isolate and brand or destroy all Coggins Test positive horses in accordance with state and federal laws.

- **Vesicular Stomatitis**: Affected horses have blisters on the tongue, gums, lips, or coronet band. This zoonotic disease affects horses, other livestock, wild animals, and humans. It is spread by biting flies and gnats, contact with the blisters or saliva of infected animals, and buckets, equipment, trailers, feed, bedding, and stalls on which the sick horse drooled. Humans can get the disease from horses. **Prevention**: Control insects. Keep stable areas and equipment clean. Use individual feeders and water containers. Quarantine incoming horses and isolate those that appear to be sick. Wash your hands, clean and disinfect your boots, wear latex or plastic gloves, and change clothes between quarantined horses and resident horses.

- **African Horse Sickness**: The disease is mainly in Africa, it is spread through midge and mosquito bites. There are three different forms which may include a variety of symptoms including a high fever, depression, cough, frothy discharge from the nostril(s) and mouth, difficulty breathing, swelling of the head and neck, "pink-eye", and pain. **Prevention**: Consult with your veterinarian about vaccinating and potential exposure when participating in international events. Quarantine all horses entering the U.S. from Africa for 2 months, then test.

- **CEM (Contagious Equine Metritis)**: This is an acute, highly contagious venereal disease, found mainly in Europe. Infected mares often have milky pus draining from the vulva 10-14 days after breeding. They may abort or fail to get in foal. Infected stallions and carrier mares have no signs of the disease but will spread it. **Prevention**: Quarantine and test all imported fillies, mares and stallions. Do not breed CEM positive horses until they are treated and tested CEM negative or "clean". Use strict hygiene during all reproductive procedures and breeding including wearing disposable gloves, washing hands, and cleaning and disinfecting instruments. Call your veterinarian if you think horses on your farm or at the breeding stable have this disease.

- **Anthrax**: Affected horses have a high fever; colic; swollen areas on the neck, throat, and belly; chills; and blood from the rectum, followed by fast breathing, stupor, staggering, coma, and death. The disease is spread by contact with nasal discharges, sneezing, direct contact, eating contaminated grass, and by insects (soil, food, and drink). This zoonotic disease affects herbivores including cattle, sheep, goats, camels, antelopes, and horses. It can be spread to people by infected animals or their products. Spores in the soil can infect animals for years. **Prevention:** Vaccinate 2-4 weeks before seasonal outbreaks in areas known to have anthrax.

- **Piroplasmosis**: Horses become infected by a tick bite or by an injection with a re-used needle or syringe that was used on an infected horse. Horses become weak and stop eating 7-22 days after exposure. In severe cases, horses may have a fever, anemia, yellowish coloration inside the mouth or eyes, a swollen abdomen (belly), or may have reddish urine. **Prevention**: Dispose of all used needles and syringes in a sharps container. Do not re-use needles and syringes. Control ticks. Horses known to test positive for Piroplasmosis should be quarantined at least 300 feet away from uninfected horses. Check infected horses carefully for ticks and remove and destroy all ticks before moving horses from quarantine and when returning horses to quarantine.

Summary:

Vaccinate horses against the diseases that are found in your location or locations where you plan to travel with your horse. Many vaccinations are sold in 2-way or 5-way doses which may help you save money by vaccinating against several diseases with one dose. Ask your veterinarian to develop a recommended vaccination schedule to fit the unique needs of your horses. The following table may help you in making your decisions.

A Comparison of Vaccinating Against Common Diseases vs. Treating Disease Outbreaks:

Disease	Annual Cost[1] of Vaccination	Cost[1] of Treatment	Mortality Rate of Infected Horses
Tetanus*	$2-$20	$2000+	~100%
EEE*	$2-$20	$2000+	75-90%
WEE*	$2-$20	$2000+	20-50%
VEE	$2-$20	$2000+	75-90%
Rabies*	$10-$20		~100%
West Nile Virus*	$35-$45	~$5000	~35%
Flu	$5-$50	~$200	low
Rhino	$15-$25	~$200	low, high in foals
Botulism	$20-$50	~$5000-$8000	~100%
Potomac Horse Fever	$25-$40	~$4000-$5000	75-90%
Strangles	$20-$50		low

**The American Association of Equine Practitioners suggests that at a minimum all horses should be vaccinated against these common, preventable diseases. Vaccination Guidelines, http://www.aaep.org/vaccination_guidelines.htm*

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[1]2011 cost estimates obtained from equine veterinarians in the Lexington, KY region.

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