

Breeding Your Mare

by Sarah Sampson, DVM

The birth and raising of a healthy foal can be a very rewarding experience, but it can be a long, hard road that results in a healthy foal. Regardless of whether you are a first-time or an experienced breeder, mare management can be a challenge. The loss of a pregnancy or a foal, or an inability to get a mare in foal, can be emotionally and economically devastating.

As a breeder, you must be clear as to why you want to breed your mare. It can be difficult to be objective about a mare's strengths and weaknesses and choosing an appropriate stallion is important. Your veterinarian can help in determining the ability of your mare to become pregnant and carry a foal to term. It is important that she be in good physical condition and be current on vaccination and deworming. A breeding soundness evaluation (BSE) will help in the decision and preparation to breed. During a BSE, the veterinarian will look at the condition and conformation of the mare and obtain a complete health and breeding history from you. Palpation and ultrasound of the reproductive tract is done, as well as a uterine culture and cytology. As mares age, it may become necessary to do a uterine biopsy.

In early Spring, mares go through a "transition" period in which their estrous cycle is erratic and ovulation is not guaranteed. Light therapy and hormone treatment may help decrease the length of the transition period if early conception is wanted.

Options can be discussed with your veterinarian. Mares can be bred by live cover by a stallion, or by artificial insemination using chilled or frozen semen. What is best for your mare will depend on many factors, as well as stallion options available. There are many breed regulations as to how breeding can/cannot occur and it is important that you become familiar with the breed and the particular stallion of interest.



Once your mare has undergone a BSE and is up to date on vaccines and deworming, she can be monitored for signs of estrous or she can be "short-cycled" to bring her into estrus at a predictable time. Once a follicle starts growing on an ovary (ies), insemination can then be timed to coincide with ovulation. Often, ovulation is induced using hormone shots, to ensure proper timing.

Once your mare has ovulated, a pregnancy check can be done 14-15 days from the day of ovulation, using a trans-rectal ultrasound. Mares must be checked by day 16 post-ovulation to make sure she does not have twins. Twins are too dangerous to let go to term in mares.

Successful breeding of a mare is really a team effort between mare owner, stallion manager and veterinarian. Good luck!

Fly Spray ~ Our Very Own Recipe!



Looking for a natural fly spray recipe? Here at Northwest Equine, we recommend trying out this spray...

- 12 ounces distilled water
- 12 ounces white vinegar
- 3 ounces "Skin So Soft" (by Avon)
- 1 ounce pure citronella oil (health food store)

Mix well and spray on a small area, check a few hours later for any swelling or redness, then spray generously over entire horse, being careful to avoid

When Does My Horse Need A Chiropractor?

by Renee Meronek, DVM

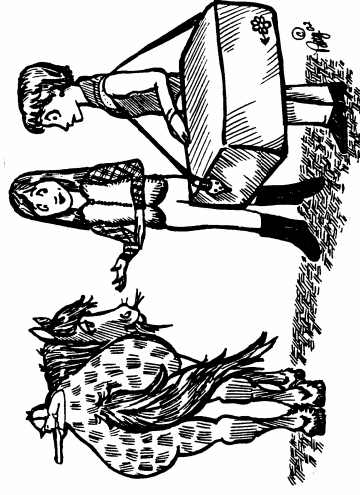
Horses that have been lame or have had a traumatic injury or fall, may use their bodies in an abnormal way in order to compensate. This abnormal use may cause chiropractic subluxations, which cause decreased performance and pain in your horse.

Following are some helpful hints or signs that your horse may be trying to tell you she/he is in need of additional attention:

If you have any questions regarding your horses health or per-

- Showing discomfort or irritation when saddling
- Wringing tail, pinning ears, or bucking when riding
- Evasive type maneuvers such as extending head or hollowing back
- Shortened stride
- Difficulty flexing at poll
- Showing discomfort when riding
- Reluctance to work, especially if your horse normally enjoys it.
- Difficulty bending or collecting

*Gosh, I'm so glad you could fit us in!
-his back is getting sore and he's
developed quite a "Hunter's Bump".*



formance, please do not hesitate to contact your veterinarian. If you would like more information regarding chiropractic please feel free to call me at (360) 687-9700 or e-mail your questions to RenYer@aol.com.

Recommended Vaccination

by Sarah Sampson, DVM

Appropriate vaccinations play an important role in the control of infectious disease. Basically, vaccination increases an animal's resistance to specific disease producing agents. When a horse is vaccinated it is exposed to an antigen, which is usually a bacteria, virus, or toxin that has been altered so that it can no longer cause disease. This exposure stimulates an immune response so that in the future the horse can rapidly respond to the agent. Vaccination does not guarantee 100% protection against disease, and it is important to have management practices that minimize stress and limit potential exposure to infectious agents.

There are many vaccines available, which are constantly being improved, and it is important to develop a vaccination program suitable for your horses and to periodically review that program with the help of your veterinarian. Several factors should be considered:

1. The likelihood of the horse getting the disease, which varies with location, season, age of horse, and management practices.
2. The potential severity of the disease.
3. The safety and efficiency of the vaccine.

Tetanus (lockjaw): A disease of the nervous system caused by a bacterium "*Clostridium tetani*". This is a normal inhabitant of the intestinal tract of horses and of soil. Infection is usually through a wound, deep punctures being most susceptible as they provide an ideal environment for bacterial growth. The toxin causes spasms and paralysis and usually results in death. This is a highly fatal disease and all horses should be vaccinated yearly.

Encephalomyelitis (sleeping sickness): This disease is caused by a virus and there are 3 types that can affect horses, all of which have individual vaccines:

1. Eastern equine encephalomyelitis (EEE)
2. Western equine encephalomyelitis (WEE)
3. Venezuelan equine encephalomyelitis (VEE)

The viruses are transmitted to horses by mosquitoes or occasionally other blood-sucking insects from birds and rodents. It generally occurs in warmer months when the population of insects is greatest. Signs include incoordination, blindness, inability to swallow, and paralysis. The prognosis is poor, and can result in death in 90% of affected horses.

Influenza (flu): This is among the most common infectious respiratory disease. It is caused by varying strains of influenza virus and is highly contagious. Signs include fever, inappetence, depression, cough, nasal discharge, muscle soreness. A new intranasal vaccine has recently been developed that is thought to offer better protection. Vaccination is highly recommended for horses that have significant exposure to new horses.

Herpesvirus (rhinopneumonitis): There are two herpesviruses that are of major importance:

1. EHV-1
2. EHV-4

Both can affect the respiratory tract, causing disease which varies

Toxic Plants

by Sarah Sampson, DVM



There are many poisonous plants in North America. Plant toxins are secondary products of plant metabolism and are not essential to plant growth or reproduction. Many plant toxins are bitter or cause strong reactions in animals resulting in reduced grazing of the plant and reduced chance of survival of the plant predator (ie, horse). Many factors can affect how well a poisonous plant survives in any given year or season:

Any adverse climatic conditions such as temperature

Agricultural practices such as fertilization or treatment with herbicides.

Animal management practices such as:

nutrient deficiencies (may cause abnormal appetites leading to consumption of unusual or toxic plants)

overgrazing (causes inadequate grass and leads to animals eating less palatable toxic plants, and increases number of weeds in the pasture)

confinement (curiosity or boredom can lead to consumption of toxic plants.

Familiarity with indigenous toxic plants is very important for every horse, donkey and mule owner. By knowing what plants are poisonous you can work to remove them from your property or at least prevent your animals from having access to them.

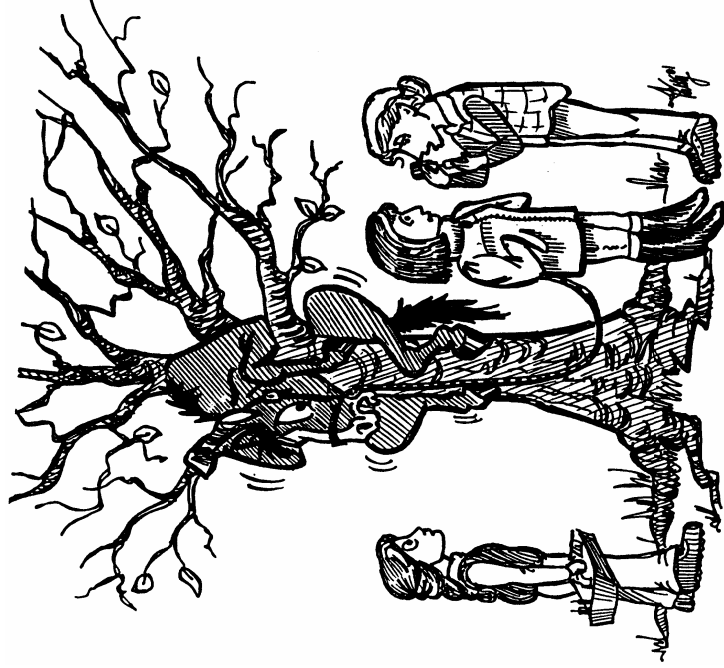
Plant identification manuals appropriate to the type and range of toxic plants in your area are available from state agricultural colleges or agricultural extension services, as well as most veterinarians.

Following is a list of the more common poisonous plants in North America. I recommend all horse owners become familiar with these and be able to recognize them. Toxic plants can be wildflowers, weeds, cultivated plants or trees:

It is important to know the plants on your property, but also to be aware of the plants on surrounding properties and in any areas you may ride or trailer to with your horse. Try not to be overwhelmed by this huge list, but use it as a guide to start ensuring

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|---|---------------------------|
| 1. Blue Flax | High Toxicity |
| 2. Bracken Fern | Low Toxicity |
| 3. Buttercup | Variable toxicity |
| 4. Death Camas | Moderate to high toxicity |
| 5. Fiddleneck | Moderate toxicity |
| 6. Foxglove | High toxicity |
| 7. Jimsonweed | Moderate toxicity |
| 8. Larkspur | High toxicity |
| 9. Locoweed | Low toxicity |
| 10. Milkweed | High toxicity |
| 11. Monkshood | High toxicity |
| 12. Nightshade | Moderate toxicity |
| 13. Poison Hemlock | High toxicity |
| 14. Tansy Ragwort/groundsel/hounds tongue | Moderate toxicity |
| 15. Sagebrush | Low to moderate toxicity |
| 16. St. Johnswort/Klamath Weed | Moderate toxicity |
| 17. Water Hemlock | |
| 18. Yellow Star Thistle/Russian Knapweed | Very high toxicity |
| 19. Alsike Clover | Low toxicity |
| 20. Avocados | Moderate toxicity |
| 21. Azalea/Laurel/Rhododendron | Moderate toxicity |
| 22. Johnson Grass/Sudan Grass | Moderate toxicity |
| 23. Oleander | |

that your horse lives free of toxic plants by starting with those that are familiar to you and working your way through the list to the not so familiar plants. Please remember that even fallen leaves and clippings of plants can be toxic.



Recommended Vaccination

continued

Rabies: This is a viral disease transmitted by saliva-contaminated wounds. The most common reservoirs are bats, skunks, raccoons, and the red fox, less common are dogs, cats and horses. It can also be transmitted by inhalation of droplets, orally, or transplacentally. This virus infects the central nervous system. Incubation period varies from 9 days to 1 year in horses. Clinical signs vary tremendously from lameness, all the way to death. You can see behavior changes, ataxia, paralysis, colic, anorexia, paresis and fever sometimes.

Potomac Horse Fever (PHF): this is caused by *Ehrlichia risticii*, an intracellular rickettsial parasite of white blood cells. Usually see disease during warm months (May-September). This is a non-contagious disease. Infection may occur through blood contamination or by ingestion. Signs include fever, depression, anorexia, colic, diarrhea. Infrequently, laminitis is seen. It can be up to a 30% fatality rate. Vaccination does not provide absolute protection but decreases severity of clinical signs and results in a lower mortality rate. Once signs are seen, the disease progresses rapidly and the horse may die.

West Nile Virus: This is a new virus that has shown up in the U.S. in the last few years. It is transmitted from birds to horses and humans by mosquitoes. There is no transmission between

horses and humans, they are incidental hosts and cannot spread the disease. Most human infections are mild, but more severe infections have been seen in the elderly (>60). Presently, approximately 25-30% of infected horses die. Signs include depression, weakness or paralysis, muscle fasciculations, inability to rise, catalepsy. It is most often seen in summer/fall. Usually clinical signs last 3-5 days and the horse either recovers (75%) or dies. The best way to lessen chances of disease is to control mosquitoes—get rid of stagnant water, clean clogged roof gutters yearly, use pesticides, mosquito dunks, stall horses indoors at dawn and dusk, put fans in stalls. Clean and chlorinate swimming pools. There is now a conditionally approved vaccine available that has been used in horses on the east coast with no serious side effects. Efficiency of vaccine is not known.

(See vaccination recommendation chart on reverse side of page.)

Coggins Tests, Health Certificates

Planning a trip with your horse? Here are a few things to consider prior to transporting your horse over state lines or entering into competition:

Coggins testing, designed by Dr. Leroy Coggins, screens horses for Equine Infectious Anemia (EIA), also known as swamp fever. Most, if not all, states require a negative Coggins test before a horse may be transported across state lines. Many competitions and sales require a negative Coggins test for all horses entered. Depending on the state or competition, this negative test must have been obtained during the previous six months. The EIA virus is spread through the blood of infected horses, and infects only horses. Biting insects, especially horse flies and deer flies, carry the virus from horse to horse. The Coggins test is simple, inexpensive, and well worth the peace of mind that comes from knowing your horse(s) remain negative for EIA.

Health Certificates - When you are transporting your horse nationally, or internationally, you must have a current health certificate completed by a veterinarian which states that your horse is healthy and free of contagious diseases. Depending on your destination, your health certificate will be valid for either 30 days or 6 months. Negative Coggins results are to be included on the certificate. It's a good idea to know what the regulations are from state-to-state, in Canada or any other country in order to be prepared in the event you are stopped when crossing boundaries.

Livestock Identification/Brand Inspections - At Northwest Equine we have two veterinarians certified to complete Brand Inspections. (Not all veterinarians are certified.) Brand Inspec-

tions are required on all horses moving over state lines. They function as a "proof of ownership". There is a possibility of a large fine if you do not have proof of a brand inspection when you are traveling. This is necessary on all horses, not just those that have brands!

One Way/No Return inspections are performed prior to the movement of horses to an out of state destination.

For those who frequently transport horses out-of-state, there are two popular options:

A yearly inspection is valid for twelve months from the time of issue.

A lifetime inspection is valid until such time as the horse is sold. At the time of inspection you will be given a temporary certificate and a permanent ID card will be mailed to you by the Olympia office of the Department of Agriculture.

For more information contact your veterinarian, or the Washington State Department of Agriculture in Olympia.

& Brand Inspections

Table 1: Vaccination recommendations for adult horses. *

Use of Horse	Tetanus	Encephalomyelitis (EEE,WEE)	Herpesviruses (EHV-1,EHV-4)	Equine Influenza	Potomac Horse Fever (PHF)	Rabies	Strangles
(Pleasure Horses with other horses (minimal contact)	Annual	Annual, Spring	Optional – biannual, may booster before likely exposure	Optional – biannual, may booster before likely exposure	Annual	Annual	Annual
Show Horses (significant contact with other horses at shows or through stabling)	Annual	Annual, Spring	Every 3 months	Every 3 months	Annual	Annual	Annual
Pregnant Mares	Annual, 4-6 weeks prepartum	Annual, Spring (timed 4-6 weeks prepartum)	Inactivated EHV-1 vaccine-5,7 and 9 months of gestation; EHV-1 and EHV-4 4-6 weeks prepartum	Biannual with one booster timed 4-6 weeks prepartum	Annual (timed 4-6 weeks prepartum)	Annual, after foaling	Only if exposure likely after foaling

*All horse that have been previously vaccinated should receive a primary immunization series according to the manufacturer's recommendation for the vaccine. For most diseases, this involves a series of 2-3 vaccinations.

Table 2: Vaccination recommendations for Foals, Weanlings and Foaling Mares.

Mares	Foals*	4-6 weeks prefoaling	5 months	6 months	7 months	9 months	10 months	12 months
Tetanus	X	X	X	X	X	X	X	X
EEE/WEE	X	X	X	X	X	X	X	X
Influenza	X	X	X	X	X	X	X	X
EHV-4, EHV-1	X**	X	X	X	X	X	X	X
Rabies	Not while pregnant	Not while pregnant	X	X	X	X	X	X
PHF	X	X	X	X	X	X	X	X
Strangles	Not while pregnant	Not while pregnant	X	X	X	X	X	X

** Pregnant mares should also be vaccinated with an inactivated EHV-1 vaccine at 5, 7 and 9 months of gestation to help prevent abortion due to EHV-1.