



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Optimal vs Maximal Growth

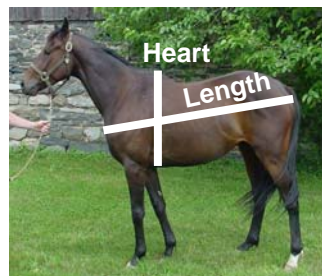
By: Marcia Hathaway, PhD, U of M

Maximal growth of the horse is different than optimal growth of the horse. Feeding a young horse so that it is growing at the maximum rate possible is undesirable because during the growth process bone mineralization, which is responsible for the strength of the bone, lags significantly behind bone lengthening (at 12 months of age the young horse could be expected to have reached approximately 90 - 95% of its mature height but only about 75% of its mature bone mineral content). Ideally, the young horse should gain weight at a rate that its developing bones can easily support. However, overfeeding (especially energy) can cause a young horse to gain weight so fast that its bones do not have the structural strength to support its weight and/or the rapid weight gain can exacerbate other skeletal anomalies. Under these conditions, the incidence of developmental orthopedic

disorders (DOD) and unsoundness increases. This scenario can also occur during periods of uneven growth. For example if a horse which was underfed and growing slowly is switched to an adequate diet which allows it to grow quickly, the probability of DOD occurring is increased. Foals between the ages of 3 months and 9 months of age are at greatest risk for the incidence of DOD. Ideally, the young horse should be fed so that it grows at a moderate, steady rate. Recommended rates of average daily gain for horses are found in the National Research Council (NRC) Nutrient Requirement for Horses (2006) publication (to order the publication, go to www.nrc.edu). Recommended average daily gain values for horses of different mature body weights range from 0.28 - 0.39% and 0.15 - 0.21% of the horse's body weight for weanlings and yearlings, respectively. Feeding a young horse so that it grows at a moderate rate does not compromise the

eventual size of the horse. Consequently, you do not have to be concerned that feeding the weanling and yearling for a moderate rate of growth will result in a smaller horse at maturity. Monitoring the horse's body weight using a scale or a measuring tape are two ways to track growth over time. With a tape, measure the circumference of the horse's heart girth and the length from point of shoulder to point of buttock. The measurements and the following equation can be used to closely approximate the horse's weight.

$$\text{lb body wt} = \frac{[\text{heart girth (in)}]^2 \times \text{length (in)}}{301}$$
 (for yearlings) or 280 (for weanlings).



Ask the Expert

By: Roger Moon, PhD, U of M

Q: How can I protect my horse from ticks?

A: Given horse skin can be quite sensitive, it is best to stay ON LABEL! There are some oral pastes like ivermectin and moxidectin, which will produce blood titers high enough to kill feeding ticks. Pour or spray-ons for horses are more difficult to recommend. If one were worried about ticks on horses, keep them out of areas where ticks will be abundant. Such areas include densely vegetated (tall grass, shrubby ground) habitats. Dry paddocks and grazed pastures inside fences should not be a problem. Before riding into such areas, dose legs with a permethrin-based product (again, only if formulated for use on horses), which will repel ticks before they get attached.

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Up Coming Events

Equine Center Update
To view the latest Equine Center Newsletter, *Equine Connection*, go to www.cvm.umn.edu/umec/news

Hands-on Pasture Workshop

Milaca, MN
Thursday, June 14th
5:45 pm to 9:00 pm
Contact Lynn at 320-983-6120 to register.

Fact Sheets Available

The following fact sheets are now available for viewing and purchase on our website www/extension.umn.edu/horse

NEW FACT SHEETS

- Common MN Horse Pasture Grass and Legume Species
- The 11 Primary Noxious Weeds of Minnesota
- Care of the Broodmare.
- Management of Established Pastures.
- Nutrition for Weanlings and Yearlings.

New 4-H Helmet Rule

All 4-H'ers participating in any 4-H sponsored mounted activity are required to wear ASTM/SEI approved protective head gear. For more information, visit: www.mn4hhorse.com



We have received numerous questions regarding water quality and tank cleaning. Most people have inquired about using bleach as a tank cleaner or water chlorinator. Tanks can be emptied, scrubbed clean, rinsed with a 10% bleach solution, rinsed twice more with water, and then refilled for immediate use. Alternatively, bleach can be added to existing water in a tank. If regular household bleach is used in



Cleaning Water & Tanks

By: Marcia Hathaway, PhD, U of M

recommended quantities, followed by a waiting period prior to consumption, it can be an effective means of disinfecting water tanks. The chlorine will dissipate during the waiting period so you don't have to be concerned about your horse drinking chlorine. Table 1 shows how much bleach (be sure to always use unscented bleach products) to add to varying amounts of water to disinfect relatively clean water. After the bleach treatment, let the water stand for at least an hour, before allowing the horse to drink. If the water is cold

(less than 10°C or 50°F) increase the waiting period to two hours. If you are treating water that was obtained from a lake, stream, or shallow well that may be contaminated with chlorine-resistant parasites from animal droppings, double the amount of bleach and wait for 2 hours before allowing your horse to drink. Water tanks need to be cleaned frequently, even in the winter, to avoid algae buildup (which will decrease voluntary water intake and could be toxic) and unsanitary tank conditions. Strict

adherence to recommended levels of bleach and the subsequent waiting time need to be followed in order to avoid over application, which can lead to toxicity.

Table 1. Amount of bleach needed to disinfect water.

Gals. of Water to Disinfect	Amount of Bleach Needed*
1	2 drops
5	11 drops
50	1 3/4 tsp.
100	3 1/2 tsp.
500	6 Tbs.

*Will produce water with about 2 parts per million of chlorine.

Many horses and ponies can live into their 20's or even 30's with good health care. These equine senior citizens play many roles for their owners, providing trustworthy mounts for new riders, children, people with special needs, and as companions to other horses, and their owners. Like people, their health needs shift as their bodies age.

Care of Elderly Horses

By: Julie Wilson, DVM, U of M

Digestive Tract: Dental issues arise as teeth wear out or are lost. Diminished absorptive capacity of the intestinal tract can lead to weight loss or loose manure. A higher likelihood of some types of colic such as small intestine obstruction by a lipoma (fat tumor) requires prompt attention.

exercise. Laminitis (founder) may occur if the horse develops Cushing's syndrome. Muscle wasting may develop, particularly over the horse's topline.

medical and environmental management as they age.

signs, including poor shedding of winter hair, premature winter coat in the fall, greasy skin, increased thirst and urination, founder, and increased susceptibility to infections.

Musculoskeletal System: Arthritis of multiple joints may cause stiffness or limit the range of motion with

Immune System: A mild reduction in efficiency of response to microbes leads to increased susceptibility to infections. This vulnerability is significantly greater if the horse develops Cushing's syndrome, which causes high blood levels of cortisol, a hormone which further diminishes the immune system's responsiveness.

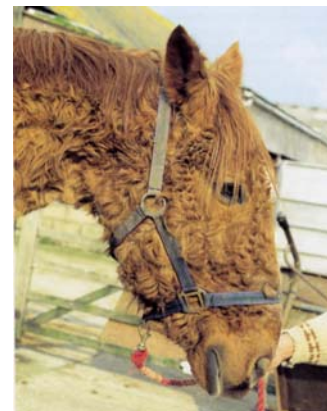
Reproductive System: Fertility in both mares and stallions declines.

Cardiovascular System: Age related changes may impact the heart or blood vessels, leading to heart failure or sudden death if a major vessel ruptures.

Nervous System: Coordination may diminish slightly, resulting in a decline in agility. Arthritic changes in the neck or degeneration of the spinal cord can result in progressive incoordination.

Endocrine System: Abnormal hormone production by the pituitary gland at the base of the brain results in Cushing's syndrome, which is characterized by progressively more severe

Photo of an elderly horse with Cushing's Syndrome.



Next month, health care recommendations for elderly horses will be discussed.