



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Ventilation Systems for Horse Barns - Part II

Natural Ventilation Systems. The simplest system is an open front shed, pointing to the south. This allows the horse to get in out of the wind and/or rain and snow. This is adequate for the horse as long as they are well fed and acclimated to the current weather conditions.

An enclosed naturally ventilated barn must have sidewall vents or eave openings (inlet) and a ridge or roof chimney openings (outlet). Conditions inside these enclosed facilities are typically at or slightly above outside temperatures, year round, but are generally draft-free and when combined with dry bedding can provide a comfortable environment for mature and healthy horses. The advantage of natural systems is economics, but control of airflow and air distribution is not as good. These barns should have heated water lines and tanks to prevent them from freezing during cold conditions.

Mechanical Systems. A mechanically ventilated barn is design for year around conditions. During cold weather, minimal ventilation is needed to remove moisture generated from respiration and

evaporation of spilled drinking water and urine and feces.

This cold weather ventilation rate should be 25 cubic feet of air per minute (cfm) per 1,000 lbs of horse. This cold air exchange rate is best provided by a continuously running sidewall exhaust fan. During mild weather, a second fan(s) that delivers an additional 100 cfm/ 1,000 lbs (total of 125 cfm/1,000 lbs of horse) with an indoor temperature controller (thermostat) set at about 50 F. During warm/hot temperatures another exhaust fan(s) sized at an additional 200 cfm/1,000 lbs (total of 325 cfm/1,000 lbs of horse) needs to be added to hold down excessive temperature rises in barns with a separate (or a single multi-stage) temperature controller set to activate at about 60 F. A mechanically ventilated barn needs designed inlets or someplace for air to enter the building. The inlets should be sized to provide 1 square foot of inlet area for every 600 cfm of exhaust fan capacity which should be evenly spaced throughout the barn to provide good air distribution.

By: Larry Jacobson, PhD and Chuck Clanton, PhD, Univ. of Minn.

Research Update - Foal Weight Gain on Pasture

Researchers from the University of Kentucky have shown that pasture growing conditions can influence average daily gain (ADG) in foals.

A group of 320 Thoroughbred foals were regularly weighed between birth and weaning. Estimates of ADG were calculated for all foals at 3 or 4 months of age in May, June, July, and August. During these months, foals (and mares) were kept on predominantly cool-season grass pastures. Information on daily rainfall was also collected.

A positive relationship was identified between ADG and rainfall, suggesting

ADG's will be higher during periods of greater rainfall. Results showed that ADG was within or above suggested ranges during May, but below ranges during June, July, and August. Higher rainfall, paired with the cooler temperatures of May likely increased pasture growth, nutrient availability, and subsequent foal ADG. However, in later summer months, ADG was below expected rates, suggesting supplementation may be necessary when pasture growth is depressed due to weather conditions.

Summarized by: Jennifer Earing, PhD, Univ. of Minn.

Inside This Issue

Ventilation Systems for Horse Barns— Part II	1
Research Update	1
Chiropractic Care for Horses	2

Upcoming Events

74th Annual Minnesota Nutrition Conference

September 17-18, 2013
Mystic Lake Casino & Hotel
Prior Lake, MN
Sept. 18 Equine Session will focus on forage utilization
www.mnnutritionconf.umn.edu

Research Collaborators Needed!

Is your laminitic horse/pony confined to a drylot? Is the drylot weedy? If you answered "yes" to these questions, please contact Krishona at krishona@umn.edu

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Chiropractic Care for Horses

Animal chiropractors diagnose and treat “stuck joints”, including those of the back. Diagnosis is made via thorough palpation combined with a strong knowledge of anatomy and normal joint motion. Once the subluxation, or “stuck” joint, is identified, the animal chiropractor will correct it with an adjustment. An adjustment is a high velocity, low amplitude thrust on a specific bone in a specific direction. This means the adjustment is very quick, yet gentle.

Even though horses have a very thick muscle mass over the spine, the vertebral joints are moveable and relatively easy to manipulate. Adjustments influence bones, muscles, tendons and ligaments. A high velocity, low amplitude thrust in a specific direction is used to help restore normal joint movement. If the correct technique is used, the ligaments and other soft tissue are not impacted. For most animals the treatment is very relaxing. Often, you will see the animal licking, chewing, yawning, and sighing during a chiropractic treatment.

Horses with restricted joint motion must compensate by changing their posture and way of going. If left unresolved, restricted joint motion can eventually cause bigger problems because of the negative effects on biomechanics and the nervous system. Pain is a common symptom associated with restricted joint motion. A horse may benefit from a chiropractic evaluation if you notice signs of pain, including:

- Abnormal posture while standing
- Discomfort when brushing or saddling
- Reduced performance
- Evasion issues such as head

tossing, grabbing the bit, or hollowing the back

- Pinning ears, bucking, or swishing tail
- Refusing jumps or knocking rails
- Other signs of discomfort when ridden
- abnormal behavior issues
- The horse may seem “off”, both mentally or physically
- Facial expression of pain or apprehension
- Sensitivity to touch

More subtle signs can include:

- not tracking up
- Inability or difficulty engaging the hindquarters
- Differences in muscle size and/or tone
- Irregularity of gait, which cannot be assigned to a leg
- Difficulty flexing at the poll, neck or back
- Difficulty with collection or lateral movements
- Inability to stretch or lengthen topline
- Difficulty with leads or cross cantering
- Brushing or interfering
- Stiffness - generalized or on one side of the body or neck
- Decreased coordination in gaits
- Horse is on the forehand
- Stiffness coming out of the stall
- Horse pulls against one rein
- Back does not swing

Each animal is an individual and the goals of treatments are unique to each case. A problem usually takes time to become severe enough to show clinical signs and symptoms. Therefore, a single treatment is usually not enough to eliminate a problem. Most animals

By: Kyla Awes, Doctor of Chiropractic

show significant improvement after 1 to 3 treatments. Chronic problems usually take longer to resolve and require more chiropractic treatment, whereas animals with acute problems often respond more quickly. Even after a specific problem is resolved, it is recommended that your animal have regular spinal checks by an animal chiropractor in order to ensure a healthy functioning nervous system. It is much easier to resolve joint motion issues when they are identified early.



The initial consultation, exam, and treatment will usually last between 45 minutes and one hour. The initial visit tends to take longer than subsequent treatments, which usually last between 30 and 45 minutes depending on the animal chiropractor’s findings.

“Stuck joints” can occur at all ages. Performance injuries, stress, poor nutrition, fatigue, and even the birth process are among some of the most common causes. However, chiropractic is not a replacement for traditional veterinary medicine. Animal chiropractic should be integrated with veterinary care.

Dr. Kyla Awes is contracted by the Univ. of Minn. Equine Center to work out of the Piper Performance Clinic.