

Grazing News



Iowa State University
Department of Animal Science
Equine Science Newsletter & Updates

December 2011

In This Issue

Iowa Horse Council Annual Meeting
Winter Care for Horses
Equine Health and Prevention of Diseases
Management of the Mare and Foal Workshop
NCR Equine Business Management Conference
What Are You Feeding Your Horse?
International Equine Associations
Agriculture Pavilion Update
eXtension's HorseQuest Online Resources
US Horse Processing Could Resume Soon

Quick Links

Equine Science
4-H Horse and Pony
Iowa Horse Youth
ISU Equine Extension
Master Equine Manager
Veterinary Clinical Sciences
Ag Decision Maker
ISU Extension Publications
eXtension HorseQuest

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HAPPY HOLIDAYS

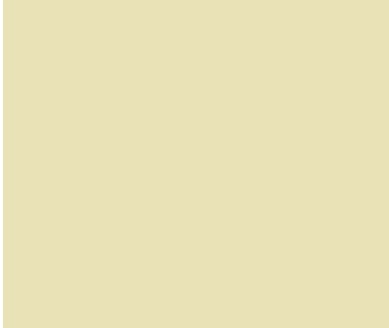
Below is new and updated information from Iowa State University Equine Science. If you have questions or comments about this message or the content listed herein, please contact me.



Peggy M. Auwerda
Iowa State University Extension & Outreach Horse Specialist
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Upcoming Events

- [Iowa Horse Council Annual Meeting - Jan. 21st](#)
- [Equine Health and Prevention of Diseases - Jan. 29th](#)
- [Management of the Mare and Foal Workshop - Feb. 11th & 12th](#)
- [Horsin Around 2012 Featuring Robin Frid](#) - Jan. 14th & 15th
- [NCR Equine Business Conference - February 25th](#)
- Iowa 4-H and Youth Horse Jamboree - March 24th & 25th
- [Iowa Horse Fair](#) - March 30th - April 1st
- Block & Bridle Horse Show - April 20th - 22nd
- Master Equine Manager 1 - 4/3, 4/10, 4/17, 4/24, 5/1, 5/8, 5/11 & 5/12
- Master Equine Manager 1 - 5/10, 5/17, 5/24, 5/31, 6/7, 6/14, 6/15 & 6/16



Iowa Horse Council Annual Meeting

January 21st, 2012

@ Iowa State University

Ames, IA

Attend the annual meeting of the Iowa Horse Council to find out what the council is all about.

10:30 Registration

11:30 Lunch

	SPEAKERS	
12:30	Paul Tauke State Forester/Chief Iowa DNR Forestry Bureau	Update on Iowa Trails
12:50	Jill Paxton Bureau Chief Iowa Department of Agriculture and Land Stewardship Horse and Dog Bureau	Update on Horse Industry in Iowa
1:10	Dr. Kim Houlding Madrid Veterinary Clinic	Update on United Organization of the Horse
1:30	Dr. Peggy Miller-Auwerda Department of Animal Science Iowa State University	Update on ISU Animal Science & Equine Program

2:00 Business Meeting
 Call to Order
 Minutes of 2011 Annual Meeting
 Old Business
 Committee Reports
 New Business
 Election of Board Members & Officers



[RSVP to Dr. Peggy M. Auwerda by January 13th](#)

Directions to Kildee Hall - Room 1204 - From Hwy 30 exit on University Blvd and go north to Wallace Road. Turn left on Wallace and right on Osborne. Right before the entrance gates turn right into the parking lot.

<http://www.fpm.iastate.edu/maps>

<http://maps.google.com/?ll=42.02953532525486,-93.64401529799471&z=16>

Winter Care for Horses by Peggy M. Auwerda

A horse's adaptation to cold weather is either acute (immediate) or chronic (long-term). The immediate response of a horse to a sudden change in temperature is to change its behavior. Horses seek shelter from the cold and wind, or huddle together, to decrease heat loss. Horses will stand with their heads away from the wind, their tails set low and into the wind. Horses stop foraging and stop moving to conserve energy. On the other hand it is not unusual to see horses running in cold weather, which increases muscle contraction causing heat production. Shivering and other voluntary muscular activity can also generate substantial body heat. For chronic exposure, horses require 10-21 days to acclimatize to the cold. Horses develop a heavy winter hair coat. The coat acts as a tremendous insulator. Cold weather will cause the hair to stand up (piloerection), trapping and retaining body heat.

The thermo neutral zone is when metabolic heat production does not need to be increased to maintain thermo stability. The lower critical temperature (LCT) is the temperature below which metabolic heat production is increased to maintain core body temperature. Once the LCT is reached, physiological changes and human intervention, such as shelter and/or extra feed, are needed to help the horse cope with the cold. The LCT for young horses can range from 12.2oF to 32oF and in adults the LCT is as low as 5oF .

For each decrease in coldness of one degree F below the critical temperature there is an increase in digestible energy requirements of one percent for body temperature maintenance. Forage (hay) is the most desirable method to meet a horse's elevated energy requirements. Forages contain higher fiber than grains. Fiber is utilized through bacterial fermentation within the cecum and large intestine. Much more heat is produced in bacterial fiber fermentation than in digestion and absorption of nutrients within the small intestine (grains). RESULT - A greater amount of heat is being produced through the utilization of forages.

Feeding good quality grass hay is the simplest way to ensure the horse will meet its energy requirement in the cold. If a horse is eating a round bale or large square they should be fine in terms of eating enough to maintain energy balance. If you limit feed, feed 2X per day, the horse will need 1 to 3 flakes of extra hay per day. Energy intake is the most critical factor in determining how readily a horse develops a tolerance for cold. If a horse does not eat enough energy to offset the heat loss due to the cold, the horse loses weight. The extra cost of feed to rehabilitate a thin horse back to normal will equal or exceed the cost of the feed that should have been fed to maintain the horse's body weight during the cold.

Horses should have access to some type of shelter - a timberline, natural bluff, or a shelter. The shelter is typically a 3-sided shed. Recommendations for the size of shed are 100 sq. ft./foal; 120 sq. ft./yearling and 150 sq. ft./horse. Horses do conserve up to 20% more body heat in a shed compared to an open exposed area. A timberline or natural bluff would serve the same function as a 3-sided shed.

When cold weather persists at temperatures below the LCT, then an increase in dietary energy is required. Dietary energy is the only nutrient that must be increased for horses kept at temperatures below their LCT. The main source of dietary energy (calories which convert to heat) is obtained from feed. Other sources of heat include the sun, muscular activity and mechanical heat in barns.



Equine Health and Prevention of Diseases

January 27th, 2012

8:00 A.M. - 5:00 P.M.

<http://www.extension.iastate.edu/masterequine>

The course is a program designed to help you maintain optimal health and reduce risks of disease on your farm. You will be introduced to many of the common problems facing the horse owner and you will learn the steps to take so that you can reduce the risk of diseases and injuries for your horses.

Schedule

8:00 Registration
8:30 Introductions
8:45 Equine Emergencies
9:45 Colic
10:30 Break
10:45 Developing a year round farm biosecurity program for maintaining the health of the horse.
11:30 Teeth and dental care
12:30 Lunch
1:30 Hand-On - Daily Health Checks; Body Condition Scoring; First-Aid Treatments; Lacerations & Treatments, How to Splint a Leg, Bandaging Legs; Examination of a Potential Colic Including Nasogastric Tube Placement and Abdominal Ultrasound, Dental Examination, Emergency Rescue



Speakers - Dr. Joan Howard and Dr. David Wong, ISU Equine Veterinary Clinical Sciences

Registration

Only 20 people Accepted to Participate
Before 1/20 - \$200
1/21-1/26 - \$225
MEM's & Students - 10% Discount

Management of the Mare and Foal Workshop

February 11th & 12th, 2012

<http://www.extension.iastate.edu/masterequine>

All horse owners, mare and/or stallion managers, foaling attendants, and other breeding farm personnel will benefit from this program by learning the most efficient methods for ensuring success of their breeding program.

Saturday February 11th

8:00 Registration
8:45 Nutrition of the Mare
9:30 Mare Anatomy & Physiology - Hormonal Patterns & Influences on the Reproductive Tract, Manipulation of the Estrous Cycle Including Lighting
12:00 Lunch
1:00 Pregnant Mare Care, Pre-foaling Management of the Mare, Predicting Parturition & Foaling Procedures; Complications of Pregnancy & Foaling; Post-Parturient Foal Management
3:00 Neonatal Foal Care & Foal Diseases
4:30 Nutrition for the Growing Horse
5:15 Advanced Technologies in Reproduction



Sunday February 12th - Wet Lab - Live Demonstrations & Hands-On (Limited to 15 people)

8:30 - 4:00 Record Keeping to Enhance Reproductive Efficiency; Estrus Detection, Fertilization & Pregnancy; Ultrasonography Assessment of Follicle Growth in the Transitional & Cycling

Mare; Breeding Soundness Exams; Placenta Evaluation; Progesterone Assays; Learn to Inseminate Mares

Speakers - Dr. Peggy Auwerda, Dr. Roy Kipper, Dr. Bruce Christensen
<http://www.extension.iastate.edu/masterequine>

North Central Equine Business Management Conference February 25th

Universities Connect Equine Industry Professionals with Resources and Opportunities

Multi-state conference will foster rural equine business development in the North Central Region

EAST LANSING, Mich - Equine business professionals in the North Central Region of the United States are invited to a dynamic, multi-state conference where they will be connected with land grant universities, industry professionals and other valuable resources.

In an effort to keep equine businesses a vital part of our rural communities, the [Equine Business Conference](#) will provide horse industry professionals with information and resources on liability, business finance, marketing and insurance for equine businesses.

Hosted by Michigan State University, University of Minnesota, University of Nebraska and Iowa State University, this one-day conference will be offered on Saturday, February 25, 2012 in four locations - East Lansing, Michigan; St. Paul, Minnesota; Lincoln, Nebraska; and Ames, Iowa. At each location, participants will hear from a "live" industry expert and will see broadcasts of presenters from the other three locations. Topics will include:

- Equine Insurance: Using Insurance to Protect Your Horse, Yourself, and Your Equine Business Investment
Wade Ellerbrook, Licensed Real Estate Broker, Insurance Broker and Appraiser
- Law: Legal Liability and Contracts,
Julie Fershtman, Attorney, Foster Swift Collins & Smith, P.C.
- Taxes and Finance: Structuring Your Horse Business to Succeed in the Future
Tina Barrett, Executive Director, Nebraska Farm Business
- Promotion, Marketing and Advertising: Tips on Social Media and Low- and No-Cost Promotion
Terry Schroeder, C.E.O., Reichert Celebration, Inc.

Advance [online](#) registration is required. The registration fee is \$30. [Sponsorship opportunities](#) are also available.

Funded in part by a grant from the North Central Regional Center for Rural Development, the Equine Business Conference is a collaborative effort between [My Horse University](#) and [eXtension/horses](#). Equine industry professionals are also encouraged to join the Equine Business Network (EBN) community on [Facebook](#) and [Twitter](#). Through partnerships with eXtension/horses and My Horse University, EBN offers an array of free online resources including webcasts that are based out of the participating land grant universities



Join our new facebook page [Equine Business Network](#)
Join us on [Twitter](#)

What Are You Feeding Your Horse?

by Peggy M. Auwerda

The primary component of the horse's diet should be forage with the nutrients lacking in forage made up with concentrates (grain). Within each of these feeds are water, carbohydrates (starch, sugars, and fiber), protein, lipids, minerals and vitamins. To find out what a feed consists of a sample can be sent to a number of analytical companies. The sample is first dried down removing any moisture. Dry matter - equals (100% - Moisture). Within dry matter are all the nutrients. Dry matter is composed of ash and organic matter. Ash is a measure of the total mineral content. Organic matter is composed of nitrogenous compounds and non-nitrogenous substances (Figure 1).

Nitrogenous compounds consist of protein which is composed of amino acids. Protein is a major component of vital organs, tissue, muscle, hair, skin, milk and enzymes. Amino Acids are organic nitrogen containing compounds that serve as the building blocks of protein.

Non-nitrogenous compounds consist of lipids (fat) and carbohydrates. Lipids (fat) are typically determined by ether extraction. In addition to fat, ether extraction may solubilize plant pigments, esters and aldehydes. This is why the measurement is called crude fat on the guaranteed analysis of a horse feed. Fat is an energy dense nutrient and contains 2.25X the energy found in carbohydrates. Fat is added to rations to boost energy levels when intake may be limiting.

Carbohydrates are the primary source of energy for a horse.

Nonstructural carbohydrates (starches and sugars) are digested in the small intestine. Fiber such as hay and pasture is digested from the microbes in the hindgut. The horse has a relatively large and highly developed hindgut (cecum and colon) containing a vast microbial population for the fermentation or breakdown of large amounts of fiber.

Carbohydrates are divided into nonstructural and structural (Figure 2). Structural carbohydrates give the plant rigidity enabling it to support itself as it grows, much like a skeleton in animals. It consists of crude fiber which is made up of primarily celluloses and secondary lignin. Crude Fiber is the historical method of fiber analysis

s. It is not the most accurate method for quantifying fiber, particularly for forages. However, grains are low in lignin so it is a reasonable estimate of fiber in grains and is still used today as the legal measurement of fiber in grains and finished feeds.

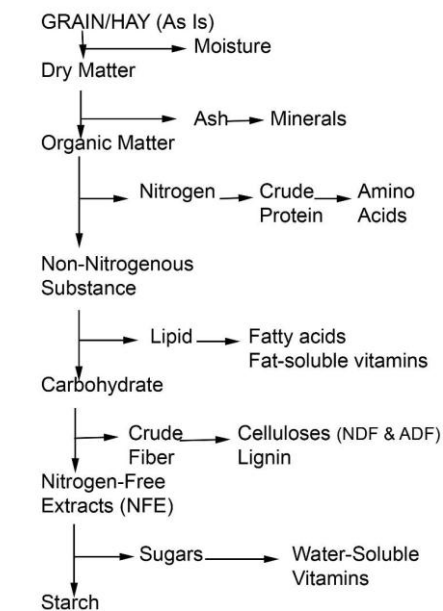


Figure 1. Proximate Analysis of Hay/Grain

Neutral Detergent Fiber (NDF) is a measure of hemicellulose, cellulose and lignin representing the fibrous bulk of the forage. NDF can be negatively correlated with intake or the higher the NDF, the lower the intake. Acid Detergent Fiber (ADF) is a measure of cellulose and lignin. ADF is negatively correlated with overall digestibility. Lignin is the indigestible part of the plant. As lignin increases, the digestibility of cellulose decreases which lowers the amount of energy available to the horse. As hay (plant) matures the amount of fiber will increase. Higher quality hay will have NDF's between 35-55% and ADF between 22-35% (as-fed). Low quality hay will have NDF's between 55-70% and ADF will range between 35-45%. If the hay is 65% or over NDF, it may increase the risk of impaction colic so horses should have plenty of water.

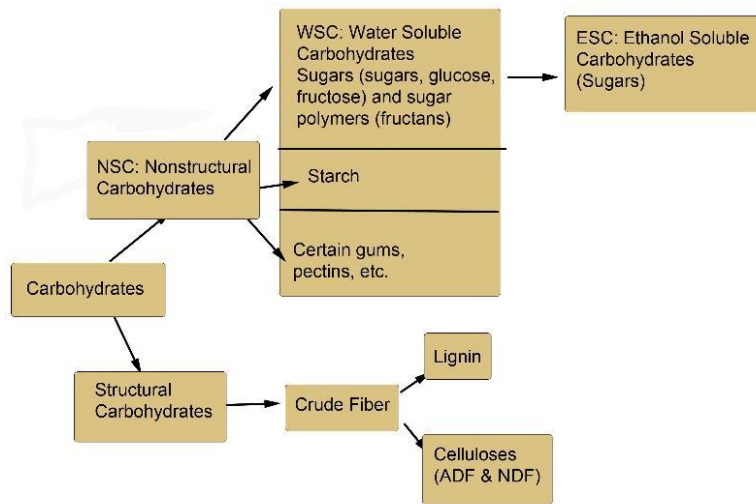


Figure 2. Carbohydrates

Non-Structural Carbohydrates (NSC) usually calculates as water soluble carbohydrates (WSC) + starch or ethanol soluble carbohydrates (ESC) + starch. NSC includes the sugars and starches, and is a very important group of nutrients for horses because these are the carbohydrates that can be broken down by enzymes and absorbed from the small intestine into the blood stream as glucose and stored as glycogen in the muscles and in the liver. Starch is a polysaccharide found primarily in the grain or seed and/or root portions of plants. Starch is a good source of energy.

WSC includes ESC which is primarily sugars, both monosaccharides and disaccharides. WSC will include various oligosaccharides and polysaccharides. Included in WSC are fructans that are present in forages. Simple sugars are digested and absorbed in the small intestine, while fructans are fermented in the large intestine. When eaten in large amounts, some fructans have disrupted the bacterial population in the large intestine and have been shown to cause laminitis. When looking at a feed or hay analysis report, ESC should be a small proportion than WSC of the NSC. High WSC might indicate high fructan levels in grasses or high simple sugar sugars in nongrass forages and grains.

References

Gudmundsson O. 1998. Evaluation of Feeds For Horses. NOVA COURSE ON THE ICELANDIC HORSE AND HORSE BREEDING AND MANAGEMENT. Hvanneyri Agricultural College, Iceland

International Equine Associations Align with a Common Purpose

Following a series of meetings and discussions which began at the [Summit of the Horse](#) in Las Vegas, Nevada, in January, 2011, and culminated with a very productive live demonstration and documentation of technological systems at the Lindsay Livestock Auction in Lindsay, Ontario, Canada,- organizers are looking forward to forming an "International Equine Business Association" (IEBA). The [Horse Welfare Alliance of Canada](#) and United Horsemen of the United States share a common goal to mutually protect the welfare of the horse, strengthen the international horse industry, and to promote the use of horses and equine products in commercial enterprises. [Read More](#)

Agriculture Pavilion Update

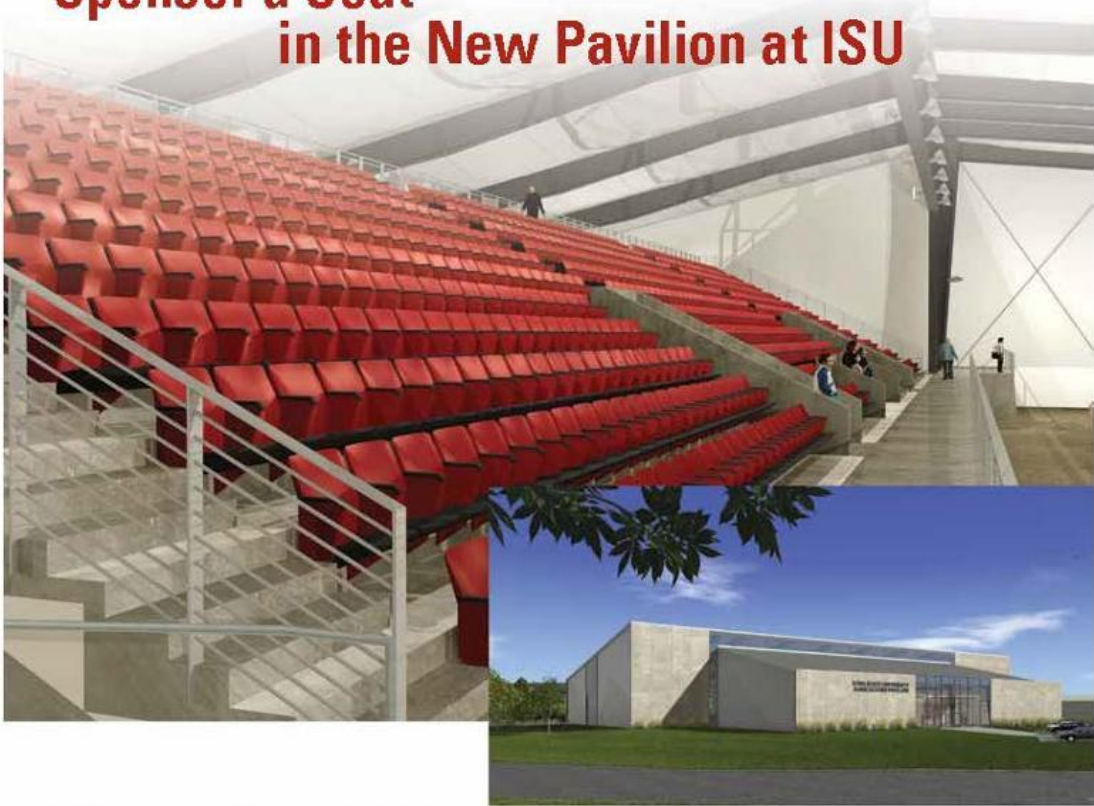
Plans continue to move forward on the \$7 million state-of-the-art [Agriculture Pavilion](#). The new facility, unique to Iowa State and nearly all of the Midwest, will allow animal-human interaction through teaching laboratories, outreach activities, and a variety of functions for current and future students. As a keystone in the College of

Agriculture and Life Sciences' efforts to train students for a diverse set of opportunities in animal husbandry, agriculture and related fields, the pavilion will also provide an inviting environment for recruiting young people who are interested in learning more about the diverse career opportunities in these fields. Scheduled to be built south of campus, the all-weather pavilion is currently expected to include:

- 125-by-250 foot arena with seating for 1,000 people and a concrete floor that can be covered by 18 inches of dirt during events
- Heated arena and animal holding areas during the winter for livestock judging and skills competitions, short courses, training sessions and livestock, dog and equestrian shows

- F

Sponsor a Seat in the New Pavilion at ISU



Help support the new Agriculture Pavilion!

Iowa State University is in the midst of a campaign to create a new pavilion that will be used for agriculture programs, classes, student clubs and youth activities. The arena area will have individual seating for approximately 1000 people. Brass plates will be attached to the seats recognizing the sponsors. Reserve your seat now.

I want to sponsor a seat in the new agriculture Pavilion. _____ Seats @ \$500.00 per seat = \$ _____

Name _____

Address _____

City _____

State _____ Zip _____

E-mail _____

Send your contributions to the ISU Foundation, Box 2230, Ames, IA 50010-2230.
Please make any checks payable to the ISU Foundation and add "ISU Pavilion Seat" in the memo line.

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to 35 people each situated beneath the arena seating area, thus reducing the facility's footprint and improving its energy efficiency

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US Horse Processing Could Resume Soon

Now that federal lawmakers have declined to defund USDA inspections at plants that process horsemeat for human consumption, horse processing in the United States could resume before the end of the year, according to horse processing proponent Wyoming State Rep. Sue Wallis. Wallis sponsored legislation facilitating horse processing plant development in Wyoming and is affiliated with pro-processing groups including United Horsemen and the International Equine Business Association. [Read More](#)

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