Fructans: Dangers in the grass
Eileen Coite, Wayne County Cooperative Extension

As horse owners, we are continually concerned with providing the most nutritious, safe, and healthy diet for our horses, with the goal of minimizing the incidence of nutritional related illnesses. Colic and laminitis are just a couple of challenges we face from time to time, and knowing how to prevent these and other nutrition related illnesses are key to reaching this goal. So, having said that, have you ever heard of “fructans” and how they can impact horses?

Fructans, often called “dangers in the grass” are non-structural carbohydrates or sugars found mostly in cool season grasses, such as fescue, orchardgrass, ryegrass, timothy, etc. Fructans are also found in warm season grasses but at much lower and less dangerous levels. Although produced in the plant leaves through the process of photosynthesis, fructans are stored in the stems of plants.

So why are fructans a potential danger to horses? High levels of fructans can cause disorders such as colic, laminitis, and/or tying up symptoms. These conditions are a result of increased lactic acid, decreased pH in the cecum, death of digestive bacteria and protozoa, leading to a release of toxins in the gut. Stress factors such as this can turn into laminitis (founder) in the horse. Considering the fact that bermudagrass is our most commonly grown and fed forage to horses in southeastern North Carolina, we are actually in luck when it comes to fructans! We often talk about the nutritional value of bermudagrass being lower than many other grasses, especially cool season forages, but in this case, it excels. Another thing to remember is that some horses are more sensitive to high fructans than others. Knowing about fruc-
tans can however help us to prevent problems in those that are most susceptible or categorized as “high risk”, such as horses with a history of colic or laminitis problems.

Some of the things we know about fructan levels are that they tend to increase with cool temperatures, they increase with sunlight (due to photosynthesis), they increase with dry weather, and levels are higher in the afternoon than the morning. At the same time, fructans will decrease with rainfall or elevated moisture. Knowing what has an impact on fructan levels can help us manage our higher risk horses around them. For instance, grazing at night or in the morning instead of in the afternoon is a good idea. Limiting grazing is helpful during dry periods or frost, which are both plant stress periods. Hay can be tested prior to feeding for fructans, and susceptible horses should only be offered hay with 20% or less fructans. Pasture growth should also be managed at approximately 4-8” in height, mowed to encourage new growth and get rid of old, mature plants, while being careful not to overgraze either. Overgrazing a pasture can cause an increase in fructans through plant stress.

Some more ideas for higher risk horses may be soaking their hay for 30 minutes or more prior to feeding. Research has shown that soaking for 30 minutes reduces fructans by 19%, while soaking for 60 minutes can cause a 31% reduction. Adding soaked beet pulp to the diet can also help. Higher risk horses should have limited grazing time by either only grazing in the morning hours or grazing at night, or by using a grazing muzzle. Limiting the diet to less than 20% non-structural carbohydrates is best to preventing colic and/or founder in these animals.

If you are a horse owner, non-structural carbohydrates or fructans are something to be aware of and cautious about, especially if your horse falls into the high-risk category. However, we shouldn’t panic and decide all cool season forages are bad for our equine friends! Cool season grasses are critical to extending the grazing season in our pastures, and in many situations are the most nutritious forages we can feed. A good mix of well managed and fed warm and cool season forages have been and will remain the foundation for balanced equine diets.

Are you prepared for Hurricane season?
Vivian Rowe

We all remember the hurricane seasons of 1996 and 1999 with hurricanes Fran and Floyd doing much damage and devastation over Eastern N.C. I hope it taught everyone a lesson. That lesson being we can never be prepared enough. We all need to be prepared not only for hurricanes but spring and winter storms as well, because we never know what role nature will play.

With Hurricane season here I hope everyone has their evacuation plans in place, and ready to activate if the need should become necessary. If you have not already done so, I would like to help you get started.

You need to have a pre-designated place you can safely take your animals and house them for an undetermined amount of time should you have to evacuate. Be sure that you have two routes of evacuation if possible, in case one is blocked. You will also need to have an emergency first aid kit for both animals and humans handy for unexpected emergencies. Take pictures of your animals, gather registration papers, Coggins test form and anything that can help you identify your animals, after the disaster. All of this (Continued on page 3)
needs to be placed in a plastic tote or bags to keep it dry. All the above should be done well before the storm, preferably before hurricane season arrives.

If you have small animals check with your local veterinarian about boarding them in a kennel. You can also check with local County Animal Response Team (CART) for sheltering options. Keep in mind that your extension office personal are there to help if you need them also.

When an advisory is issued, you need to put your plan into action! (An advisory means that hazardous conditions are expected within 72 hours).

You should start to secure all loose objects that are outside, and fill all water troughs. If possible store about 20 gallons of water per horse for a 7 day period. This can be stored in 55 gallon barrels or in garbage cans lined with plastic bags. You also need to store a 7 day supply of feed.

If you own a generator for operating pumps and fans be sure that you have a supply of fuel on hand. Call your contacts for evacuation and make sure that arrangements are still in place for housing your animals. At this time continue to monitor the weather and be prepared to take further action if necessary.

When conditions are upgraded to a watch it means that conditions are worsening and a hurricane (or storm) is expected to hit your area within 36 hours. If you live in an area that is prone to evacuation now is the time to do so, Do Not wait till a warning is issued, because it will be too late.

Place identification tags on your horses. You can use cattle tags attached to your halters (break away halters are preferred) these tags need to include your name, address, phone number and your horses name. You can also paint your phone number on your horse’s side or hoof for ones that must be left out in pasture, but be sure to also put a fly mask on them to help protect their eyes from flying debris.

When a warning is issued you have 24 hours before the storm is expected to hit your area. You should have everything in place and be getting yourself and your family to safety.

When the storm arrives do not attempt to go out and check on your animals during the storm or during the eye (the calm of the storm) you may not have time to return to safety before the other side of the storm approaches. Remember that the number one concern is your safety. Our animals may be of great importance to us but if something unforeseen was to happen to them they can be replaced, but your life cannot.

After the storm the danger is still not over. When you go out to check on your animals look out for downed electric lines which may be live. Do not attempt to walk through or cross any water. Not only can you not tell how strong the current or depth may be, but there may be dangerous contaminants in the water. Remember it only takes a couple of inches to float a car. You need to continue to monitor the water levels. Just because the storm is over does not mean that water will not continue to rise, especially if you are down stream from an affected area.

What I have talked about not only can be applied to Hurricane season but to winter storms also. Being prepared for any situation can mean the difference between a great loss of and a very little damage. It can also mean the difference between life and death.

I hope you all have a safe and hurricane free season, if not I hope what I have discussed will help you and you critters stay safe.
Summer is a prime time for horse shows and trail rides, and the excessive heat is just something you get used to, right? But don't forget to stop and think before hopping on for a ride! Heat and humidity combined can create the dangerous possibility of heat stress for your horse (and for you too!).

Hyperthermia is what happens when the body loses its ability to regulate its core temperature. Sometimes you hear it referred to as overheating, heat stroke, or heat exhaustion, but these terms actually all have different signs and symptoms. Hyperthermia has different levels of severity but there are some general signs you should look for, including profuse sweating or no sweating, refusal to work, lack of coordination, convulsions, dehydration, temperature above 105°F, pulse above 50 beats per minute, and respiration above 30 breaths per minute. Therefore it is extremely important to know how to check your horse’s vital signs! Hyperthermia can be caused by overwork, prolonged exposure to direct sunlight, obesity, poor ventilation in the stall or trailer, and increased temperature.

As work load and temperature increase, the amount of body heat your horse generates when exercising increases. Sweating is the most efficient way of cooling the body. The body heat is carried to the surface of the skin through the blood. Once there, the effects of evaporating sweat cools the blood as it pumps back through the body. When humidity is really high, it interferes with your horse’s natural ability to cool itself. The sweat is unable to evaporate as quickly due to the high moisture levels in the air. Horses who suffer from anhydrosis, or the inability to sweat, are at a much higher risk of suffering from heat stress. Special precautions should be taken to protect these horses during extreme temperatures.

To determine whether a normal horse’s ability to sweat will be affected, add the outside temperature to the level of humidity for that day. For example, if it is 90°F outside with a relative humidity of 15%, your total will be 105. If the number you get from adding these two together is less than 130, then your horse will be able to cool himself with little or no problems. If the number falls within 130-150, then the ability to cool will be moderately affected. If the number falls within 150-180, then the ability to cool will be greatly affected and your horse will probably need assistance in doing so. If the number is above 180, all normal cooling mechanisms will not work and you should take extreme precautions to protect your horse.

Preventing dehydration is the biggest key to preventing hyperthermia. Large amounts of salt and water are lost through sweat so it’s important to keep ample amounts of fresh water and free choice salt available to your horse at all times.

Know Your Horse’s Vital Signs!
Emily Adams, Onslow County Cooperative Extension

During this hot weather, it’s important to keep a check on your horse’s vital signs. Normal respiration rate at rest should be between 8-16 breaths per minute. Normal pulse rate in an adult horse should be between 30-40 beats per minute. Normal temperature is 99-101°F. If respiration, pulse, or temperature is elevated, be sure to keep a watch on your horse. He could be suffering from heat stress or could be exhibiting signs of illness, such as colic.

Horses should be drinking 5-10 gallons of water per day depending on temperature and score of your horse (approximately 1 gallon for every 100 lbs body weight on average). To test whether your horse is dehydrated, use the “pinch test”. Pinch an area of skin on your horse’s neck. If the skin flattens back into place when you let go in less than 1 second, the horse is fine. If it doesn’t return to normal that quickly, it means your horse could be dehydrated.
How Prepared are you for a hurricane? Match the questions with their correct answers.

1) What does a hurricane watch mean? ______

2) You need to have a 7 day supply of what? ______

3) What does a hurricane advisory mean? ______

4) Why do you not want to cross any deep water after a storm? ______

5) What does a hurricane warning mean? ______

6) What needs to be included on your horses identification tag? ______

7) What would help to identify your animal after the storm if needed? _____

8) Why should you continue to monitor the water level after the storm? ______

9) How soon before of the storm should you evacuate? _____

10) Who can you ask for help? _____

Answers on page 6

A) Your name, address, phone number and horses name
B) Because you cannot tell the depth or current of it, and it may be contaminated.
C) Feed and water
D) The storm will is expected to hit your area within 24 hours
E) Possibility of a storm within 72 hours
F) Veterinarian, CART team, Extension personnel, Emergency Management
G) A storm is expected to hit your area within 36 hours
H) When conditions are upgraded to a watch
I) Registration papers, Coggins test form, pictures
J) Because the water may continue to rise due to rainfall upstream
How many horses live within the great North State? Today, the answer is we don’t really know. But not knowing how many horses live and work in North Carolina means we do not have an accurate understanding of the financial impact the horse industry has on our State’s economy. We have often heard that “money talks.” In this case, not knowing the number of horses we have and the economic impact of the North Carolina horse industry limits our ability to effectively market the industry to legislators, policy makers, and the horse industry itself. Thanks to the efforts of North Carolina Senator David Weinstein and Representative Nelson Coles, the horse industry may soon have the numbers needed to promote and grow the industry.

Senator Weinstein and Representative Coles co-chaired the Joint Legislative Study Committee on the Equine Industry, a committee that has recommended legislation, seeking funding for a thorough study of the economic impact of our state’s horse industry. The North Carolina General Assembly is now considering House Bill 1826 and Senate Bill 1205, bills that seek funding to evaluate the current number of horses residing in the state, their uses, economic contributions to the state, and potential means of developing and growing the horse industry. Similar studies in Virginia and Maryland have demonstrated that the economic impact of the horse industries in those states is $1 billion and $1.5 billion respectively, numbers that prove the dynamic nature of the horse industries in those states.

The current Bills call for funds to be appropriated to the Rural Economic Development Center, which will then allocate the funds to the Agricultural Advancement Consortium, which will oversee the study. The North Carolina Horse Council Executive Board has unanimously endorsed H-1826 and S-1205. Now it is important for you, the horse owner, to make your position known. Please contact your Senator and Representative in support of these Bills. Your opinion counts! Again, numbers are important. More phone calls and letters help lawmakers prioritize issues. And we believe it is time for the horse industry to be recognized as a high priority. Passage of these Bills will provide the funding needed to prove once and for all that the North Carolina Horse Industry is a dynamic industry that has a great deal to offer North Carolina.

If you need contact information for your Senator or Representative, the North Carolina Horse Council will be happy to provide that information. You may contact the North Carolina Horse Council at 919-854-1990 or go to www.nchorsecouncil.com. If you have questions regarding information in this article you may also contact Mike Yoder at 919-515-5784 or at Mike_Yoder@ncsu.edu.
Calendar of Events:

September 14th - 17th - Equestrian Exchange Consignment Sale, Raleigh State Fairgrounds for more information
www.equestrianexchange.com

September 28th - October 7th Wayne Regional Agricultural Fair
see www.waynefair.com or call 919-735-7277 for more information

September 30th - Cowboy Up Horse Festival, Elm City; contact Alfred Tyson at 252-443-7504

October 5th - Wayne Fair Horse Show

October 4th - 22nd - NC State Fair Horse Show (contact Glenn Petty 919 733-4845)

For more information on any of the above activities and events, contact the Extension office at 731-1520.

REINS Volunteers by County
Volunteers may be contacted via Extension Agents

Johnson County:  Kelly Boutwell, Michele McLaughlin & Will Walls
Wayne County:  Jerry Boone, Vivian Rowe, Cindy Wheaton & Vickie Yelverton
Wilson County:  Carol Kyles & Kathy Moore

Extension Agent Contact information
Greene County:  Eve Honeycutt, Agricultural Agent (252) 527-5191  eve_honeycutt@ncsu.edu
Johnson County:  Ron Hughes, Agricultural Agent (919) 989-5380  ronald_hughes@ncsu.edu
Wayne County:  Eileen Coite, REINS Regional Coordinating Agent, Agricultural Agent (919) 731-1520  eileen_coite@ncsu.edu
Wilson County:  Walter Earle, County Extension Director (252) 237-0114  walter_earle@ncsu.edu

Hoof Prints is a bimonthly newsletter written by a team of experienced equine professionals for persons interested in equine information in Southeastern North Carolina. For more information on material and events presented in this newsletter, contact your local agent and Cooperative Extension office at:
Eileen A. Coite
Extension Agent
Agriculture—Livestock
North Carolina Cooperative Extension
Wayne County Center
PO Box 68
Goldsboro, NC 27533-0068

Helping People Put Knowledge To Work
We’re on the Web!
www.ces.ncsu.edu/wayne