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AGRONOMY & EQUINE EDITOR

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Augusta Cooperative FARM BUREAU, INC.

MAINTAINING YOUR HORSE'S BODY CONDITION DURING WINTER

LEARN HOW TO USE HIGH-QUALITY FORAGE, WATER, AND FAT TO HELP YOUR HORSE MAINTAIN A HEALTHY BODY CONDITION SCORE IN COLDER WEATHER.

Q: My 8-year-old mare's body condition score (BCS) tends to fluctuate depending on the season. She often stays around a 5 or 6 BCS during the warmer months but drops to a 4 as the weather gets colder. She is fed a balanced diet and is turned out overnight year-round. Her workload decreases during the coldest months of the year. Is it concerning or indicative of a problem that her BCS fluctuates like this? What can I do to combat it?

A: Weight loss in the colder months commonly occurs because horses need more calories to stay warm. They can use up to 25% more energy to maintain adequate body temperature. Several other factors can influence your horse's energy requirements, such as housing, age, and environment.

TRACK YOUR HORSE'S BODY CONDITION

The Henneke body-condition-scoring system involves palpating six body areas—neck, withers, shoulder, ribs, back, and tailhead. I recommend performing this on your horse every two weeks to track her body condition and make sure you are not misled by her winter coat, which can make her appear fatter than she is.

Some weight fluctuation in the colder months is normal and occasionally encouraged with easy keepers that tend to become overweight in the spring and summer. However, if your horse maintains a healthy condition through the summer but drops to a BCS of 4 in the winter, she likely needs supplemental calories to support a BCS of 4.5-5.

If you notice unexplained weight loss in your horse, first consult your veterinarian to rule out any health or dentition issues. From that point an equine nutritionist can help you make diet changes to combat the weight loss.

USE FORAGE TO HELP YOUR HORSE MAINTAIN BODY CONDITION

The best way to keep a horse warm in the winter months is with high-quality forage. If your horse begins losing weight, first increase her hay. Free choice access to high-quality forage can help promote weight gain, especially in cold weather. The fermentation process that occurs in your horse's hindgut when she consumes forage produces heat, which can help fuel her internal furnace and support thermoregulation.

WATER FOR HORSES DURING WINTER

Many horse owners overlook water as an important nutrient during the winter. If horses drink less water, they don't eat as much. Water offered to horses must be fresh, clean, and free from ice. If you live in a very cold climate, add a trough heater or other mechanism to keep the water from freezing and ensure your horse has continual access.

SUPPLEMENTAL ENERGY FOR HORSES IN THE WINTER

If your horse does not maintain her weight with an increase in forage intake and a balanced diet, you might need to consider adding a fat source. Horses do not have a gallbladder, but they can digest fat well if you introduce it slowly to their diet. Fat is more calorically dense than carbohydrates, which means it contains more than twice the amount of calories per pound. You can find numerous fat supplements to top dress your horse's already balanced diet.

With this approach it will be easy to add and remove the fat product when the horse does not need additional calories.

TAKE-HOME MESSAGE

In the winter you might notice your horse's weight fluctuates slightly because she requires more energy to stay warm. However, you should not notice significant changes in her BCS. Horses always need access to fresh water and a high-quality hay source. If they still lose weight on a balanced diet with free-choice access to high-quality forage, consider adding a fat source for additional calories.

The Horse

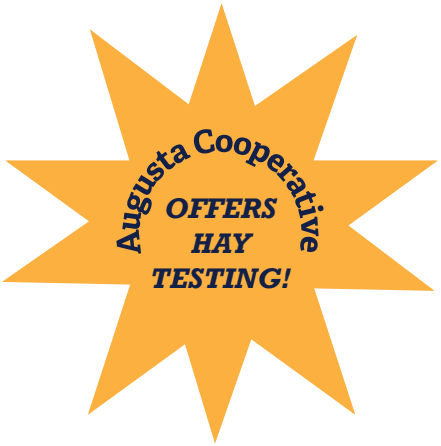
MOLD AND MYCOTOXINS IN HORSE HAY

HAY WITH A HIGH MOISTURE CONTENT IS AT RISK FOR DEVELOPING MOLD. THERE ARE A VARIETY OF HEALTH RISKS FOR HORSES THAT CONSUME MOLDY HAY.

WHAT CAUSES MOLD TO GROW ON HAY?

Much hay has been rained on or left lying in the field for prolonged periods of time due to excessively wet and humid conditions. The long drying periods with high humidity can allow mold to grow on the hay in the field.

Rain and poor drying weather has caused some hay to be baled wetter than desired. With high humidity, normal drying in storage may not occur and hay can retain elevated levels of moisture allowing mold growth. Mold and bacteria will grow on hay (without preservative added) at moisture levels above 14% to 15%. The mold growth produces heat, carbon dioxide and water, which further damages the hay. Moldy hay can result in dry matter and nutrient loss and produce spores and dust. Drying of stored hay is enhanced by increasing ventilation, creating air spaces between bales, reducing stack size, and stacking in alternating directions. Since moisture tends to move up and out the top of a stack of bales, ample headspace should be provided above a stack in a barn, allowing moisture to evaporate.



Molds commonly found in hay include Alternaria, Aspergillus, Cladosporum, Fusarium, Mucor, Penicillium, and Rhizopus. These molds can produce spores that cause respiratory problems, especially in horses and, under some conditions, will produce mycotoxins.

Horses are particularly sensitive to dust from mold spores and can develop a respiratory disease like asthma in humans called Recurrent Airway Obstruction (RAO), commonly referred to as heaves. A horse with RAO will have a normal temperature and a good appetite, but will often have decreased exercise tolerance, coughing and nasal discharge. Labored breathing occurs during exercise and, in some cases, while at rest. Hypertrophy of the abdominal oblique muscle used for expiration creates the characteristic 'heave line' seen on horses with RAO. Some horses are highly allergic to certain mold spores while others seem to be minimally affected. Strategies to reduce dust exposure are as follows:

- Do not feed dusty and moldy hay and grains.
- Keep horses outside as much as possible.
- Place feed at a lower level so particles are not inhaled through the nostrils.
- Feed hay outside to minimize dust problems.
- In severe cases, hay cubes may replace hay.
- Soak dusty hay for 5 to 30 minutes before feeding. This will help minimize respiratory problems associated with dust and mold spores but will not reduce the threat of mycotoxin contamination.
- Store hay away from your horse as much as possible and ensure any hay in the vicinity is kept dry to reduce mold.
- If the horse is housed indoors, ensure that there is good, draft-free ventilation.

Table 1 contains classification of risks at various mold spore counts. While most molds do not produce mycotoxins, the presence of mold indicates the possibility of mycotoxin presence and animals being fed moldy hay should be watched carefully for mycotoxin symptoms.

Table 1. Feeding Risks* at Various Mold Spore Counts

Mold Spore count per gram	Feeding Risk and Cautions
Under 500,000	Relatively low Risk
½ to 1 million	Relatively Safe
1 to 2 million	Feed with Caution
2 to 3 million	Closely observe animals and performance
3 to 5 million	Dilute with other feeds
Over 5 million	Discontinue feeding

*Risks refer primarily to effect of mold without regard to possible mycotoxin content. Dust may also reduce feed consumption. Data from Richard S. Adams, Kenneth B. Kephart, Virginia A. Ishler, Lawrence J. Hutchinson, and Gregory W. Roth. 1993. Mold and mycotoxin problems in livestock feeding. The Pennsylvania State University.

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WHAT ARE MYCOTOXINS AND HOW CAN THEY AFFECT MY HORSE?

High moisture hay can also lead to the proliferation of bacteria, molds and fungus that can produce mycotoxins that are dangerous to horses and other livestock species. Some forage laboratories will test for the presence of mold and mycotoxins. If hay is moldy, do not feed it.

Although the effects of mycotoxins on horses are not well documented in scientific literature, in field situations apparently mycotoxin problems appear to be significant. Mycotoxins have been implicated in a variety of health problems including colic, neurological disorders, paralysis, hypersensitivity, and brain lesions. The cumulative effect of feeding low levels of mycotoxins may also contribute to a gradual deterioration of organ functions. Other symptoms of mycotoxins in forages include:

1. Intake reduction or feed refusal.
2. Reduced nutrient absorption and impaired metabolism, including altered digestion and microbial growth, diarrhea, intestinal irritation, reduced production, lower fertility, abortions, lethargy, and increased morbidity.
3. Alterations in the endocrine and exocrine systems.
4. Suppression of the immune system, which predisposes horses to many diseases.
5. Cellular death causing organ damage.

WHAT IS PROPIONIC ACID AND WHY IS IT USED ON HAY?

Some hay growers apply preservatives (organic acids, yeast cultures, enzymes, etc.) to prevent the growth of the bacteria and fungi that sometimes cause heat, musty odor and mold in inadequately dried hay. Most preservatives applied to horse hay contain organic acids that are the same as those found in the horse's gastrointestinal tract. Propionic and acetic acid, the most common organic acids in hay preservatives, are produced naturally in the cecum and colon of the horse because of microbial digestion of fibrous feeds. These organic acids can be used as mold inhibitors and applied when hay is not yet dry enough to bale safely, but rain is coming, and the crop may be lost if not baled early. Studies have shown a decrease in the heating and molding of hay during storage with the use of preservatives.

A study conducted at the University of Illinois found that yearlings receiving hay treated with a mixture of propionic and acetic acids consumed just as much hay and gained just as much weight over a one-month feeding trial as yearling's consuming untreated hay. Clinical measures of the horses' wellbeing were not affected by consumption of preservative-treated hay, indicating that the hay had no negative effects on the horses. A study conducted at Cornell University showed that when given a choice, horses preferred untreated alfalfa to alfalfa that was treated with a mixture of propionic and acetic acid. However, when only given the choice of acid treated hay, the horses readily consumed it. Thus, after a short conditioning period, horses will consume acid-treated hay.

However, caution should be used when feeding hay that was baled at very high moisture levels, using higher levels of propionic acid. It is important to let that hay cure for several weeks so that the acid has time to dissipate and the hay has a chance to cure. This is especially true when feeding large round and square bales. There have been suspected cases of colic when horses were fed hay baled at very high moisture levels (29%) containing high levels of acid. Hay that is baled at high moisture levels should not be stored beneath or next to hay that was baled at appropriate moisture levels without the addition of an acid preservative. The moisture dissipating from the acid treated hay can move into the dry hay and cause it to mold.

Penn State Extension

HORSE HOOF PUNCTURE WOUNDS

DISCOVER WHY YOU MUST TREAT HOOF PUNCTURES WITH URGENCY AND THE STEPS YOU CAN TAKE PRIOR TO THE VETERINARIAN'S ARRIVAL.

Why hoof punctures are emergencies, and steps you and your veterinarian can take to help your horse

Don't pull the nail. This is a sentiment I'll repeat. Because if you take away just one thing from reading this article, it's that.

Hoof punctures are common and almost always emergencies (and, it seems, rarely does a horse's sole find a horseshoe nail during normal business hours). Objects penetrating the hoof can introduce bacteria, causing infection within the foot and pastern. "Hoof punctures are one of those 'It's no big deal,' or 'It's horribly devastating' type of injuries," says Cathy Lombardi, DVM, CVA, of the The Oaks Veterinary Clinic's Equine and Farm Services, in Smithfield, Virginia.

In this article we'll explain why you must treat hoof punctures with urgency, steps you can take prior to the veterinarian's arrival, and what he or she can do for the horse.

WHAT'S AT RISK

Anatomically, the hoof is more complicated than meets the eye. While the third phalange, or the coffin bone, occupies most of the hoof capsule, many other structures reside here. "When a foreign object penetrates the hoof capsule, it may come into contact with the coffin bone, deep digital flexor tendon, navicular bone, navicular bursa, or even the coffin joint," says Allie Catalino, DVM, veterinarian at the Equine Clinic at Oakencroft, in upstate New York. "These structures can be physically disrupted (fractured or torn) by the penetrating object as well as seeded with bacteria."

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"The (coffin) bone is only 1.5 centimeters away from the visible external sole," she continues. "At a similar depth, under the horse's frog is the attachment of the deep digital flexor tendon to the coffin bone. The small navicular bone sits between the deep digital flexor tendon and the coffin bone at the horse's heels and is surrounded by the navicular bursa, a synovial structure."

Joints, bursas, and tendon sheaths are examples of synovial structures. They produce synovial fluid, which helps lubricate and support the neighboring bones and soft tissues. "When inflammation or infection is introduced into a synovial structure, the synovial fluid loses its viscosity and ability to lubricate, which can result in damage to underlying bone or soft tissue," says Catalino. "With minimal blood supply to a synovial structure, infection is treated with aggressive intervention in the form of flushing surgically, followed by deposition of antibiotics within the structure."

WHAT TO DO

After calling your veterinarian, keep your horse in a stall or contained area, if possible. Your horse will likely be able to shift weight off the affected foot for the duration of time it takes for your veterinarian to arrive.

Don't pull the nail.

Imaging is of the utmost importance in these scenarios. Veterinarians take **radiographs** of the affected hoof prior to removing the penetrating object. This allows them to visualize exactly what structures the object affects, which will also guide their treatment plan. If the horse needs surgical intervention at a referral hospital, the veterinarian can prep the foot for travel at this time.

Keep resisting the urge to pull the nail.

My trick to stabilize the affected hoof is to place two rolls of Vetrap on either side of the nail over the sole. I will then duct tape the rolls to the sole, allowing the horse to bear weight on them rather than risk pushing the nail further into the foot. This allows you to transport the horse safely, and veterinarians at the referral hospital will know the exact location of the tract in the hoof.

LOCATION, LOCATION, LOCATION

The offending object's point of entry can tell you a lot about the horse's prognosis. Obviously, a thorough understanding of **hoof anatomy** is crucial. Most synovial structures are in the heel, whereas laminae and coffin bone fill most of the area in front of the frog.

"If you have to have a penetrating injury to the hoof, the best-case scenario is the object enters the sole close to the hoof wall and has a fairly straight trajectory," says Lombardi. "The less deep it penetrates, the better."

"The worst place to see an object such as a nail enter is in the middle third of the frog," she adds. "The depth that the nail has been driven into the foot determines how serious the problem may be. If it's fairly short, like a 1-inch roofing tack, it may not be a big deal to treat. If it's a long nail that penetrates straight in, and I determine it is likely to have penetrated a synovial structure, I'm talking to that owner about immediate referral to a hospital for aggressive care and possibly surgery."

TREATMENT

Your veterinarian's plan depends on the penetrating object's location. That's why it is so, so important to leave the hoof alone until your veterinarian arrives.

"For a simple puncture, with no evidence of synovial involvement, my treatment is very similar to treatment of a hoof abscess," says Lombardi. "After pulling the nail, I'll have the owner soak the foot in Epsom salts and water for several days. I have them keep the foot bandaged and the horse in a clean and dry environment."

Because horses are likely to encounter *Clostridium* tetani bacteria in their environment, your veterinarian might recommend a tetanus booster if your horse isn't current on this core vaccination. Bacterial neurotoxins cause a progressive and severe condition, resulting in a neurologic gait, third eyelid protrusion, inability to chew, and hyperexcitability to stimuli. Advanced cases can result in respiratory distress, seizures, and death. It's always easier to prevent tetanus than treat it.

Your veterinarian might prescribe non-steroidal anti-inflammatory drugs, such as phenylbutazone and flunixin meglumine, to alleviate the horse's pain. These drugs work to reduce inflammation in the hoof caused by the penetrating wound and are very effective at making these horses more comfortable.

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Depending on the case, your vet might also administer antibiotics either systemically or via regional limb perfusion.

"For cases where no synovial structures are involved, those horses recover quickly and fully," says Lombardi. However, cases involving synovial structures need aggressive and urgent care, oftentimes at a specialty clinic. Early referral can give these horses the best prognoses.

SURGICAL INTERVENTION

Your horse stepped a nail, you didn't pull it, and your veterinarian was able to come out right away. Radiographs revealed the nail penetrated the navicular bursa, and your veterinarian suggested referral. D. Michael Davis, DVM, MS, owner of New England Equine Medical and Surgical Center, in Dover, New Hampshire, explains what happens with these cases at a referral hospital.

"The goals are to explore the puncture wound or draining tract to its depth, most often creating an opening to allow better drainage," says Davis. "If it's known that a synovial structure is involved in the puncture or the tract leads to a synovial structure, then a plan should be made to lavage that space as well as open the puncture/draining tract."

The purpose of the wound lavage is to clear the tract of bacteria to reduce the risk of infection. "This could be via needle through-and-through lavage or could be via arthroscopy and debridement, all depending on the severity and time to treatment." Arthroscopy is a surgical procedure that involves lavage and debridement under general anesthesia through small incisions in the skin overlying the affected synovial structure. Vets typically reserve it for very severe puncture wounds.

Challenging cases might benefit from further imaging. Computed tomography, better known as CT scans, can be incredibly useful. "CT is far and away the most helpful to appreciate the 3D perspective of a penetrating wound or tract, as well as the potential ramifications it has on tissue (e.g., bony lysis, or destruction)," says Davis. "It can be extremely beneficial in (planning treatment for) long-term or difficult-to-resolve cases."

PROGNOSIS

Penetrating puncture wounds are never guarantees. While most can result in a simple subsolar abscess, those involving synovial structures can result in crippling osteoarthritic changes or even death.

Time is not on your side. "There is no doubt that any synovial structure infectious process is an emergency that calls for prompt action to drain, lavage, and debride," says Davis. "More aggressive techniques (surgical vs. nonsurgical lavage) employed earlier than later can make a difference in overall case progression and prognosis."

TAKE-HOME MESSAGE

If ever confronted with a penetrating object into your horse's hoof, it is an emergency. It cannot wait until the next morning. And do not pull the nail. Call your vet immediately for assessment and treatment. Your horse's soundness—even his life—could very well depend on it.

The Horse

FEEDING HORSES FOR WEIGHT GAIN

ONE COMMON QUESTION ASKED BY HORSE OWNERS IS "HOW DO I PUT WEIGHT ON A THIN HORSE?"

There are several factors that can lead to a horse being underweight, including health conditions, age-related issues, or simply inadequate calories in the horse's diet.

When dealing with a thin horse, first we need to look at the horse's health status. Is the horse suffering from parasites, disease, chronic pain, ulcers or dental issues? These are all issues to be addressed by your veterinarian, and making an appointment with your vet is the first step to help your horse gain weight. If weight loss is caused by a health condition, then addressing the condition may be all that is necessary to help your horse regain the lost body condition.

Your vet may suggest that your horse is getting to an age that its teeth are no longer adequate to chew long-stemmed hay, even with proper dental care. Hay is very fibrous, and as a horse ages, its teeth wear down to the point that the horse is unable to fully chew the hay, and, also with age, the horse's digestion and absorption in the gut becomes less efficient. Therefore, what hay and feed does make it into the digestive tract does not get fully utilized. In these situations, the optimal choice is Purina® Equine Senior® horse feed. Equine Senior® was designed to contain enough roughage to be fed with minimal or no hay, so that the geriatric horse will receive sufficient nutrients to meet its requirements even without an additional forage source. The horse should be gradually switched from the current feed to Equine Senior®, and then the amount of Senior will be gradually increased to compensate for the roughage the horse is unable to eat.

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There may come a time that a geriatric horse will not be able to utilize hay (or possibly even pasture) whatsoever, and will need to obtain all its nutrients from Equine Senior®. For this reason it is not uncommon to feed 15 or more pounds per day of Equine Senior® to a geriatric horse, especially if the horse is working. If the time comes when the horse's dental condition is so poor that the horse is no longer even able to chew the soft pellets, then water can be added to the Equine Senior® to make a mash. (Note: the age at which a horse becomes a senior is determined by the horse. Some horses need to be fed Equine Senior® in their teens, others will do fine on Equine Senior® Active, Ultium® Competition, Strategy® GX, Strategy® Healthy Edge® or an appropriate Omolene® horse feed with pasture and/or hay well into their twenties.)

If the senior horse is eating recommended amounts of Equine Senior®, and still needs to gain a few pounds, there are a few options available. First, if the older horse is still well able to chew and digest pasture/hay, switching to a higher calorie feed may be a good choice. Equine® Senior Active is a high-calorie feed that is ideal for older horses that are still able to utilize long-stemmed forage. Ultium® Competition, Omolene® #200 and Omolene® #500 are also calorie-dense feeds that may be helpful to help an older horse gain weight when fed with appropriate good quality hay and/or pasture. If the horse is not able to adequately utilize hay/pasture, and is eating enough Equine Senior® to completely replace the forage in the diet, then adding Purina's high fat supplement Amplify® may provide enough additional calories for the horse to gain weight.

Augusta Co-op Solutions

Purina, Ultium Competition, 50 lbs.

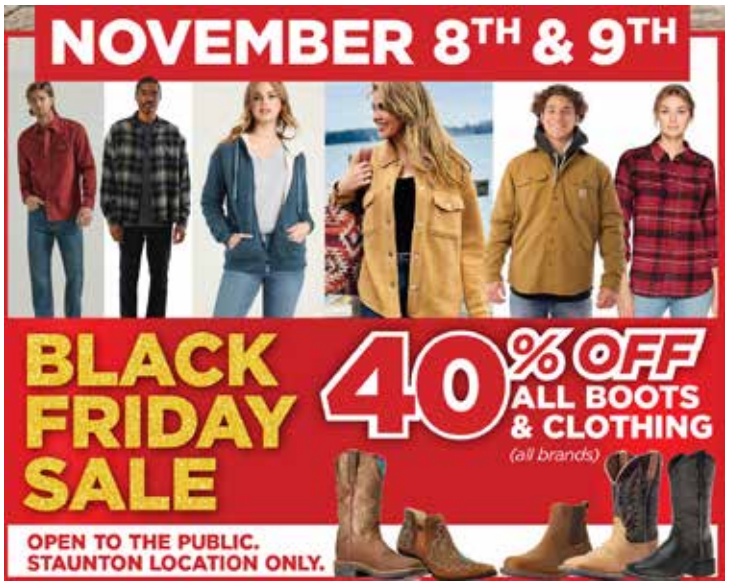
A pelleted horse feed designed for competition athletes competing at the highest levels. Delivers a concentrated amount of energy to these horses by utilizing several different sources including vegetable oils, beet pulp and a proprietary mix. Energy dense so less feed is required for maintenance of body condition when compared to feeds with lower energy density.

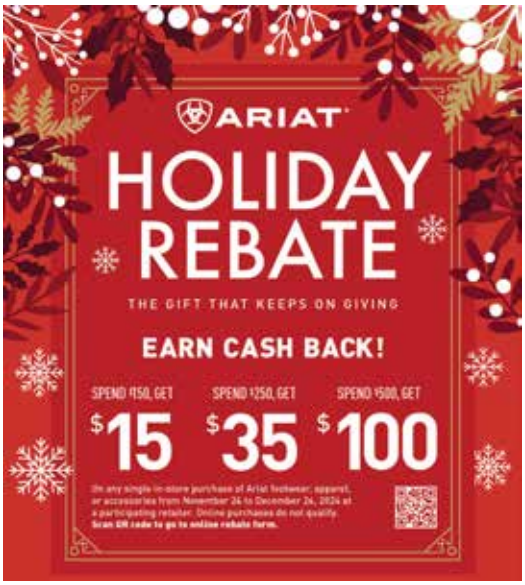
SKU - 58528

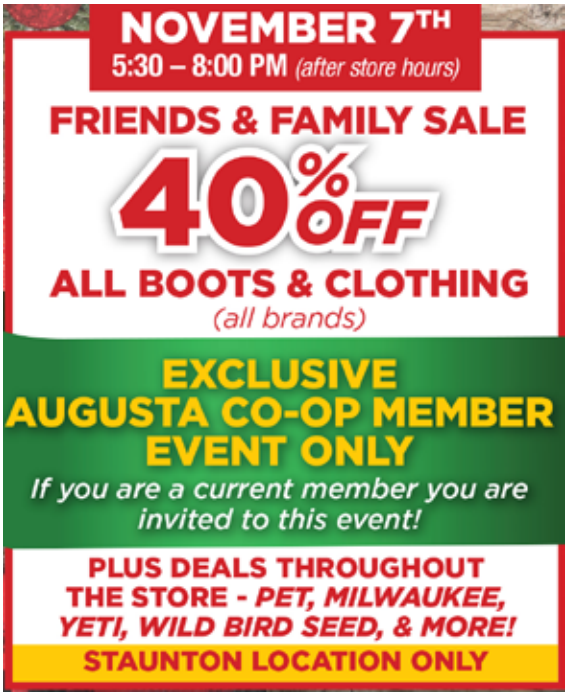
In many cases, the reason a horse is underweight is that it is just not eating adequate calories. So, to put weight on a horse, first you need to determine how much the horse currently weighs and how much weight it needs to gain. An easy way to determine the horse's body weight is to use a weight tape. The Purina equine research team has spent many years measuring horses at the Purina Animal Nutrition research farm to develop our body weight tape, which is available through your local Purina horse feed dealer. Be sure to read the directions on the tape, measure around your horse's heart girth and determine the current weight. To decide how much weight the horse needs to gain, you also need to determine your horse's Body Condition Score. In general, most horses should be maintained at a body condition score (BCS) of 5-6; broodmares should be 5 to 7. A BCS of 5 is a horse that you can look at from the side and not see any ribs showing, but if you run your hand along the barrel you can easily feel the ribs.

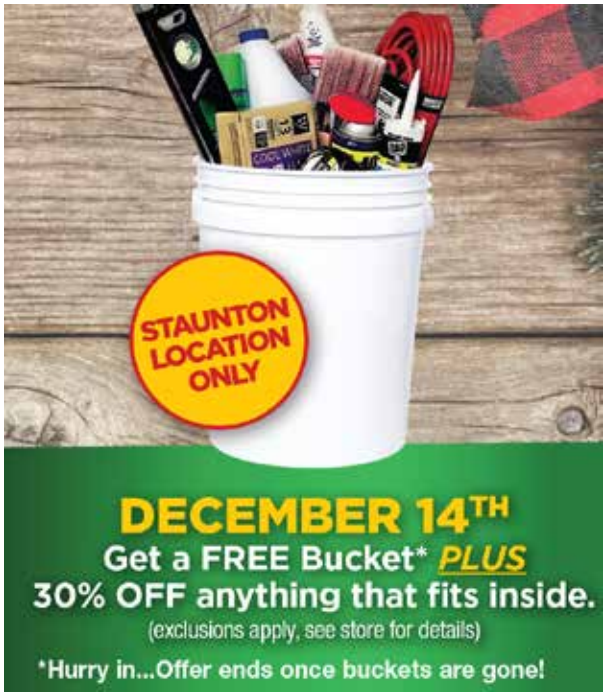
For every condition score below 5, an 1100-pound horse needs to gain about 45-50 pounds, and a 1-pound gain requires about 8000-9000 kcals over the calories required for maintenance. So, for example, if the horse needs to go from a 4 to a 5, it needs to gain 45 pounds, which is a total of approximately 380,000 kcals. Obviously, we're not going to feed that in one day! It is safest to put weight on a horse slowly, so let's take 90 days for this example. 45 pounds of gain in 90 days is 1/2 pound per day, a safe goal to aim for. About 4500 additional kcal per day over the normal amount fed should achieve half a pound of gain per day. This could be accomplished by adding 2 pounds of Strategy (3000 kcals) and 2 pounds of alfalfa hay (approximately 1800 kcals) per day, or maybe 2.5 pounds of Ultium (4750 kcal). As in all cases, changes need to be made gradually to reduce the risks of digestive upsets.

Purina









EVENTS / CALENDAR

FRIENDS & FAMILY SALE (AFTER HOURS)

Thursday, November 7 • 5:30PM-8PM

40% off all boots & clothing. Plus deals throughout the store - pet, Milwaukee, YETI, Wild Bird Seed & more! Staunton location only.

Members only event.

BLACK FRIDAY SALE

November 8-9, 2024

40% off all boots & clothing. Open to the public. Staunton location only.

DEALS LEADING UP TO CHRISTMAS

November 11-16

35% Off Ariat & Carhartt

Scan to view event details

November 12-16

BOGO 50% Off Exclusive Dog & Cat Food

November 18-23

35% off Wrangler & Cinch / $40 off $250 Small Engine purchase or service.

November 25-30

30% off Boots & Accessories

December 2-7

30% off Toys & Giftware

30% off Simply Southern & Sterling Kreek Clothing

December 14

Free bucket plus 30% off whatever fits inside!

LTO – first 150 buckets. Deals complete after buckets distributed.

Exclusions apply.