

## Transitioning Horses to Spring Pasture

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It is tempting to turn horses out into spring pastures at the first sight of green grass, especially after a long winter. However, spring grazing should be introduced slowly and delayed until grasses reach 6-8" in height to optimize both the health of the horse and pasture.

When horse pastures reach 6-8", begin grazing 15 minutes the first day, increasing the grazing time each day by 15 minutes until 4-5 hours of consecutive grazing is reached. After that, unrestricted or continuous grazing can resume. *Why is this recommendation so important?*

### HORSE HEALTH

**Change feedstuffs gradually.** Even though hay and pasture are both forages, there are significant differences. Dried hay is ~15% moisture compared to fresh pasture at 85% moisture. The horse is a hindgut-fermenting herbivore that relies extensively on the microbes present in its gastrointestinal tract to be able to process forages. The microbes are a mix of different organisms that work together for the benefit of the horse. If the feedstuffs the microbes are utilizing change suddenly, there may be too little time for the microbial populations to adjust. Instead, large numbers of microbes die, while others flourish, setting up a situation where toxins may be absorbed by the horse, resulting in digestive dysfunction and possibly colic. A gradual change from one feedstuff to another provides enough time for the microbial populations to adjust.

**Manage pastures to reduce the chance of laminitis.** Laminitis is a painful, disabling, common, and costly disease of horses and ponies that has many causes. Annual incidence of laminitis in the U.S. is reported to be 2%, but this rises to ~5% in the spring and summer. Nearly half of all reported cases of laminitis in the U.S. occur in animals at pasture. During photosynthesis, green plants produce simple sugars. When sugars are produced in excess of the energy requirement of the plant for growth and development, they are converted into storage, or "reserve" carbohydrates. Carbohydrate storage is commonly seen during spring rapid growth periods. The vegetative tissues of cool season pasture grasses (i.e., timothy, orchardgrass, brome grass) accumulate fructan as a component of their reserve carbohydrate, which is stored in the stem until required by the plant as an energy source. The sum of the simple sugars, fructan, and starch comprises the nonstructural carbohydrate (NSC) fraction of the plant. There is some evidence of association, and even stronger evidence of causation between laminitis and rapid intakes of NSC. Furthermore, administering high concentrations of fructan to horses has resulted in laminitis.

**Why is so much emphasis placed on fructan and spring grazing?** Seasonal variations in pasture carbohydrates are well documented. In European studies, concentrations of fructan were highest in the spring, lowest in summer, and intermediate in the fall. Because horses are selective grazers, and are known to find feedstuffs with elevated sugar content highly palatable, avoiding or restricting grazing in the early spring can reduce the chance of rapid NSC intake and laminitis. Horse owners should seek veterinarian approval before grazing horses susceptible to (or with previous episodes of) laminitis as some horses cannot tolerate any grazing.

### PASTURE HEALTH

Pasture grasses need sufficient growth before grazing is allowed. Photosynthesis (the process of converting solar energy to chemical energy) occurs mainly within the leaves of plants. If leaves are grazed too early (prior to 6" tall) or too often, plants can lose vigor, competitiveness, and root structure due to the lack of photosynthetic ability. This will lead to eventual die-back of desired forages and these areas being replaced by undesirable plant species or weeds.

Grazing should cease when forages have been grazed down to 3-4". At this time, move horses to another paddock or a dry lot. Grazing can resume when grasses regrow to 6-8". On average, 2-3 acres of well-managed pasture can provide the forage needs for one horse from spring to fall.

### CONCLUSIONS

It is critical to slowly introduce horses to spring pastures. When horse pastures reach 6-8", begin grazing for 15 minutes the first day, increasing the grazing time by 15 minutes each day until 4-5 hours of consecutive grazing is reached. Following this recommendation will help ensure both horse and pasture health.