

## How to feed when hay is in low supply or of poor quality



This summer had no shortage of sunny, dry days. While the weather may have been ideal for the show season, or for trail riding with your favorite horse, 2016 was not a great summer for growing hay in Ontario and parts of Quebec.

With only around half the normal days of rain between May and August for most parts of Ontario, hay yields are low and, in some places, very low.

So what does that mean for the horse owner?

The shortage of hay in many areas is already causing an increase in prices. Not only will the price of hay be high, but many producers are not seeing typical nutrition levels in their yields due to the extra dry weather. While the importance of testing hay to understand its nutritional value is always stressed, this year it is especially important.

Why is it important to have your hay analyzed?

Horses require a diet that is primarily based on forage, and therefore it is essential to understand the nutritional value of your hay in order to make sound decisions regarding the supplementation of calories, proteins and vitamins and minerals.

What are we seeing this year in terms of hay quality?

\* **Low Protein:** Average crude protein results for horse hay are coming in 2-6% lower than normal this year. Why is this important to know? While mature, non-working horses may not require a diet as high in protein, growing horses, mares in gestation or lactation, breeding stallions and performance horses will likely require additional protein supplementation to make up for the lack of protein in their hay.

\* **Low Digestibility:** Digestibility is affected by the fibre components of the hay, and this is correlated with the maturity of the hay at the time of cutting. When there is insufficient rain, the plant doesn't get enough growth to cut at the proper stage for optimum nutrient levels. More mature hay may result in higher yields per acre, but the digestibility is compromised. Mature hays with a high stem to leaf ratio are less digestible than younger hays. From your hay analysis, the important values to look at to determine digestibility are *Acid Detergent Fibre (ADF)*, *Neutral Detergent Fibre (NDF)*, and *lignin*.

i. *ADF* measures cellulose and lignin, the least digestible plant components. Cellulose varies in digestibility and is negatively influenced by the lignin content (the indigestible component); as lignin increases, digestibility of the cellulose decreases. *ADF* values increase as hay maturity increases, and higher *ADF* concentrations mean lower digestibility. Hays that are too high in indigestible fibres can increase the risk of gastric disturbances and distension of the digestive tract.

ii. *NDF* measures all of the fibre in the plant: hemicellulose, cellulose, and lignin. The *NDF* value is related to the amount of forage a horse can consume: as *NDF* increases, intake decreases.

iii. The relationship between *NDF* and *ADF* is important: if two hays have comparable *NDF*, the hay with lower *ADF* will be of better value for your horse.

If your hay is of poor digestibility, its nutritional value to your horse will be decreased, and this will have to be taken into consideration when making feed decisions this year.

\* *Low Calcium and Low Phosphorus:* Hay results this year for Ontario and Quebec are showing Calcium and Phosphorus values at the extreme lower end of typical values. What does this mean for your horse? It is essential to look at supplementation to ensure that his requirements are being met.

\* *High sugars:* Drought conditions can cause an increase level of accumulated sugars in hay; the hay may not have been able to grow much due to lack of water, but the sun is still causing photosynthesis and it will have accumulated plenty of sugar. Many hays this year are proving to be unsuitable for horses sensitive to sugars in their diet, such as those prone to founder, insulin resistant horses and horses with Cushing's. When in doubt, test your hay.

How do you make the most of the hay available this year?

First, plan now for peace of mind later. Weigh your hay to understand exactly how much you are feeding per day. This helps to prevent overfeeding or unnecessarily wasting hay. You will thank yourself in late winter when your hay stores aren't surprisingly lower than expected, and there is no hay to be found. Slow feeders and hay nets are great options to control intake and prevent unnecessary wasting; feeding round bales without a feeder has been found to result in hay wastage of up to 50%!

Second, feed to body condition, and understand what that means. By having a good understanding of your horse's body condition, you will be able to make sound choices when it comes to choosing what and how much to feed to maintain a [body condition score](#) of 5 (on a scale of 1 to 9). It is also important to understand the difference between an overweight horse and a horse that has a hay belly. With hays of lower quality and poor digestibility, on a forage-only diet horses will need to consume more hay to meet their nutritional requirements. On the flipside, the low digestibility will mean the hay is spending a longer time in the digestive system as the microbial population attempts to digest the fibre, causing distention and resulting in the infamous hay belly. We often hear complaints of "horses with big bellies" but poor muscle tone, poor coat quality, and visible ribs. Because of this "big belly", horse owners are often reluctant to feed a concentrate. However, in these cases, it is important to manage the hay intake, improve hay digestion by feeding a product containing probiotics and prebiotics, and/or a [live yeast](#) culture, and if necessary, supplement with a high fibre product containing good quality protein, vitamins and minerals to balance the deficiencies in the hay. For performance horses, growing horses, pregnant or lactating mares, senior horses and other horses where forage alone is not meeting their caloric requirements, choose a product designed specifically for their needs, and feed according to label directions at levels that will maintain a healthy body condition.

Next, to stretch your hay supply throughout winter, you can look at products that can replace a portion of the hay in your horse's diet. The horse's digestive system is designed to function primarily on forage, and hay provides the long-stem fibre required to function optimally. Therefore, it is much better to stretch the existing hay source throughout the season instead of feeding all the hay first and then running out halfway through winter. Options include hay cubes, hay pellets, and complete feeds with high levels of fibre that can be fed as a [partial hay replacer](#). A horse should consume a minimum of 1.5 to 3% of bodyweight per day of long stemmed forage, and following the feeding instructions specific to the product you choose will help eliminate the risk of digestive disturbances, or the development of stereotypies associated with low fibre diets.

By replacing a portion of the hay diet with a hay supplement, you will be able to stretch your hay supply further, while providing a good quality source of highly digestible fibre and protein. Various products also offer different additional advantages; some may solely provide an additional [source of digestible fibre](#) and protein in a convenient, dust-free product, others may offer those, *plus* added vitamins, minerals, probiotics and prebiotics. Many of these products are also low in sugar and starches, which make them suitable for horses whose sugar and starch intake needs to be managed. Choose the product that is suited for your horse's life stage and nutritional requirements.

Third, balance for vitamins and minerals. Even in the best of years, hay is not able to provide all the vitamins and minerals a horse needs. By having a clear understanding of how much concentrate and how much hay supplement you are feeding, you will be able to meet the missing vitamin and mineral requirements with a [good quality ration balancer](#). If you are feeding under the recommended amount of a concentrate, you will need to balance for vitamins and minerals. If your hay is low protein and low digestibility, chose a ration balancer that has [higher protein levels](#). If you have chosen a hay supplement that contains added vitamins and minerals, balance accordingly.

Lastly, and most importantly, always be sure to have hydration in mind. Changing from pasture to hay, changing fibre sources, feeding poor quality hay or even the change to colder temperatures can increase the risk of digestive upsets, especially if horses are not properly hydrated. Clean, fresh water that is not too cold is essential in encouraging your horse to drink. Adding loose, white salt, to your horse's diet can help increase water consumption. Soaking feed and or hay are also options for horses especially prone to digestive upsets.

If in doubt, seek out the advice of an Equine Nutrition Consultant. They can help sample your hay for analysis, interpret the results, body condition score your horses, evaluate your nutrition management practices and balance rations for specific needs.