

Understanding Hay Analysis Results

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For most horses, hay is a primary source of nutrients and essential fiber for hindgut health. Performing a hay analysis can help you balance the rest of your horse's diet and potentially reduce feed costs. These test results can provide a copious amount of information, but here are some important aspects to understand:

- DM (%) = dry matter, which indicates all nutrients in the sample minus water. When horses digest hay, the water is removed. Therefore, dry matter most closely represents the nutrients available to the horse.
- AS (%) = as sampled, which indicates all nutrients in the sample plus water. Most feed tags are printed on an "as sampled" basis, so use this value to calculate total diet nutrients if feeding hay and grain.
- CP (%) = crude protein. This is the total amount of protein in the sample.
- ADF (%) = acid detergent fiber. This is the amount of cellulose and lignin in the hay. Horses cannot digest either of these components, so the higher this value, the more indigestible the hay. Values generally range from 30% (more digestible) to greater than 50% (less digestible).
- NDF (%) = neutral detergent fiber. This includes hemicellulose, cellulose, and lignin. These components provide the "bulk" of hay because they are the structural parts of the plant. The higher the value, the smaller amount of hay a horse needs to consume to meet his nutrient requirements. Values typically range from 40% (more hay needs to be consumed to meet requirements) to greater than 60% (less hay needs to be consumed to meet requirements).
- WSC (%) = water-soluble carbohydrates, which includes carbohydrates such as mono-, di-, and polysaccharides. Examine water-soluble carbohydrate levels carefully for horses with or prone to laminitis, insulin resistance, equine metabolic syndrome, or other related-health conditions. High WSC levels markedly affect blood-insulin responses and often cause an exaggerated response in these horses, which can lead to potentially life-threatening bouts of laminitis.
- DE (%) = digestible energy. This is the energy in the hay minus the energy lost in normal metabolic functions and feces. This is the most common source of estimating energy value in the equine diet.

Take-Home Message

A hay analysis is an important tool for horse owners to help better balance their horse's diets and formulate a least-cost ration. Because forages should make up the greatest portion of the horse's diet, performing a hay analysis is a simple tool to ensure a properly balanced ration.