

Swiftsure Equine Veterinary Services

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How to Read a Hay Analysis

As Fed or Dry Matter

First looking at a hay analysis, there are two columns of numbers, entitled “As Fed” and “Dry Matter (DM)”. To properly read an analysis, we eliminate the variable of moisture in order to accurately compare and analyze the nutritional value of the hay. Therefore, we evaluate the numbers in the Dry Matter column only.

Crude Protein

Crude Protein (CP) is an estimation of the total protein content of a feed. The acceptable range of CP for maintenance of an average horse is more than 8% to less than 14%, with an ideal range of 11 to 13%. Your horse’s requirement for protein in the hay will be dependent on what other feeds are being offered, exercise level, age, and health state.

NSC

Non Structural Carbohydrates (NSC) is the sum of Water Soluble Carbohydrates (WSC) and Starch. It is commonly used to determine whether the hay has safe parameters to feed to a metabolically challenged or laminitic horse. The acceptable range of NSC is less than 11% for a metabolically challenged horse, or less than 15% otherwise.

WSC

Water Soluble Carbohydrates (WSC) is a measure of very simple sugars plus more complex storage sugars called, Fructans. Research shows that Fructans may be causing significant health issues for our metabolically challenged horses. The acceptable range of WSC is less than 10% for a metabolically challenged horse, or less than 14% otherwise.

Starch

Starch is a complex form of sugar that the plant may use to store carbohydrates. The acceptable range is less than 1.2%.

Nitrates

Nitrates are nitrogen containing compounds that can be toxic to horses if ingested in large quantities. An acceptable range of Nitrates is less than 0.4%.

ADF & NDF

Acid Detergent Fibre (ADF) and Neutral Detergent Fibre (NDF) values give an indication of the ability of the horse to digest the nutrients in the hay. The higher the values, the lower the digestibility. NDF can be used as an indicator of palatability. The lower the NDF, the

more palatable the feed. The ADF acceptable range is less than 40% (typically 30 to 40%) and the NDF acceptable range is greater than 55% (typically 55 to 60%).

DE

Digestible Energy (DE) is essentially a measurement of energy in a feed and is measured as MegaCalories (MCAL) in the horse. DE can be misleading at times, as it does not take into account digestibility of the feed. Some feeds, high in cellulose (high ADF & NDF) will have a high DE, but a low digestibility, resulting in a lower caloric intake. The DE acceptable range is greater than 2 MCAL/kg or 0.85 MCAL/lb.

Other important micronutrients in hay may or may not be included in the hay analysis, including Selenium, Zinc, Magnesium, Calcium and Phosphorus.