



Parkridge **HAY**

Quality Pasture
Horse Hay

FEEDTEST Guide

Hay & Mineral Analysis
How to read your results



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Feed Analysis

Dry Matter/Moisture

Legume hay with soft leaf should be around 13% moisture. Too dry and the leaf shatters and is lost, too wet and the hay can go mouldy and heat up. Cereal and **grass hays should be 8% to 12%.**

Crude Protein (CP) can vary widely from 1% to 3% for straw, **3% to 10% for grass hay**, 15% to 25% for legume hays and 23% to 29% for fresh pastures. Protein is an important factor in the overall 'Digestible Energy' of a feed.

Acid Detergent Fibre (ADF) is the indigestible fraction of the hay including hard stalks and stems. It is important for function and fermentation in the hindgut. The higher the ADF, the lower the energy value of a feed.


Neutral Detergent Fibre (NDF) is the total amount of fibre including cell walls in leaves and stems. Some fibre is digestible in both the foregut and the hindgut. High NDF can limit the physical amount of fodder a horse can eat.


Digestibility (DMD) generally refers to ruminants but this figure can give an idea of the overall value of a feed. High digestibility means high feed efficiency and energy absorbed per kilo of fodder.

Digestibility (DOMD) is the digestibility of the organic matter and has the ash content taken out.

Metabolisable Energy (ME) is a calculation of the calorific value of the feed, it is like the calories on a food label. It is an indication of the energy value of the feed and the animal performance that can be expected from it.

Water Soluble Carbohydrates (WSC) is the sweetness of the hay and the sugar load which can be critical to IR or Laminitic horses.





Non Structural Carbohydrates (NSC) is the sum of WSC and Starch or Fructans. Starch is generally low in hays, in the order of up to 3% so the WSC is the greater bulk of the sugar load in a hay. Oaten hays can be very high ranging from 18% up to 35% WSC, **grass hays harvested for peak sweetness are generally 15% to 20%**, native grasses are up to 12%.

Ethanol Soluble Carbohydrates (ESC) are a sub-set of WSC and measure the short chain and small molecule sugars which are rapidly digested.

Starch is generally low in hays but can be important in overall digestive function. Starch carryover into the hindgut can contribute to problems.

Sugar

The sugar measurement is part of the starch analysis and consists of simple sugars only. The difference between WSC and sugars is likely to be predominantly Fructans.

Horse DE


Horse Digestible Energy (MJ/kg) indicates the energy density of the feed. This is critical to ensure that the horse gets enough nutrition from the volume of hay it eats.

Mineral Analysis

Mineral Analysis is one part of the overall mineral management of your horse. It is not possible to give a standard level of minerals as there are many different species of plants on many different soils and growth situations.

Mineral levels will vary markedly but by themselves will not indicate deficiencies or toxicities. They do however provide valuable information when considered in conjunction with soil analyses and/or blood tests.

The mineral levels do provide a mechanism where mineral intakes can be monitored in your horse's diet.





Mineral Analysis cont.

For example; a Calcium level of 3400mg/kg in your hay (87.8% dry matter) means that your horse will take in 4.78g of Calcium with every 1.6kg biscuit.

When comparing minerals, the units of measurement may differ.

The simple rule to convert mg/kg to percent is to divide the mg/kg number by 10,000 = %.

A calcium level of 3400mg/kg converts to 0.34% (3400/10000).

For more information contact:

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How much sugar is in this hay?

As a rough guide, you can estimate the amount of sugar your horse gets from a biscuit of hay with your test results. This is based on the average biscuit of hay weighing about 1.6kg (1600g). The calculation uses the WSC and the Dry Matter.

e.g. 1 biscuit of hay of 87.8% dry matter and 11% WSC is 165g sugar.


$$\text{Sugar (g)} = (1600 \times 0.878) \times 0.118 = 165\text{g}$$

A ready reckoner is tabulated below:

Sugar Calculator (g)		Dry Matter %									
		92%	91%	90%	89%	88%	87%	86%	85%		
Water Soluble Carbohydrates %	5%	74	73	72	71	70	70	69	68		
	7.50%	110	109	108	107	106	104	103	102		
	10%	147	146	144	142	141	139	138	136		
	12.50%	184	182	180	178	176	174	172	170		
	15%	221	218	216	214	211	209	206	204		
	17.50%	258	255	252	249	246	244	241	238		
	20%	294	291	288	285	282	278	275	272		
	22.50%	331	328	324	320	317	313	310	306		
	25%	368	364	360	356	352	348	344	340		
	27.50%	405	400	396	392	387	383	378	374		
	30%	442	437	432	427	422	418	413	408		
	32.50%	478	473	468	463	458	452	447	442		
	35%	515	510	504	498	493	487	482	476		
	37.50%	552	546	540	534	528	522	516	510		

Grams of Sugar in a 1.6kg Biscuit

NOTE that grass pasture will also contain varying amounts of sugar which must be taken into account when estimating the total sugar intake of your horse.



Water Soluble Carbohydrate (WSC) % Scale

Diet Hay 1 - 8% WSC & low protein

Low Sugar Hay 4 - 12% WSC

Medium Sugar Hay 13 - 16% WSC

High Sugar Hay 17% + WSC



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