

## ALTERNATIVE HAYS AND ROUGHAGES (As Fed Nutrient Values)

**Comparative Nutrient Values – You can compare the Lucerne and Oaten Hay nutrient profile with the alternate hays for relative nutrient content.**

Feed	Description	Energy MJ/Kg	Crude Protein %	Calcium %	Phosphorus %	Preparation before Feeding
Lucerne Hay (Mid Bloom)	Soft leaves, thin or flattened stems, 25-50% flower heads, soft to feed.	9	17	1.3%	0.22%	Dampen to reduce dust prior to feeding – higher in protein than most horses require.
Oaten Hay	Sweet, soft hay with some grain in heads, falls apart when dry.	7.4%	8.1%	0.33%	0.20%	Dampen to reduce waste and dust prior to feeding.
Barley Hay	Coarse, fibrous hay with sharp awns on heads and thick stems, which can reduce acceptance. Often dusty, high wastage if not soaked.	7.4	7.8	0.21	0.25	Dampening to soak for 20-30 minutes will help improve palatability, acceptance and reduce waste.
Japanese Millet (Barnyard Grass)	Fine stemmed cereal hay – palatable before full maturity. Seed contains silicon widely recommended for joint health.	6.8	8.8	0.2	NA	Spray on molasses to improve acceptance. Soft when dampened – check for mould and must be ‘sweet’ to smell.
Buffalo Grass	Coarse, rough hay with thick leaves – falls apart easily – must be fed dampened.	6.4	6.9	0.56	0.12	Dampen prior to feeding. Can be mixed with lucerne chaff, as a short dry roughage.
Sorghum Hay (Milo)	Thick stems and leaves can reduce palatability. Once dried, toxic compounds less than green sorghum.	6.4	6.5	0.35	0.18	Chop up large stems and dampen prior to feeding to reduce wastage. Mix with 30-50% lucerne hay to improve nutrient intake.
Pea Hay	Higher protein hay relative to pod content – sweet and palatable. Check for mould	8	13	0.84	0.23	Always open up bale to check for mould “fumes” and sour odour. Dampen before feeding – substitute for lucerne.
Pea Straw	Lower nutrient and protein content than pea hay, but still palatable – check for mould and stones.	3.56	4.0	0.89	0.6	Less energy and protein than hay but useful hay to mix with lucerne to extend bulk.
Rice Straw	Low digestibility. Coarse, hard stems and leaves – may lacerate mouth – solid stems.	5	4	0.19	0.07	Dampen well before feeding as stems are solid (not hollow) limit 200g/100kg bwt/feed.
Waste Paper	Clean cardboard – no staples and shredded non-printed paper has been used as a roughage for horses.	4	0.6	0.09	0.06	Feed with Lucerne. Low in energy, protein – only use to extend hay – feed only if desperate.
Canola Hay	Coarse, fibrous stems and leaves when dry. Can be dusty and not palatable unless dampened	7.1	14	NA	NA	Dampen before feeding – mix 50:50 with lucerne or cereal hay.
Vetch Hay	Legume type plant with higher energy & protein, diluted if mixed with oats or wheat.	8.3	18.4	1.21	0.3	Although a legume similar to lucerne, do not feed pure vetch hay as it has been associated with colic. Always mix 50:50 with cereal or grass hay.
Vetch Oat Hay		6.6	11.9	0.76	0.27	

Feed	Description	Energy MJ/Kg	Crude Protein %	Calcium %	Phosphorus %	Preparation before Feeding
Lupin Hay	Large leaves and coarse thick stems.	Note: Lupinosis can occur in cattle, sheep, horses and pigs grazing and being fed stubble due to mould growth on the plant. Lupin hay must not be fed if it is mouldy. It is best to avoid feeding Lupin Hay.				
Pangola Grass Hay (43 days growth)	Coarse stems and hairy leaves. Less palatable when dry.	2.7	5.7	0.35	0.16	Chop up and soak before feeding to improve palatability and reduce waste.
Brome Grass Hay (mid bloom)	Rough leaves and coarse stems, falls apart easily when dry. Seeds may compact in between teeth.	7.8	12.6	0.25	0.25	Sharp leaf edges may lacerate mouth – dampen before feeding.
<b>Substitutes for Chaff</b>						
Lupin Hulls	Highly digestible fibre with traces of lupin seed particles.	8.1	8.2	NA	NA	Can be mixed with 5% molasses water to reduce dust. Limit 750mL/100kg bwt/feed.
Sunflower Hulls	Moderate digestibility some seed parts and oil in hulls.	4.3	4.8	0.15	0.03	Dampen. Limit to 600mL/100kg bwt/feed.
Rice Hulls	Poor digestibility, high in silica, sharp hard hulls	1.9	2.8	0.11	0.07	Grind and soak prior to feeding. Limit to 400mL/100kg bwt /feed.
Oat Hulls	Low digestibility. Often mixed with 5% molasses at feeding.	6	3.8	0.15	0.14	Limit to 750mL/100kg bwt/feed. Does not reduce risk of sand colic as claimed.
Sugar Beet Pulp	Available as Speedibeet. Very digestible fibre – mix 30-50% with chaff to increase bulk	11.8	8.9	0.62	0.09	Soak to swell before feeding. Very palatable and improves acceptance of food.
Soyabean Hulls	Highly digestive fibre. Available as Easifibre.	10.8	12	4.5	1.9	Dampen before feeding. Can be used to provide 50% of forage requirement. Generally well accepted.

### Water Quality

Although most horse owners are concerned about securing supplies of hay under drought conditions, the supply and quality of water for horses must also be considered. Horses consume 2 ½ - 5 times more water by weight (1litre=1kg) than dry food each day, relative to their workload, sweat output and in lactating mares, milk production, which increases water demand by 200% - ensure lactating mares have adequate, clean, fresh water to maintain their milk production of up to 20L/day for a 500kg lactating mare.

**Dam water is of particular concern during a drought, as hot weather during the summer months evaporates water from the dam surface, concentrating suspended solids, pollutants and organic matter from dying plants, salts, faecal contamination from run off and micro-organisms.**

Horses are usually choosy about the taste and palatability of water they consume, reducing water intake if it is too salty, has a different taste or has an odour. Reduced water intake can lead to dehydration and increase the risk of impaction colic in horses eating dry hay. Miniature horses are particularly prone to impaction colic if they do not drink enough water. This is a problem not only in hot weather but also in cold weather as Minis often do not consume enough water to maintain the water content of their hindgut. This can lead to impaction colic if dry hay or chaff is fed.

Foals and aged horses with low immune status are particularly susceptible to microbial contamination in water. In a drought, dams can become a haven for ducks which carry microbes such as Salmonella, which can lead to diarrhoea in aged horses – it is best to provide clean town or rain water in a bucket and fence off access to the dam.

### **Handy Hint**

Provide additional water in a tub or bucket in a yard if dam water is low and solids and organic matter is concentrated. If horses are used to drinking dam water with a muddy, clay taste, they will often not readily accept town or tank water. To help improve acceptance, obtain some clean clay, put 100gm in a microwave and microwave on 90 seconds on high to kill any micro-organisms. Then mix the ‘cooked’ clay in 20 litres of water to impart a “muddy taste”. If town water is highly chlorinated, add 2 litres of boiling water/20 litres of town water to evaporate the chlorine.