

# Basic Nutritional requirements of horses

## Forage for a healthy hindgut

Fact Sheet series for the  
Small Rural Landholder

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### The Issue

*When access to a fibre source is limited or horses are fed periodically (i.e. not provided ad lib or freely available feed) they can suffer psychological stress and tend to over eat to compensate once feed is made available.*

*Limiting a regular forage supply can also:*

*Increase the likelihood animals will eat toxic plants or timber such as fence posts and trees;*

*Increase injury risk by leaning over fences to graze; and*

*Heightened aggression between animals for food resources may occur.*

*Limited access to a quality pasture or hay source is detrimental to gastrointestinal tract health.*

Horses are hindgut fermenters and require a constant supply of high fibre forage to keep their gastrointestinal tract working efficiently. Hindgut fermenters rely on a healthy microbial population to break down fibre, thus maintaining proper function and health of the digestive system.

The process of fibre breakdown in the hindgut by microbes produces heat, hence by providing sufficient fibre in the colder periods will assist to keep horses warm. Seasonal temperature fluctuations, especially during colder conditions, may cause a loss of body condition especially if a source of adequate fibre is not readily available.

Too little fibre, high grain diets or prolonged periods of time without food can disrupt the microbial population and hinder proper function of the equine digestive system. In addition, rapid changes in diet (i.e. from a predominately hay based diet to a pasture based diet without gradual transition) can upset the balance of the hindgut bacteria.

High fibre forage includes:

- Pasture;
- Pasture hay; and
- High fibre commercial feeds such as beet pulp and soy hulls.

The high fibre forage should account for the bulk of a horse's diet, with a minimum of 1.5% of an animals' bodyweight being offered daily.



This means a 500kg horse will need to consume 7.5kg (dry weight) of pasture, hay or equivalent fibre source just to keep their gut functioning properly.

Whilst horses require a constant supply of fibre, idle or spelling and lightly worked horses do not need a high energy diet. Sugars and starches are digested in the stomach and small intestine along with nutrients, and are highest in grain and cereal pasture and hays. Excess sugar and starch in the diet can pass through undigested to the hindgut, leading to a build up of lactic acid and associated problems, such as hindgut acidosis ('tying up'), diarrhoea and laminitis.

### **Feed tests and nutritional supplements**

Many horses will only need to be supplemented with salt (sodium chloride) on top of high quality pasture or hay and fresh water. Other vitamins and minerals should be supplemented according to pasture and hay nutrient shortfalls.

These short falls can be determined by undertaking a feed test analysis on a hay sample. An online feed program may also help to estimate requirements, and choose a supplement based on results. This is generally a very economic way to provide a balanced ration.

### **Feed tests**

After establishing a good supply of pasture or pasture hay, test for nutritional value to determine protein, metabolisable energy (ME) and vitamin and mineral levels and Non Structural Carbohydrate (NSC) levels (sugars and starches) for horses requiring a low NSC diet. As a general rule, NSC levels < 10% are safer for horses and ponies, particularly if they have a diagnosed or suspected metabolic issue such as laminitis, Cushing's disease, or a history of digestive or hindgut issues.

#### Key management considerations

*A clean fresh and constant water supply is essential*

*Ad lib forage (pasture and or pasture hay) as required. Extra hay should be offered before a cold snap, and prior to animals losing body condition.*

*Provide a basic vitamin mineral supplement according to forage or ration shortfalls.*

*Additional energy requirements for aged, lactating, late pregnant, working and young horses may be required.*

*It is best to allow free grazing or ad lib hay as a base ration, and then supplement with higher energy feeds as required.*

*There are many feed ration formulation programs available at little or no cost which can be accessed online to assist with building a simple, forage based diet .*

*The majority of horses will do very well on a base diet of rested, unimproved or native pasture, with additional hay in the colder months according to condition.*

*Weekly body condition scoring can be useful to identify whether animals are maintaining, improving or losing condition.*



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#### For general information contact:

Bass Coast Landcare Network  
[info@basscoastlandcare.org.au](mailto:info@basscoastlandcare.org.au)  
[www.basscoastlandcare.org.au](http://www.basscoastlandcare.org.au)  
 Phone: (03) 5678 2335

#### Energy requirements for aged, lactating, late pregnant, working and young horses

Additional energy and protein in the form of grain, cereal and legume hays, supplements and commercially prepared feeds should be fed as per individual requirements for horses who are aged, lactating, late pregnant, working and young stock. Late pregnant (last three months of pregnancy) and lactating mares, young stock, older, injured and competition horses will require additional energy to supplement their basic ration. However, constant access to good pasture or hay should still form the basis of a horses' diet, to keep the gastrointestinal tract healthy.

#### Water quality

The first basic requirement of any animal is a constant supply of clean fresh water. Water troughs should be inspected daily to ensure constant availability and to remove potential contaminants such as dead birds or animals. Self-filling troughs still need to be checked daily to make sure floats, valves and pumps are in working order.

Dams can be a suitable water source but are not recommended in most cases due to:

- Potential contamination from manure;
- negative impact on biodiversity;
- increase sedimentation & pollution;
- risk of erosion;
- animals can get stuck in the mud.

#### Water tests

Water sources for animals (other than mains water) should be tested periodically to check it is safe for consumption. Water tests are easy to carry out and relatively inexpensive, especially if rain, dam and bore water are the sole sources of water for animals.

#### Water temperature

Water temperature in winter may become too cold for horses to drink as much as usual. If this occurs it may help to add a water heater to encourage adequate consumption. This is important, as a decreased intake of water can increase dehydration and reduced gut function,

and lead to health problems such as colic; a veterinary emergency. It is extremely important to encourage adequate intake of water.

#### Summary

1. The types and quantities of higher energy feed required will depend on a number of factors as described in the fact sheet.
2. A good analytic program can help to build a suitable ration which a qualified equine nutritionist or equine vet can help determine.
3. Generally, it is best to keep the diet as simple as possible to keep the hindgut healthy. Allowing horses to graze healthy, diverse pastures and providing supplemental hay during the colder months is beneficial.
4. There are many slow feeder hay nets on the market, which can help to slow the rate of consumption of hay, providing a constant supply of fibre without overfeeding or having hay spoiled or wasted.

#### Further reading and resources

Feed XL – “The do-it-yourself feed planner for your horse” [www.feedxl.com](http://www.feedxl.com)

Kentucky Equine Research (KER)  
<https://ker.com> Go to tools/microsteed

Kohnke, J. (1999) “Feeding Horses in Australia - a Guide for Horse Owners and Managers” RIRDC publication No 99/49, Australia.



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