

Christine Scully on

Roughage. The Key To Healthy Digestion.

Christine Scully

BAppSci (Equine Studies) Honours Class 1. C.Sturt.
Dip Equine Acupuncture Cert.Sp.Mass., Cert Nat., Cert IV Training and Assessment

At this time of the year, especially, many horses have a deficiency of pasture and the tendency is for owners to provide more concentrates in the diet to cover for this lack of pasture. Unfortunately horses are missing out on their required intake of roughage and the extra concentrates being fed can have a negative effect on their digestive health. So let us look at the provision of roughage to our horses.

The Requirement For Roughage:

Roughage and water are the most important of all digestive inputs to our horse diets. A lack of roughage results in a reduced ability to absorb the nutrients to survive. Despite this fact more and more horse owners are feeding higher proportions of concentrated rations and our incidence of digestive problems is rising.

What is the function of roughage?

Roughage is a source of both digestible and indigestible fibre.

Digestible fibre is a source of energy for the horse and bowel flora. These micro-organisms are involved in digestive function, and are a source of some nutrients for the horse.

Indigestible fibre is involved in maintaining normal acid levels in the digestive tract along with normal bowel motility. Little indigestible fibre is contained in concentrated feeds.

Given the above functions, providing adequate roughage assists to maintain bowel activity, normal acid levels, and the uptake of nutrients through bowel micro-organism activity. This can only have a positive benefit to digestive function and general health.

Frequency of meals:

The horse has a very small stomach in comparison with the total digestive tract (See Diagram One). This is one of the reasons the horse is designed to continuously forage for food.

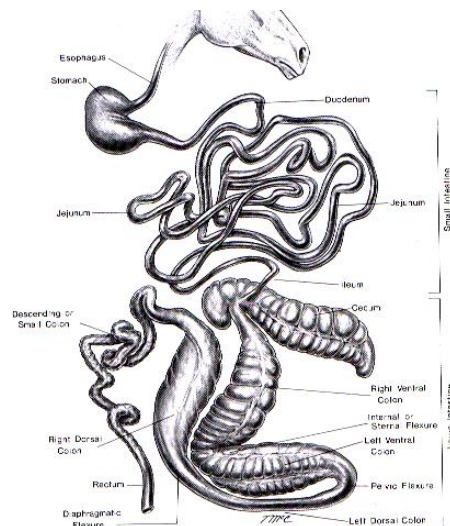
Grazing horses spend at least 70% of their time foraging. If we compare this to common practises of feeding once or twice per day to a horse with limited pasture, we see yet another issue contributing to digestive problems in horses.

Large infrequent meals can result in:

1. Reduced contact between the feed and gastric juices, reducing breakdown of feed.
2. Increased gastric acid secretion in response to the large amount of feed.
3. Excess stretching of the stomach, leading to increased bowel motility, and a large influx of fluid into the bowel.
4. Circulating blood volume reduces as fluid leaves blood vessels to the bowel.
5. Significant changes in electrolyte, enzyme and hormone levels also occur.
6. Less time is spent eating than that spent by pasture fed horses. Leading to the development of stable vices etc.

These effects increase the risk of high gas production, colic, laminitis, gastric ulceration and reduced bowel flora activity. When the same volume of feed is split into 4 - 6 meals per day, these changes do not occur, nor are they seen in pasture maintained horses.

Diagram One: The Equine Digestive System.



Source: Lewis L.D. (1995) Equine Clinical Nutrition. Feeding and Care. Williams & Wilkens. USA

Solutions:

The simplest solution is to provide our horses with continuous access to hay or good pasture. All horses, unless working at intense levels, lactating or growing can live quite well on a complete diet of pasture and/or hay, (assuming adequate mineral levels).

How much Roughage is a minimum?

Proportions of Roughage to Concentrate for Horses		
Activity Level	Hay %	Concentrate %
Maintenance	90 - 100%	0 - 10%
Light Work	70 - 100%	0 - 30%
Moderate Work	60 - 70%	30 - 40%
Intense Work	50 - 60%	40 - 50%

Source: NRC 1989

Most of our horses are in light work or less, and from the above table you can see that the bucket feed can be disposed of and you will enhance health not reduce it!

Sure when our horses' work level increases more energy is required, but here also roughage is the key to healthy digestion.

Have a think about your diet... what proportion of roughage do you provide your horse? How often do you feed? Most important of all ... what simple practices can you alter to improve the digestive health of your equine friend?

Until next time take care of yourselves and your equine friends. *Christine*