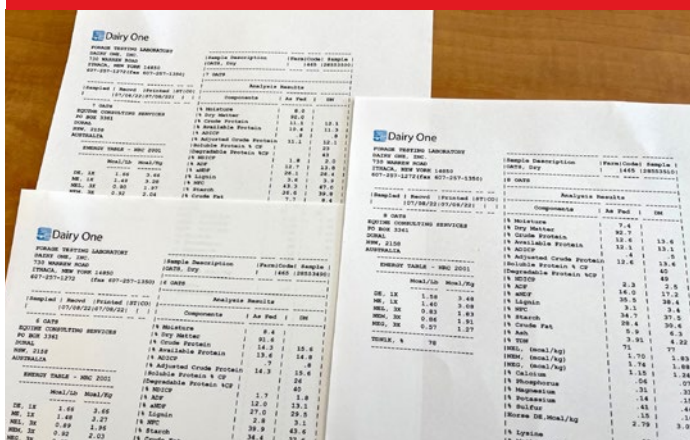


In this Issue...

- NUTRITION BASICS | Controlling nutrient levels in diets
- RACING RESEARCH | Can we carb-load horses?
- STUD FARM SCIENCE | Protein quality and growth
- ALL THINGS EQUESTRIAN | Equine Gastric Ulcer Syndrome

NUTRITION BASICS



RACING RESEARCH



Controlling nutrient levels in diets

The nutrient content of feed ingredients (i.e. the level of carbohydrate, protein and fat) varies considerably between feed sources and is also related to climatic and agronomic factors as well as the variety of grain used.

In our experience we have seen levels of crude protein in oat samples vary from around 9% to over 14% and starch from less than 30% to around 45%. The grain weight can also vary considerably (a standard 2L dipper can weigh between approx. 900g – 1.25kg).

The variations in nutrient content of raw materials can have a marked effect on the total diet which, if not corrected, may impact performance over time.

The monitoring of the nutrient composition of feed ingredients and sourcing of feedstuffs from single-origin suppliers can assist in controlling for these variations.

Can we carb-load horses?

Procedures to increase muscle glycogen (“glycogen packing or loading”) have been utilised in human athletes involving increasing carbohydrate intake while reducing exercise in the 2 – 3 days before an event.

Similar regimens to increase muscle glycogen content of horses have been explored. While a small increase in grain content in the days leading up to a race may help to top up muscle glycogen stores, too much of an increase can result in digestive or metabolic issues through the overloading of carbohydrate into the large intestine.

Gut fill is often of more concern when feeding the racehorse. A slight reduction in hay for a 2 – 3 day period before a race will reduce body weight (increasing the power to weight ratio) without causing digestive disturbances.

A diet supplying appropriate levels of carbohydrate and fat tailored to the horse’s workload and environment will help to ensure adequate energy reserves for optimal performance on race day.



Protein quality and growth

Both the amount of protein and its quality, or amino acid content is critically important for growth and development.

- In yearlings, supplementation of specific amino acids has been reported to improve average daily gain (*Potter and Huchton, 1975; Ott, 1981*);
- Similarly, lactating mares fed high-quality protein prior to and following foaling produced milk with a higher protein content during the first month of foaling compared to mares not on the supplemented feed. Foals born from these mares also had significantly higher growth rates during the first seven weeks of life (*Graham et al., 1994; Graham-Thiers and Kronfeld., 2005*).

High-quality protein sources include soybean meal, canola meal and lupins, while added amino acids typically include lysine and methionine.



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Equine Gastric Ulcer Syndrome (EGUS)

It is well known that racehorses are prone to gastric ulceration, however studies have also reported EGUS in horses involved in other disciplines with prevalence figures of 58% in show horses (*McClure et al., 1999*); 67% in endurance horses (*Nieto et al., 2004*) and even 71% in broodmares (*le Jeune et al., 2009*) reported in the literature. Risk factors for EGUS include exercise intensity, highly concentrated diets, forage quality, intermittent feeding, transportation and use of non-steroidal anti-inflammatories (*Andrews et al., 2005*).

There are a number of nutritional strategies that have been suggested to reduce the risk of EGUS. These include:

- The use of lucerne hay as the primary roughage source (*Nadeau et al., 2000*);
- Reducing the time between feedings;
- The use of slow hay feeders;
- Feeding a small amount of lucerne hay approximately 30 minutes before work;
- Limiting the use of concentrates where possible;
- The addition of vegetable oil in the ration.

There are numerous supplements on the market that have been suggested to reduce the incidence of EGUS in horses. Further research is required to support their efficacy in the field.



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