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Nutritional Minute



Myths and Facts about Protein

MYTH: Protein is a good source of energy for mature horses.

BUSTED: Of the three dietary energy sources—carbohydrates, fats and protein—protein is the hardest for horses to turn into energy. It is inefficiently utilized and produces more heat during metabolism than carbohydrates or fats. A feed high in protein may not be high in energy. Energy is what mature horses need most to perform at optimal levels.

MYTH: The higher the crude protein content, the better the feed.

BUSTED: Over the years, high-percentage crude protein feeds have been equated with quality because good quality proteins tend to be more expensive. Therefore, feeds containing high-quality proteins cost more and have been assumed to be better feeds for all horses. This is not always the case.

The percentage of protein needed by an individual horse varies throughout his lifetime. While a high-protein feed may be best for a younger horse, it may not be the best feed for a mature horse that has high energy and low protein demands. The percentage of crude protein alone does not indicate the type or quality of the protein in a feed. Not all protein is created equal. Young horses consuming the inappropriate levels and types of proteins will not grow properly even when supplied with adequate energy. Bottom line, you need to match the right types and levels of protein to meet your horse's specific needs.

MYTH: Feeds high in protein "cause" kidney damage.

BUSTED: High-protein feeds do not cause kidney damage to healthy horses. Excess protein is excreted in the urine as urea. When a horse takes in more protein than he needs, he tends to urinate more and the urine is often stronger smelling. In the past this was equated with kidney stress. However, horses that have developed liver or kidney disease from another cause may be put on protein-restricted diets to ease the workload on the compromised organs.



FACT: Too much protein in the diet can cause health problems.

Unlike fats and carbohydrates, horses do not store protein for later use. Excess protein metabolism results in the buildup of nitrogen end-products, such as ammonia and urea.

A diet containing excess protein will increase the horse's water requirements and urine output as the ammonia and urea are flushed out of the body. Exposure to this strong urine can cause lung irritation and other airway problems.

FACT: Protein requirements change throughout a horse's lifetime.

Protein requirements are dependent on the age, health status, and work load of your horse. Growing and reproducing horses need the highest levels of protein in their diets, which makes sense because new tissue is being created to sustain growth.

Hard-working horses are next in line as they are building new muscle and replacing damaged tissue on a regular basis. Sedentary and middle-aged horses that don't work very hard have the lowest requirements of protein.

As they progress into their senior years, horses may need additional protein as the efficiency of their digestive tracts decreases. Horses with certain medical conditions may need more or less protein in their diets depending on their health issues.

FACT: The percent crude protein number on your feed tag is only one piece of the puzzle.

The "percent crude protein" found on the labels of feeds and supplements is a calculation of the nitrogen content of the product. Nitrogen is contained in the amino acids that serve as the building blocks of proteins. The word "crude" means that not all the protein reported by this number is digestible. It is estimated that between 2% - 5% of many common protein sources are not absorbed.

While the percent crude protein number is helpful, it should not be the sole piece of information used when choosing a feed or supplement for your horse. Crude protein does not tell you the source of protein contained in the feedstuff or the amino acid makeup of that protein. Percent crude protein is most useful when combined with information on the type of protein included in a product.

As we discussed in our previous Nutritional Minute, Protein Demystified, lysine is the first limiting amino acid in a horse's diet. Knowledge of the lysine content of a protein source is necessary when properly balancing your horse's diet. Some labels will include the percentage of lysine found in a product. Knowing what ingredients are good sources of lysine and identifying those sources in the ingredient list will also help you make an informed decision.

Since all horses are individuals, we recommend you consult with your veterinarian or trained equine nutritionist to fine-tune the percentage of protein required in your horse's diet.



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