

WHAT ABOUT FAT?

by Jim Ward, D.V.M.

Lately, there has been tremendous interest in the horse world about fat. In regards to human nutrition, "fat" is often considered a bad word, and low-fat diets are a popular trend. But we should remember that in people, some fats are necessary and healthy. This is equally true for horses: fats play a very important role in equine nutrition.

There are many reasons to feed horses added fat. The questions are: what kind of fat and what fat sources should be used?

Rationale

The best reason for using added fat is for an energy (calorie) source. The primary purpose for grain feeding is to provide energy for maintenance, performance, growth and reproduction. Horses can efficiently use fat as a calorie source. By feeding fat, the risk of colic and laminitis is lessened by reducing the amount of starch (carbohydrates) in the ration.

A high-performing horse has twice the calorie requirement as the same horse on a maintenance diet. Owners and trainers of performance horses often ration more feed to meet that calorie need. Horses with a high grain ration are often at risk because high levels of grain feeding can cause a starch overload in the small intestine and cecum.

The cecum and large colon in the horse's intestinal tract is where forage is digested. Fiber digestion is accomplished by the bacterial and protozoal populations residing in these organs. When starch enters the cecum, the pH drops and this bacterial population dies. This can result in a cascade of events that may include colic, laminitis and death.

When horses eat a high starch feed equivalent to 0.5 percent body weight per meal, there is a risk of starch entering the cecum. This translates into five pounds per meal on a 1,000-pound horse. Thus adding fat makes a ration safer and feed intake can be lowered because fat has more than double the calories of starch.

Other reasons for adding fat to a feed ration are to improve endurance, heat tolerance, hair coat, and attitude. Horses on fat-supplemented diets experience increased endurance because of a glycogen sparing effect. Glycogen is the fuel for muscular activity that is stored in the muscle cells. Horses that are on high fat diets conserve glycogen, which can help them finish a performance event stronger.

This is particularly important in racing, eventing, cutting, and other activities that require high performance over time.

Horses trained in hot, humid environments show improvement to heat tolerance because fat-supplemented rations generate less heat as a by-product of digestion. This becomes important in the Southwest where heat is prevalent.

A shiny hair coat is important to horse



Feeding fat indiscriminately to young horses can create deficiencies.

"Bling Bling," a healthy foal, is the latest addition to Bit of Heaven Ranch, Home of the Tennessee Walking Horse. Only seven days old and already curious about her new world.

Photographer/Owner: Gay W Cichowski

owners who are showing or selling horses. Higher fat levels, especially those that contain a balance of omega three and omega six fatty acids, are good choices for those in the show ring or sale ring business. Horse owners often report that horses that are fed lower-starch diets with added fat have a calmer attitude than those that are fed a conventional high starch and forage diet.

Fat Sources

Vegetable oils and animal fats are both available fat sources. Animal fat is seldom used because of public perception and decreased palatability compared to vegetable sources. Corn oil, soy oil, rice bran and flax seed are the most popular fat sources for horses. There are advantages

and disadvantages with each.

Corn oil is palatable and digestible, but it does not have a favorable balance of omega three and omega six fatty acids compared to soy oil or flax seed. Soy oil may not be as palatable as corn oil, however.

Raw rice bran is unstable and becomes rancid quickly, especially in hot weather. This is due to the enzyme lipase, which is present naturally. Rice bran can be stabilized by heat treating, which deactivates the lipase. During storage, raw rice bran progresses rapidly to rancidity and palatability suffers unless it's processed quickly. Rice bran also has low calcium and a high level of phosphorus. This inverted calcium to phosphorus ratio can be detrimental for both young and high performance horses.

Most livestock fitters know that flax seed and the linseed oil that it contains produce a shiny hair coat. It's also known widely that flax seed contains a high proportion of omega three fatty acids to omega six fatty acids. The process of extrusion during feed manufacturing stabilizes rice bran and flax seed, increasing shelf life with resultant increases in palatability and digestibility.

Indiscriminate fat supplementation can create deficiencies of other nutrients. This is known as empty calories; where energy levels are adequate, but protein, lysine and mineral levels are not. Developmental bone problems can result, which may precipitate injuries in young horses.

There also is a period of adjustment of about three to four weeks for horses to receive benefits from added fat. Any change in diet should be done gradually over seven to 10 days to avoid the possibility of digestive upsets.

A balanced diet, tailored to the use and age of the horse, is the most important consideration. A trained nutritional consultant can make recommendations that will best fit your horse and the activity involved.

About the author: Jim Ward D.V.M., a 1965 graduate of Texas A&M University, is an equine Management Consultant for Cargill Inc, a position he has held since 2000. He is a Member of the Cargill Product Development Team and the Cargill Global Equine Team and currently serves as the general manager for Millennium Farms at Moon Lake, a Thoroughbred facility in Elm Grove, LA. Under Ward's direction, Moon Lake Farm has been the location of several feeding trials conducted in association with Cargill.