

JUST ADD FAT

Overconsumption of fat is a menace to human health. An undeniable link exists between obesity and hypertension, elevated cholesterol, diabetes, heart disease, arthritis, and some forms of cancer. But, how do horses fare when fed fat-laden diets? Although not all horses require high-fat diets, equine nutritionists agree that horses can thrive on them. In fact, horses in some athletic endeavors perform better on fat-rich diets than traditional offerings of hay and low-fat textured or pelleted feeds.

Depending on chemical composition, triglycerides can be classified as fats, those that are solid at room temperature, or oils, those that are liquid at room temperature. To simplify matters, the term "fat" is usually used to encompass both fats and oils.

Fat is an energy powerhouse. Compared to carbohydrates (such as the starch derived from cereal grains), fat provides 2.25 times the energy. In a typical hay and grain diet, horses can use 50-60% of the energy provided. Conversely, horses can use more than 90% of the energy provided in vegetable oil. Because of this conversion efficiency, fats are ideal feedstuffs for weight gain or maintaining condition on horses in rigorous training.

Advantages of feeding fat are multifold. The ability to increase calories without dishing up more feed is one benefit of fat-rich diets. As larger volumes of ordinary feed are dispensed, problems may arise. Grain may escape the small intestine without being properly digested, leaving the grain to pass into the large intestine where fermentation occurs. Fermentation upsets the microbial population in the large intestine and predisposes a horse to colic or founder. Scaling down meal size will therefore minimize the risk of gastrointestinal disease or laminitis.

High-fat diets have also been successfully fed to horses with two distinct types of muscle disease, polysaccharide storage myopathy (PSSM) and recurrent exertional rhabdomyolysis (RER). PSSM is caused by a glycogen storage malfunction in muscles. In normal horses, cereal grains are digested and the resulting glycogen is sometimes stored in muscle and used as an energy source. However, in horses with PSSM, muscles become saturated with glycogen, triggering an episode of tying up, which is characterized by reluctance or inability to move, cramping of muscles, particularly of the hindquarters, and production of off-colored urine. RER is most prevalent in young, nervous fillies during race training. A more even sex distribution occurs following four years of age. Treatment for both PSSM and RER typically includes switching from a high-starch diet to a low-starch, high-fat one.

High-fat rations may also fill a void in behavior management. Horses receiving large volumes of typical textured feeds may be bounding with excessive energy, almost to the point of being unmanageable. Fat has been tagged as providing "cool energy" to horses. Reactivity trials or spook tests demonstrate that horses are calmer when fed diets fortified with corn oil or mixtures of soy lecithin and corn oil than on textured feeds.

So, how does a horseman deliver the goods? Perhaps the easiest way to add fat into the diet is by feeding a premixed feed. Most of these formulations contain 5-10% crude fat. While the benefits of feeding fat are well known in equine nutrition circles, not all feed mills manufacture high-fat feeds



as the demand in some areas may be too low to warrant large runs.

Supplementing fat is more common. Oils can be top-dressed to a meal. Corn oil is the most widely used fat and seems to be preferred by horses when compared to other oils such as canola oil, peanut oil, cottonseed oil, linseed oil, and soybean oil. Recycled cooking oils are not suitable for horses because they contain free radicals, unstable chemical compounds that can cause the horse's antioxidant defenses to work double time.

A 1,100-pound horse can tolerate two cups of corn oil daily, although one cup a day is a more common offering. Like all new components of a diet, oil should be started slowly and gradually increased to the desired level.

Corn oil is not without its problems, the primary one being palatability. Most horses that refuse to eat oil are doing so because they're simply being fed too much of it. If the oil is being added equally between two or more meals and the horse is still turning up its nose in disapproval, try spraying some oil on the horse's hay or hay cubes. Alternatively, a different fat source may be tried. Kentucky Equine Research has created two high-fat supplements, Equi-Jewel and En-Dure, that may fit the bill.

Equi-Jewel, a stabilized rice bran product that contains 20% fat, has become a popular fat supplement over the last



several years. Many people prefer it to oils because it's less messy and, more importantly, because it provides certain physiological benefits to the equine athlete including decreased heart rate following exercise and lower blood levels of lactic acid. When levels are elevated in the bloodstream, lactic acid causes fatigue and poor performance.

Equi-Jewel has a balanced calcium to phosphorus ratio so there are no worries regarding oversupplementation of phosphorus. This is one of the most important considerations when feeding a rice bran product as too much phosphorus can lead to skeletal disorders, particularly in growing horses.


Equi-Jewel is available in two forms, the standard meal, which is flaky and powder-like, and the new pelleted version. Like humans, horses have preferences in feed texture, and for those horses that do not care

for the meal, the pelleted form was created.

En-Dure, an incredibly energy-dense supplement, contains 50% fat and ensures the nutrient demands of the equine athlete are fulfilled. Fat sources in En-Dure are highly digestible and palatable. These sources provide the optimal balance of fatty acids so horses can derive the greatest caloric benefit. En-Dure also contains the powerful natural antioxidant vitamin E, which helps protect muscle tissue from exercise-induced damage. Carnitine is essential for proper muscle functioning. As exercise levels increase, muscle carnitine levels decrease. To offset these deficiencies, L-carnitine has been added to En-Dure.

In addition to supplements, Kentucky Equine Research formulated a high-fat, low-starch feed called Re-Leve, created specifically for horses prone to tying up, thyroid dysfunction, and other problems. Re-Leve contains 12% fat from corn oil and rice bran, and fiber in the form of shredded beet pulp and soy hulls. Initial inspection of Re-Leve reveals a feed that is anything but traditional in appearance. Though it does not resemble textured or pelleted concentrates, horses find it palatable and horsemen find it a cure for a multitude of management headaches.

Kentucky Equine Research offers a trio of fat supplements, one of which will help your horse overcome difficulty in maintaining or gaining weight, rally against the ill effects of tying up and other muscle ailments, and be the best athlete he can possibly be.

Fat can be a valuable component in the diets of some horses and should not be feared or shunned as it often is in human nutrition circles. In certain situations, feed-stuffs loaded with fat may be just what the veterinarian orders. 



Becky Siler