



Equine Nutrition

SIMPLIFYING HORSE FEEDING

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A combination of good quality hay and oats has long been considered the ideal equine diet. Quality forage should always be the cornerstone of any horse's diet. However, when growth, gestation, or the horse's workload create calorie demands that the horse cannot meet through hay consumption alone, oats are a safe grain choice to boost the horse's energy level.

Oats have a lower starch content than other grains making them less likely to cause problems such as colic or founder. Oat starch is more digestible than the starch in corn or barley. This makes oats a good grain choice for both horses on a low carbohydrate diet or those that need to gain weight. Oats are also less subject to toxic molds and mycotoxins than other grains. Best of all, horses readily clean up the tasty, soft, and easily chewed kernels.

No single foodstuff is perfect, however, and oats are no exception. They are low in calcium; beta carotene (the precursor of vitamin A); vitamins D, E, and K; and several B vitamins. They are also low in several essential amino acids. Fortunately, horses synthesize the B vitamins and vitamin K they need in their hind gut. Sunshine provides vitamin D, and pasture or green, leafy hay provides beta carotene. Studies by biochemist Dr. Bill Collins of the Eastern Cereal & Oilseed Research Centre in Ottawa, Canada, show that although the vitamin E content of oats is low, they also contain high levels of other antioxidants that act to fortify their vitamin E. Still, good quality forage, oats, and free choice trace mineralized salt are a suitable diet for mature adult horses in light work or maintenance.

Horse owners whose horses have higher energy or protein needs now have more choice when it comes to buying oats. In addition to traditional hulled oats, hullless oats are now available in the American market. Hullless oats substantially improve on a diet of traditional hulled oats and hay. This is especially true when it comes to feeding young, growing horses, broodmares, and horses doing moderate to heavy work. With, on average, (based on an average of the 2001 analyses of lots of Equavena hullless oats from Semican, Inc.) 27% more protein than traditional hulled oats and 49% more fat, hullless oats offer hardworking horses and broodmares the additional nutrients and calories they need. Broodmares on grass hay may need additional calcium, which can be supplied by top dressing hullless oats with dicalcium phosphate (Table 1).

Because most of hullless oats' additional calories come from fat, not starch, they are less likely to create digestive problems for hardworking performance horses whose diets are close to 50% grain. Their higher fat content also means that

Table 1. Feed quantities for simplified horse feeding.

1,000-lb Horse (mature weight)	Grass Hay (lb/d)	Alfalfa Hay (lb/d)	Hullless Oats (lb/d)
Mature			
Light work	18-20	15-18	2-4
Medium work	20-22	18-20	4-6
Intense/race work	22-25	20-22	6-8
Growth			
Weanling	12-15*	10-12†	4-6
Yearling	18-20†	15-18†	4-6
Light work	18-20†	15-18†	4-6
Medium work	20-22†	18-20†	6-8
2-year-old, intense work	22-25†	20-22	8-10
Broodmare			
Early pregnancy and maintenance	18-20	15-18	2-4
Late pregnancy	22-25	18-22	4-6
Lactating mare	22-25†	18-22	6-8

*These animals will benefit from the addition of 2 oz dicalcium phosphate and 8 oz soybean meal top dressed on the oats daily.

†These animals will benefit from the addition of 1 oz dicalcium phosphate top dressed on the oats daily.

horses get more calories with every bite, a factor than can be important with poor eaters.

Hullless oats also offer a more complete package of essential amino acids for young, growing horses. They contain 50% more methionine and 60% more lysine than traditional hulled oats. Again, however, top dressing the oats with a little dicalcium phosphate will be necessary to bring calcium levels up for growing animals (Table 1).

Some people criticize oats, compared with commercial mixed feeds, for their nutritional variability. The precise nutritional content of a given bag of oats, like that of any grain, can vary depending on the soil and growing conditions that produced it. Nutrient tables like those published in the National Research Council's *Nutrient Requirements of Horses* give horse owners average values to work with in formulating rations. But they do not tell you exactly what is in the particular bag of oats you just opened.

Most horse owners are unaware, however, that many commercial mixed feeds are not always consistent from lot to lot. Although manufacturers guarantee specific nutritional minimums on each bag, the actual ingredients in the bag may vary over time. As the prices of raw ingredients go up or down, manufacturers change their ingredient formulas to stay profitable. As long as the feed still meets the nutritional levels stated on the feed label, that is a perfectly legitimate business practice. However, the owner seeking consistency in the diet of a horse prone to colic from feed changes, for example, is going to be disappointed.

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