



MANAGEMENT

Stretching Your Horse's Hay Supply During Drought

no. 1.625

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Quick Facts...

High-fiber roughages should make up the majority of a horse's diet.

Ideally, horses should receive 1.5 to 2.0 percent of their body weight per day as roughage. A *minimum* of 1 percent of body weight as roughage is needed to maintain normal digestive function.

If grain is needed to maintain body condition, divide the daily portion into several smaller meals. Each grain meal should not exceed 0.5 percent of body weight.

Make any changes to the diet gradually over 1 to 2 weeks.

Provide free-choice access to water and salt.

Drought conditions result in poor hay and pasture production and rising feed costs. Often, horse owners are forced to find alternative feed sources to either "stretch" their limited hay supply, or completely replace it.

Horses should be fed between 1.5 percent and 3.0 percent of their body weight per day in total feed. The amount of feed should be adjusted based on the quality of the roughage, the addition of grain to the diet, the horse's physiological state (e.g., growth, lactation, level of work), and the desired level of body condition (Table 1).

Roughages, including hay and pasture, are the most important component of your horse's diet. Roughages provide essential sources of digestible energy, protein, and some vitamins and minerals. Roughages also supply dietary fiber required for the normal function of the horse's digestive system. Ideally, horses should receive 1.5 to 2.0 percent of their body weight per day as roughage. A *minimum* of 1 percent of body weight as roughage is needed to maintain gut health.

Roughages, by definition, are feeds that are high in fiber (minimum 18 percent crude fiber). In addition to hay and pasture, there are many other high fiber feeds that can be used to totally replace or partially replace the roughage portion of your horse's diet. Table 2 lists some alternative roughage sources, along with their replacement value relative to grass or alfalfa hay.

Feeds with moderate levels of fiber (11 to 15 percent crude fiber) can also serve as an alternative during drought. These lower fiber feeds cannot totally replace the roughage your horse needs, but they can reduce the amount of hay you have to feed your horse. Start by ensuring your horse receives at least 1 percent of its body weight per day in roughage. Then use moderate fiber feeds to complete the remaining portion of your horse's ration. Table 3 lists feeds with a moderate level of fiber that can be used to replace a portion of the hay in your horse's diet.

Table 1: Expected daily feed intake as a percent of body weight*

Class of horse	Roughage	Grain	Total
Mature, idle	1.5 – 2.0	0 – 0.5	1.5 – 2.0
Working horses**	1.0 – 2.0	0.5 – 1.5	1.5 – 2.5
Mare, late gestation	1.0 – 2.0	0.5 – 1.0	1.5 – 2.5
Mare, lactation	1.0 – 2.0	0.5 – 1.5	2.0 – 3.0
Weanling	1.0 – 1.5	0.5 – 1.5	2.0 – 3.0
Yearling	1.0 – 1.5	0.5 – 1.5	2.0 – 2.5

*Adapted from NRC (1989) Nutrient Requirements of Horses

**Depends on intensity of work.

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Table 2: Alternative roughage sources that can be used to totally replace or partially replace your horse's hay/pasture.

Alternative Roughage	Can be used for total replacement of hay	Can be used for partial replacement of hay	Replacement Value*		Comments on Roughage Alternative
			Amt. needed to replace 1-lb grass hay	Amt. needed to replace 1-lb alfalfa hay	
Alfalfa hay	✓	✓	0.85 lbs	1.0 lb	Higher protein and calcium than grass hays, so will feed less.
Grass hay	✓	✓	1.0 lb	1.2 lbs	Many types of grass hay: timothy, brome, orchardgrass, prairie, etc.
Bermudagrass hay	✓	✓	1.0 lb	1.2 lbs	Type of grass hay imported from southern U.S.; Similar nutrition as other grass hays.
Millet hay	✓	✓	1.3 lbs	1.6 lbs	Usually contains some millet grain; Less nutritional value than most grass hays; May have a laxative effect if feed as the only roughage.
Sorghum grass		Not recommended			Includes Johnsongrass, Sudangrass, & sorghum-Sudan hybrids; May cause neurological problems in horses.
Alfalfa hay cubes	✓	✓	0.85 lbs	1.0 lb	Alfalfa that has been chopped and cubed; Similar nutrition as alfalfa hay (see above).
Alfalfa/timothy hay cubes	✓	✓	0.95 lbs	1.1 lbs	Combination of alfalfa and timothy forages; Less protein and calcium than straight alfalfa, but more than plain timothy.
"dehy" alfalfa pellets	✓	✓	0.85 lbs	1.0 lb	Pelleted alfalfa hay; Similar nutrition as alfalfa (see above).
"Complete" feed	✓	✓	0.70 lbs	0.85 lbs	Contains a mixture of grains and roughage sources; Designed to be fed without hay; Should contain at least 15% fiber if no hay is fed.
Haylage	✓	✓	1.55 lbs	1.85 lbs	Hay preserved by ensiling rather than traditional drying; Higher moisture than hay, so will have to feed more; Can spoil (mold), so feed contents of bag within 2 to 3 days.
Oat hay	✓	✓	1.0 lb	1.2 lbs	Nutritive value similar to grass hays.
Straw	✓	✓	1.25 lbs	1.5 lbs	Oat straw more palatable than wheat or barley straw; Bulky, high fiber, low in other nutrients; Will require protein supplementation.
Beet Pulp		✓	0.70 lbs	0.85 lbs	Good source highly digestible fiber; Relatively high in calcium; May require soaking before feeding; Limit to 10 lbs (dry weight) or less.
Soy hulls		✓	0.8 lb	1.0 lbs	High fiber, but more digestible than other hulls.

*Replacement values based on average digestible energy content of feeds. Feed amounts may have to be adjusted due to variation between sources of feed and horses.

Table 3: Moderate fiber feed sources that can be used to replace a portion of the hay/pasture in your horse's diet.*

Moderate-Fiber Feed Alternatives	Can be used for total replacement of hay	Can be used for partial replacement of hay	Replacement Value**		Comments on Moderate Fiber Feed
			Amt. needed to replace 1-lb alfalfa hay	Amt. needed to replace 1-lb grass hay	
Rice bran	No	✓	0.50 lbs	0.60 lbs	High in fat and phosphorus; More fiber than most grains (similar to oats), but less fiber than hays and other roughages; Diet may require additional calcium supplementation if product is not already balanced by the manufacturer, if 2 lbs or more rice bran are fed per day, and/or if horse is also receiving plain, unfortified grains (e.g., oats).
Wheat bran	No	✓	0.60 lbs	0.70 lbs	More fiber than most grains (similar to oats), but less fiber than hays and other roughages; High in phosphorus; Diet may require additional calcium supplementation if 2 lbs or more wheat bran are fed per day and/or if horse is also receiving plain, unfortified grains (e.g., oats).
"Pack" cube	No	✓	0.70 lbs	0.85 lbs	Combination of grains and roughage sources; Can be fed without additional hay if pack cube contains at least 15% fiber.
Oats	No	✓	0.65 lbs	0.75 lbs	Not a high fiber feed, but contains more fiber than other grains; Limit to 1% of horse's body weight or less; Ensure at least 1% of body weight is fed as high fiber roughage; Fortification of diet with vitamin/mineral supplement may be necessary.

* As long as your horse is receiving a minimum 1% of its body weight per day as hay or some other high fiber roughage (18% crude fiber or greater), the rest of the diet can be made up of lower fiber feeds, such as those included in this table.

**Replacement values based on average digestible energy content of feeds. Feed amounts may have to be adjusted due to variation between sources of feed and horses.