

Buying Winter Hay for Horses

Plan ahead when purchasing hay to save money and get the right amount.



grass hay, photo by Danielle Smarsh, Penn State

Hay is an extremely important part of your horse's winter diet. It is an important source of calories and the internal heat of fiber fermentation helps to keep your horse warm.

In the fall, many of us are starting to think about stocking up on hay for the winter. There are many factors that will influence your purchase.

1. Hay market. After a wet spring and a dry fall for 2019, high quality hay is in tight supply. These difficult hay making conditions are contributing to continued high prices for quality hay. However, by tracking "good" quality hay prices at hay auctions over 3 full years (2016-2018; USDA PA Weekly Hay Report; discontinued in May 2019), it appears that yearly hay prices at auction have been lowest from June to September, before increasing in October. Private sale prices may not vary as much month to month as auction prices, but they will follow the same general trends.

2. Storage. How much space do you have to store your hay? While it would be nice to stock up on all the hay you will need for the winter, you need to consider how much will fit in your available storage space.

3. Bale type. Most horse owners buy small square bales for ease of handling. However, you can save money if you have the capability to handle and store larger bales. According to the USDA PA Weekly Hay Reports, buying

"good" quality grass hay in large square bales would save an average of \$50 per ton. Another way of looking at it is that in the PA hay auctions, buying small square bales was 28% more expensive.

4. Nutritional needs. Not all horses need premium quality hay with very high protein and energy levels. While we certainly want our hay to be high quality in terms of minimal weeds, dust, and other contaminants, mature hay with lower nutritional value can be safe and healthy for obese horses or easy keepers. For these horses, it is better to feed more of a lower calorie hay than to restrict intake of a premium quality hay. Hay/forage should be the foundation of a horse's ration, and they should have access to forage as often as possible for gut health and normal feeding behavior. Remember, there is only way to know for sure what the nutritional quality of the hay is: analyzing a sample of each load.

5. Fiber for warmth. It is advisable to purchase a bit extra for extremely cold periods. Fiber is fermented in the horse's cecum, which produces heat and helps to keep the horse warm. Horses with heavy winter coats that are acclimated to the climate need extra forage for warmth when the temperature drops below 18°F. Clipped horses will need extra hay at warmer temperatures. An extra flake from a small square bale per horse should be plenty.

Hay Waste

Before calculating the amount of hay you will need to purchase, you should also consider how much of your hay gets wasted either from storage or by your horses. Storage waste can range from 2-40%, depending on how you store the bales. Round bales stored outside produce the most waste, as the bottom and outermost 4" layer will be exposed to moisture. Storing hay inside or covering it well can reduce the amount wasted.

Then you must consider the amount wasted by your horses as they eat. Feeding hay on the ground is a huge source of waste, as horses trample and defecate on it. [Studies at the University of Minnesota](#) have found that using feeders significantly reduces hay waste. When feeding small square bales, the study found the following amounts of hay waste:

- No feeder: 13%
- Hay rack: 5%



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- Basket feeder: 3%
- Slat feeder: 1%

While purchasing feeders is an added cost, based on the price of hay and how much can be wasted without a feeder, these feeders pay for themselves in 9 to 12 months.

Researchers at Minnesota also looked at [round bale feeders](#), testing 9 feeders and a no-feeder control. The feeders tested allowed either complete access to the hay or restricted access (slow feeders). They found the following amounts of hay waste:

- No feeder: 57%
- Circular free choice feeders: 13-33%
- Restricted access feeders: 5-11%

Without a feeder, the herd actually consumed less hay and lost weight because so much of the hay was trampled and spoiled. The payback period for these feeders was far less than the small square bale feeders because of the huge reduction in waste compared to using no feeder.

Calculating Hay Needs

To estimate how much hay to buy, you can run a few simple calculations. We will assume that horses eat approximately 2-2.5% of their body weight in hay per day as their full ration. If your horses have higher energy needs and also receive grain meals, you can subtract the weight of grain from the 2% figure based on your horse's weight. We will also assume that the hay season lasts from November to March, and that horses have high-quality pasture for forage during the rest of the year.

1 horse at 1100 pounds x 2% BW = 22 lbs hay per day (if you feed grain, subtract its weight from this number)

22 lbs x 150 days = 3300 lbs hay per horse

Don't forget to account for wastage! Here, we will assume 5% storage waste because our bales are stored inside and 13% waste from feeding small square bales on the ground.

3300 lbs x 1.05 (storage waste) x 1.13 (ground waste) = 3915 lbs hay per horse

If you buy your hay by the ton, this would be 3915/2000 = almost 2 tons of hay per horse.

If you buy your hay by the bale, you will need to find out the approximate weight of each bale. Assuming a 40 lb bale, 3915/40 = 98 bales per horse.

Conclusions

Forage is the most important part of your horse's diet, and during Pennsylvania winters, hay is the most economical way to provide forage. By planning ahead and running some simple calculations, horse owners can save money and ensure that they have purchased the right amount of hay to last through the winter.

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