

Seven Horse Hay Storage Tips

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You buy (or harvest it), haul, carry and stack it. Now make sure your hard-earned hay will be usable when needed.

- 1. Buy quality hay.** Reject damp, warm or steamy hay; be very careful to not buy moldy hay. It should smell sweet, not musty, dirty or moldy. Before loading, open 1-2 bales and look/smell for mold. If moldy/wet, it will not improve once stacked in the barn. If bales are not excessively wet, hay conditioners (propionic acid or calcium carbonate) help prevent mold and are okay for horses.
- 2. Store hay under cover.** Ensure the building roof is watertight. Before bringing in new hay, check floor for dark stains indicating water leaks above. When stacked here, it will grow moldier each rain. Patch or replace the leaky roof immediately. Outside bales should have a temporary cover for storage duration. The outer 4" layer of a 6' diameter round bale contains ~25% of total bale volume and will likely be weather damaged if improperly stored outside. Reduce losses with indoor storage or good plastic covering outdoors (adequately secure tarp and check it frequently).
- 3. Animal-proof area.** Plug rat/mouse holes with steel wool or rat-wire mesh. Cover openings near the ground to detour larger wildlife (i.e. raccoons) from entering. Animals deposit feces and chew twine, making a mess of the hay storage area.
- 4. Store hay on pallets.** Bales stored on wet ground can take on moisture, causing early deterioration and up to 50% spoilage. Stacking on pallets encourages air circulation beneath bales, helping prohibit mold growth. Condensation can occur if loft/shed floor "sweats" as temperature changes; pallets help prevent bales from "wicking-up" condensation. Keep hay storage area clean as the space beneath/within pallets creates perfect rodent habitat.
- 5. Bring old bales up front.** Pull old bales to the front or side before stacking new hay, and feed them first. As long as moisture entry is completely avoided, and hay was adequately dry when put into storage, it should keep indefinitely. However, high humidity might increase moisture content and reduce storage life.
- 6. Stack bales for circulation.** To encourage air circulation, place bottom layer of small square bales on sides so the uneven, "nonstring" surface is on the floor. In each row, leave space between bales, and alternate orientation of layers (at right angles with layers above and below). This pattern "ties" the stack together, while keeping bales from packing too tightly. Store large round bales end-to-end as tightly as possible in long lines on a well-drained site. A gently sloping site with a southern or southeasterly exposure maximizes solar drying drainage. If more than one line of bales is needed, space adjacent lines at least 3' apart, increasing airflow and allowing sun to reach the back row. Stacking large round bales usually increases losses, trapping moisture and limiting drying action from sun and wind exposure.
- 7. Large round bales typically have higher storage loss** than small rectangular bales, especially when stored outdoors. Data shows outdoor storage losses range from 5-35% depending on precipitation levels, storage site location and original bale condition. Placing round bales outside on the ground represents the cheapest method of hay storage but has the greatest potential for loss due to weather. Most of the losses occurring during outside storage take place on the bottom where moisture levels remain highest and air movement is the lowest. There are a number of storage techniques to minimize outdoor storage loss:
 - A) Make/buy dense bales as they sag less and have less surface area in contact with the ground. A dense surface layer will shed more precipitation and protect the inner part of the bale from weathering.
 - B) Use plastic wrap, net wrap or plastic twine. Twine reduces bale sag, maintains bale shape, and provides a tight, smooth surface. Plastic twine will resist weathering, insects and rodents better than natural fiber twines. Twine should be wound tight and spaced no more than 6-10" apart for best bale storage.
 - C) Store bales on a well-drained location. Bales soak up moisture if placed on a wet or poorly drained site. A well drained, 4-6" coarse rock base will minimize bottom spoilage, as well as using wooden pallets. Never store bales under trees.

Information was adapted from literature provided by Virginia Tech Extension and Equus Magazine.