

BY DESIGN

Indoor hay storage facilities

by Katy Lippolis, Iowa State University

With much of the country experiencing drought and a shortage of hay supplies, finding ways to stretch hay through the winter months is increasingly important.

A long-term option to decrease hay losses due to spoilage is storing bales under roof or in an enclosed barn (see Table 1). Bringing hay inside can also prevent hay from losing quality. While the initial cost may be high compared to storing outside, the barn will often pay for itself over time when considering the decrease in spoilage and often improved nutritional value.

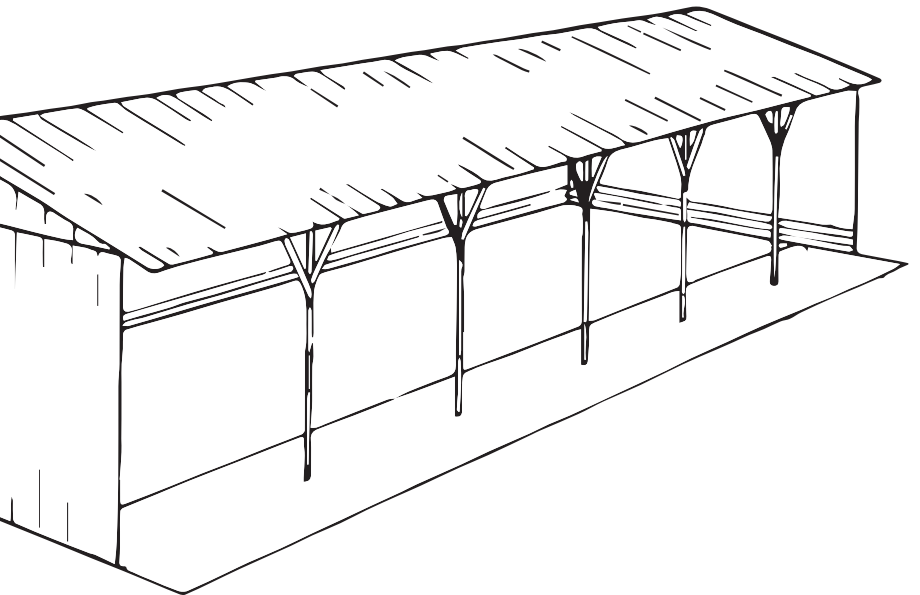
There are many economical options available for facilities to get hay and other feedstuffs out of the weather, including pole barns and hoop barns. While the designs included in this article are partially enclosed, there are a wide variety of options available — from no walls to fully enclosed, depending on your needs. Some important components of hay storage facilities include:

Drainage: Build your barn in an area that is well-drained and not in a low spot. After construction, make sure to maintain proper drainage so that water quickly runs away from the barn.

Flooring: Either design allows for your choice of flooring. Crushed gravel, pallets and concrete work well to keep hay away from moisture in the ground.

Stacking: Wall height of hoop barns should be about the diameter of the bales you're storing. Make sure to stack hay in a way that prevents hay leaning on the walls to prevent bulging and wall failure. Stack hay only high enough that you can still safely move the bales.

Ventilation: Keep hay at least 2 feet away from the walls and top of the barn to assist in air circulation and



Pole barn

PHOTO COURTESY MIDWEST PLAN SERVICE, PLAN #73110

decrease moisture. Stacks can also be further separated inside the barn to increase circulation. Vents or fans may be necessary to provide airflow in partially or fully enclosed barns.

Hay storage facilities such as those included here work well to keep hay stored indoors in a cost-efficient manner. For help analyzing whether the cost of building a hay storage facility offsets your

hay losses due to spoilage, Excel spreadsheets comparing options are available via the Ag Decision Maker website maintained by Iowa State University Extension and Outreach at www.extension.iastate.edu/agdm/decisionaidscd.html. |

Editor's note: Katy Lippolis is an Iowa State University Extension beef cow-calf specialist.

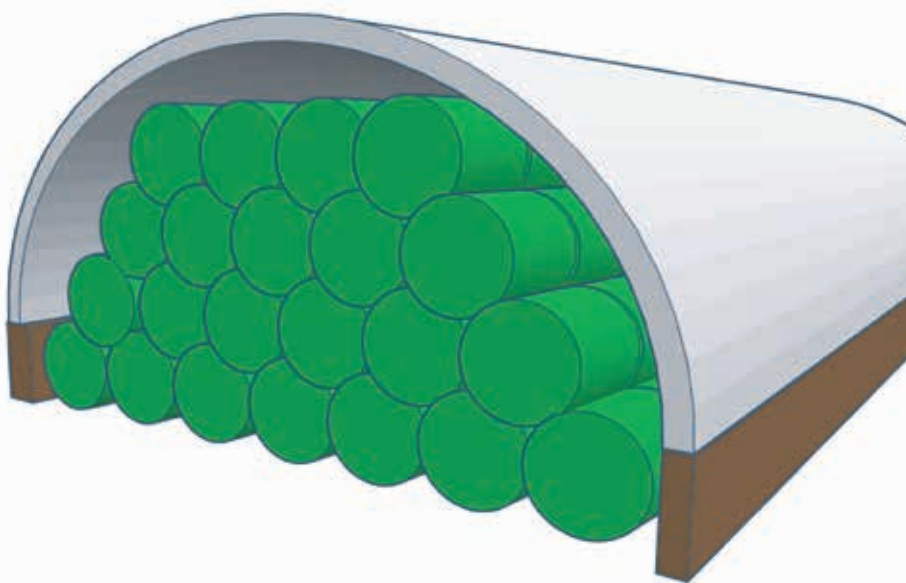


Table 1: Effects of storage method on dry-matter loss of round hay bales

Storage method	Storage period	
	< 9 months	12-18 months
Exposed		
Ground	5%-20%	15%-50%
Elevated	3%-15%	12%-35%
Covered		
Ground	5%-10%	10%-15%
Elevated	2%-4%	5%-10%
Under roof	2%-5%	3%-10%
Enclosed barn	<2%	2%-5%

SOURCE: Huhnke, 2003.