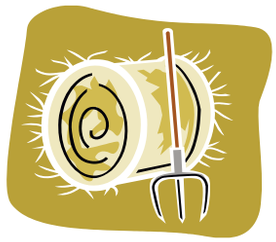
FIGURE 1 Hay storage cost comparison by Iowa State University Extension

Hay Storage Cost Comparison

Ag Decision Maker -- Iowa State University Extension
For information on hay costs, see Information File A1-15, Iowa Pasture Cost Improvement Budgets.

Place the cursor over cells with red triangles to read comments.
Enter your input values in shaded cells.



General Information	Unit	
Acres of hay produced annually	acres	200
Average yield, total for all cuttings	tons/acre	4.5
Width of bale	feet	5
Length or diameter of bale	feet	6
Average weight of bale	pounds	1,250
Tons of hay needed to meet annual needs	tons/year	750
Value of hay at harvest, on farm	$/ton	$125
Estimated cost of production for hay	$/ton	$90
Long-term interest rate for building investment	%	3%
Value of labor used for storing hay	$/hour	$15.00

Choose Storage Options to Compare

- ☒ Outside, on gravel, no cover
- ☒ Outside, on gravel, under tarp
- ☒ Outside, bare ground, under tarp
- ☒ Outside, on bare ground, plastic wraps
- ☒ Under roof, no sides
- ☒ Inside, new building
- ☒ Inside, existing building

Show/Hide Storage Options

Storage Loss	Unit	Bare ground, no cover	Outside, on gravel, no cover	Outside, on gravel, under tarp	Outside, bare ground, under tarp	Outside, on bare ground, net wraps	Under roof, no sides	Inside, new building	Inside, existing building
Expected spoilage & dry matter loss (click here for research data)	%	27%	22%	8%	13%	13%	8%	5%	5%
Outside Storage									
Initial cost of gravel base or pallets, per square foot	$/sq. foot		$0.80	$0.80					
Expected years of life for gravel base or pallets	years		5	5					
Cost of plastic tarps, per square foot	$			$ 0.20	$ 0.20				
Expected years of life for covering	years			4	4				
Cost for plastic bale wraps, each	$/wrap					$ 1.00			
Inside Storage									
Construction cost of new building, per square foot	$/sq. foot						$ 2.50	$7.00	
Expected years of life of new building	years						30	30	
Approximate value of existing building, per square foot	$/sq. foot								$ 2.00
Repair and maintenance rate, annual	% of value						1.0%	2.0%	3.0%
Property tax and insurance rate, annual	% of value						1.5%	1.5%	1.5%
Other Information									
Number of layers of stacked bales	layers	1	1	3	3	1	4	3	2
Total labor needed for storing, covering, and uncovering	hours/year	60	60	80	80	70	150	200	250

Cost Comparison

Type of storage	Unit	Bare ground, no cover	Outside, on gravel, no cover	Outside, on gravel, under tarp	Outside, bare ground, under tarp	Outside, on bare ground, net wraps	Under roof, no sides	Inside, new building	Inside, existing building
Tons of hay harvested per year	tons/year	900	900	900	900	900	900	900	900
Number of bales stored per year	bales/year	1,440	1,440	1,440	1,440	1,440	1,440	1,440	1,440
Storage area needed--square feet	square feet	45,360	45,360	15,120	15,120	45,360	11,340	15,120	22,680
Initial investment for building	$						$ 28,350	$ 105,840	
Initial investment for gravel or pallets for storage site	$		36,288	12,096	-				
Ownership cost per year for building	$/year						1,866	8,026	3,402
Ownership cost per year for storage site	$/year		7,802	2,601	-				
Labor cost for storage per year	$/year	900	900	1,200	1,200	1,050	2,250	3,000	3,750
Cost of coverings per year	$/year			765	765	1,440			
Total cost per year for storage	**$/year**	**$ 900**	**$ 8,702**	**$ 4,566**	**$ 1,965**	**$ 2,490**	**$ 4,116**	**$ 11,026**	**$ 7,152**
Value of spoilage and dry matter loss	$/year	$ 30,375	$ 24,750	$ 9,000	$ 14,625	$ 14,625	$ 9,000	$ 5,625	$ 5,625
Total cost for storage including storage loss	**$/year**	**$ 31,275**	**$ 33,452**	**$ 13,566**	**$ 16,590**	**$ 17,115**	**$ 13,116**	**$ 16,651**	**$ 12,777**
Tons of hay available for feeding or selling	tons/year	657	702	828	783	783	828	855	855
Total cost for storage, incl. storage loss, per ton avail. for feeding	$/ton	$ 47.60	$ 47.65	$ 16.38	$ 21.19	$ 21.86	$ 15.84	$ 19.48	$ 14.94
Value of hay available to feed minus cost of storage	**$/year**	**$ 81,225**	**$ 79,048**	**$ 98,934**	**$ 95,910**	**$ 95,385**	**$ 99,384**	**$ 95,849**	**$ 99,723**
Acres of hay needed to meet annual needs	acres	1,027	962	815	862	862	815	789	789
Total cost to meet annual hay needs	**$/year**	**$ 93,493**	**$ 95,835**	**$ 77,505**	**$ 79,468**	**$ 79,971**	**$ 77,098**	**$ 80,725**	**$ 77,326**

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Author: William Edwards
Ann Johanns
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Team Forage website:
www.fyi.uwex.edu/forage/harvest