

Pricing Standing Hay

“What is standing hay worth?”

Sales of standing hay require agreement on price and a method of determining yield if sold by the ton. Dry matter loss is also a factor in sales of standing forages particularly when chopped for silage.

Several factors should be considered when calculating a value for standing forage. The method described here can help buyer and seller determine what price range they should try to achieve for their particular situation. The examples shown can be the basis for selling hay by the acre or by the ton.

Price - Price reflects weather and yield risk. Price also reflects the cost of alternative feeds that could include commercial hay purchases delivered in. Price fluctuates from year to year, depending on the previous year’s harvest, demand, and current season’s potential. Current prices can be found at:

http://www.uwex.edu/ces/forage/pubs/hay_market_report.htm

Generally, prices show a seasonal decline at first cutting unless there have been significant losses of hay stands due to winterkill or other problems during the previous growing season.

Yield - Yield can be estimated before harvest from historic records or from stand evaluations. Stand evaluations estimate yield potential. Actual yields will be less than this maximum potential and will vary depending on age of the stand, fertilizer program and weather. Sales based on actual yield minimize risk for both buyer and seller. Actual yield can be determined by weighing loads or estimated by weighing a few bales and counting total bales harvested. Table 1 can be used to estimate relative yield for individual cuttings.

Cutting	% total yld	Cutting	% total yld
1	40	1	35
2	30	2	25
3	30	3	20
		4	20

For example, if total yield expectation is 4 ton/acre for three cuttings, first cutting would be estimated at 1.6 ton/acre (40% of total yield).

If chopped for silage, moisture content of the haylage would have to be determined to convert haylage yields to hay equivalent. This step simplifies pricing and price comparisons.

Haylage can be converted to hay equivalent by the formula:

$$\text{Hay Yield} = \frac{\text{Silage Yield} \times \% \text{ Dry Matter}}{\% \text{ Dry Matter of Hay}}$$

For example, if 1st crop yield is 3 tons of haylage at 40% dry matter, this haylage could be converted to hay equivalent as follows:

$$\text{Hay Yield} = \frac{3 \text{ ton} \times .40 (\% \text{ d.m.})}{.85 (\% \text{ d.m. of hay})} = 1.2 \text{ ton (hay equiv.)}$$

Dry Matter Loss in storage- This is loss attributed to respiration or the curing process after harvest and is approximately 2% for hay and 10% for silage.

Quality - Timeliness of cutting and the percentage of alfalfa versus weeds in the stand will impact forage quality. A dense, clean stand of pure alfalfa should be of higher value than an older stand with weeds and would deserve a premium in a competitive forage market. Forage samples can provide better estimates of harvested quality for ration balancing than visual inspection of the hay crop.

Harvest Costs - Approximate costs \$/cutting

(labor \$8.50/hr., 3 cuttings, 4-4.5 ton hay/acre)			
Cut/Cond	\$10-14/a	Hauling	\$4-6/a
Raking	\$8-10/a	Unloading	\$6/a
Baling	\$26-30/ton	Chopping	\$60/a
Wrapping	\$7-9/bale	Blower	\$4/a

Harvesting costs are factored into the stand value when the seller does the harvesting, or should be a consideration when calculating forage value when a buyer harvests the forage. If forage needs to be transported some distance, hauling costs should also be factored into harvesting costs.

For contracts over an entire season or more than one year, agreement may also be needed for other costs, such as insecticide or fertilizer applications.

Example transactions that follow include the sale of all three cuttings, the sale of 1st crop only, and the sale of 2nd and 3rd crop.

Price determination can start with calculating the minimum price a seller would want to receive and the maximum price a buyer would be willing to pay. The first example is three cuttings sold to a buyer who also harvests the forage (total 3 cut yield estimated at 4 tons/acre).

Seller's Minimum Price (annual costs):

Land (4-6% of land value)	\$3500x.05=	\$175/a
Est. & Maintain Stand (seed, fert., lime)		<u>270/a</u>
Total Annual Cost of Established Alf.		\$425/a

Buyer's Maximum Price (est. 4 ton/a yield):

Market Value of Hay 4 ton x \$300/ton=\$1200

Subtracting harvest expenses:

Cut, Rake, Bale, Haul, (3 cuttings)	-	180
Weather Risk (\$30/cutting)	-	120
Dry matter loss (2% for hay)	-	<u>32</u>
Breakeven Price for Standing Hay/acre		\$ 868

Both buyer and seller would like to gain in this sale. This means negotiating a price between \$425 and \$868 per acre for 3 cuttings.

The final sale value could be based on actual measured yield.

With expected yield of 4 tons/acre the seller has a minimum \$105/ton price (\$425/4) and the buyer a maximum \$217/ton value (\$868/4).

Total harvest expense is approximately \$60/ ton.

Sale of standing 1st crop can also be based on estimated yield. Payment could be based on actual measured yield by weighing wagons.

The seller's expected minimum value for first cutting, based on total annual cost determined in the first example, would be as follows:

Land Cost	\$175/a x .40 =	\$ 70
Taxes & Ins	\$30/a x .40 =	12
Establish & Maintain Stand	\$270 x .40	<u>108</u>
Total annual cost of est. hay (1 st crop)		\$190

The buyer's maximum or breakeven price paid for silage would be calculated on a hay equivalent basis as follows:

Market value of hay	1.6t x \$300/t =	\$480
Cut, chop, haul, blower (1 cutting)	-	60
Weather risk	-	30
Dry matter loss (10 % for silage)	-	<u>48</u>
Breakeven price for standing 1 st crop		\$342

The buyers breakeven price would be \$213/ton (\$342/a divided by 1.6t/a). Total harvest expenses for haylage in this example is estimated at \$60/ton of hay equivalent.

Second and third crop are expected to make up approximately 60% of total yield. Sale of 2nd & 3rd crop can be based on the same approach.

The seller's minimum value for 2nd & 3rd crop:

Land Cost	\$175/acre x .60 =	\$105
Taxes & Ins	\$30/acre x .60 =	18
Establish and Maintain Stand	270 x .60	<u>162</u>
Total Annual Cost		\$285/acre

If 2nd and 3rd crop are purchased as silage, the buyer can evaluate the purchase as follows:

Market Value of Hay	2.4 ton x \$300/ton=	\$720
Cut, Chop, Haul, Blow (2 cuttings)	-	120
Weather Risk (\$10/cutting)	-	20
Dry Matter Loss (10% x value at filling)	-	<u>72</u>
Breakeven price/acre for 2 nd & 3 rd crop		\$532

A simplified pricing arrangement could be a charge of \$225/acre for 1st cutting or \$175/acre for 2nd and 3rd cutting each or \$375/acre for all three cuttings. These are net prices paid to the landowner. These prices may be acceptable to a buyer if expected yields are greater than 4 tons/acre and the agreement is made in time to allow harvest of 1st cutting at a RFV of 170 or greater. In this price range, yields greater than 4 tons/acre would have a value that would cover the purchase prices above and harvest expenses.

Risk - Lower than expected yields or weather delays that lower forage quality can **greatly** reduce the net gain of purchasing standing hay. Producers need to adjust the numbers in these examples to reflect current market conditions, yield and harvest timeliness. The value of risk is difficult to estimate, but can be based on a typical value of the desired hay quality. For example, high quality alfalfa hay may average \$150 or more per ton. Contracts signed well before harvest and full season contracts should reflect a lower price due to the level of risk that the buyer is assuming. In contrast, an agreement made close to harvest would be much closer to the current hay price because the buyer knows the status of the crop being purchased. A rule of thumb is to value risk at 20% of hay value.

A written agreement prior to start of harvest, especially when multiple cuttings are sold/purchased, should be made and should include price, payment schedule, who is paying insecticide and fertilizer expense, method of determining yield when selling by the ton, and other factors. A written contract clarifies the sale agreement for all parties.

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