Determining the Value of Standing Alfalfa in 2025

Kevin Jarek - UW-Madison Division of Extension - Regional Crops and Soils Educator

Scott Newell – UW-Madison Division of Extension – Alfalfa Outreach Specialist (formerly)

Determining the sale value of standing alfalfa is challenging due to the absence of daily price reports, as exist for agricultural grain commodities. Recent hay market prices are the best available proxy and are available through the UW-Madison Extension website at https://cropsandsoils.extension.wisc.edu/hay-market-report/. The three most significant factors to consider when determining the potential value for any individual cutting of alfalfa, or the stand for the entire growing season include the following:

1. Expected dry matter (DM) yield in tons per acre
2. Estimated value of a ton of DM
3. Harvest costs

Ideally, producers would weigh all the forage harvested from each cutting from a particular field. This is the best way to ensure both parties are treated fairly in any formal arrangement in which standing alfalfa is bought or sold. Multiple forage samples should also be collected during the process of harvesting to determine an accurate value for the average dry matter (DM) content of the feed being sold. Once you have agreed upon a fair price or value for a ton of DM (may be with or without harvesting costs), simply multiply the harvested tonnage by the agreed upon value per DM ton then adjust for harvesting costs. Unfortunately, not all farms have access to drive-over scales. When an on-farm scale is unavailable, weighing at least one individual wagon or load with a state-certified scale at harvest will significantly improve the yield estimate accuracy relative to estimating without a scale.

Prior to harvest, or in addition to weighing wagons at harvest, expected dry matter (DM) yield can be estimated by measuring alfalfa stand density or by utilizing multi-year on-farm data sourced from the Wisconsin Alfalfa Yield and Persistence (WAYP) program. The project is managed by the University of Wisconsin-Madison/Division of Extension. The results from the 2024 WAYP summary are reviewed at: https://www.youtube.com/watch?v=Epu5-83ZNVo. The 16 fields enrolled in the program in 2024 averaged 5.13 ton DM/A. This was the highest average yield we have recorded since the project began in 2007. Farmers should take into consideration past production potential, understanding the mean yield over the course of the past 18 years is 4.41 tons DM/A. Excessive rainfall contributed to last year's record DM yields across the state.

Factors to discuss in determination of a fair price for standing forage.

1) Stand Density
2) Average Yield per cutting
3) Expected total season yield
4) Weather risks and field losses
5) Determine Value per ton DM
6) Harvesting Costs

Greater detail on the specifics for these considerations provided below.

1) **Stand Density**: Alfalfa stands with an **<u>average of 55 stems per square foot</u>** are defined as not being limited and have full season yield potential. Due to the high variability in alfalfa stem counts throughout many fields, it is wise for buyers and sellers to evaluate stands to determine realistic potential yield. WAYP project data can aid in estimating DM yield derived from on-farm data collected over the past 18 years. Local growing conditions, alfalfa stand condition after winter, age and composition of the stand, soil texture/series, soil fertility, and drainage can all significantly impact alfalfa DM yields during any given growing season. It is not advisable to purchase standing alfalfa without taking each of these considerations into account before any final arrangement is agreed upon by all parties involved.

stand density (stems/sq ft)	action
>55	stem density not limiting yield
40–55	some yield reduction expected
<39	consider replacing stand

Source: Alfalfa Stand Assessment – Is This Stand Good Enough to Keep? – Dan Undersander, Forage Agronomist,

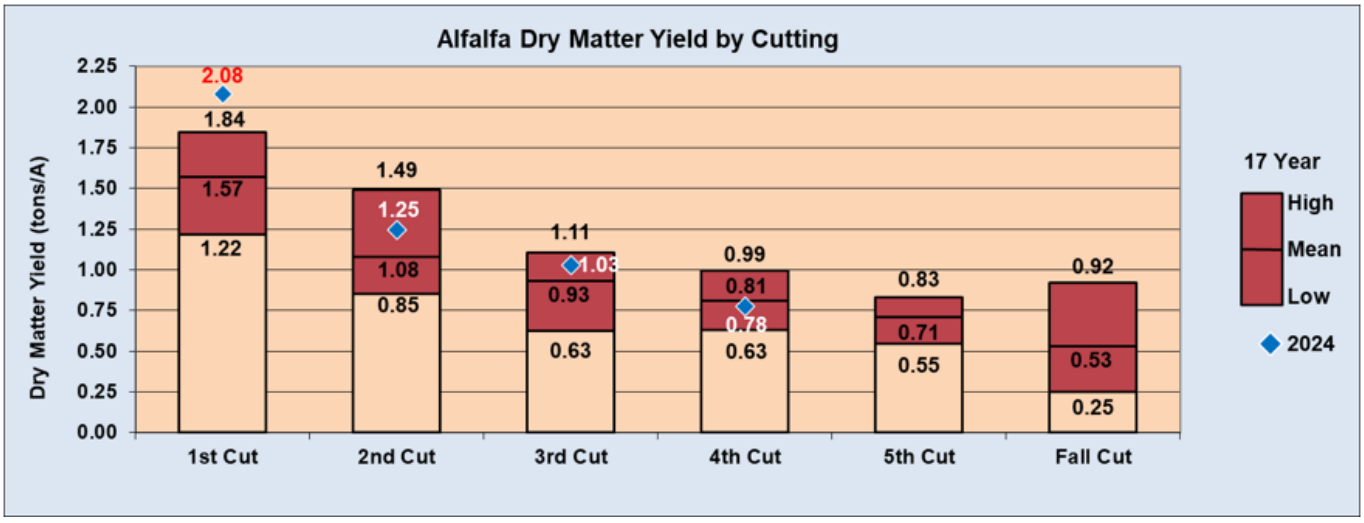
2) **Average Yield Distribution Per Cutting as Determined by the WAYP Program On-Farm Data:**

3 cut system – **46%** (1st crop) – **28%** (2nd crop) – **26%** (3rd crop)

4 cut system – **36%** (1st crop) – **25%** (2nd crop) – **21%** (3rd crop) – **18%** (4th crop)

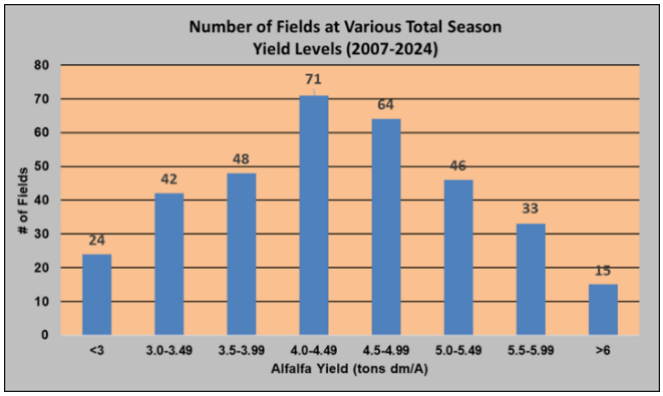
5 cut system – **32%** (1st crop) – **21%** (2nd crop) – **18%** (3rd crop) – **16%** (4th crop) – **13%** (5thcrop/fall cut)

WAYP data collection begins with the first full production year following new seeding. Fifth cutting (September) and late fall cutting (October/November) data were collected in years when available. It should be noted that four-cut systems represent the largest percentage of the data. The low, mean (average), and high values for DM yield over the life of the project are illustrated below. In addition, 2024 data is included for comparison to the other benchmark measurements established over the past 18 years. Data from multiple years, not just the previous year, will provide more accurate estimates.

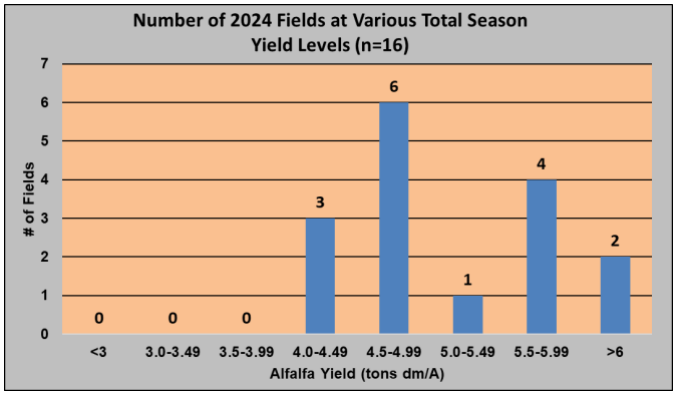


Source: Wisconsin Alfalfa Yield and Persistence (WAYP) Program Summary, 2024

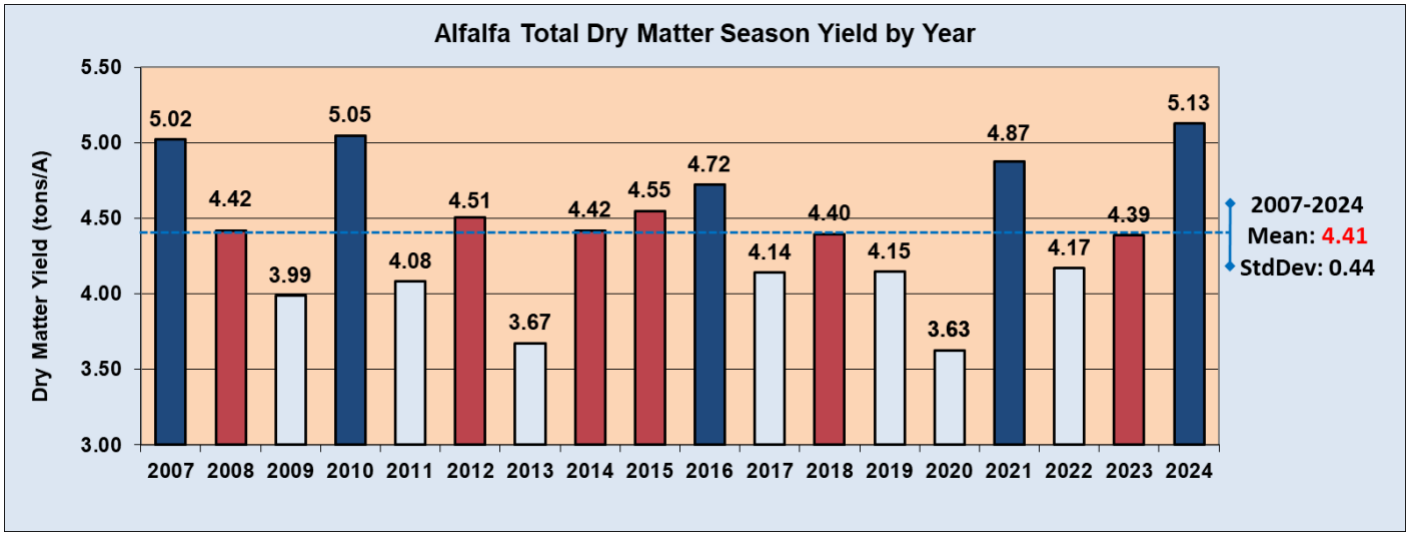
3) **Historic Total Season Yield**: The WAYP program has an observed yield range from less than 3.0 tons to more than 6.0 tons DM per acre. The most frequently observed yield has been **4.0-4.49 Tons DM per acre per year**. The following chart illustrates the annually observed mean of alfalfa DM yield in tons per acre from 2007-2024. The average yield of first through fourth crops over the project is 4.41 tons DM per acre. The 2024 growing season data resulted in a record 5.13 tons DM yield/acre.



Dry Matter Yield Level Distribution 2007-2024



Dry Matter Yield Distribution 2024 Growing Season



Source: Wisconsin Alfalfa Yield and Persistence (WAYP) Program Summary 2024

4) **Weather Risk and Field Losses**: Management practices applied to the site by the buyer during the cutting and harvesting of alfalfa will influence final quality measurements. Purchased baled hay may have a known, measured quality from a forage test. Alfalfa purchased standing in the field has unknown quality until after harvest due to weather risk, insect or disease pressure, maturity at cutting, leaf shatter, and harvesting losses. These factors should be considered and accounted for when determining the final price. An adjustment of 15 percent to the value of the alfalfa standing in the field may be considered a reasonable method to further account for the buyer's risk. The buyer and seller can decide if they wish to use a factor other than 15%.

Merging alfalfa windrows before harvesting as haylage - Outagamie County

5) **Determining the Value of a Ton of DM Alfalfa**

Small square bales being harvested in Outagamie County

The Hay Market Demand and Price Report for the Upper Midwest is located at https://cropsandsoils.extension.wisc.edu/hay-market-report/ on the UW-Madison Division of Extension Crops and Soils website. It is updated regularly. The **April 29, 2025** report indicates large square bales of Prime Quality (>151 RFV/RFQ) alfalfa averaged $162.00 per ton. The value of a ton of DM is determined via the following calculations:

Price for a Ton of DM

As baled hay, assume moisture of 15 percent, which means it is 85 percent DM or **0.85**

$$\frac{\$162.00}{as\ fed\ ton} \times \frac{as\ fed\ ton}{0.85} = \frac{\$191.00}{ton\ DM}$$

Using a value of $191.00 per ton DM and applying a 15% risk adjustment, we end up with a risk-adjusted value for a ton of DM standing alfalfa as follows:

$191.00 X 0.15 = $28.65
$191.00 - $29.00 = **$162.00 per risk adjusted ton of DM**.

6) **Harvesting Cost**: Custom harvest operation values can be used to estimate harvest operation expenses. Preliminary data from the 2025 Wisconsin Custom Rate Survey and the **2025 Iowa Farm Custom Rate Survey** at https://www.extension.iastate.edu/agdm/crops/pdf/a3-10.pdf were sourced for the example calculations included here. The estimated costs for individual field operations are identified below:

Mowing and Conditioning per acre:	***Windrow Merging per acre:***	***Chopping, Hauling, and Filling per acre:***
$15-16 per acre, statewide average (WI - Preliminary 2025)	$12.58 per acre, statewide average (WI – Preliminary 2025)	$60.00 -$70.00 per acre, $65.00 average *
$12.00 -$22.50 per acre, $16.50 statewide average (IA - 2025)	$9.00 - $21.00 per acre, $13.90 statewide average (IA - 2025)	Preliminary 2025 WI Survey results posted at: https://farms.extension.wisc.edu/topics/pricing-and-contracts/custom-rates/

*Estimated range calculated from on-farm WI data, WI Custom Rate Guide does not provide per acre cost.

Using the most recent values from Iowa State one may spend $16 per acre mowing and conditioning alfalfa, $13 per acre merging, and $65.00 per acre chopping, hauling, and filling an upright silo or a bunker silo (**adjust your costs as needed**) resulting in $94.00 per acre invested for each cutting. **Your harvesting costs may be higher or lower than those cited here**. If you harvest four (4) cuttings, total harvest costs are $376.00/acre for the season ($94.00 X 4 cuttings = $376.00.)

Harvesting 1st cut alfalfa haylage in Outagamie County

Using the yield per cutting data presented from the WAYP project, we can estimate the value of each cutting over the course of a season, based on total estimated DM yield.

Net Forage Value for Total Season and Individual Cuttings

Expected Yield (Tons DM/A)	Total Season ($/A net)	Individual Cutting ($/A net)			
		1st (36%)	2nd (25%)	3rd (21%)	4th (18%)
4.0	$272.01	$139.28 (1.44)	$68.00 (1.00)	$42.08 (0.84)	$22.64 (0.72)
4.5	$353.01	$168.44 (1.62)	$88.25 (1.13)	$59.09 (0.95)	$37.22 (0.81)
5.0	$434.01	$197.60 (1.80)	$108.50 (1.25)	$76.10 (1.05)	$51.80 (0.90)
5.5	$515.01	$226.76 (1.98)	$128.75 (1.38)	$93.11 (1.16)	$66.38 (0.99)
6.0	$596.01	$255.92 (2.16)	$149.00 (1.50)	$110.12 (1.26)	$80.96 (1.08)
6.5	$677.01	$285.08 (2.34)	$169.25 (1.63)	$127.13 (1.37)	$95.54 (1.17)

Assumptions: Risk adjusted price per DM ton = $162.0015, Harvest cost = $94/A

Value in ( ) is DM/A in tons

Example Calculation:

Harvesting 4.5 tons DM total value of $729 (4.5 x $162) less harvesting costs $376.00 (4 x $94.00) = $353 net

1st Cutting = 4.5 tons x 36% total yield (1.62 tons DM) x $162 = $262.44 - $94 harvest cost = **$168.44 net**
2nd Cutting = 4.5 tons x 25% total yield (1.125 tons DM) x $162 = $182.25 - $94 harvest cost = **$88.25 net**
3rd Cutting = 4.5 tons x 21% total yield (0.945 tons DM) x $162 = $153.09 - $94 harvest cost = **$59.09 net**
4th Cutting = 4.5 tons x 18% total yield (0.81 tons DM) x $162 = $131.22 - $94 harvest cost = **$37.22 net**

Maximizing yield potential

If full alfalfa yield potential is to be realized while optimizing stand persistence, a soil nutrient management plan should be implemented beginning with current soil tests. Following UW recommendations for applying nutrients will optimize money spent on fertilizer. Every cutting of alfalfa removes a significant amount of potassium (K) from the soil. A one-hundred-pound application of potash fertilizer (0-0-60 or 0-0-62) provides 60 or 62 lbs. of K2O per acre. Manage soil test K levels accordingly.

Alfalfa DM Yield Tons/Acre	LBS of K2O Removed Per Ton of DM Yield	Total LBS K2O Removed	Cost Per Unit of K20	Expense to Replace Removed K20
4.0	60	240	$ 0.43	$ 103.20
4.5	60	270	$ 0.43	$ 116.10
5.0	60	300	$ 0.43	$ 129.00
5.5	60	330	$ 0.43	$ 141.90
6.0	60	360	$ 0.43	$ 154.80
6.5	60	390	$ 0.43	$ 167.70

Pest management also needs to be considered. Guidelines for treatment thresholds for potato leafhoppers are at https://fyi.extension.wisc.edu/forage/cut-bale-scout/.

Additional Considerations

The best way to determine the potential value of standing alfalfa for both the buyer and the seller in any transaction would be to consider local conditions, pricing, and data to develop a crop enterprise budget. This budget should accurately reflect the true costs of production (cropland rental rates, crop input costs, etc.) where a particular transaction is expected to occur. Crop enterprise budgets for forage and grain crops are available for viewing and download at: https://cropsandsoils.extension.wisc.edu/article-topic/economics-budgets-financial/. Established Haylage budget in pdf is available for those who prefer longhand.

The National Agricultural Statistics Service (NASS) collects and publishes individual county averages for non-irrigated cropland cash rental rates in Wisconsin annually. The most recent data (8-23-24) is available at:

https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/County_Estimates/.

Summary

Pricing alfalfa by the cutting or by the acre may be difficult given the widespread DM yield variability between and within fields. Weighing harvested forage is the most accurate method to determine alfalfa yield. Focusing time and effort on three significant considerations when determining the value of standing alfalfa can help.

Alfalfa stand that may be limited by stem count3

1. Estimate yield as accurately as possible.
2. Account for reasonable harvesting costs.
3. Consider risk of harvest and weather loss.

Additional Methods for Determining the Value of Alfalfa – Is There an App for That?

Additional methods to calculate the value of standing alfalfa developed by the University of Wisconsin – Madison Division of Extension can be downloaded for **free** at https://play.google.com/store/apps/details?id=com.smartmappsconsulting.haypricing. Those with iPhones and iPads can download the app from the Apple Store by searching "Hay Pricing". All phones may not be compatible.

More information on alfalfa management and production is available in the most recent edition (2021) of the ***Alfalfa Management Guide*** available for purchase at: https://www.amazon.com/Alfalfa-Management-Guide-New-Undersander/dp/0891183477 . The 2015 edition of the ***Alfalfa Management Guide*** is available for free at: https://learningstore.extension.wisc.edu/products/alfalfa-management-guide-p1047.