

## Establishing a Value for 2017 Standing Hay

There are many factors that impact the value of standing hay. The value fluctuates depending on the local supply and demand and winter survival of the crop. The winter survival status of the crop can be accurately assessed when the alfalfa reaches 6" in height. At that point stands that have density of more than 55 stems/square foot are in good shape. Stands with less than 40 stems/square foot should be replaced and stands with 40-55 stems /sq. ft. will have reduced yields and are probably in their last year of economic production.

The crop quality, size and location of the stand, forage mixture, and local land rental rates also impact the value. Over the past few years the baseline value of standing forage crops has decreased due to larger inventories of hay stocks in Wisconsin and lower commodity prices.

Assuming there is little winter kill around the state in 2017 several factors will likely lead to continued lower prices for hay and established hay ground. First, local land cash rents have remained constant or declined in each of the last three years. Second, Wisconsin hay stocks at the end of 2016 increased by 10% from 2015 due to strong yields around the state last year, and the disappearance of hay in Wisconsin was down 19% in 2016 leaving current hay supply greater than the demand. This has resulted in Wisconsin all hay prices at \$87/ton for February 2017.

When renting a field of standing hay you're buying a crop that is already established, but not yet harvested. When renting hay ground the landowner should get, at minimum, a bare land rental price plus the cost of alfalfa establishment prorated over four years, and the value of nutrients removed by the alfalfa crop. If they can't get that minimum, then there may be more value in just renting bare land without the cost associated with establishing alfalfa.

The value of P and K nutrients removed by alfalfa is a major consideration when pricing hay ground and standing hay. Each ton of forage dry mater removed from hay fields removes 13 lbs. of Phosphorous (P205) and 60 lbs. of Potassium (K20) fertilizer. Using the county's average hay yield of 4.5 tons D.M./acre that equals 58.5 lbs. of Phosphorous and 270 pounds of Potassium per acre that needs to be replaced to maintain soil fertility annually. If we place a current value of K at \$0.28/ lb. that adds up to a cost of \$16.80 for each D.M. ton of alfalfa. With a 4.5 D.M. ton per acre yield, that adds up to a value of \$75.60/acre (4.5 tons x \$16.80/ton) of K that needs to be replaced if all 4 cuttings are sold.

If we assume the prevailing bare land cash rent value is \$160/acre and prorated alfalfa seeding costs (planting and seed cost) are \$40/acre/year. The minimum price needed for standing alfalfa is then \$200 per acre PLUS the value of potassium that is removed (\$75.60/acre) we come up with a number of \$275.60/acre that the owner needs for 4 cuttings of alfalfa. Add to this amount another \$20/acre to replace the pounds of phosphorous (P205) that is removed with that same yield and the total cost is \$295/acre. This represents the amount the landowner may need to cover land, crop establishment, and maintenance fertilizer costs, if the land owner is paying for the maintenance fertilizer.

What about the buyer's perspective? Let's assume it costs \$40 to harvest a ton of forage dry matter (DM). As we calculated above, potassium removal will be about \$17/ton of D.M., and phosphorus removal will be about \$4/ton of D.M. Adding these three amounts together gives us a total minimal investment of \$61/ton D.M. for fertilizer replacement and harvest cost. With that value comes some weather risk of getting a quality crop harvested.

If a land owner decided to charge \$200/acre plus fertilizer replacement costs for established hay ground, the total investment for a 4.5 ton per acre yield is roughly \$105 per D.M. ton ((\$200/acre divided by 4.5 tons = \$44) + \$61 for harvesting and fertilizer = \$105)). That price is equivalent to paying about \$53 per ton for Haylage @ 50% D.M., or about \$89 per ton for baled Hay @ 85% DM. Comparing this to current hay market prices this may or may not be a good buy. That answer will vary for each farm.

Keep in mind that the process is more important than the actual numbers, as land values, harvest costs, and fertilizer will vary with each situation. For example, some fields with soils that test excessively high in phosphorus will not require any to be added for several years and reducing the P levels may free up more land to spread manure on. The final cost is also going to differ by location, yield and quality of the hay. Buying standing alfalfa may or may not be a good deal and farmers should run their own numbers. Compare the cost of buying standing hay and incurring the harvest costs along with weather risks to buying hay already baled or chopped out of the field at harvest time.