

Pasture Leases and Rental Arrangements

Quick Facts for Determining Pasture Rental Rates

Based on Cropland Value (Per Acre)

- Rental rate is equal to 50% to 70% of the rental value of local cropland
 - ⇒ Rental rate should reflect productivity
 - ⇒ Cropland estimates are available in the 2013 Wisconsin Agricultural Statistics document posted on Sauk UW-Extension's website under "Pasture Rental Arrangements"

Example: For 2013, Sauk County cropland rents for an average of \$110/year/acre.

$$\begin{array}{l} 0.50 \times \$110/\text{year/acre} = \$55/\text{year/acre} \\ \quad \text{(Lower Productivity Pasture)} \\ 0.70 \times \$110/\text{year/acre} = \$77/\text{year/acre} \\ \quad \text{(Higher Productivity Pasture)} \end{array} \left. \vphantom{\begin{array}{l} 0.50 \times \$110/\text{year/acre} \\ 0.70 \times \$110/\text{year/acre} \end{array}} \right\} \text{Estimate rental rate of} \\ \text{\$55-77 per year per acre}$$

Based on Current Market Value (Per Acre)

- Considers market rate or pasture rental prices resulting from negotiations between multiple land owners and livestock owners within the region
 - ⇒ Market rates are published by state crops and livestock reporting services or university Extension economists

Example: The current market value is between 3.5-6%, and Wisconsin's rental rate is from 2.5-3.5%. Wisconsin agricultural land in Sauk County sells for \$3,897 per acre (*2013 WI Agricultural Statistics*) and with a 3% market rate, land can be rented out at \$116.91 per year per acre based on this calculation.

$$\$3,897 \text{ per acre} \times 0.03 = \$116.91 \text{ per year per acre}$$

Per Head (per Month)

- Rental rate determined by an agreed upon dollar value per animal unit (AU) per month
 - ⇒ Ex. \$5.50 per AU per month. (*AUs are further described on the following page.*)
 - ⇒ This method is most often used when pasturing only a few head of livestock
 - ⇒ Usually, there is no differentiation made between cows with calves, cows in milk but without calves, and dry cows
 - ⇒ WI Specific AU Equivalents can be found in the Animal Feeding Operations document on Sauk County UW-Extension's website under "Pasture Rental Arrangements"

Example: With a \$25.00 per AU per month cost, calculate the cost of a beef steer with an AU of 1.0

$$\$25.00/\text{AU/month} \times 1.0 \text{ AU} = \$25.00/\text{head/month}$$

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Alternative Feed Cost for Livestock

- Rental rate considers the price of alternative feeds and the condition of pasture land
- Calculation requires animal units, current hay price, and a pasture quality factor
- Utilizing AUs provides a more meaningful rental rate
 - ⇒ Differentiates cow with calves, cows in milk but without calves, and dry cows
 - ⇒ 1.0 AU is the approximate forage amount a 1000lb beef cow with calf will eat in one month (26 lbs. of dry matter per day OR 780 lbs. per month).
 - ⇒ All other animals are converted to an "Animal Unit Equivalent" of this cow

Animal Type	AU Equivalent
Milking and Dry Cow	1.43
Heifers (400-1200lbs.)	1.0
Steers, Bulls or Cows (400lbs. to mkt.)	1.0
Sheep (per animal)	0.1

Animal Type	AU Equivalent
Swine (55lbs. to Mkt.)	0.4
Swine (Up to 55lbs.)	0.1
Chicken (per bird)	0.0333
Chicken (layers)	0.0123

⇒ Other WI Specific AU Equivalents can be found in the Animal Feeding Operations document on Sauk County UW-Extension's website under "Pasture Rentals"

- Current Wisconsin Hay Prices are available at: www.timslackauctionrealty.com/
 - ⇒ Indirectly measures the scarcity of pasture available in the local community
- *Pasture Quality Factor* is a rating for the condition of the pasture

Lush, green, high protein pasture	0.30
Excellent grass pasture	0.275
Good pasture	0.25
Fair pasture	0.225
Poor grasses or considerable weed growth	0.20

Example:

AU —Avg. weight (1000s of lbs.) of forage production	Average price of hay (per ton)	Pasture Quality Factor	Rate Per Head Per Month
1,000 lb beef steer	\$150/ton for grass hay	0.275 for excellent pasture	
1.0 AU	x \$150	x 0.275	= \$41.25/Head/Month

Based on Hay Price and Animal Units

- Rental rate considers current hay price and AU

$$\text{Average price of hay (per ton)} \div \text{Conversion Factor (8.5)} \times \text{Animal Unit} = \text{Rate Per Head Per Month}$$

- Current Wisconsin Hay Prices are available at: www.timslackauctionrealty.com/

Example: Consider the beef steer from the previous exercise.

$$\$150 \text{ per ton of hay} \div 8.5 \times 1.0 \text{ AU} = \$17.65/\text{head/month}$$

Based on Bushel Price and Animal Unit

- Rental rate considers current corn bushel price and AU
- Current Wisconsin Bushel Prices are available at the USDA Farm Service Agency website

Example: Consider the beef steer from the previous exercise.

$$\text{Average corn bushel price} \div \text{Conversion Factor (2.2)} \times \text{Animal Unit} = \text{Rate Per Head Per Month}$$
$$\$4.70/\text{bushel} \times 2.2 \times 1.0 \text{ AU} = \$10.34/\text{head/month}$$

Share of Gain

- Land owner and livestock owner share production and price risk
 - ⇒ Relative dollar contribution (per head or per AU) of each party is used to divide income
 - Common Land owner contributions: land taxes, interest of the pasture investment, depreciation and repairs on water systems and fences, may include part of the cost of salt, mineral, and labor
 - Common Livestock owner contributions: interest on the cattle investment, grain, salt, mineral, labor, and risk of death loss
- Calculate *net increase* in value of the milk or livestock gains produced from pasturing
 - ⇒ Difference between the beginning value of animals pastured and ending value
 - ⇒ Divide value of gain among the land owner and livestock owner with respect to their separate, overall percentage contributions

Variable Rates

- Productivity risk is shifted to the landowner
 - ⇒ Livestock weight gain is influenced by the quality of the pasture, which is dependent on weather conditions during the growing season
 - ⇒ Rental rate is based on a fixed amount per pound of livestock gain

Example: Pasture rent for a beef steer is set at \$25.00 per month, and the total lease charge for a 4 month grazing season is \$100.00. A 220-pound gain per animal over 4 months is a reasonable.

The cost gain is the total lease charge divided by the pound gain.

$$\$100.00 \div 220 \text{ lbs.} = \$0.45 \text{ per pound}$$

In place of the pasture rent, the lease rate could be set at \$0.45 per pound of gain.

Over 4 months, weight gain for a beef steer can vary greatly. If the total weight gain had been 300-pounds or 175-pounds instead 220-pounds the monthly Pasture Rental Rate would vary as follows:

$$\$0.45/\text{lbs.} \times 300\text{lbs.} \div 4 \text{ months} = \$33.75/\text{head/month}$$

$$\$0.45\text{lbs} \times 175\text{lbs.} \div 4 \text{ months} = \$19.69/\text{head/month}$$

$$\$0.45\text{lbs} \times 220\text{lbs.} \div 4 \text{ months} = \$24.75/\text{head/month}$$

One of the most common source in uncertainty in livestock production is weight gain, which is influenced by many factors.

Comparison of Pasture Rental Rates

Rates Per Acre

The following calculations are based on cropland rental value (dollars/year/acre) and agricultural land value (dollars/year/acre) for the state of Wisconsin in 2013.

Cropland Value Calculation

$\$110/\text{year/acre} \times 0.50 = \mathbf{\$55/\text{year/acre}}$ for low productivity pasture

$\$110/\text{year/acre} \times 0.70 = \mathbf{\$77/\text{year/acre}}$ for high productivity pasture

Market Value Calculation

$\$3,897/\text{acre} \times 0.03 = \mathbf{\$116.91/\text{year/acre}}$

Rates Per Head (Per Month)

The following calculations are based on AUs equivalents designated by the Department of Natural Resources for the state of Wisconsin. Consider a beef steer with an AU of 1.0 and current Wisconsin hay and bushel prices.

Basic Per Head (Per Month)

$\$25.00/\text{AU/month} \times 1.0 \text{ AU} = \mathbf{\$25.00/\text{head/month}}$

Alternative Feed Cost

$1.0 \text{ AU} \times \$150/\text{ton of hay} \times 0.276 = \mathbf{\$41.25/\text{head/month}}$

Based on Current Hay Price and AU

$\$150/\text{ton of hay} \div 8.5 \times 1.0 \text{ AU} = \mathbf{\$17.65/\text{head/month}}$

Based on Current Corn Bushel Price and AU

$\$4.70/\text{bushel} \times 2.2 \times 1.0 \text{ AU} = \mathbf{\$10.34/\text{head/month}}$

Variable Rates

A beef steer with a \$25.00 per AU per month cost gains 220 lbs. over a 4 month grazing period. This is a reasonable estimate of weight gain.

$\$25.00/\text{month} \div 220 \text{ lbs.} = \$0.45/\text{lb./month}$

However, with respect to certain environmental conditions weight gain can vary:

With 300lbs. gain: $\$0.45/\text{lbs.} \times 300\text{lbs.} \div 4 \text{ months} = \mathbf{\$33.75/\text{head/month}}$

With 175lbs. gain: $\$0.45/\text{lbs.} \times 175\text{lbs.} \div 4 \text{ months} = \mathbf{\$19.69/\text{head/month}}$

With 220lbs. gain: $\$0.45/\text{lbs.} \times 220\text{lbs.} \div 4 \text{ months} = \mathbf{\$24.75/\text{head/month}}$

As shown by the variety of Pasture Rental Rates listed above, it is difficult to determine an exact value. The rate will change based on the changes in value of crops or land.

Use this guide as an estimate to negotiate a rental rate that will work for the landowner and the renter.