

# On Pasture

Bonus Content for Subscribers

---

## How to Figure Pasture Lease Rates

---



# Here's Your Bonus!

The most difficult part of pasture leasing may be figuring out a rate that works for both parties. We can't guarantee this will make it a breeze, but it will give you some tools so you'll have an idea where to start.

We've included links to helpful online resources. You can access them by clicking on the links in this PDF document. The table of contents is also clickable, so you can jump to what you'd like to read most.

If you have questions or suggestion, do let us know!

Enjoy!

Kathy Voth  
On Pasture Founder and Publisher

# Contents

What's the Going Rate?.....3

Pasture Conditions  
Affecting Price .....6

Valuing Pasture  
    Return on Investment .....9  
    Forage Value.....9  
    Animal Unit Months.....10  
    Sharing Profit and Risk.....12

# What's the Going Rate?



The reason it's hard to figure out what a pasture lease is worth is there are so many factors contributing to its value in any given year.

Some pastures have better quality forage than other pastures, some are already fenced and have water, and others will require investments of time and money to make

them usable. And then there are the dry years when demand for pasture goes up because everyone needs additional pasture to graze and farmers are willing to pay a premium for whatever pasture is available.

Adding to the difficulty are different ways you can calculate how to pay for a lease including yearly leases, a monthly fee paid per head/Animal Unit, or variable rates that depend on pounds of gain.

We'll cover the physical components to consider when valuing a pasture, and take a look at different lease options. But first, let's look at some data.

## Pasture Rent Records

One way to get a start figuring out the value of a pasture, is to find what other folks have paid. That's where the National Agricultural Statistics Service comes in.

NASS is the federal agency tasked gathering and reporting the facts on American agriculture for people working in and depending on the industry. In addition to a Census of Agriculture every five years, NASS conducts hundreds of surveys each year and prepares reports covering virtually every aspect of U.S. agriculture. Production and supplies of food and fiber, prices paid and received by farmers, farm labor and wages, farm finances, chemical use, and changes in the demographics of U.S. producers are only a few examples.

Every other year, they conduct a "Cash Rents Survey" to gather information about and report on rent prices paid for irrigated and non-irrigated cropland, and for pasture. They start in mid-February sending out surveys to farmers and ranchers, and, to make sure they're getting responses, they follow up with phone calls and sometimes in-person visits. Then, in early August they release the statewide data, followed up by data by county in late-August. You can read more about the [survey and estimating process here](#), but for now, let's cut to the chase and get you to the answers.

## [Click Here to See Statewide Cash Rent Estimates](#)

You'll arrive at a page that looks like this:

As you scroll to the right, you'll see the estimates per acre for cropland and pasture. They're listed in alphabetical order by state. After you've scrolled through the 2020 estimates, you'll see the estimates for 2019 and before. If you scroll all the way to the bottom you can see the information they collected in 1994.

Program	Year	Period	Geo Level	State	State ANSI	watershed_code	Commo	Domain	Domain Category	RENT, CASH, CROPLAND - EXPENSE, MEASURED IN \$ / ACRE - VALUE	RENT, CASH, CROPLAND - EXPENSE, MEASURED IN \$ / ACRE - CV (%)	RENT, CASH, CROPLAND, IRRIGATED - EXPENSE, MEASURED IN \$ / ACRE - VALUE	RENT, CASH, CROPLAND, IRRIGATED - EXPENSE, MEASURED IN \$ / ACRE - CV (%)	RENT, CASH, CROPLAND, NON-IRRIGATED - EXPENSE, MEASURED IN \$ / ACRE - VALUE	RENT, CASH, CROPLAND, NON-IRRIGATED - EXPENSE, MEASURED IN \$ / ACRE - CV (%)	RENT, CASH, PASTURELAND - EXPENSE, MEASURED IN \$ / ACRE - VALUE	RENT, CASH, PASTURELAND - EXPENSE, MEASURED IN \$ / ACRE - CV (%)
SURVEY	2020	YEAR	NATIONAL	US TOTAL	...	00000000	RENT	TOTAL	NOT SPECIFIED	139	...	216	...	126	...	13	...
SURVEY	2020	YEAR	STATE	ALABAMA	01	00000000	RENT	TOTAL	NOT SPECIFIED	68	...	135	...	65.5	...	23	...
SURVEY	2020	YEAR	STATE	ARIZONA	04	00000000	RENT	TOTAL	NOT SPECIFIED	275	...	275	...	...	...	2.4	...
SURVEY	2020	YEAR	STATE	ARKANSAS	05	00000000	RENT	TOTAL	NOT SPECIFIED	112	...	135	...	48	...	19	...
SURVEY	2020	YEAR	STATE	CALIFORNIA	06	00000000	RENT	TOTAL	NOT SPECIFIED	439	...	497	...	40	...	13	...
SURVEY	2020	YEAR	STATE	COLORADO	08	00000000	RENT	TOTAL	NOT SPECIFIED	70	...	142	...	28	...	6.2	...
SURVEY	2020	YEAR	STATE	DELAWARE	10	00000000	RENT	TOTAL	NOT SPECIFIED	112	...	151	...	94	...	55	...
SURVEY	2020	YEAR	STATE	FLORIDA	12	00000000	RENT	TOTAL	NOT SPECIFIED	132	...	263	...	62.5	...	17.5	...
SURVEY	2020	YEAR	STATE	GEORGIA	13	00000000	RENT	TOTAL	NOT SPECIFIED	126	...	205	...	67	...	30	...
SURVEY	2020	YEAR	STATE	HAWAII	15	00000000	RENT	TOTAL	NOT SPECIFIED	371	...	435	...	230	...	11	...
SURVEY	2020	YEAR	STATE	IDAHO	16	00000000	RENT	TOTAL	NOT SPECIFIED	171	...	225	...	62	...	12	...
SURVEY	2020	YEAR	STATE	ILLINOIS	17	00000000	RENT	TOTAL	NOT SPECIFIED	222	...	243	...	221	...	42	...
SURVEY	2020	YEAR	STATE	INDIANA	18	00000000	RENT	TOTAL	NOT SPECIFIED	194	...	245	...	192	...	40	...
SURVEY	2020	YEAR	STATE	IOWA	19	00000000	RENT	TOTAL	NOT SPECIFIED	230	...	238	...	230	...	54	...
SURVEY	2020	YEAR	STATE	KANSAS	20	00000000	RENT	TOTAL	NOT SPECIFIED	65	...	129	...	56	...	19.5	...
SURVEY	2020	YEAR	STATE	KENTUCKY	21	00000000	RENT	TOTAL	NOT SPECIFIED	146	...	200	...	145	...	28	...
SURVEY	2020	YEAR	STATE	LOUISIANA	22	00000000	RENT	TOTAL	NOT SPECIFIED	96.5	...	114	...	77	...	19	...
SURVEY	2020	YEAR	STATE	MARYLAND	24	00000000	RENT	TOTAL	NOT SPECIFIED	107	...	194	...	98	...	48	...
SURVEY	2020	YEAR	STATE	MASSACHUSETTS	25	00000000	RENT	TOTAL	NOT SPECIFIED	82.5	...	210	...	68	...	28	...

You can also [click here to see the data visually](#). You'll get a better view of the graph to the right showing nationwide changes over the last twenty years, a map, and state rankings that quickly tell you where pasture rent is the most and least expensive.

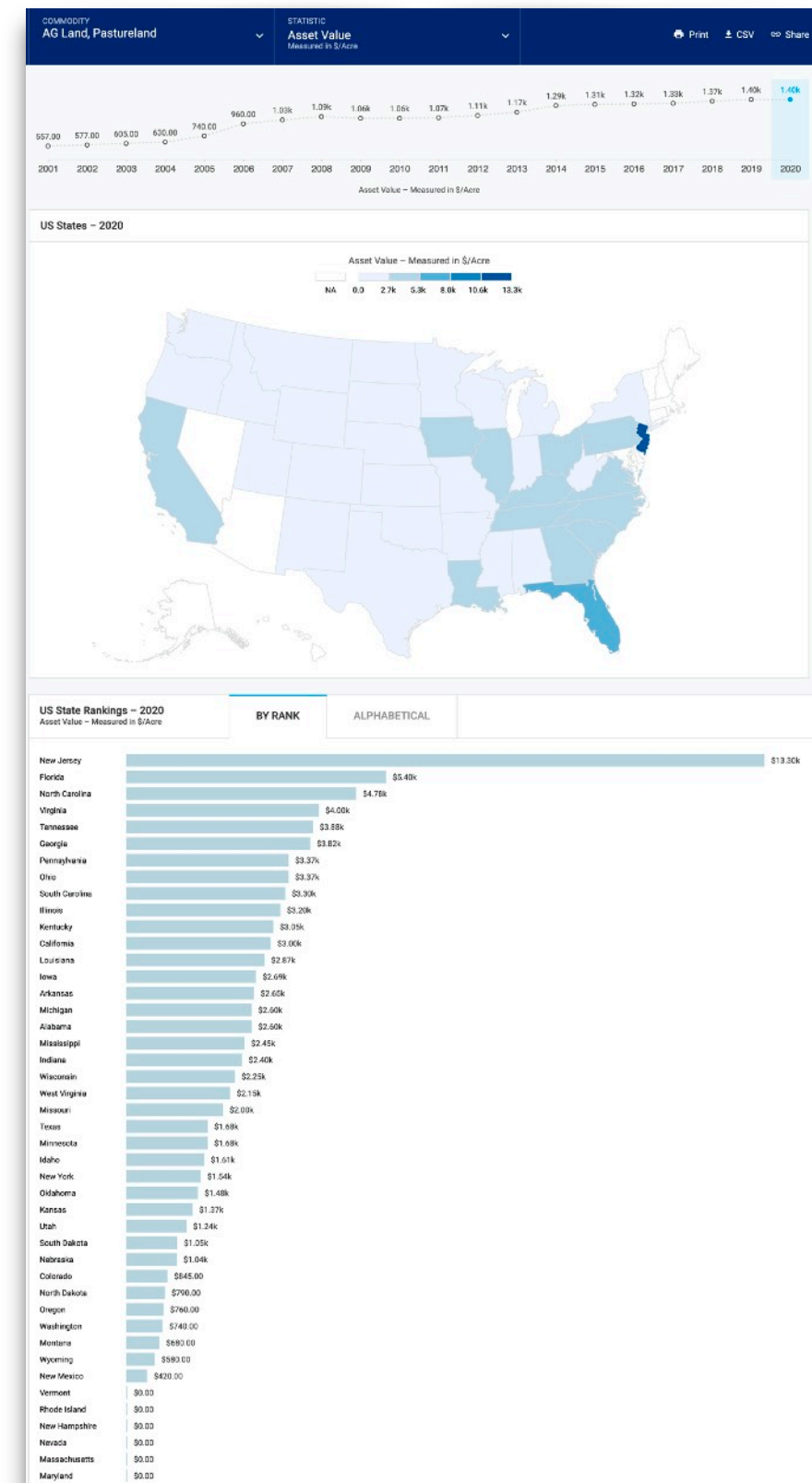
## [Click Here to See By-County Cash Rent Estimates](#)

You'll get a similar table, but this time the information is split out by state and county.

## How Can You Use This?

The cash rent estimates provided by NASS are just that: **estimates**. You can use them as a starting point for what you might pay to lease pasture. But there are lots of elements that determine pasture value.

Let's start with some of the physical factors to consider, and then take a look at different agreement options that might also affect price.





# Pasture Conditions Affecting Price



All pasture is not created equal. Some has better forage and some has more fertile soils. Fences add to the value of a pasture as does other infrastructure. So, as you're doing the math to help you figure out what a good pasture lease rate is, don't forget to make a list of the pros and cons that may add to or subtract from the pasture's value. Here are some examples to consider:

## Soil Conditions

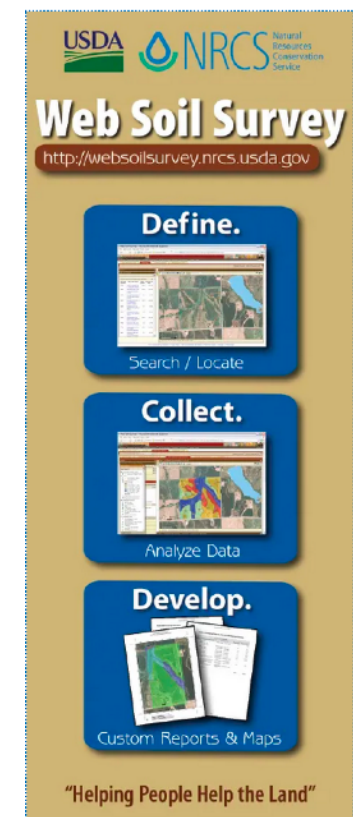
### Pluses

- Fertile soils grow more, better forage and reduce outlays for fertilizer.

The Web Soil Survey can give you information about the soils in your location as well as how much forage it can produce. [Here's an On Pasture article with the link to the Web Soil Survey website and instructions for using it.](#)

### Minuses

- Check the pH on the pasture's soil. If the soils are acidic, plant growth will suffer and you might even have to spread lime to solve the problem.





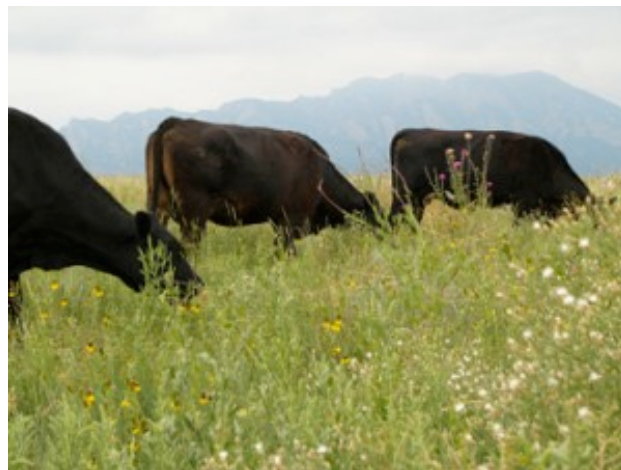
## Forage Species and Condition

### Pluses

- Legumes in the pasture are better than just grass.
- A good mix of cool season and warm season grasses ensure forage spring through fall.
- Weeds - if your cattle are educated and they eat weeds, a weedy pasture can be a bonus. Weeds are high in protein, are more digestible than grass, and often hold their nutritional value longer through the grazing season.

### Minuses

- Plant diseases reduce forage quality and quantity.
- Some insects can reduce the quality and yield of pasture, cause hay harvest problems or be a nuisance for your livestock.
- Weeds - if your cattle are uneducated, and they don't eat weeds, there is less forage in your pasture. If weeds are impacting a pasture,



A perfect pasture may be in the eye of the beholder, or in the education of the livestock grazing it. These educated cows are happily putting on weight in a very weedy pasture because Kathy Voth taught them how to eat weeds. [You can learn about teaching your livestock to eat weeds by clicking here.](#)

you might consider leasing it at a lower rate. Then you can spend 8 hours over 7 days to train your livestock to eat them. You'll have more forage, at a good rate, and the landowner will appreciate the improvements your livestock make in the pasture over time.

## Fences, Water, Hills and Rocks

### Pluses

- Good quality fences with conveniently located gates and roads make pastures more valuable.
- Water, especially if it's present in a way that makes your rotations through the pasture easier are also a bonus.



## Minuses

- No fences, or fences in poor condition, will add to the labor and money you'll need to invest to make the pasture useful to you.
- No water, intermittent water, or too much water in the form of flooding all lower the value of a pasture.
- Are their hills, rocks, or other natural parts of the pasture that will make management of your livestock more difficult? Figure that into the value of the pasture and its lease rate.

## Location, Location, Location

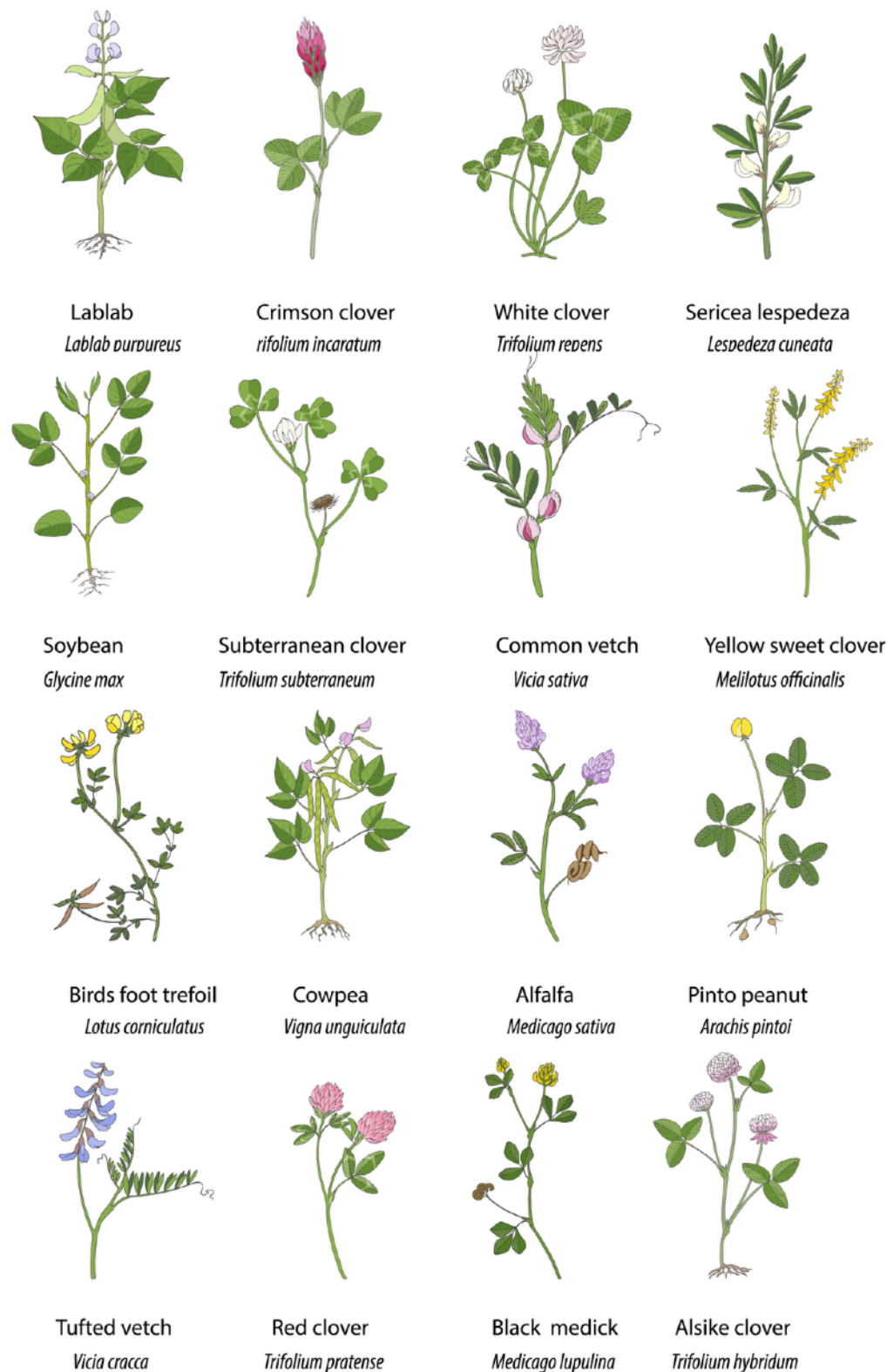
Consider how neighbors and their livestock and dogs might impact how you manage your livestock. The same goes for hunters, recreational users, and railroad.

Pay attention to distance from your home base as well. The farther your travel, the less well that pasture may work for you.

Keeping all these things in mind will give you a better idea of where to start with a pasture lease rate.

Now let's move on to some other ways to value pasture when considering lease rates.

## Common Pasture Legumes





# Valuing Pasture

Return on Investment • Forage Value  
Animal Units • Profit Sharing



## Return On Investment

Return on investment pays the landowner a percentage of the cost of owning the property. For example, if the land is assessed at \$200 per acre and banks charge 8 percent for loans (or a return of 8 percent on investment is desired), then pasture rent is calculated as follows:

$$(\$200) \times (8\%) = \$16/\text{ac per year base cost}$$

The problem with this method if you're the person leasing is that it doesn't take into account forage quality or production or whether there is adequate fencing, water and other things that you need to care for livestock on pasture.

## Forage Value

Putting a value on the forage a pasture provides is another option for deciding on a lease value.

We start by figuring out how much a given piece of pasture might produce in tons of forage. You may already have a good idea what to expect based on what you learned from the Web Soil Survey. If not, you can ask a local farmer, talk to your Conservation District, NRCS, or Extension staff.

One way you can do forage value math is to figure the value of the hay (estimated production) and then subtract the harvest costs and the cost of livestock transportation and

your own time and travel to check on your livestock to arrive at the maximum you might pay.

Iowa State University Extension Economists suggest taking the estimated forage production and multiplying it by 25 % of the price of grass hay during the grazing season for pasture, or 35% of the price of hay if you're looking at an established hay stand. Here's what that looks like:

$$\begin{aligned} &\text{Price of hay/ton} \\ &\times 25\% \text{ or } 35\% \text{ (depending on your forage)} \\ &= \text{rent/acre} \end{aligned}$$

With numbers plugged in it looks like this:

Pasture at 25%

$$\text{\$100/ton} \times .25 = \text{\$25 per acre rental rate}$$

Established Hay Stand at 35%

$$\text{\$100/ton} \times .35 = \text{\$35 per acre rental rate}$$

## Animal Unit Months

Figuring pasture use rates by Animal Unit (AUM) is more common in the western United States where it is the basis for public lands leased to ranchers for their stock. An Animal Unit Month (AUM) is the amount of forage required to sustain a 1,000 pound cow with her calf at her side for 30 days. That works out to about 26.1 pounds per day.

Livestock Class and Type	Animal Unit (AU) value	Number/AU
<b>Cattle:</b>		
1,000 lb beef cow/calf pair	1.00	1.00
1,100 lb beef cow/calf pair	1.10	0.91
1,200 lb beef cow/calf pair	1.20	0.83
1,300 lb beef cow/calf pair	1.30	0.77
1,400 lb beef cow/calf pair	1.40	0.71
Calves by themselves over 3 months	0.30	3.33
Weaned calves to yearlings	0.60	1.67
Yearling cattle (600-800 lbs)	0.70	1.43
2-year old dry cattle (800-1000 lbs)	0.90	1.11
Mature Bull	1.30	0.77
<b>Sheep:</b>		
Mature ewe with lambs	0.20	5.00
Weaned lambs to yearlings	0.12	8.33
Mature ram	0.25	4.00
<b>Goats:</b>		
Mature doe with kids	0.17	5.88
Weaned kid to yearling	0.10	10.00
Mature buck	0.22	4.55
<b>Mature Horse</b>	<b>1.50</b>	<b>0.67</b>



Forage requirements for all the other classes of livestock are shown in relationship to that 1,000 pound cow and her calf. The Animal Unit chart included here shows the basic classes



of animals. [Click here to download a PDF](#) that includes all classes and sizes of graziers.

The nice thing about this method is that it makes it easy to plug numbers into a formula to give you a good idea of how many animals you can feed for how long. The formula factors in pasture quality (as shown in the table below), and the market price of hay so that you can come up with something fair to both parties.

**Table 2. Pasture quality factor.**

<b>C = Pasture Quality Factor</b>	<b>Description</b>
0.12	Unimproved, poor condition
0.15	Fair to good permanent pasture
0.18	Very good permanent pasture
0.20	Excellent meadow – grass and legumes
0.22	Lush legume pasture

Here's the formula:

$$\begin{aligned} &\textbf{Number of Animal Units} \\ &\textbf{x Average Hay Price Out of the Field Per Ton} \\ &\textbf{x Pasture Quality Factor} \\ &= \textbf{Rate Per Head Per Month} \end{aligned}$$

(Note: This formula works well for irrigated pasture, but may over-estimate non-irrigated, arid range rental rates where there is less forage and very little infrastructure.)

Here's an example of what the formula looks like using a 1200-pound cow with her calf, during a time when hay is going for \$100 per ton, and you're hoping to rent an excellent grass and legume pasture:

$$\begin{aligned} &\textbf{1.20 AU x \$100/ton x .20 Quality Factor} \\ &= \textbf{\$24/AUM} \end{aligned}$$

From here the landowner and prospective leasee can negotiate price based on expectations for management of the pasture, past experience, water and fence infrastructure and other requirements.

**Don't like that formula? Here's another option:**

$$\textbf{Hay Value Per Ton/8.5}$$

(Rule of Thumb Forage Equivalent)

$$\textbf{x Animal Unit = Rate Per Animal Unit Per Month}$$

Using the same cow-calf pair and hay price, here's that formula in action:

$$(\$100 \text{ per ton}/8.5) \times 1.2 = \$14.12 \text{ per AUM}$$

This is also just a starting point and depending on the result may point out whether you've over- or under-estimated the value of your hay.

## Sharing Profit and Risk

If you intend to graze stocker cattle, establishing a rental rate based on pounds gained means that the landowner and the leasee share the profit if there is one, and the risk if gain isn't as great as expected. If you're considering this method, you'll have to have base values for the cost of gain, the expected gain, how long the animals will graze, and the per animal costs for caring for them through the grazing season.

All of the formulas I found for this method start with a Pasture Charge per Head per Month, also called a **Seasonal Cost**. This charge seems to be \$10, though none of the sources I used explained why. So starting with that as my full disclosure, we'll go through this figuring process.

$$\begin{aligned} &\text{Pasture Charge Per Head Per Month} \\ &\times \text{Number of Months} \\ &= \text{Seasonal Cost} \end{aligned}$$

Or

$$\$10 \times 6 \text{ months} = \$60 \text{ per head}$$

We use this as our base and then we divide by the pounds of gain we expect. This will change depending on the kinds of animals you're running, grazing management, health and parasite load of the livestock and forage quality. This is where the risk sharing comes in. Let's say that we think our stock will gain 200 pounds each while they're on pasture. Now our formula looks like this:

$$(\$10 \times 6) / 200 \text{ pounds} = 30\text{¢ per pound of gain.}$$

Thirty cents per pound is our break-even price and if the animals all gain 200 pounds each, that's what the landowner gets. If the stock gain more, say 240 pounds, here's what the landowner gets per animal:

$$240 \times .30 = \$72 \text{ per head}$$

But if the animals only gain 175 lbs each, the landowner gets less money per animal:

$$175 \times .30 = \$52.5 \text{ per head}$$



As you can see, profit/risk sharing is a bit more complex and requires participants to have more background in markets, animal weight gain, and pasture performance. If this doesn't yet describe you, choose another option.

That's a look at how to figure pasture lease rates. I hope this gives you a good place to start.

**See you On Pasture!**

