

## Budgeting for a Pasture Rental Rate

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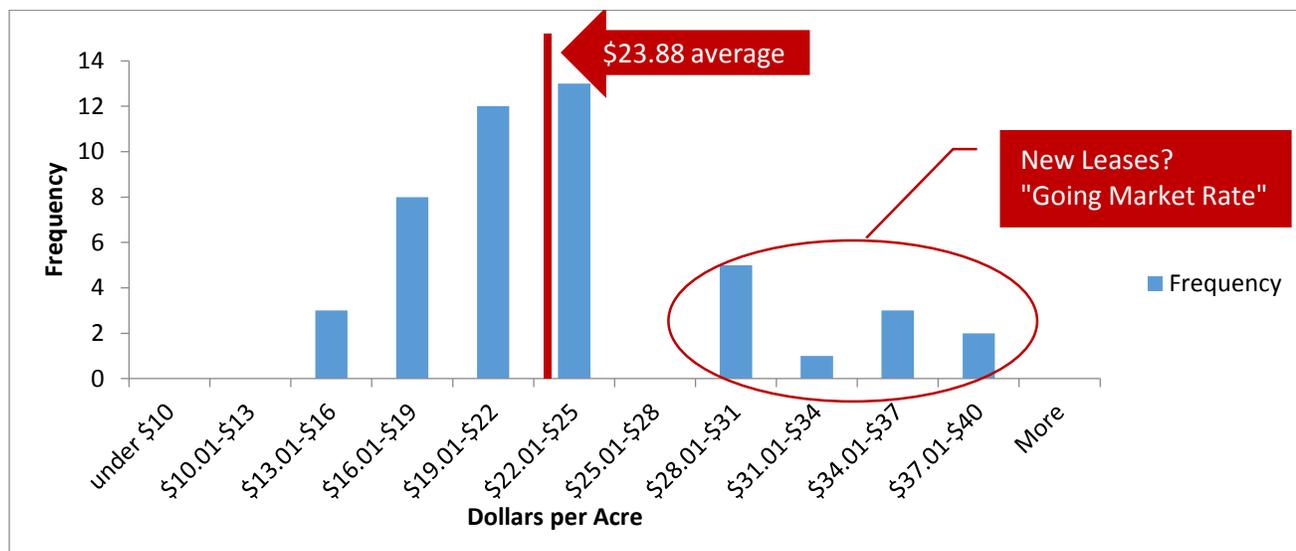
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Cattle producers in Kansas are increasingly looking for opportunities to rent pastureland and finding a tight market. Even with a down-turn in cattle prices, competition to acquire good grass has kept rental rates strong. However, it is difficult to quantify what a pasture is actually worth from a cattle productivity standpoint. Depending on management, rainfall, and a host of other factors, what a producer can pay for a rental rate varies tremendously.

As a landlord, it is difficult to know what is a “fair” rental rate for a given pasture. Many times the tenant has had the lease long-term and the relationship is good. Therefore, it is hard to know how much to adjust the rates to keep up with the market while not unfairly putting a burden on the tenant. At the same time, with higher land prices that had occurred in recent years, even earning a 1% return on land value can be difficult.

Information on reported pasture rental rates is slim at best. The National Ag. Statistics Service (NASS) had conducted a survey each year ([www.nass.usda.gov](http://www.nass.usda.gov)), but only one average value per county was reported. This does not do justice to the quality difference in pastures, management, or how long the lease has been in place. Also, some counties did not have enough returned surveys to report a statistically significant value.

Even though many people turn to survey reports, they can be misleading without showing distributions of responses. Research conducted in the River Valley Extension District in north-central Kansas has shown a bimodal distribution to pasture lease surveys that produces an artificially low average value when compared to the “going market rate”. For example, Figure 1 displays a histogram of reported pasture rental rate survey data in 2013. While the average is \$23.88, newly competitive market rates are seen between \$28.00 and \$40.00 per acre. If a landlord or producer was just given an average number (\$23.88) to establish a new rental agreement, they would be considerably below what the market is currently yielding. This is mostly due to the differences in a newly negotiated lease, and leases that have been in place for a number of years.



**Figure 1: Histogram of River Valley Extension District 2013 Pasture Lease Survey Reported Rates**

Besides survey data, not much exists to help landlords and tenants set a pasture rental rate. In addition, pasture is particularly challenging because productivity is not easy measured, such as the case with cropland. Traditionally in Kansas, cropland has been leased in shares, meaning the landlord pays a portion of the inputs and receives a portion of the crop. A cash rent equivalent is easy to determine as an alternative, knowing what traditional crop-share arrangements have been. For cattle, this can only be accomplished when setting a rental rate on a per-pound-of-gain basis. Measuring grass productivity and estimating the amount that the cattle producer “harvested” is difficult at best, and can easily lead to disputes in determining a proper value.

Most pasture leases in Kansas center around cash, and in particular dollars per acre. This presents challenges in that overgrazing can occur since the tenant has the incentive to get the most productivity from the cattle and not leave the optimum amount of forage for grass to regenerate in coming years. The higher the rental rate, the greater the pressure to get the most out of the pasture. Leasing on a per head basis can help overcome this, as a smaller stocking rate will increase grass quality and produce better cattle gains. A less common but equivalent arrangement is leasing on an Animal Unit Month (AUM) basis. This takes into consideration the pounds of forage that a pasture can produce and matches the stocking rate accordingly. Other arrangements include per head per day, per pounds of gain on stocker cattle, and further special arrangements. Choosing a method to price the pasture can have very important long-term effects, so should not be taken lightly.

To look at a specific pasture and production scenario and determine a rental rate, K-State Research and Extension and the Department of Agricultural Economics has created the “Pasture Rental Rate Decision Tool”. This takes a budgeting approach to setting a rental rate by looking at costs both from the producer and landlord perspectives. It also considers three different pasture productivity scenarios and how stocking rate can effect what a cattle producer is able to pay for the pasture ground. This tool is available on [www.AgManager.info](http://www.AgManager.info) under the “Decision Tools” section.

**Pasture Rental Rate Decision Tool:**

**Stocking Rate**

To start out budgeting a pasture rental rate, stocking rate must first be determined. In the decision tool, any numbers in blue are inputs that should be evaluated and changed from the default value if needed. The tool will ask when the grazing period will start and end and the total acres of pasture available (Figure 1). Next, the tool asks what “Pounds of Production per Acre” to expect in an Unfavorable, Normal, and Favorable year. This will vary tremendously depending on soil type, previous management, rainfall, etc. There are a number of resources available for guidance on estimating pasture productivity. Contact you K-State Research & Extension office or local NRCS office for assistance.

Note that you can change harvest efficiency, pounds per AUM, and Forage Consumed per Day (as a percentage of body weight). Depending on your grazing situation, these inputs may need to be altered. Default harvest efficiency of 25% assumes you follow the take half-leave half approach for consumption of available forage, with an additional 25% being ungrazable due to trampling, manure, insect and wildlife consumption, etc. This may be conservative depending on the situation. With rotational grazing, harvest efficiency can be increased to as much as 35-40%. NRCS standards for an Animal Unit Month (AUM) is 912.5 pounds of air dry forage. If you entered pounds of production per acre in dry matter forage, this can be adjusted down. NRCS standards also assume a grazing animal consumes 3% of its body weight per day in air dry forage. This is a good guideline, but can vary depending on the quality of forage being grazed and/or supplements being fed.

Calculating a Stocking Rate				
Inputs				Print Stocking Rates
Grazing Period Start	5/1/2016			
Grazing Period End	10/31/2016			
Grazing Days	183			
Total Acres of Pasture	320			
		Unfavorable Year	Normal Year	Favorable Year
Pounds of Production per Acre		2500	3500	4500
Pounds of Grazed Forage per Acre		625	875	1125
AUM's available/Acre		0.68	0.96	1.23
Total AUM's for pasture		219	307	395
Consumed pounds of forage on pasture		200,000	280,000	360,000
				Assumptions:
				25% Harvest Efficiency
				912.5 Pounds per AUM
				3.0% Forage Consumed per Day (Per

**Figure 1: Inputs for Calculating a Stocking Rate**

Cattle weights are needed for an “ideal stocking rate” to be calculated (Figure 2). These values will be used in the Stocker Cattle Budget and Cow/Calf Budget sections. If fall calving, disregard calf weight growth since forage consumption will be minimal (leave calf weights blank).

		Forage Consumed per Day (lbs)	Total Forage For Grazing Period (lbs)	Ideal Stocking Rate			
<b>COW/CALF PAIRS</b>		49.5	9058.5		Unfavorable Year	Normal Year	Favorable Year
Mature Cow Weight	1250			Number of Cow/Calf Pairs	21.8	30.5	39.2
Calf Starting Weight	250			Number of Bulls	0.9	1.2	1.6
Calf Ending Weight	550						
<b>BULLS</b>		54	3294	Acres per Cow/Calf Pair & Proportion of Bull	14.7	10.5	8.2
Average Weight	1800						
Date In	6/1/2016						
Date Out	8/1/2016						
# of Cows per Bull	25						
OR				OR			
		Forage Consumed per Day (lbs)	Total Forage For Grazing Period (lbs)	Ideal Stocking Rate			
<b>STOCKER CATTLE</b>		23	4118	Stocker Cattle	48.6	68.0	87.4
Starting Weight	600						
Ending Weight	900			Acres per Stocker	6.6	4.7	3.7
Average Daily Gain	1.64						

**Figure 2: Stocking Rate Calculations for Cow/Calf Pairs or Stocker Cattle**

### Stocker Cattle Budget

Stocking rates as determined by the above inputs will automatically be entered into this budget. A beginning cost of stocker cattle and expected selling price must be entered. These prices significantly influence what a producer can pay for grass and ultimately will not be known until after the fact. The Feeder Cattle Futures market, adjusted for local basis, is arguably the best resource for predicting prices. The tool will default to the average settlement in the month of December for April and November contracts in the following year, adjusted to a Salina, KS basis projection using [www.BeefBasis.com](http://www.BeefBasis.com). Projected prices should be updated when the rental negotiations are made. The tool will also ask for a death loss percentage (Figure 3). Enter long term historical or expected value.

Budgeting for Stocker Cattle Grazing-Inputs				
Inputs from Stocking Rate Page				
Grazing Period Start	5/1/2016			
Grazing Period End	10/31/2016			
Grazing Days	183			
Total Acres of Pasture	160			
Growing Season	Unfavorable	Normal	Favorable	
# of head	24	34	44	
Acres per Head	6.6	4.7	3.7	
Expected Cattle Returns				
Beginning Weight (lbs)	600	Per Head		
Beginning Cost (\$/cwt)	\$168.00	\$ (1,008.00)		
Death Loss	1.00%	\$ (10.08)		
Ending Weight (lbs)	900			
Expected Ending Price (\$/cwt)	\$143.00	\$ 1,287.00		
Gross Income per head		\$ 268.92		

**Figure 3: Inputs for Stocker Cattle Budget**

Livestock Costs will be the next category of values to determine (Figure 4). These are costs that occur between the purchasing and selling of the stocker cattle, not necessarily just when they are on pasture. Entering actual costs will help to determine a specific rental rate for each scenario. Default values are based on the KSU Farm Management Guide “Stocker” beef budget found at [http://www.agmanager.info/livestock/budgets/projected/KSU\\_Beef\\_FMG\\_2015.xlsm](http://www.agmanager.info/livestock/budgets/projected/KSU_Beef_FMG_2015.xlsm). These are

average state values and should not be used to reflect every cattle operation. Protein supplement is added to the default scenario for the last 3 months of the grazing season.

Enter any feed used per head (besides pasture) in harvested forage, grain/protein supplements, and mineral. The tool will calculate the total for the herd based on the three stocking rate scenarios. Enter veterinary costs per head, marketing costs, and miscellaneous costs. Cash interest assumes financing for initial cattle investment at the inputted operating interest rate over the grazing days.

Labor is an input that is not a strict per-head value, but will scale up or down with the number of head. Enter the total hours per head and per-hour value placed on labor (to reflect paid and unpaid labor), for a “normal” stocking rate. The tool scales labor up or down by half the actual change in cattle numbers for the Unfavorable and Favorable years (i.e. the more cattle there are, the more efficient labor will be per head). Likewise, Machinery includes repairs on equipment for checking cattle, delivering mineral and/or supplements, hauling, etc. These inputs will not scale directly per head, but will be increasingly efficient with a higher stocking rate. Entering a per-head amount will calculate the value for the Normal stocking rate, and Unfavorable and Favorable years will scale up and down from there. The same procedure is done for Utilities, Gas, Fuel, and Oil.

Fixed overhead reflects taxes, insurance, and depreciation on machinery and equipment, and will not vary based on number of head. Enter total dollars for these categories. The tool will display total costs for each stocking rate, cost per head, and cost per head plus the initial cattle value. All are important measures when budgeting the rental rate. Notice that per-head costs will decrease as stocking rate increases. Some producers do not consider fixed costs when bidding on pasture, but are content with a return above variable costs. If this is the case, fixed costs may be excluded.

In most cases, livestock costs will be paid by the producer. If the landlord shares in some of these costs (example: if labor is provided by the landlord to observe cattle and deliver mineral), adjust the percentages accordingly to reflect the landlord and tenant contributions.

Livestock Costs							Total for Herd			Cost Paid by	
Category:						\$/head	Unfavorable	Normal	Favorable	Producer %	Landowner %
Harvested Forage	\$ -	per ton	x 0	total lbs	=	\$0.00	\$ -	\$ -	\$ -	100.00%	0.00%
Grain/Protein Supplements	\$ 150.00	per ton	x 270	total lbs	=	\$20.25	\$ 486.00	\$ 688.50	\$ 891.00	100.00%	0.00%
Mineral	\$ 550.00	per ton	x 45.8	total lbs	=	\$12.58	\$ 301.95	\$ 427.76	\$ 553.58	100.00%	0.00%
Labor (towards cattle)	\$ 20.00	per hour	x 1.2	hours	=	\$24.00	\$ 696.00	\$ 816.00	\$ 936.00	100.00%	0.00%
Vet Medicine/Drugs						\$7.00	\$ 168.00	\$ 238.00	\$ 308.00	100.00%	0.00%
Marketing						\$11.00	\$ 264.00	\$ 374.00	\$ 484.00	100.00%	0.00%
Utilities,Gas, Fuel, Oil						\$6.00	\$ 174.00	\$ 204.00	\$ 234.00	100.00%	0.00%
Machinery charge						\$10.00	\$ 290.00	\$ 340.00	\$ 390.00	100.00%	0.00%
Cash Interest on Cattle Investme	\$ 1,008.00	purchased cost	x 5.0%	operating interest		\$25.27	\$ 606.46	\$ 859.15	\$ 1,111.84	100.00%	0.00%
Miscellaneous						\$2.00	\$ 48.00	\$ 68.00	\$ 88.00	100.00%	0.00%
Fixed Overhead	Total dollars					--	\$ 433.50	\$ 433.50	\$ 433.50	100.00%	0.00%
Taxes	42.5										
Insurance	51										
Depreciation	340										
						<b>Total Costs</b>	<b>\$ 3,467.91</b>	<b>\$ 4,448.91</b>	<b>\$ 5,429.91</b>		
						Per Head	\$ 144.50	\$ 130.85	\$ 123.41		
						Per Head plus beg. Value	\$ 1,152.50	\$ 1,138.85	\$ 1,131.41		

Figure 4: Budgeting Livestock Costs

Land costs are the next items to quantify (Figure 5). These occur regardless of the stocking rate or productivity. Enter water source yearly maintenance, noting that there are not always costs every year.

If ponds are cleaned out every 10-20 years, these cost need to be divided out to a yearly cost basis. Most of the time this is paid by the landowner, but can be adjusted to the tenant if necessary.

Spraying weeds can either encompass yearly spot spraying, aerial spraying, or both. In some pasture situations, the landlord provides the chemical cost and the tenant provides the application labor. Adjust “cost paid by” percentages as necessary. The fertilizer category can be used if looking at a tame pasture situation. A per acre burning charge should be entered, taking into account that burning may not be done every year but the cost should be spread over all years.

Enter maintaining fence cost per acre. If the landowner is providing materials and the tenant is providing labor, allocate costs accordingly. Default values for water, weeds, burning, and fence maintenance come from Table 11 of the *2015 Pasture Leasing Arrangements in Kansas* survey at: [http://www.agmanager.info/farmmgmt/land/lease/papers/KS\\_PastureLeasingArrangements\\_2015.pdf](http://www.agmanager.info/farmmgmt/land/lease/papers/KS_PastureLeasingArrangements_2015.pdf) .

New fence construction should be allocated out over its useful life (30-50 years). The default new fence construction value was estimated using “2010 Fence Material and Construction Cost Survey in Kansas”, found at [http://www.ageconomics.k-state.edu/extension-outreach/docs/misc/Ag\\_Econ\\_Staff\\_Paper\\_11-03\\_Oct\\_2010.pdf](http://www.ageconomics.k-state.edu/extension-outreach/docs/misc/Ag_Econ_Staff_Paper_11-03_Oct_2010.pdf) . It assumes roughly \$7000 in material cost for a ¼ section of fence with labor costs at \$17.85 per rod and \$57.17 for each corner, depreciated over 30 years. If pasture is larger or smaller, contains cross fencing, or a different type of fence, costs will need to be adjusted. The default assumes the landlord will pay for this long-term investment.

Corrals might be included in the pasture (which will require yearly maintenance and long-term new construction) or portable units brought in to gather cattle. The default assumes a \$12,000 portable corral, depreciated over 15 years, with a \$1000 salvage value. Since the tenant uses this in other parts of the cattle operation, only a tenth of this cost is allocated to this pasture.

“Interest on Land” is a long-term rent-to-value ratio that is applied to the investment of the land. Current land value should be entered and the ratio can be adjusted. In Kansas, the current rent-to-value ratio is near 1%. This is added to the “Landowner Share of Cost” to reflect what they hope to get on their investment. Note that sometimes this drives *Landowner Cost* higher than the *Amount the Producer Could Afford to Pay* and may not be achievable by the landlord. If set to zero, only pasture maintenance costs furnished by the landowner will be captured in Landowner costs. County estimates of pastureland value can be found here: [http://www.agmanager.info/farmmgmt/land/county/CountyValues\\_July2015.pdf](http://www.agmanager.info/farmmgmt/land/county/CountyValues_July2015.pdf)

Land Costs					
Category:					
		\$/acre	Total for Pasture	Cost Paid by Producer %	Landowner %
Water Source Maintenance		0.89	\$ 142.40	0.00%	100.00%
Spraying Weeds		\$ 3.55	\$ 568.00	100.00%	0.00%
Fertilizer		\$ -	\$ -	100.00%	0.00%
Burning Pasture		\$ 0.56	\$ 89.60	100.00%	0.00%
Maintaining Fence		\$ 2.84	\$ 454.40	100.00%	0.00%
New Fence Construction		\$ 2.00	\$ 320.00	0.00%	100.00%
Corrals		\$ 0.45	\$ 72.00	100.00%	0.00%
Other land costs		\$ -	\$ -	100.00%	0.00%
<b>Total Costs</b>		<b>\$ 10.29</b>	<b>\$ 1,646.40</b>		
Interest on Land	2,000.00	Land Value per acre	1.0%	rent/value ratio	=
		\$ 20.00	\$ 3,200.00		

Figure 5: Budgeting for Land Costs

Figure 6 provides the budgeted analysis to the inputted scenario. The producer’s costs are first analyzed under the three pasture conditions (Unfavorable, Normal, and Favorable). As more stocker cattle are able to graze on the pasture, the higher return is realized by the producer. *Amount Producer Could Afford to Pay* assumes that all return is given to the landlord. This is the very maximum a producer could pay and still cover all costs of production. Note that the producer still faces risk that stockers do not achieve the anticipated gain, that prices may fall below the anticipated selling amount, and costs may be higher than anticipated. They would want to include room for a “risk premium” to cover some of the variation in actual production. This being said, because of the competitiveness in the market, there may be years that producers will bid to only cover their variable costs if it means keeping or acquiring a piece of ground. Note that the more productive the pasture, the higher the rate they can pay since they are realizing higher returns. Rental rates are reported in four different methods (per acre, per head, per pound of gain, and per AUM) to capture a variety of rental arrangements.

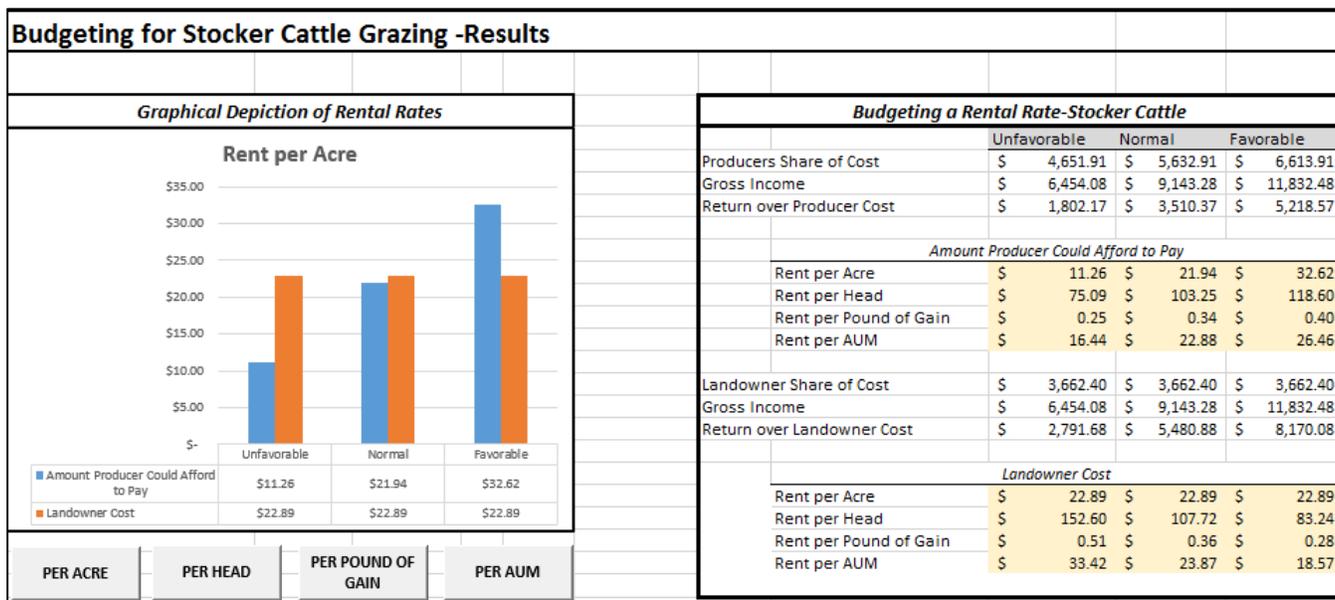


Figure 6: Calculated Rental Rates for Default Stocker Budget

The landowner share of costs include the Interest on Land and any maintenance costs assigned to them. Their cost does not vary by grass production level, so on a per-acre basis, all scenarios will be equal (unless sharing in cattle costs). Landowner costs on a per-head, per pound-of-gain, or per-AUM basis will decrease when spread over more head (more productive grass). At the same time, as more cattle are able to be grazed on the pasture, the producer realizes higher returns and can pay more. Hopefully, these costs will converge or become close to each other in a “normal” production year. As noted earlier, sometimes the *Landowner Cost* will exceed the *Amount the Producer Could Afford to Pay*. In this situation, either the Landowner will need to expect a smaller return on their investment (rent/value ratio) or the cattle producer will need to cover only variable costs to be able to bid more (eliminating Fixed Overhead) .

Landowners and tenants should consider all methods of pricing and discuss grass production scenarios when setting a rental rate. If the rate is set based on a “normal” year, discuss how that rate could be adjusted depending on grass production and if cattle are needed to be pulled early from the pasture, or more added throughout the grazing season to achieve optimal grazing levels. Also, if looking at a long-term lease, will there be adjustments when cattle prices are favorable or poor? Setting the rate based on one year of expected prices can be very risky for the producer. Finally, which pricing method is preferred? For example, setting a rate per pound of gain spreads this risk over both parties, but allows the landlord to capture more return if cattle perform well. Renting on a per-AUM basis gives the tenant more flexibility on the size and type of cattle to put on the pasture, while retaining the same stocking rate.

The last section of the Stocker Cattle Budget can be used to assess cattle production risk (Figure 7). Death loss, ending stocker weight, and stocker selling price are all variables that will affect how much a producer can pay for pasture, and are not readily known beforehand. To assess deviations from the inputted values, adjust these risks up or down by 1% or 5% and see how rates change in Figure 7.

Budgeting for Stocker Cattle Grazing -Production Risk			
Production Variables			
Death Loss	Normal	1.00%	
Stocker Ending Weight	1% higher	909.00	
Stocker Selling Price	5% lower	\$135.85	
<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid gray; padding: 5px; background-color: #f0f0f0;">Print all Pages</div> <div style="border: 1px solid gray; padding: 5px; background-color: #f0f0f0;">Print Production Risk Table</div> </div>			
<b>Stocker Cattle Production Risk</b>			
	Unfavorable	Normal	Favorable
Producers Share of Cost	\$ 4,651.91	\$ 5,632.91	\$ 6,613.91
Gross Income	\$ 5,203.12	\$ 7,371.08	\$ 9,539.05
Return over Producer Cost	\$ 551.21	\$ 1,738.17	\$ 2,925.13
<i>Amount Producer Could Afford to Pay</i>			
Rent per Acre	\$ 3.45	\$ 10.86	\$ 18.28
Rent per Head	\$ 22.97	\$ 51.12	\$ 66.48
Rent per Pound of Gain	\$ 0.08	\$ 0.17	\$ 0.22
Rent per AUM	\$ 24.50	\$ 11.33	\$ 14.83
Landowner Share of Cost	\$ 3,662.40	\$ 3,662.40	\$ 3,662.40
Gross Income	\$ 5,203.12	\$ 7,371.08	\$ 9,539.05
Return over Landowner Cost	\$ 1,540.72	\$ 3,708.68	\$ 5,876.65
<i>Landowner Cost</i>			
Rent per Acre	\$ 22.89	\$ 22.89	\$ 22.89
Rent per Head	\$ 152.60	\$ 107.72	\$ 83.24
Rent per Pound of Gain	\$ 0.51	\$ 0.36	\$ 0.28
Rent per AUM	\$ 33.42	\$ 23.87	\$ 18.57

**Figure 7: Rental Rate Calculations for Stocker Budget with normal Death Loss, 1% higher Ending Weight, 5% lower Stocker Selling Price**

### Cow/Calf Budget

Stocking rates, as calculated in the first section, will be used for this budget as well. Rental rate values will be reported in categories of Unfavorable, Normal, and Favorable conditions to reflect different grass productivity levels.

For this budget, the yearly cost of keeping the cow, minus pasture rental rate, is used instead of a beginning value (such as in the stocker budget). There will a lot of variation in this value depending on the operation, which explains why some producers can pay more for pasture than others. The default value is based on the KSU Farm Management Guide “Cow/Calf” beef budget found at:

[http://www.agmanager.info/livestock/budgets/projected/KSU\\_Beef\\_FMG\\_2015.xlsm](http://www.agmanager.info/livestock/budgets/projected/KSU_Beef_FMG_2015.xlsm). According to this state-wide budget, if looking at total cost per cow, adding in cull income and pasture rent gives a value around \$700. If only considering variable costs, running a cow year-round without pasture rent would be more around \$550. Depending on what the cattle market can support, there are years that producers will only be able to cover variable costs to bid on pasture.

Weaning percentage reflects the number of live calves weaned per exposed cow and is used to adjust ending value (weight and price) to a reflective herd value. Adjust these inputs as necessary, taking note that ending weight (weaned calf weight) is specified when calculating stocking rates. Gross income per head is the difference between the weaned calf value and the yearly cow cost, without pasture rental rate included (Figure 8). Default calf price is based on a November Feeder Cattle Futures contract average in the month of December prior to the grazing year, adjust to an expected Salina, KS basis using [www.beefbasis.com](http://www.beefbasis.com).

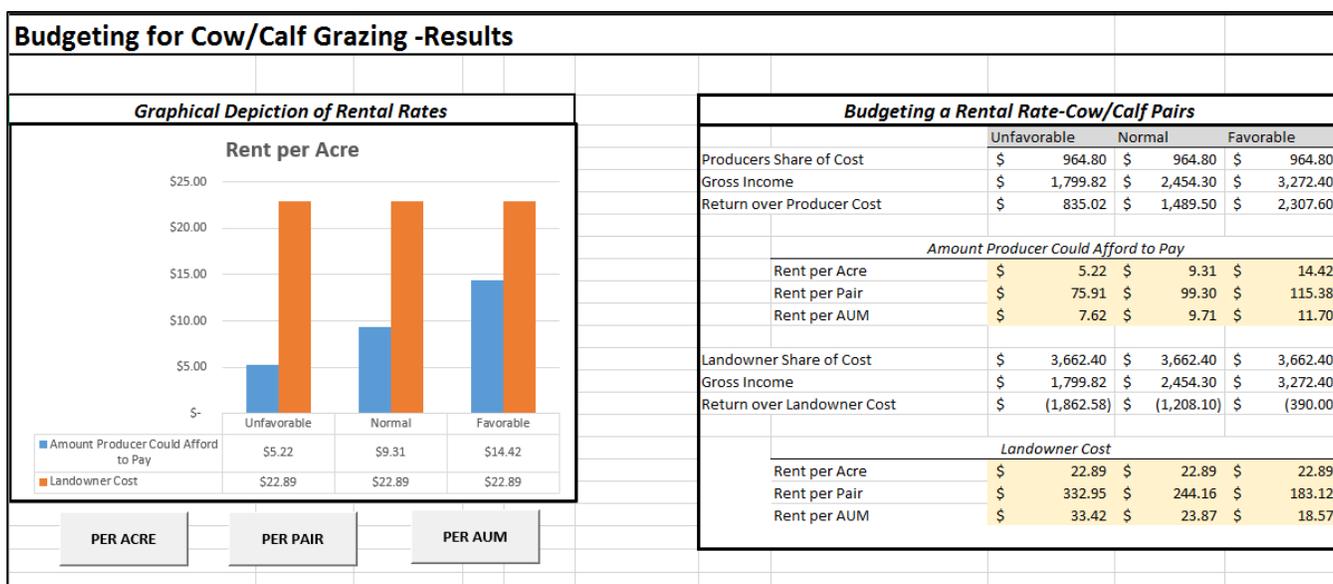
Inputs from Stocking Rate Page				Expected Cattle Returns	
Grazing Period Start	5/1/2016				Per Head
Grazing Period End	10/31/2016			Cow Yearly Cost (w/o pasture)	\$ 600.00
Grazing Days	183			Weaning Percentage	89%
Total Acres of Pasture	160			Ending Weight (lbs)	550
				Expected Ending Price (\$/cwt)	\$156.00
Growing Season	Unfavorable	Normal	Favorable		\$ 763.62
# of head	11	15	20	Gross Income per head	\$ 163.62
Acres per Head	14.7	10.5	8.2		

**Figure 8: Cow/Calf Budget Inputs**

This approach has limitations in that economies of scales are not captured, as in the Stocker Budget. For example, items like labor, machinery and equipment, and fuel are more efficient as the costs are spread over more cattle. In the Cow/Calf budget, these do not vary per head so Land Costs are the only contributors to differences in per-pair costs.

Land cost categories, explanations, and defaults are the same as in the Stocker Cattle budget above. Rental rates are not reported in per pound of gain, but all other measures are included in results (Figure 9). Notice that the producer’s share of costs are equal across grass production conditions, but as more pairs are able to graze, more income is realized. This allows the producer to pay more per acre, per pair, or per AUM. The Landowner cost is also equal across categories, so on a per-acre basis, their cost sets the rent per acre at a fixed amount. As more pairs are able to graze however, landowner cost goes down

on a per-pair or per AUM basis, since costs are spread over more animals. Again, because of the rent/value ratio on land or producer expectations to cover all cow costs, *Landowner Cost* can exceed the *Amount Producer Could Afford to Pay* and someone will have to be willing to accept a lower return. In this example even in a favorable year the producer will be able to match the landowner’s expected return. The rent-to-value ratio will need to be adjusted down or cattle producer will have to reduce yearly cow costs to only covering variable costs.



**Figure 9: Calculated Rental Rates for Default Cow/Calf Budget**

Like the Stocker Budget, the Cow/Calf producer also has production risk. These risks come in the form of weaning percentage (not weaning the expected amount of calves because of reproductive issues or death loss), selling calf weight, selling calf price, or yearly cow costs. The decision tool allows the user to scale these production risks up or down by 1% or 5% to see the effect on rental rates (Figure 10).

Budgeting for Cow/Calf Grazing -Production Risk		
Production Variables		
Weaning Percentage	5% lower	84.00%
Selling Calf Weight	5% higher	577.50
Selling Calf Price	5% higher	\$163.80
Yearly Cow Cost	Normal	\$600.00
<div style="text-align: center;"> <input type="button" value="Print All Pages"/> </div>		
<div style="text-align: center;"> <input type="button" value="Print Production Risk Table"/> </div>		

Table 4: Budgeting a Rental Rate				
	Unfavorable	Normal	Favorable	
Producers Share of Cost	\$ 964.80	\$ 964.80	\$ 964.80	\$ 964.80
Gross Income	\$ 2,140.53	\$ 2,918.91	\$ 3,891.88	\$ 3,891.88
Return over Producer Cost	\$ 1,175.73	\$ 1,954.11	\$ 2,927.08	\$ 2,927.08
<i>Amount Producer Could Afford to Pay</i>				
Rent per Acre	\$ 7.35	\$ 12.21	\$ 18.29	\$ 18.29
Rent per Pair	\$ 106.88	\$ 130.27	\$ 146.35	\$ 146.35
Rent per AUM	\$ 10.73	\$ 12.74	\$ 14.84	\$ 14.84
Landowner Share of Cost	\$ 3,662.40	\$ 3,662.40	\$ 3,662.40	\$ 3,662.40
Gross Income	\$ 2,140.53	\$ 2,918.91	\$ 3,891.88	\$ 3,891.88
Return over Landowner Cost	\$ (1,521.87)	\$ (743.49)	\$ 229.48	\$ 229.48
<i>Landowner Cost</i>				
Rent per Acre	\$ 22.89	\$ 22.89	\$ 22.89	\$ 22.89
Rent per Pair	\$ 332.95	\$ 244.16	\$ 183.12	\$ 183.12
Rent per AUM	\$ 33.42	\$ 23.87	\$ 18.57	\$ 18.57

**Figure 10: Rental Rate Calculations for Cow/Calf Budget with 5% lower Weaning Percentage, 5% higher Selling Calf Weight and Calf Price, and normal Yearly Cow Cost**

In summary, the KSU Pasture Rental Rate Tool provides guidance for what might be an equitable rental rate between a landowner and tenant. By using a budgeting approach, all costs are taken into consideration based on which party is providing the service or resource. Tool recommendations are directly linked to estimated prices and costs, so conservative values are best when looking at a long-term lease. Ideally, flexibility could be built into the lease to where some of the rental payment is made up front and the remaining is made after-the-fact when grass production, cattle prices, and cattle performance is known. This spreads the risk and potential returns more evenly between landlord and tenant.

For more information and sample lease forms, visit [www.AgManager.info](http://www.AgManager.info).

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