

Contributions Approach to Pasture Leasing: A Pasture Lease Calculator

by Kate Binzen Fuller, Assistant Professor/Extension Specialist, Dept. of Agricultural Economics and Economics

This MontGuide explains a contributions approach to setting pasture lease rates using an online calculator developed by MSU Extension. It is a complement to *Grazing Leases*, MT201601AG.

WHAT'S A FAIR RATE FOR A GRAZING LEASE?

While “fair” can be difficult to define, a contributions approach is a way to set up an equitable lease rate. This type of lease requires both landowner and livestock owner to tally their costs and economic returns from the pasture grazing lease, and split the proceeds accordingly.

For the landowner, costs will likely include land maintenance, taxes, and improvements. For the livestock owner, contributions will likely include those related to the animals themselves, but also any land improvements that are the responsibility of the tenant. The two parties then divide the proceeds from sales at the end of the season according to their contribution. This method shares some of the risk between livestock owner and landowner. Both parties benefit in a “good year” and both will receive less revenue in a “bad year.”

In Montana, most livestock leases are for cow-calf production, so the rate would be set based on the value of calf gain, divided proportionally by the contributions of each of the two parties. The MSU pasture lease calculator is a version of a spreadsheet created for the AgLease101.org website by Drs. Ray Massey and Matt Stockton, both members of the North Central Farm Management Extension Committee. This version, available at msuextension.org/pasturecalc, is designed with cow-calf producers in mind.

The information buttons, which can be accessed by moving the mouse over the blue symbol, contain useful information to help fill out cost and revenue amounts, and explain the calculations being made. The default values, which can be changed to better reflect a particular operation, are based on a sample cow-calf operation from eastern Montana.

The calculator has three tabs – two worksheets and a summary of results. The Landowner Cost and The Livestock Owner Cost tabs tally the contributions of the landowner and livestock owner, respectively. Each sheet is linked – so values entered in one sheet will be used in

calculations in the others. The Landowner's Contribution is the minimum rental payment that would cover the landowner's costs. The Livestock Owner Net Return on the Livestock Owner Cost Estimate tab shows the maximum the livestock owner would pay without losing money from the lease. The Implied Rental Rate on the Share of Gain tab calculates rates based on the return from selling animals and the contributions of each party. These calculated rates for the landowner and livestock owner can be used as starting points in the lease rate negotiation.

For a cow-calf operation, there will be costs involved in breeding and caring for mother cows in the winter. These costs are not considered explicitly here, because we are calculating the costs and returns to the pasture itself in terms of calf gain. But, they should be considered when evaluating the profitability of the operation.

The landowner

In the Landowner Cost tab, land-related costs are tallied. These include the opportunity cost of the land itself (the return that could be made on a sale of the land). They also include any landowner-installed improvements, such as fencing, wells, or corrals. It is important to enter a reasonable lifespan for these improvements as they often amount to very large up-front costs, but are much less when spread out over a number of years. Depreciation is the annualized cost of these improvements over their lifespan.

The opportunity cost of the land is often not considered by landowners who are not thinking about selling their land, and is more likely to be considered by a landowner who is thinking over whether to keep or sell their land. Either way, how and if that opportunity cost is considered is often subject to negotiation.

Land taxes are often another large cost. Land tax calculations vary from state to state and county to county, so enter the annual land tax bill manually. Interest, repairs, taxes, and insurance on facilities are calculated as a percentage of the sum of these values. If you don't

have one of these charges, enter 0 for the percent. If the exact value is known for one of these charges, adjust the percentage so that it reflects that exact cost. The total pasture ownership cost is the sum of all of the annual costs entered or calculated.

The landowner's contribution, in per calf, or per acre terms is that sum divided by number of pairs/calves, or acres, respectively. The number of pairs/calves is calculated based on the stocking rate and the number of acres, which is entered in the Livestock Owner tab. The landowner would not want to receive less than this amount – in order to have all costs covered. Sometimes, this isn't possible, and if the landowner is planning to keep the land regardless, may be willing to accept less than this amount.

The livestock owner

The value of the lease to the livestock owner is based on the value of weight gained by animals during the time on pasture, minus costs. Adjust the weights and values so that the average value of gain matches your historical averages (or expectations). Enter the number of months the animals will be on the pasture and the stocking rate during that time (not the stocking rate per month). Interest is on any money borrowed to purchase calves, stockers (if appropriate) or bred heifers for the year. If there was no borrowed money to purchase animals, enter 0 in the rate column. The livestock owner's contribution per calf sums all of these costs in per calf terms. Net returns to grazing is the value of the gain, minus costs. The livestock owner would not want to pay more than this amount, or they would be losing money from putting the animals on the pasture.

Share of gain calculations

The share of gain lease rates are calculated by summing each party's costs and the proceeds from livestock sales according to the contribution each party makes. The percent contribution shares are also given.



To order additional publications, please contact your county or reservation MSU Extension office, visit our online catalog at <https://store.msueextension.org> or e-mail orderpubs@montana.edu

Copyright © 2018 MSU Extension

We encourage the use of this document for nonprofit educational purposes. This document may be reprinted for nonprofit educational purposes if no endorsement of a commercial product, service or company is stated or implied, and if appropriate credit is given to the author and MSU Extension. To use these documents in electronic formats, permission must be sought from the Extension Communications Coordinator, 135 Culbertson Hall, Montana State University, Bozeman, MT 59717; **E-mail: publications@montana.edu** The U.S. Department of Agriculture (USDA), Montana State University and Montana State University Extension prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status. Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Cody Stone, Interim Director of Extension, Montana State University, Bozeman, MT 59717.

Stocker operations

If instead of a cow-calf operation, the livestock owner is raising stockers, this calculator can still be used. The numbers – stocking rates, costs, and net returns – will need to be adjusted so that they are in per head terms rather than per pair or per calf.

What lease rate value should I use?

After deciding if the lease should be based in per acre or per calf terms, there are still several values to consider, each of which is likely different. If, for example, we are just looking at per-acre terms, the default values imply \$18 is necessary to cover the landowners' contribution (on the Landowner Cost tab), the livestock owner will lose money if they pay more than \$27 (Livestock Owner tab). Between those two values there is room for negotiation. If the two parties have agreed to split the value of the proceeds according to their cost contributions, the landlord would receive \$25 per acre. Here, the landlord's net benefit is $\$25 - \$18 = \$7$ and the livestock owner's is $\$27 - \$25 = \$2$ per acre. If calves don't gain well or if prices are low, these values can shift. Evaluating (or re-evaluating) at the end of the season can help landlord and tenant share the risk of the operation, potentially to the reward of both parties. The process of negotiation will likely depend on if and what alternatives are available to both parties. As with any lease, the terms of the agreement need to be put in writing at the beginning of the process to alleviate disagreement and other issues during the lease period. You will find a sample lease agreement at <https://aglease101.org> in the Document Library.

For More Information

Drafting a lease requires many important considerations other than setting an appropriate rate. For information on setting terms and legal issues, see MSU Extension Montguide, *Grazing Leases* (MT201601AG) or on the msuextension.org/aglease website.