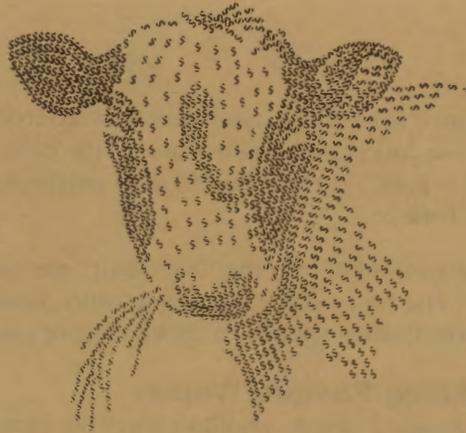


CALCULATING MONTHLY PASTURE CHARGES ON THE BASIS OF FEED VALUE



Pasture rental charges are often based on tradition rather than logic. Frequently they fail to reflect either the value of the forage or the value of the nutrients to the livestock. Ideally, the rental charge should be based on the quantity of feed consumed and the value of that feed, had it been harvested as hay.

Monthly pasture charges are commonly based on animal unit equivalents. Due to differences in average mature cow weight from herd to herd and people's differing conception of an animal unit (some consider it a cow-calf pair, while others consider it a mature cow), charging solely on an animal unit basis can lead to misunderstanding.

What Is an Animal Unit?

Pasture consumption is highly related to animal weight. An animal unit is defined as a 1,000-pound mature cow, thus a 1,200-pound cow would constitute 1.2 animal units. A calf probably doesn't eat an appreciable amount of feed until it is 2 to 3 months old or weighs around 200 pounds so it is probably not appropriate to make a charge for the calf until that time. If the calf entered the pasture at 200 pounds and left at 500 pounds, the charge should be based on a 350-pound calf—its average weight for the period ($200 + 500 = 700 \div 2 = 350$).

What Adjustments Should Be Made for Quality?

The performance obtained from pasture is determined by the forage species and their condition and stage of growth. The charge made should reflect this performance. Best quality pastures might be assigned a value based on anticipated performance and all lesser quality pastures assigned lower values, reflecting the reduced performance expected from them.

Pasture quality descriptions and suggested assigned values are as follows:

Excellent (.30)

Seeded grass or grass-legume pastures, abundant growth, tender with no blooms or seed heads showing. Yearlings on pastures in this category would be expected to gain $1 \frac{3}{4}$ pounds or more per day.

Good (.25)

Abundant growth of seeded or native grasses or legumes, but less palatable grasses than the "excellent" classification or with a high proportion of plants in the early to late bloom or seed stage. Yearlings on pastures in this category would be expected to gain from $1 \frac{1}{4}$ to $1 \frac{3}{4}$ pounds per day.

Fair (.20)

Grasses which are less abundant but adequate. Pastures are either weedy or are of lower quality because of lack of moisture or advancing maturity. Yearlings on pastures in this category would be expected to gain from $\frac{3}{4}$ to $1 \frac{1}{4}$ pounds per day.

Poor (.15)

Short and overgrazed, droughty, or heavily infested with weeds. Yearlings on pastures in this category would be expected to gain less than $\frac{3}{4}$ pound per day.



The factors assigned for each pasture were derived from: 1) the protein and energy value of pasture of this classification; 2) the anticipated performance of the cattle; and 3) the consumption expected by a 1,000-pound animal. The "excellent" pasture should give performance comparable to alfalfa hay, which was used as the comparison forage.

Irrigated pasture would fall into the "excellent" or "good" categories with only exceptions falling in the "fair" category. The best range or native pasture would fall in the "good" category the first half of the season with lower quality species or more mature pastures falling in the "fair" or "poor" categories.

What Is Standing Pasture Worth?

The charge for standing pasture should reflect the current market value of hay, less the cost of harvesting. Selling forage as pasture rather than hay removes the risk of weather damage associated with hay production. An adjustment in the hay value is necessary to reflect this reduced risk.

Unless personal records provide a figure for your area, use \$25 to \$27 per ton for the cost of harvesting hay. This figure reflects current central Washington custom rates of \$13 to \$14 per acre for swathing, \$.50-\$.65 per bale for baling (100 pound bales), and \$.25 to \$.27 per bale for roadside stacking (nine tiers high). The risk of weather damage will vary from area to area, but 10% of the selling price of hay during the pasture season seems to be a fair average.

How Do We Put It All Together?

A formula which would be equitable follows:

$$\begin{array}{ccccccc} \text{Monthly} & & \text{Average animal weight} & & \text{Average value per ton} & & \text{Pasture quality} \\ \text{Charge} & = & \text{during the pasture} & \times & \text{of standing alfalfa} & \times & \text{factor} \\ & & \text{season (in 1,000-} & & \text{during the pasture} & & \\ & & \text{pound units)} & & \text{season} & & \end{array}$$

The average value of standing alfalfa is calculated as:

$$\begin{array}{ccccc} \text{Average price of} & & \text{Cost of swathing,} & & \\ \text{stacked alfalfa hay} & - & \text{baling, and stacking} & - & \text{Weather risk factor} \\ \text{during pasture season} & & & & \end{array}$$

To demonstrate the use of this formula, assume that the average weight of the cow herd is 1,100 pounds, the average weight for calves during the pasture season is 350 pounds (they enter the pasture at 200 pounds and leave at 500 pounds), and alfalfa hay is selling for \$80 in the stack. The pasture under consideration is classified as good. The charge per cow and calf pair would be as follows:

$$\text{Animal units involved: } 1,100 \text{ lbs.} + 350 \text{ lbs.} = 1,450 \text{ lbs.} \div 1,000 = 1.45$$

$$\text{Value of standing pasture: } \$80 \text{ (hay price)} - \$25 \text{ (harvest charge)} - \$8.00 \text{ (weather risk factor)} = \$47.00/\text{ton.}$$

$$\text{Pasture charge per cow-calf month: } 1.45 \text{ (animal units)} \times 47.00 \text{ (value of standing pasture)} \times .25 \text{ (pasture quality factor)} = \$17.04 \text{ per month.}$$

Similarly if the hay price were \$60 per ton, the monthly pasture charge would be \$10.51 for a cow-calf pair.

This formula reflects the value of the standing forage and does not take account of other factors associated with pasture rental such as provision of water and fence maintenance. These expenses are necessary if the feed is to be utilized as pasture, just as baling and swathing are part of the cost of selling baled hay, so it would not be appropriate to pass this on as part of the pasture rental. Charges for additional services such as herd surveillance would need to be negotiated between the owners of the cattle and the pasture.

By William E. McReynolds, Extension Animal Scientist, Washington State University. More detailed data supporting the computations are available, on request, from the author. His address is Clark Hall, Washington State University, Pullman, WA 99164.

Issued by Washington State University Cooperative Extension, J. O. Young, Director, and the U.S. Department of Agriculture, in furtherance of the Acts of May 8 and June 30, 1914. Cooperative Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, color, religion, national origin, sex, age, or handicap. Revision of EM 4479 April 1983. 25¢