

Feeding Beef Cows in Winter

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Feeding hay to cattle is expensive. The expense of producing, making and feeding hay accounts for approximately 50% of the cost to produce beef and 30% of the cost to produce milk in the Midwest. By using winter pastures to extend the grazing season, producers can reduce the amount of hay they feed and in doing so substantially reduce input costs.

Stockpiled tall fescue.

A popular winter pasture in the Midwest is stockpiled tall fescue. The biggest advantage of stockpiled tall fescue is its low cost. For instance, dry beef cows can be maintained on stockpiled tall fescue for about 40 cents per head per day compared to over \$1.25 per day for hay. For cow-calf operations, this is probably the cheapest way to winter dry, pregnant cows. It works pretty well for fall-calving cows also. Another advantage of stockpiled tall fescue is that it weathers well. Tall fescue leaves have a waxy layer that helps them stay green nearly all winter. As a result, the quality of well-managed stockpiled tall fescue is often better than most grass hay.

Tall fescue pastures to be stockpiled should be grazed or clipped to a 3 or 4-inch stubble in early to mid August. Immediately following this, 40 to 80 lb./acre of N fertilizer as ammonia nitrate should be applied to stimulate fall growth. It is better to apply the N in mid-August when it is dry than to wait until the first autumn rains to apply the N. Waiting until mid-September to apply N generally will reduce forage yield by 20 to 40%. Producers of stockpiled tall fescue need to maximize the number of days in September and October that growth occurs. And applying the N early does that.

After the pastures have been fertilized, little needs to be done until winter grazing is needed. Once you decide to utilize the feed, strip grazing works best. Utilization rates for conventional grazing are approximately 30% versus 70% for strip grazing. Typically, allocating a three day supply (or less) of forage to animals will maximize utilization. Given the high cost of other winter feeds (i.e. hay or supplemental feed) maximum utilization is a must. Systems need not be complicated to be effective. Poly tape, step-in posts, and portable chargers can help make systems affordable.

Despite the benefits of stockpiled tall fescue, it has some limitations. One limitation is that stockpiled tall fescue usually cannot supply enough nutrients to sustain rapidly growing stocker calves. This is most often a problem in mid to late winter as the quality of stockpiled tall fescue declines. Producers needing to feed animals that have high nutrient requirements must either heavily supplement their stock or use legume or grass/legume hay or silage as their forage base. Another limitation of stockpiled tall fescue is that much of it in the Midwest is endophyte infected. Stock consuming endophyte infected tall fescue have reduced weight gains, lower milk production and/or animal health problems.

Feeding hay wisely.

Although extending the grazing season is a cost effective way to reduce winter feed costs, most cow-calf producers end up feeding some hay during the year.

No matter how hay is packaged, if you waste it, you lose money. Below are some general rules that can help minimize waste during feeding.

- **Feed hay in small amounts or in a feeder to minimize waste** (Table 1). When fed a limited amount of hay at a time, cattle have less opportunity to trample and soil the hay. Feeding hay in a rack or a "hay ring" also limits the opportunity that animals have to trample or soil hay, and will reduce waste substantially if you intend to provide more than a day's worth of hay at one time.
- **Feed hay in well-drained areas**
If you intend to feed hay in a single location all winter, then providing a footing such as crushed gravel or even concrete can help minimize problems with mud. Perhaps more cost effective is to move hay-feeding areas around the farm to minimize the damage to any one area of the pasture.
- **Feed hay stored outside before hay stored inside**
Hay stored outside usually has more spoilage during storage and lower palatability than hay stored inside. Cattle will waste a greater percentage of poor-quality hay than they will of good-quality hay. Animals fed high-quality hay early in the season will often refuse poor-quality hay when it is offered later.

The simplest system for feeding large round bales is to set the bale in the pasture or feeding area where the stock have free access to hay. This system does not require the purchase of any extra equipment for feeding, but it is prone to high feeding losses. Losses are greatest when a several-day supply of hay is fed at one time. Feeding a one-day supply of hay each day minimizes waste but increases labor costs. When feeding large round bales without a ring or rack, a good way to estimate how many bales to have available each day is to figure one cow per foot of outside diameter of the bale. Even then, feeding losses can be excessive.

A better system for feeding large round bales is to set the bale in the pasture or feeding area but limit access to the hay with a rack or hay ring. This system requires an initial investment in hay racks or rings (hay rings usually cost about \$150 each), but feeding losses are low, even if a seven-day supply of hay is left at one time (Table 1). Feeding hay in racks or rings is crucial for producers who do not or cannot feed hay to their cattle on a daily basis.

Table 1

Estimated losses (percentage of hay offered) from different hay-feeding methods

Bale type	With rack		Without rack	
	1-day supply	7-day supply	1-day supply	7-day supply
Small square bales	3.9 percent	4.1 percent	6.7 percent*	
Large round or square bales	4.9 percent	5.4 percent	12.3 percent *	43.0 percent *
Formed haystacks	8.8 percent	15.0 percent	22.6 percent	41.0 percent
Small round bales (fed in place on pasture)			10.0 percent	30.0 percent

*Bales spread or unrolled across pasture

When hay rings are used, you need to consider the space available around the feeder. Most hay rings have enough space for approximately 10 cows at a time. The more aggressive cows will eat first and consume the more desirable hay. Cows that are more timid will be forced to eat the lower-quality material or go hungry. To make the most efficient use of hay rings, you may need to purchase several rings and feed more bales at one time.

As an example, a 30-cow herd would consume one 900-pound round bale per day. To feed a 30-cow herd, we could use one hay ring that is filled daily. But a better alternative would be to use three hay rings that are filled every three days. This gives every cow in the herd an opportunity to get the hay she needs.

Another popular system is to unroll the bale and feed it on the ground as loose hay. In addition, several equipment manufacturers sell "bale processors" that chop hay and deposit it in a windrow for feeding. Both of these systems are labor intensive and can result in high trampling and soiling losses if too much hay is fed at one time. If a three-day (or longer) supply of hay is unrolled or "processed" and left for cattle to consume on their own, feeding losses of 40 percent or more can be expected. However, if fed on a daily basis, feeding losses run about 12 percent. One advantage of unrolling or processing bales is that it gives you the opportunity to move the hay feeding areas around the pasture and distribute manure and nutrients evenly over a large area.

Summary

No matter how you do it, feeding cows in winter is a challenge. But it is managing this time of year that separates low-cost producers from the rest of the pack. In most cases a combined program that maximizes the use of stockpiled forage and good hay feeding practices optimizes the forage system.