Fall Grazing Options to Cut Costs

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It is inevitable that feed and fuel prices have reached their peak, specifically corn and by-products. It is also known that profit margins in cow/calf production are narrow in part because feed costs represent up to 60% of all cost. With the short forage growing season (~120-150 days) in the northern Great Lakes region, a constant challenge producers face is implementing methods to reduce winter feeding cost. It is also unavoidable that the drought has impacted the number of forage grazing days, as well as hay supplies.

Well-managed pasture-based livestock operations can enhance profitability by improving animal and pasture performance, increasing harvest efficiency, reducing stored feed cost, and reducing the chance of weed problems, resulting in a longer grazing season. Producers must realize what is termed "grazing season" is not limited to the period of time when forages are actively growing. Along with a well-managed summer pasture grazing system, methods can be used to extend the grazing season in the fall by stockpiling forages. Carry-over of pastures not grazed (stockpile grazing) and forages swathed into windrows (swath grazing) can be grazed later in the fall when forages are not actively growing.

Stockpiling is the process of growing the forage until frost and letting the animals harvest their own feed at a later date. Most forage species can be stockpiled; however, some species are more suitable than others based on palatability, forage quality, winter hardiness, and grazing pressure. Stockpile grazing replacing mechanically harvested stored forage can improve pasture utilization the subsequent season by staggering spring "flush" and distributing manure on pastures by livestock. However, forage quality, quantity and utilization can be affected by fall moisture and nitrogen availability and winter weather conditions. Forage utilization will depend on snow cover and temperature conditions throughout winter. Wisconsin research suggests that cattle can graze through 8" of snow; however, utilization may suffer with excessive amounts of snow or ice.

Swath grazing has been extensively used in the northern U.S. and Canada and is the process of cutting hay, leaving it in windrows and allowing livestock to graze windrows later in the fall. Grazing has been extended by as much as 45 days with minimal effects on cattle performance or consumption when grazing in the most severe weather conditions. Canada has reported no impact on body conditions when grazing windrows in the fall and Nebraska reported that weaned steer calves gained or maintained weight with windrows vs. stored hay. Windrow grazing is typically done with annual crops such as barley, oats, peas, and triticale, as well as some perennial crops. By letting cattle harvest their own forage, cost of processing and feeding hay can be reduced by 60-75%. Manure handling in dry lots is reduced with increased manure distribution out on pastures.

However, there are risks associated with fall grazing, often times more perceived than actual. Again, forage quality, quantity, and utilization can be a factor with less desirable forages, fall moisture, nitrogen availability, and winter weather. Crusting of snow/ice on windrows can cause sore noses on cattle foraging through the snow and can negatively impact feed intake. Too much snow accumulation in stockpiled grazing will reduce forage intake and decrease forage utilization. Wind damage can occur on poorly managed windrows prior to snow cover. On pastures or hay fields where cattle are grazing windrows or stockpiled forages, availability of fencing, shelter and heated water (particularly later in the fall) may be limited.

There has been a constant concern with forage quality in stockpiled forages. It has been documented that nutrient concentrations, particularly energy, of harvested forages exposed to moisture can be negatively impacted over time. However, 2005 and 2006 preliminary data from the North Central Research & Outreach Center (NCROC) in Grand Rapids, MN, indicates that concentration of nutrients (crude protein, total digestible nutrients, etc.) in forages left in windrows over time are not significantly impacted. Fall grazing systems have not been compared with traditional hay feeding in the fall for the Upper Great Lakes Region. Studies conducted at the NCROC in Grand Rapids over the last two years have compared these grazing and feeding systems.

2006 and 2007 Studies. The objective for both years was to evaluate forage quality, forage utilization, length of grazing period, and pregnant dry cow performance of grazing windrows vs. fed stored forage (2006) and grazing windrows vs. stockpile grazing (2007) and to compare costs of these feeding systems. Annual ryegrass pastures were cut in October and pregnant dry cows grazed windrows (SWA) or fed haylage (CON) starting November 8, 2006, and grazed windrows (SWA) or stockpile grazed (STO) starting November 7, 2007. All pastures were grazed through the summer, stockpiled in August, and stocked in November based on forage yield lasting 30 days.

In 2006, forage DM yield was 3,754 lbs/acre and forage quality was measured monthly from time of cutting until the end of the project. Percent crude protein did not decrease over time for either treatment group. However, forage TDN at the end of the study was slightly lower for SWA (61%) vs. CON (64.4%) groups.

Cows grazing windrows lasted 35 days while cows fed haylage lasted 27 days. While forage loss (percent of remaining forage) was higher for cows grazing windrows (13.8%) vs. fed haylage (3.6%), average daily gains were similar for both groups (Table 1).

University of Nebraska reported forage loss in a rotational windrow grazing system for weaned calves can be estimated at 10% or less if grazed less than seven days and 5% or less if grazed one day. Reducing forage loss offers animals more available forage for consumption and extends the grazing length of that pasture.

In 2007, forage DM yield was 2,143 lbs/ac for both pasture groups. Percent crude protein decreased from cutting (STO=22.1%, SWA=22.9%) until the end of the project (STO=17.5%, SWA=19.5%) with the biggest decrease in stockpiled forage. TDN increased in the STO over time, but values did not change for the SWA group (Figure 1).

During the feeding period, STO cows lasted longer (38.5 days) than SWA cows (31 days). Average daily gains were slightly higher for SWA cows (0.4 lbs/head/day) vs. STO cows (-0.4 lbs/head/day). There was no snow cover on the pasture until day 25 when 90% of the pastures were covered. The STO cows had a negative gain by the end of the grazing period, which, because stockpiled forages are left standing and not in a concentrated area, snow cover likely affected the ability of those cows to consume enough forage for their daily intake requirements.

Forage loss was measured until December 2, when the snow storm prevented the measuring of forage loss for the remainder of the grazing period. During the first 25 days, forage loss was slightly less for STO cows than SWA cows (Table 1). Due to cattle grazing an annual forage, there was no pressure to maintain the recommended stubble height of 3-4" for regrowth, thus explaining why STO cattle had less forage loss.

The goal of applying a fall grazing system to any cow/calf operation is to reduce winter feeding cost by extending the grazing season. The cost/head/day for cows being fed haylage vs. grazing windrows in 2006 was $1.26 vs. $0.35, $0.91 more/head/day (3.6 times higher). The cost/head/day for cows grazing stockpiled forage vs. grazing windrows in 2007 was $0.08 vs. $0.14 head/day. Based on these results with annual ryegrass, the cost/head/day was higher feeding stored forage to cows in early winter, while grazing either stockpiled forage or windrows was cheaper. Keep in mind these figures do not factor in costs for pasture renovation, seed, herbicide, and fertilizer. However, all inputs collected were the same for all treatments, thus cost associated with each input would be the same regardless of treatment.

Figure 1. *Total digestible nutrients (TDN, % of DM) values from samples collected monthly from stockpiled (STO) or windrows (SWA).*

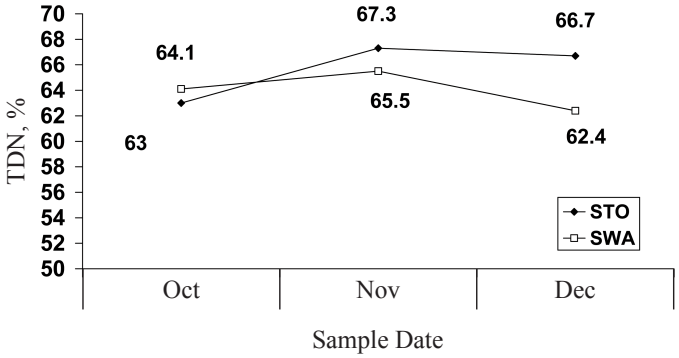

Table 1. *Forage loss, average daily gain, and cost for feeding systems in 2006 and 2007 at the NCROC in Grand Rapids, MN.*

	2006		2007	
Description	**CON[a]**	**SWA[b]**	**STO[c]**	**SWA**
Forage Loss, %[d]	3.6	13.8	8.2	9.5
Average Daily Gain (lbs/head/day)	1.9	2.0	-0.4	0.4
Cost/Head/Day[e]	$1.26	$0.35	$0.08	$0.14

[a]Cattle fed haylage in dry lot pens in 2006.
[b]Cattle grazing windrows out on pasture in 2006 & 2007.
[c]Cattle grazing stockpiled forage out on pasture in 2007.
[d]Forage loss measured as lbs of forage remaining prior to new bale fed or after cattle were rotated out on pasture.
[e]Not included: pasture renovation, seed/herbicide/fertilizer cost.

Results indicate windrow grazing and stockpile grazing can extend grazing seasons for pregnant dry cows during the fall months in northern MN. Minimum nutrient requirements for maintenance of a five-month old pregnant dry cow in the fall for CP (8.29%) and TDN (54.1%) are significantly lower than actual CP and TDN values of forage annual ryegrass in STO and SWA pasture groups. Forage quality does not seem to be a concern when left until a later grazing date. However, significant snow falls during fall grazing can impact cattle performance and forage utilization, specifically with stockpile grazing.