



Winter Feed Monitoring 2012-2013

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Cooperators:

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In a Nutshell

- Feeding and maintaining the cowherd during the winter months is one of the major expenses on cow-calf farms.
- Cooperators kept records of herd feeding and management during the winter months.
- In both years, the feed (both stored feeds and forage or crop residues) was sufficient to maintain cow weight and condition.
- Cattle weights were used to estimate feed requirements.
- The weather impacted the Schmidts' abilities to stockpile forage.
- Lower forage prices and grazing crop residues greatly reduced the feed costs in year 2.
- Finding ways to extend the grazing season are extremely valuable.

Project Timeline:
November - April
2011-2013

Background

Feeding and maintaining the cowherd during the winter months is one of the major expenses on cow-calf farms. Hay must either be purchased or grown, harvested, and baled on-farm, and in either case must be stored for later use. Studies have found that extending the grazing season through the use of stockpiled forages, gleaning of crop residues, and early-spring grazing of cover crops can reduce the amount of stored forages required. Stockpiling forages requires



Dave and Meg Schmidts' cattle visit the watering hole. The Schmidts monitored winter feed and forage use on their farm near Exira

proper grazing management: those acres to be stockpiled must not be grazed after late summer, to allow for sufficient growth. This may increase the land requirements for the farm. However, choosing to produce one's own hay may do the same. Limit feeding of stockpiled forages promotes better utilization than less-stringent forage allocation; however, care must be taken that cows do not lose too much body condition. Dave and Meg Schmidt recorded paddock movements, stored feed consumption, weight, and condition for their beef herd.

Materials and Methods

Cooperators kept records of herd feeding and management during the winter months (from when the animals were moved off of summer grazing pastures

and onto winter pastures or lots). The movement of animals through paddocks, consumption of stored feeds, and animal weights and body condition scores (BCS) were reported.

Results

Cow and calf weight and condition

In both years, the feed (both stored feeds and forage or crop residues) was sufficient to maintain cow weight and condition. Throughout the entire grazing season, mature cow BCS was a 6 or greater in yr 1, and just over 5 in yr 2. Calves gained 0.84 lb/d in yr 1, and 1.15 lb/d in year 2. Cows maintained or gained weight in both years, despite most of them calving during the trial period.

Cattle Movement and Feeds

In the fall of 2011, a droughty year, Dave and Meg started reporting movements on Sept 26, though stockpiled forages supplied all the feed required through Dec 8. The cattle started grazing new pasture in the spring on April 21 2012, for a total of 209 days. For the 2012-2013 winter, also following a dry summer, the cattle were moved onto cornstalks (approximately 300 acres) on Oct 12, received hay starting Dec 10, and finished winter grazing on March 8, for a total of 148 days. Thus winter grazing for year 1 (2011-12) was much longer than for year 2 (2012-13), though stockpiled forages made up a significant portion

of the year 1 diet. A total of 23 cattle made up the herd in year 1, and just over 30 in year 2 (some variation due to different groups co-mingling, sold animals, new calves in spring, etc).

A summary of the types of feed and amounts used are in **Table 1**.

Feed Consumption

Cattle weights were used to estimate feed requirements: cattle will consume roughly 3% of their body weight per day. By determining the feed required and subtracting the stored feeds consumed, the amount of feed derived from pastures or crop residues can be estimated as well. This information is summarized in **Table 2**. In the "Stockpile/Crop residues consumed" column, a negative number indicates that cattle were fed more stored feeds than it was estimated that they required – so it is likely that little pasture forage was consumed.



Table 1

Types of feed and amounts used							
Year	Hay ID	Hay type	Price per bale	Type of bale	Weight per bale (lb)	Number consumed	Total price
1	West	grass + legume	\$3.85	small square	50	67.5	\$259.88
	East	grass + weeds (mostly brome)	\$3.85	small square	50	36	\$138.60
	Large round	grass + legume	\$112.50	large round	1500	33	\$3,712.50
	Moehrl	grass	\$3.53	small square	45	44	\$155.32
2	Wiemann	Reed canary, brome, unknown	\$64.54	large round	1550	10	\$645.40
	Johnston	smooth brome, some alfalfa	\$16.67	large round	1400	14	\$233.38
	Wilson	mostly red clover, some orchard grass	\$151.81	large round	1750	24	\$3,643.44
	Wilson	mostly red clover, some orchard grass	\$181.81	large round	1750	5	\$909.05
	Clausen	orchard grass, smooth brome, trefoil	\$4.02	small square	50	13	\$52.26
	Wedes	all grass	\$0.02	large round	1300	11	\$0.22

Table 2

Feed consumption				
Year	Month	Animal requirements (ton)	Stored feed consumed (ton)	Stockpile or crop residues consumed (ton)
1	Sept	0.91	0	0.91
	Oct	5.34	0	5.34
	Nov	5.82	0	5.82
	Dec	6.60	0.27	6.33
	Jan	7.19	4.97	2.22
	Feb	11.66	7.98	3.69
	Mar	8.48	8.80	-0.32
	Apr	8.48	6.31	2.17
2	Sept	10	0	10
	Oct	10	0	10
	Nov	10	0	10
	Dec	10.26	3.90	6.36
	Jan	11.46	10.48	0.98
	Feb	10.29	12.83	-2.54
	Mar	10.57	13.53	-2.96
	Apr	11.39	9.68	1.71
Total	year 1	54.48	28.33	26.15
	year 2	53.96	50.40	6.20
	average	54.22	39.36	16.17
	difference (1 - 2)	0.52	-22.07	19.95

Feed Costs

Table 3 shows that over the two years, cattle were eating stored feeds for nearly the same amount of time, but they consumed much more in year 2 than year 1. This is partially due to the increased number of animals in the herd, but is also because cattle were on crop residues instead of stockpiled forage, and could not get as much nutrition from that.

The table also indicates that feed price per pound was much lower in yr 2, which is actually not what the hay markets indicate: good grass hay was about \$10/ton more expensive in Jan 2013 than Jan 2012.

The Schmidts made some of the hay themselves and so had a price advantage in that way. But what if he had paid commodity prices? **Table 4** is similar to table 3, but with the price of forage at actual market values (\$130/ton in 2012, \$140/ton in 2013).

The economic situation is much different with these adjustments. Not having as much ability to graze in year 2 almost doubled the cost of maintaining the cattle herd. While the climate conditions in both years greatly impaired graziers' ability to stockpile, finding ways to extend the grazing season are extremely valuable.

Conclusions and Next Steps

While the weather certainly impacted the Schmidts' abilities to stockpile forage, lower forage prices and grazing crop residues greatly reduced the feed costs in yr 2 from what they might have been. In the future, combining some stockpiled acres or cover crops may help reduce the stored feed requirements even further.

	Feed cost	
	Year	
	1	2
Days fed	134	140
Number of animals	23	32
Stored feed consumed (ton)	28.33	50.4
Value of feed consumed (\$)	5504	5484
Feed cost (\$/d)	41	39
Feed cost (\$/hd)	239	169

	Feed cost	
	Year	
	1	2
Days fed	134	140
Number of animals	23	32
Stored feed consumed (ton)	28.33	50.4
Value of feed consumed (\$)	3683	7056
Feed cost (\$/d)	27	50
Feed cost (\$/hd)	160	221



References

USDA Agricultural Marketing Service. Market News – Hay Reports. Accessed July 16 2013. <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?startIndex=1&template=TemplateW&navID=RN2HayL1&rightNav1=RN2HayL1&topNav=&leftNav=MarketNewsAndTranspotationData&page=SearchHayReports&resultType=&acct=lsnm>

Janovick, N. A., J. R. Russell, D. R. Strohbehn, and D. G. Morrical. 2004. Productivity and hay requirements of beef cattle in a Midwestern year-round grazing system. *Journal of Animal Science* 82:2503-2515. <http://www.journalofanimalscience.org/content/82/8/2503.full.pdf+html>

Curtis, L. E., R. L. Kallenbach, and C. A. Roberts. 2007. Allocating forage to fall-calving cow-calf pairs strip-grazing stockpiled tall fescue. *Journal of Animal Science* 86:780-789. <http://www.journalofanimalscience.org/content/86/3/780.full.pdf+html>

Miller, A. J., D. B. Faulkner, R. K. Knipe, D. R. Strohbehn, D. F. Parrett, and L. L. Berger. 2001. Critical control points for profitability in the cow-calf enterprise. *Professional Animal Scientist* 17:295-302. <http://pas.fass.org/content/17/4/295.full.pdf+html>

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