

Alternatives energy sources for winter-feeding cows

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Energy requirements during late gestation are second to early-lactation in amount for the beef cow. These requirements also increase in the winter due to cold weather, which is common in northern states such as Wisconsin. If cows do not have enough energy reserves after calving, this can be detrimental to the cow's reproductive performance at breeding and could impact her calf's health and productivity. The forages typically fed in Wisconsin are adequate sources of energy and if fed ad libitum can exceed the beef cows requirements in late gestation. However, producers can encounter situations where their forage supply may run short or their harvested forages may be inadequate in energy. Purchasing additional forages can be expensive, but there are other alternatives, which may be more economically.

Recent research conducted at The Ohio State University investigated alternative energy sources to grass hay in late gestation diets of beef cows. In the 1990's, research at OSU evaluated limit-feeding corn as an alternative to hay in late gestation, and a few years ago this proved to be a less expensive choice for energy. Recently, dried distiller grains (DDGS) has become a more attractive economic option for protein and energy in beef cattle diets due to greater corn prices and increased ethanol production. Therefore, the objective the study was to investigate three energy sources (hay, corn, and DDGS) in late gestation to determine effects on cow performance and feed costs. Corn and DDGS were fed at a limited intake compared to grass hay fed free access in round bale feeders, because corn and DDGS are more energy dense feeds. Hay used for the study was moderate-quality orchard grass hay. The goal was to feed the diets at similar energy intakes during late gestation, so that cows would have similar change in body weight and body condition score.

No adverse effects were observed in the cow performance during gestation or on postpartum reproductive performance from feeding different energy sources in late gestation. The diets were fed from the beginning of November until the end of February, and cows starting calving the first week of March. Feed costs were similar between the grass hay and limit-fed corn diets, whereas the cows fed the limit-fed DDGS diets were \$0.44 cheaper per cow per day. This resulted in a significant reduction in feed costs during late-gestation for cows fed DDGS.

Limit-feeding high-energy diets does require a little more intensive management and proper facilities. Cows should be adapted to the diets over 4 days to a week and the diets should be fed in bunk with adequate bunk space per cow. Cow should be housed

in a securely fenced area like a drylot rather than a pasture. If bedding the cows with fodder, straw, or other fiber sources, the cows will eat more of bedding, therefore may increase the amount of bedding used. Several other feedstuffs are available to use as energy source alternatives or can be supplemented to stretch hay or forage supplies. More information regarding the study discussed here can be directed to Amy at aradunz@wisc.edu and additional resources can be found at the end of document.

Table 1. Cow daily as-fed intake and feed costs during late gestation

	Grass hay	Limit-fed corn	Limit-fed DDGS
Grass hay, lbs/day	28	4.8	4.4
Whole shelled corn, lbs/day	--	10	--
DDGS, lbs/day	--	--	8.6
Supplement ¹ , lbs/day	--	2.2	2.2
Daily feed costs ² , \$/cow/day	1.41	1.40	0.97

¹Cows fed hay were provided with free access to a trace-mineral salt mix. Cows fed corn were provided a supplement containing 46.6% soybean meal; 26.7% ground corn; 7.8% limestone; 4.3% dicalcium phosphate; 4.1% urea; and 10.5% trace mineral salt/vitamin/monensin mix. Cows fed DDGS were provided a supplement containing 74.5 % DDGS; 11% limestone; 10.5% trace mineral salt/vitamin/monensin mix.

²Calculated with the following prices on an as-fed basis: corn = \$3.80/bu; hay = \$100/ton; DDGS = \$130/ton; corn supplement = \$400/ton; and DDGS supplement = (\$200/ton)

Additional resources:

Drylot Beef Cow/Calf Production. V. L. Anderson and S. L. Boyles. 2007.
<http://beef.osu.edu/library/as974.htm>

Limit-feeding cows a corn-based diet. S. C. Loerch.
<http://beef.osu.edu/library/limitfed.html>