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Ideas for Selecting Wintering and Calving Sites

John Zinn, Green 14 Consulting, LLC

You may have noticed that the days are getting shorter again! Chores early in the morning require flashlights. I hate to be the bearer of bad news but winter is coming. Time to think about where to winter our stock or calve in the spring.

Many of us have well fenced yards around the buildings with some or all of it surfaced with concrete or gravel. These locations are convenient to winter waterers and feed supplies and many have buildings to shelter stock from wind. Problem is we are left with a mess to clean up in the spring, manure to spread and time in short supply to get all the spring work done.

An alternative to this is to pick areas on the crop ground or pasture to winter on. Ideally we want to put nutrients on where they are needed. Winter feeding and calving areas accumulate nutrients so having a current soil test on potential areas would be ideal. We could pick areas where nutrients are in short supply. Ideally we'd also want to have good drainage and protection from strong prevailing breezes from the North and West. It would also be good to be away from sensitive features such as creeks, sinkholes, sites that are shallow to bedrock, and wetlands. Depending on the weather it may be advisable to pick more than one site per year in case we have a prolonged thaw where the first site becomes a mud hole and we need some drier ground to move the stock to.

Wind shelter is often lacking where all the other features of a good wintering site are available. Your local NRCS office and Extension have some ideas for portable constructed windbreaks, or you can stack up bales of poor quality hay to create a windbreak. Consider placing bales of good hay ahead of time in the wintering area in a grid pattern and use portable electric fence to prevent stock from accessing the whole thing at once. This allows you to move bale rings and not have to start up a tractor every time you need to give them new feed. It also spreads nutrients across the area. Other choices are rolling out bales as needed which gives even better nutrient distribution and allows stock to pick through poorer quality hay.

These ideas may help select wintering and calving areas can reduce the spring labor workload of scraping, hauling and spreading manure while providing a healthier place for stock to hang out or calve.

Pregnancy checking provides opportunities for profit

Michael Cruse, Extension Educator

Pregnancy checking helps producers make informed decisions about herd management. These tests can tell you more than just whether or not an animal is pregnant. They can provide information on number of viable fetuses, fetus sex and give estimates on pregnancy stage. So how does a livestock operation profit by paying for this information?

Many livestock operations birth once in the spring, which means they must maintain their breed stock through harsh winter conditions. Maintaining open animals over the entirety of that period will rarely balance out. Simply knowing if animal is or is not pregnant in the fall will give producers the opportunity to cut costs and improve their bottom line. Options for managing open animals include:

- Culling the animal immediately.
- Fattening the animals and selling them at a later date for a better price.
- Or rebreeding the animal.

If used correctly, pregnancy test data can also help lower newborn mortality rates and improve herd or flock health. To adjust a feed ration at critical points before birth a producer needs to have an estimate of pregnancy stage. Pregnancy checking can help refine that estimate. If a ewe is carrying triplets it may need a more concentrated food source to maintain body condition. A pregnancy check can estimate the number of fetuses an animal is carrying. Quality data collection and good record keeping are required to achieve these additional benefits of pregnancy checking.



Each farm will have its own set of variables that will influence the potential profitability of doing pregnancy checking. Large herds or flocks may see a quicker return on investment than smaller operations but all production systems can benefit from this annual testing in the long-term. Be sure to check with your local veterinarian or analytical lab to find out what pregnancy check options are available in your area.

Feeding the Cow Herd

Eric Mousel, U of M Beef Team

It is getting to be that time of year where most or all of the cow herd has been brought in off grass and up close. This year was a pretty good grass year and hay seems to be plentiful for most. But there is always the uncertainty of next spring to consider. Will we have another late spring like last year? Will it turn dry and set the spring grass back a little? Nobody knows at this point, but if roughage is a little tight, or could be a little tight, here are some things to consider:

Limit feeding cows

Cows in our country are generally way over fed, both from a quality and quantity standpoint. Most of the classical nutrition information sets intake at 2% of body weight, so on a 1400 lb. cow that is about 28 lbs. of dry matter per day. But recent research out of South Dakota demonstrates that cows may not really need that much to maintain their condition; provided their dietary energy and protein levels are met. Starting in December, 464 Angus-cross cows, at a body condition score (BCS) of 5, were split into 4 groups and were fed the same diet at 4 different levels of intake (3.0% of body weight, 2.5%, 2.0%, and 1.75%) for 90 days. The conclusion was that cows fed at an intake of 1.75% of body weight only lost about a quarter of a body condition score (about 20 lbs.) over the 90 days compared to cows fed at 2% of body weight that basically maintained their weight. The difference between feeding these cows at 2.0% of body weight vs. 1.75% of body weight was about 4 lbs. of feed per head per day. That might seem like splitting hairs, but 5 lbs. per head x 90 days x 464 head = 208,800 lbs. of feed or 105 tons. That amount of savings could feed those cows an extra 3 weeks in the spring if needed.

Stretching roughage with corn

Using corn to stretch roughage supplies in cows was used by a few outfits last winter; primarily because there wasn't enough roughage. Even at last winter's prices, it made more sense to feed corn than buy hay on the open market. I think we will see a lot more of that this winter, simply because this year, corn is cheaper than roughage on an energy basis. It takes about 2 lbs. of hay to get the same energy as a pound of corn. At \$3 a bushel, a unit of corn energy is valued at \$0.05. At \$65 per ton, the same amount of energy from the roughage will cost roughly \$0.07. So if you can feed 5 lbs. of corn per head per day, you feed about 10 less lbs. of roughage per head per day. Replacing roughage at a rate of 2 to 1 can help stretch roughage quite a ways if needed; and it is cost effective right now.

Protein supplementation

Dietary protein content is a key driver for cow condition over the winter. Early- and mid-gestational cows do not really have a very high protein requirement; 9% of the diet will usually get them by in pretty good shape. However, as the last trimester of gestation arrives and the calf begins to grow at a much faster rate and the weather gets colder, protein requirements of the cow begin to rise to around 10.5%. At the same time, diet quality generally begins to decline to some degree. Once lactation begins, protein requirements of the cow increase substantially. Although academic evaluation has placed cow protein requirement during lactation at a little over 10%; in practice, I think it is a little closer to 12%.

The amount of supplementation needed is largely going to depend on the primary feed sources in the diet. Good quality grass hay or a grass/alfalfa mix probably will not require much supplementation over the winter. Slew grass, corn stover, and other lower quality feeds will require more protein supplementation to keep condition on the cows and get them milking at optimum potential.

Cost of protein supplementation is another aspect to be considered. Protein supplements for the cow herd come in all shapes and sizes. Since protein supplements are not 100% protein; analyzing protein supplements for cost effectiveness should be done on a pound of crude protein (CP) basis. As an example, let's look at soybean meal. Soybean meal (SBM) is usually avoided by cow outfits because of its relative large upfront cost; right now a ton of SBM will run about \$375 +/- local basis. So initially this cost seems ridiculous. However, SBM is a 44% CP product, therefore its cost per pound of crude protein looks like this: $2000/T \times 44\% = 880 \text{ lbs. of CP/T}$. So, at $\$375/T / 880 \text{ lbs. of CP/T} = \$0.42/\text{lb of CP}$. Since SBM is such a high CP product, you don't have to feed very much of it to meet cow requirements. Table 1 shows selected protein supplement costs on a per pound of CP basis.

Table 1. Selected protein supplement costs on a per pound of CP basis.

Supplement	% CP	Cost/Ton	Cost/Lb. CP
Alfalfa	17%	\$65	\$0.19
Dried distillers grains	30%	\$135	\$0.22
Soybean meal	44%	\$375	\$0.42
Canola meal	40%	\$275	\$0.34
Range cake	20%	\$350	\$0.87
Protein tubs	20%	\$800	\$2.00

Balancing energy and protein in the winter cow diet can not only help control feed costs but also will help stretch feed supplies as far as possible. If you would like to visit more about nutrition for the cow herd, give me a call at 218.398.1916 or email me at emmouse@umn.edu.

Considerations for out-wintering the dairy herd

*Brad Heins, Assistant Professor, Organic Dairy Management
University of Minnesota Extension*

Quests for profitability and increased public interest in farm animal welfare have fostered a need to investigate winter housing options for low-input and organic dairy herds. Dairy cattle are commonly housed outdoors during the winter months in New Zealand and Ireland. Housing options in Minnesota, which has much colder winters, include tie-stall barns, free-stall barns, compost barns, and "out-wintering" on bedded packs with wind shelters. We have long known that beef cows and older dairy heifers can thrive with minimal shelter during Minnesota winters. In contrast, milk cows have generally been kept indoors, in part because they were milked in tie-stall barns. More recently, curtain-sided free stall barns have become the standard housing of new construction for larger herds.

Out-wintering continues to increase in popularity, and our stakeholders identified the economics of housing systems as an important research topic. In particular, they asked if out-wintered dairy cattle will stay healthy and comfortable. If so, out-wintering could reduce winter housing costs.

We recently completed the first two years of a three-year study to develop practical strategies for organic dairy producers to enhance the profitability of their farm by evaluating two winter housing systems and their effects on economics of organic dairy cows. The results presented are from the winter of 2013 and 2014.

Organic dairy cows at the University of Minnesota's West Central Research and Outreach Center in Morris, MN, that calved during fall and spring calving seasons were used to evaluate production, somatic cell score, dry matter intake, animal hygiene, and behavior of organic dairy cattle housed outdoors on a straw pack or indoors in a compost bedded pack barn.



During the two years, 165 lactating Holstein and crossbred organic dairy cattle were assigned to a winter housing system (straw pack or compost-bedded pack barn). Organic wheat straw was used as bedding for the outdoor straw packs, which were 40 feet wide by 80 feet long, and maintained to keep cows dry and absorb manure throughout the winter. The open-front compost-bedded pack barn (2 pens in the barn) was bedded with sawdust, and the bedding material was stirred twice per day with a small chisel plow. Cows were fed a TMR that included organic corn silage, alfalfa silage, corn, expelled soybean meal, vitamins and minerals.

The straw pack cows had similar milk, fat, and protein production than the compost bedded pack cows (see accompanying table on the following page). Surprisingly, there were no differences in production between the two winter housing groups of organic cows for milk production or somatic cell score. The groups of cows also had similar dry matter intake, indicating that the cows that were housed on straw packs did not require more feed than cows housed in the compost bedded pack barn. However, cows consumed about 25% more dry matter intake during the winter of 2014 compared to the winter of 2013. The average temperature during the winter months was about 7 degrees colder during 2014 than 2013.

Across the two winter seasons, there were no differences for body weight or body condition score for organic cows. For animal cleanliness, the cows housed on straw packs had udders that were cleaner than cows housed in compost bedded packs (udder hygiene score of 1.45 versus 1.73). We saw no difference in rumination time for cows housed outdoors or indoors. In future years, we will focus on the profitability of

the two winter housing systems for organic dairy cattle. Economically, animals outdoors may require about 15 to 20% more feed for the season than animals kept in confinement housing, so improvements in animal health and welfare from out-wintering will need to exceed increased feed costs if out-wintering is to be a profitable option.

Measurement	Compost bedded pack	Outdoor straw pack
Milk (lb)	34.4	33.3
Fat (%)	4.1	4.3
Protein (%)	3.5	3.5
Energy-corrected milk (lb)	34.8	34.2
Somatic cell score	2.75	2.88
Dry matter intake (lb)	42.1	39.7
Body weight (lb)	1,157	1,232
Body condition score	3.4	3.1
Udder hygiene (1 = clean, 5 = dirty)	1.73	1.45*
Rumination time (min/day)	495	474
*P < 0.05 for contrast of difference from compost bedded pack cows.		

Brad Heins presented an eOrganic webinar on out-wintering cattle that describes more information related to out-wintering cattle. For more information, go to the [eOrganic website](#).

There are several obvious benefits to out-wintering; building costs are lower, diseases associated with close confinement and poor ventilation are avoided, animals are generally cleaner, bedding costs could be reduced, feeding may be simplified, and herd size may be adjusted if weather conditions change quickly. There are five key messages to consider when considering out-wintering:

- 1) provide adequate wind protection
- 2) additional feed may be required for cows and heifers
- 3) lactating cow teats should be dry before they leave the milking facility during cold weather
- 4) health problems tend to be fewer than cows housed indoors or in confinement facilities
- 5) housing under the stars may not be for everyone.



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