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Bale Grazing Lets Cows Feed Themselves

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Harvested forage is generally used in northern climates when snow covers pastures, but time and expense can be saved if you don't have to haul hay in from the fields and then back out to the cows.

Windrow grazing, where forages (particularly annual forages) are cut and left in windrows for grazing in the fall and winter, has become popular, but bale grazing is gaining popularity, as it provides economic and environmental advantages over some traditional feeding methods, says Lorne Klein, a Saskatchewan Ministry of Agriculture grazing and forage specialist.

A few decades back, folks bale grazing their cattle were often considered poor managers; not so anymore. "Particularly in the past 10 years, stockmen have begun to realize the benefits of this method," he says.

Advantages of bale grazing

Many early bale-grazing programs involved hauling bales to a specific site, placing them in a grid pattern, and allocating a certain number of bales every 3-5 days by using electric wire. "But, the ultimate cost-saver is to graze bales on the spot where they're dropped, rather than haul them somewhere," Klein says.

Windrow grazing keeps plants at the stage of maturity they were cut, rather than becoming over-mature if they're standing all fall and winter. Plus, bales do a better job of holding nutrient quality of forage (less weather damage), and are easier for cattle to access after heavy snow.

"Snow is a non-issue when bale grazing. Cows are large and strong; even if there's a snowbank, they push through it," Klein says. "And when the snow melts toward spring, as long as the ground is frozen, there's no damage to the soil/plants."

Some management experts advise ranchers against haymaking because of the expense, but Klein argues that most of the cost of hay isn't in the cutting and baling.

"It's what you do with that bale afterward – hauling it in and hauling it back out, or to another location. All winter long, you're starting a tractor every day to move and feed bales. And, if you feed cattle in a pen, manure must be hauled out. That probably doubles the cost of the hay," he says.

But, leaving bales in the field minimizes the cost, he says. "Some producers bale graze 1,000 cows, and move very few bales. The bales stay where they're made, and the soil fertility stays right there, too," Klein says.

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Extensive research at the Western Beef Development Centre in Saskatchewan compared bale grazing to feeding in a corral and hauling manure out. It showed huge benefits in letting cows eat bales in the field.

"When you feed in a confined area and haul manure to spread on a pasture or hayfield, you recover 1% of the original nitrogen content of those bales," Klein says. "When you bale graze on fields at the proper rate – at a stocking density where you enhance vegetation – you recover 34% of the original nitrogen in the bale. We have photos of old seeded pastures that now look brand new, because we've imported these nutrients."

Even hauling bales to a pasture that needs fertilizer is more effective and cheaper than hauling manure out or using commercial fertilizer, Klein adds. The results and benefits last longer because there's a combination of nutrients and litter from manure and wasted hay.

Producer experiences

Brian Ross and his wife Rosalie run 700 cows in southeastern Saskatchewan, near the Montana/North Dakota border. They began bale grazing after BSE crashed the Canadian cattle market.

"We thought we were efficient, but BSE forced to either get more efficient or get out," he says. "With equipment and fuel costs growing, we found that bringing in hay, stacking it and then hauling it out during winter, plus starting the tractor every day, was costing about $10/bale," Ross says.

They worked into bale grazing gradually. "In 2004, we hauled bales to the cows to feed them a week at a time. Now we don't move the bales off the hayfield, except on rented land. We move the cows to the bales," he says.

The Rosses turn groups of cows into a 30-day supply of bales, starting with fields closest to the water source. Then they'll open a gate and move the cattle into the next field. Depending on the weather and wind, cattle may eat bales quicker or slower, he reports. "You have to keep monitoring the cows and hay, and know when it's time to move them."

Ross has operated this way for five winters now – some easy and some hard, he says.

"Snow isn't a factor; cattle get through it to the next bale. And they tend to clean up the bales they're working on before going to new ones, through the deep snow."
Ross says the reduction in equipment and fuel use saves money, but the biggest advantage is the fertilizer benefit on his hayland.

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"It takes a couple of years to kick into effect, because you have residue from the bale grazing, but right now those fields are producing more than they've ever produced in my lifetime," Ross says.

"Along with bale grazing, we went to later calving – in May, and we don't wean our calves until March. The calves winter with the cows on bales, and we creep feed them if it's a tough winter – and the calves do well," Ross says. The calves are sold as yearlings in August after a summer on grass.

In winter, his cows often use snow as a water source, but he also makes sure they have water – especially since he started leaving calves on the cows. "After the pairs are in fields ½ mile from the water, we see them licking snow," he says. "They often prefer to lick snow, rather than walk to water, but the water is there if they want it."

Waste is a concern

Mike Hittinger ranches north of Edmonton, Alberta, and has bale grazed five winters. "We tried it first with just a month's worth of feed. You learn by trial and error what works best for your situation, or if it works at all," he says.

He admits the amount of hay wasted by bale grazing bothers some folks, "But we don't bed the cattle – they bed in the waste – so it saves bedding. Plus it provides soil nutrients."

The poorer the hay quality, the more the cows waste, he says. Good-quality hay, he adds, is "usually cleaned up pretty well. You need to weigh the cost of labor/fuel saved vs. the cost of waste, plus the added soil fertility."

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Hittinger says some of their soils are sandy or high in clay content and need the organic matter. "It's a major reason we bale graze. We buy our hay, so we're adding nutrients wherever we put the bales, and we bale grass over our worst pastures," he says.

"One thing you need to consider is that every time you change a feeding system, you'll see some cows that don't do as well. With bale grazing, you sometimes must push cows to clean up the hay, and some cows may fall out of your program," he explains.

Nebraska example

Nancy Peterson, her husband and son run 380 cows in western Nebraska, utilizing 2,300 acres of no-till cropland. "This ranch didn't have much pasture so we've spent many years trying to match our resources with a good management system. We do a lot of swath grazing," Peterson says.

About 1,000 acres of their farm is 26 miles from home so they move cattle there for winter grazing. "This works well, except that not all fields have stock water. Sometimes, we have to put up hay on a field that

doesn't have water, since we can't swath graze it. So we put cattle on the nearest field with water, and move bales to that field for them to eat," she explains.

"But the thing we like best about bale grazing, since we are no-till farmers, is that it's a wonderful treatment for poor ground, increasing the organic matter and fertility. We see better yields following bale grazing," she says.

Bale grazing in Alberta

Steve Kenyon, Busby, Alberta, has been grazing cows on round bales for the past 13 years. He tells of a young man who came from Colombia to work for a 1,200-cow operation that bale grazed near Barrhead, Alberta.

"When Pablo first arrived, he'd never experienced winter feeding. That ranch bought another 150 cows and put them in a separate area. It was already winter, and they wanted to get the new cows fence-trained before they turned them in with the other cows. The new cows were breaking through electric fence to get to the bales, so the ranch manager decided that until they got those cows trained, he would feed them.

"Pablo's job was to bale graze 1,200 head and take the bale buster out to feed the small group. He said it took longer to feed 150 cows than the 1,200 cows bale grazing. He couldn't understand why anyone would ever haul feed to cows. He'd never seen it done either way, and was completely objective – and it made a lot more sense to him to bale graze," Kenyon says.

Kenyon says he spread out his winter's supply of 750 round bales in a 25-acre paddock, and reports it took about two hours/week to feed 366 bred heifers. The key to bale grazing if you are buying hay is to have bales delivered right to the pasture, he says.

Kenyon cuts the twine off before they freeze to the bales – a task that took about 20 hours of labor for 750 bales. He doesn't cut sisal twine because it biodegrades quickly.

To ration bales during winter, he leapfrogs two electric fences across the field. This gives a buffer zone so he can move the fence nearest the cattle, while the second fence contains them.

"You need a back-up fence, while you put it back up again. And if a cow gets through the first one, the second fence contains her. I like to strip graze along a narrow rectangular paddock," he says.

Some ranchers turn cows into a whole paddock of bales at once, rather than move a hot wire. Kenyon prefers a four-day grazing period for optimal balance between labor, animal nutrition/gain and feed waste.

"Labor is minimal if you only move cattle every 3-4 weeks, but waste may be too much, depending on the price of hay. And, you may not get optimal gains on your animals. They may eat very well for awhile, but when you're trying to get them to clean up, they won't be gaining during the last few days," he says.

"Bale grazing is a skill. You won't do it perfectly the first time. You learn as you go. It has to fit your own operation, cowherd, calving season, etc.," Kenyon says.

Sidebar: Twine vs. net-wrap

Producers have tested various types of twine and wraps to avoid removing frozen twine from round bales and found sisal twine can be left on.

"There's an advantage to leaving twine on, rather than taking it off, because it helps hold the bale together as cows eat it," says Lorne Klein, a Saskatchewan Ministry of Agriculture grazing and forage specialist.

Plastic twine should be removed. It lasts too long in the environment and presents problems in the field the next haying season. Plastic twine can also be a danger to cattle, getting caught in hooves and around their head or legs, or entangle ear tags. And, it's hazardous if ingested.

Net wrap is another option but it costs more. There's less leaf loss, however, and it's faster when making hay. Leaving net wrap on the bale also acts as a "feeder," slowing down cows' ability to break the bale apart, thereby minimizing waste.

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"Most people with big herds are using net wrap, and they leave it on the bale," Klein says. "They may pick up the net wrap later in winter, but it's easiest to clean up in the spring. Cows don't seem to have any problem with it, plus it's easy to pull out of the litter, compared to pulling tangled twine out of a grazed bale."

Sidebar: Feasibility of bale grazing

Lorne Klein, a Saskatchewan Ministry of Agriculture grazing and forage specialist, says bale grazing has been around for decades, but the convergence of three factors has aided its feasibility today.

The first, he says, was portable windbreaks, which allowed cattle to be grazed in fields without shelter. Second was electric fence to control cows' access to bales. Third was the use of snow as a water source, to utilize fields with no water.

Klein says that, 20 years ago, people using snow as a water source were thought of as negligent. "This practice was looked upon as inhumane."

In fact, Klein recalls giving a presentation to a group of producers and mentioned winter grazing and snow as a water source. "Some people in the crowd were unable to accept this concept," he recalls. "So I came back to the office and looked for information. The University of Alberta, back in the 1980s, showed that cattle do well on snow – if it's reasonably good snow (soft and powdery, not crusted)," Klein explains.

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