

Bale-Grazing: Less Work, Better Return

With bale-grazing, winter-feeding cows can be as simple as moving wires every few days.

Story & photos by Ed Haag

Neil and Barbara Dennis, beef producers from Wawota, Sask., Can., got tired of burning fuel and energy hauling hay and manure, so they decided to try something different. What they found has changed how they winter-feed their cows and yearlings and has saved them a whole lot of money and grief in the process.

Their discovery was bale-grazing, a feeding system that uses intensive grazing techniques to winter-feed round bales in the field. "Bale-grazing has changed our lives," Barbara says. "We would never go back to anything else."

No wonder. Last year she and her husband bale-grazed more than 800 animals on 1,843 acres with a net savings in fertilizer of \$18,700. Since abandoning feeding in corrals during the winter, they have seen their per-acre carrying capacity jump from 30 animals per acre to between 60 and 80.

"It all boils down to better utilization of our resources," Neil says. "We got our fertilizer exactly where we need it next year."

The couple first heard about grazing bales when their son Bradley was accepted into a local holistic resource management (HRM) mentoring program, which emphasized reduced- or low-input crop and livestock production. Not long after that, Neil and Barbara signed up for a course and, after graduating, decided to make some major changes to their cattle operation.

"It made perfect sense," Barbara says. "It taught us to work smarter, not harder."



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Based on a winter version of the intensive grazing system popularized by Allan Savory, founder of the Allan Savory Center for Holistic Management of Albuquerque, N.M., their new bale-grazing system eliminated the need to consolidate hay in the fall and then haul it, piecemeal, to the cows throughout the winter. It was exactly what Neil and Barbara were looking for.

A different game plan

No one can accuse the Dennis family of buying into a program halfway. By the 2002-2003 winter season, they had converted 1,843 acres into 130 grazing paddocks ranging from eight to 10 acres each. Using portable electric fences to control the movements of their cattle, these paddocks were rotationally grazed from spring thaw to the beginning of December when their animals were introduced to their winter feed source — bales of alfalfa-grass hay, cereal hay, and pea straw on a ratio of two bales of alfalfa-grass hay to one bale of cereal hay or pea straw. Sometimes this ration is supplemented with protein pellets.

Barbara notes that the bales are placed in the paddocks in the fall when the weather is still pleasant. This negates the need to plow roads and move hay in the winter when the temperature drops below zero and diesel machinery can be temperamental.

"There is nothing worse than hauling hay when everything is freezing," she says. "The winter weather around here can break you."

Bales are placed in rows 15 to 20 feet (ft.) apart, so that livestock access to each bale is not restricted. Also, rows should be at least 20 ft. apart to allow adequate space for electric fence between the rows.

"This way you can use the outside row of bales to hold up the fence," Neil says, adding frozen ground isn't the easiest environment to penetrate with a temporary electric fence post.

Because portable electric fence is an essential tool for controlling cattle movement and effectively metering bales, Neil recommends moving it every one to two days to keep the cattle actively eating the hay in front of them. He adds that this is an effective way to reduce waste.

Neil intentionally creates long, narrow paddocks with the water source at the lower end and begins the grazing in that paddock by placing the lateral fence close enough to the starting point to supply two days of hay for the animals within the enclosure. By moving the lateral fence gradually away from the water source, his cattle are forced to walk back and forth from the fresh feed source to the water source.

"While they are doing that they are trampling the fresh manure into the ground," Neil says. "That helps distribute the manure more evenly and makes for a more consistent stand of grass the next year."

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Depending upon cow size and bale weight, a two-day supply is about one bale per 20 cows.

A versatile tool

He adds that bale-grazing is an excellent tool for amending areas of low soil fertility. By strategically placing bales in those areas, encouraging more cattle activity, additional nutrients can be added without much effort. Conversely, areas that display high nutrient characteristics can be passed over during winter to avoid excessive nutrient buildup.

While the bales can provide some shelter from winds during periods of extremely cold weather, Neil has erected portable windbreaks in pastures that don't have natural shelter. These are moved periodically to prevent snow and manure buildup.

One of the drawbacks of bale-grazing is that it has the potential of leaving dead spots where bales have been placed if a thick layer of forage is left uneaten. Bunch grasses (crested wheatgrass) and legumes (alfalfa) are more likely to be negatively affected by this layer of overlooked forage. The die down is generally temporary with rhizomatous grasses (smooth brome), and recovery will occur in a year or two.

"I see that layer as a future resource," Neil says. "It will just sit there for a year, and then the next year it will take off and end up a foot taller than the rest of the field."

Kurt Braunwart, chief executive officer (CEO) of ProGene Plant Research of Othello, Wash., believes the time is right for bale-grazing annuals in the western U.S. "The cost of feed is going up. How high is anyone's guess," he says. "Maximizing one's stocking rate on ground that is also increasing in value is one of the few ways a beef producer can avoid being squeezed."

Round bales offer an intriguing option to those who intend to leave their forage in the field for the cattle to eat throughout the winter. "The way they are constructed helps them shed water and preserve their nutritive value," Braunwart says.

He notes that a range of high-yielding cold-season and warm-season grain forages are available now. "It is just a matter of getting caught up with the Canadians," he says. "If ethanol continues to push grain corn prices up, it shouldn't be too long before we see more cows grazing on bales on this side of the border."

More forage, more animals

Neil admits that it is difficult to think of any way he hasn't benefited from shifting

from feeding in corrals to grazing bales. For him, the two greatest benefits from the switch are the marked increase in the carrying capacity of his land and the reduction in labor. Neil admits that his expansion into retained ownership — he wintered 800 yearlings last year — would not have been possible using his old system.

In today's volatile feed market, without a guaranteed low-cost, on-farm feed source, Neil believes it would have been foolhardy to attempt wintering his regular cow herd plus committing to feed another 800 animals.

"What allowed us to do that was that forage production on the land where we bale-grazed has more than doubled," he says. "It has gone up two-and-a-half to threefold."

Neil adds that ground that had a carrying capacity of 30 animals per acre now generates enough forage to handle 60-80 cows per acre.

Canadian researchers confirm that much of the forage fed in a pasture goes directly back into the soil in the form of nutrient-rich manure. For example, one study in 1999 found that of the total nitrogen (N) fed to feedlot steers, only 10% or less was retained in the animals. Of the amount of nitrogen excreted, less than 20% was removed in the manure when the pens were cleaned out. Most of the losses were assumed to be from volatilization of urine ammonia.

"Now, we are getting that manure and urine exactly where it belongs," Neil says.

Economists from Agriculture Canada estimate that a single grazing cow returns 30¢ a day to a pasture in the form of nitrogen, potassium (K), phosphorous (P) and sulfur

(S). "That gives us a huge advantage," Neil says. "Last year the 800 yearlings contributed \$18,700 worth of nutrients back into the land."

Less need for labor

Prior to converting their operation to intensive grazing in the summer and grazing bales in the winter, both Neil and Barbara admit they spent most of their time either hauling hay or manure. Barbara estimates that with their old system, just the cost of cleaning out the corrals alone was running between \$30 and \$50 per animal per year. "That was a lot of money or time to spend on something that proved unnecessary," she says.

For Neil the most remarkable labor savings was the reduction in the time he spends on the tractor feeding his cattle in the cold winter months. By setting the bales out in the fall and then using electric wire to meter the feeding, he has dropped his winter workload and his fuel costs dramatically.

"We now average two hours a month of tractor work to feed 80 head," Neil says. "When we were farming the old way, it was two hours a day for the same number of cows."

Some of that saved tractor time is now spent moving fence to expose the cattle to new feed, Neil says. Depending on how fast the cattle go through the bales, that can amount to an hour or so every two days.

"But now, if we want to take three or four days off, we don't have to worry about finding someone to feed our cattle," he says. "We just let them loose on more bales."

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► Bale-grazing distributes manure over the field for grass to utilize in the coming year.