

Winter Feeding Transformation: Three Kentucky Cattle Farms Experiences with Bale Grazing

Dave Burge, Dorris Bruce, and Beth and Brad Hodges have all made major changes to their winter feeding systems in recent years. All three farms had been using conventional feeding approaches: a sacrifice lot on the first farm, a feeding pad on the second, and a feeding barn on the third. As with most cattlemen and cattlemen, they were tired and worn out by the end of the winter. Nature designed winter to be a slow season, a time when you should have a chance to relax, recuperate, and reflect on previous the year. But these cattle farmers were typically exhausted by early April, just in time for Nature to pick up the pace again and move full-speed into the next growing season.

Today, these three farms no longer dread the hay feeding period. Their winters are relatively easy, and they have time to slow down. Best of all, they have no piles of manure to deal with in April, or moon-scaped sacrifice areas to repair and rehabilitate. What changes did they make to winter feeding to make this possible? They implemented a winter feeding technique on their farms called bale grazing.

Bale grazing is a winter-feeding method where bales are set out on pasture and fed in a planned, controlled manner, somewhat like rotational grazing. Temporary electric fencing limits cattle access to those bales that you want fed in the current move. With each move a fence is set up to expose new bales, usually 50-75 feet in front of the previous fence, which is then taken down to allow the cattle access to the new bales. Where hay rings are used, they are rolled from the old bales to the new bales and flipped over into place. The process is typically repeated every 1-7 days. Properly planned, you will not need to use a tractor for weeks or months at a time (possibly the entire winter) and nutrients will be deposited where they are needed. Simple, cheap, and effective. The main requirements to making it work are an open mind, advanced planning, and cattle trained to electric fence.

I started bale grazing around 10 years ago on my own farm, first out of necessity, and then because of how effective it was at increasing the fertility of my pastures and decreasing machinery and labor costs. For the last six years I've been working with other farms in Kentucky to help implement bale grazing. Dorris Bruce and David Burge, both located in Anderson County, started bale grazing during the winter of 2018-2019. Beth and Brad Hodges (sister and brother) from Green County, started bale grazing during the winter of 2015-2016. The rest of this article presents the experiences and reflections of bale grazing on these cattle farms, including comparisons with their previous hay feeding methods.

Most farmers are naturally suspicious when presented with a new idea and Dorris Bruce was the most skeptical of the three farms when presented with the idea by former county agent in Anderson County, Tommy Yankey. According to Tommy: *"Dorris and I were looking at the feeding pad that the cattle previously stayed in all winter and he was perplexed why you would leave this to feed on the pasture. It seemed like a radical idea to him. Dorris said Dr. Halich must be crazy and that he thought this was a train wreck*

waiting to happen. It was only out of his respect and trust in me as an agent that he agreed to try bale grazing”.

This is a typical concern. Most farmers think that bale grazing will tear up the pastures and destroy their forage base. With two full years of bale grazing under his belt, I asked Dorris to share his actual experiences related to pasture damage:

“During the first winter there was some damage in close proximity to the hay rings. As the cows were moved to new bales, the ring areas were overseeded with fescue and perennial ryegrass. In late winter Red Clover and Annual Lespedeza were overseeded into the entire feeding paddock. By May there was no visible sign of sod destruction. The second winter was wetter than normal, and there appeared to be considerable damage. The same protocol for reseeding was followed as the previous winter. To my great surprise, by the middle of May that pasture looked better than the areas that had not been bale grazed”.

Dave Burge chimed in with his personal experience after two years:

“I had neighbors and peers who were confident that I was getting ready to ruin the farm. And as that wet winter of 2018-19 was unfolding, I was concerned, too. But as I started moving cows to fresh ground every four days, I quickly learned that the damage was minor, and the damaged areas small. Because the damage is not deep, the ground heals rapidly. I broadcast some clover on the bale sites in late winter, and then some ryegrass or orchard grass a little later. I don’t do much because the areas heal so quickly. One year later you can still tell where a bale was, but two years later it’s almost impossible.”

Alex Butler is the new county agent in Anderson County, and has been working with these two farms as well as a third farm for the last year. What has been his experience with possible damage to the pastures?

“I can’t say that there is no damage done with bale grazing but what I can say is, in my experience, the damage is minimal. The only reason I can even tell where bales were located the following year isn’t from damage, it’s from frost seeded clover in those areas that created vigorous forage in circular patterns”.

An important point to make is that these farms were all doing a very good job bale grazing, as well as seeding down the impact zones around the bales. Done poorly, bale grazing can result in considerable damage, and it is a good idea to seek guidance before you start. The number one mistake I see people make is feeding at densities that are too high for Kentucky conditions. In the learning phase, I like to see farms stay at or below two tons of hay fed per acre (roughly four 5x5 bales).

Some farmers envision bale grazing taking up a lot of time as you are moving cattle around the pastures all winter, including rolling hay rings and moving temporary fencing. In reality, a well-designed and executed bale grazing system will significantly reduce both labor and machinery costs. I asked Dave Burge how much equipment time and labor it takes to feed cattle with bale grazing, and how that compared to his previous hay feeding experience:

“I usually put out a month to six weeks of hay at a time. When I’m within two weeks of needing to put out hay again, I start looking for an opportunity like a really cold morning, or when it is dry, so I don’t make any tracks in the pasture. So probably three times a season I spend about an hour and a half putting out hay. Then every four days I spend an hour and a half moving fence and rings. With the sacrifice lot I was spending 45 minutes every day putting out hay. There are efficiencies just built into bale grazing”.

I did the figuring for Dave and pro-rating his time on a per day basis, the bale grazing worked out to 22.5 min per day for labor moving portable electric fence and hay rings, plus about 2.5 min of tractor time. A total of 25 min per day labor on average for bale grazing compared to 45 min of tractor time per day with conventional hay feeding in the sacrifice lot. The best thing about it was that Dave only had to start a tractor 3-4 times with bale grazing for the entire winter vs. 100-120 times with conventional hay feeding.

The Hodges learning curve was typical of most farms I work with. The first year they concentrated on the basics, and the second year they mastered about all the skills needed for effective bale grazing. However, they were still putting out one wagon load of hay at a time. The third year, with some encouragement, they took the leap and set out over 100 days’ worth of hay in late November. How long did it take to set out this hay in good weather? According to Beth: *“It took about four hours to put out 68 bales in late November. Everything was prepared ahead of time so we could just focus on getting the hay out. After about a half hour we had a good system going. We would load three bales on a trailer hooked to a pickup, and then spear two more for the tractor to take out. The bales on the trailer were chocked and then rolled off by hand, using gravity on the hilly terrain to do most of the work. While the trailer was being unloaded, the tractor would take out two bales at a time to a section of pasture close to the barn so that it could get back and have a bale ready to load when the pickup returned”.*

How much time did Beth and Brad spend with this 38 cow-herd during the winter feeding period? Beth continued: *“We fed about four bales at a time along with stockpiled pasture and that would last about 5 to 7 days. It took about 60 minutes each move to set up the new fence, roll rings, take down the old fence, and check on the cattle. Another benefit for us was the tractor time saved traveling to and from this farm since it was about five miles from the home farm. With bale grazing we could just drive a pickup there. We didn’t need a tractor again on this farm until we ran out of that first batch of hay, sometime in early March”.*

Again, it took the Hodges three years to reach this point. It takes time to get comfortable with bale grazing and tap into its full potential. One of the keys to labor and equipment efficiencies is to set out large chunks of hay at a time when the weather is good and the ground is dry. Setting hay out piecemeal will rob bale grazing from this potential benefit, just like it does with conventional hay feeding.

Many cattle farmers worried that bale grazing will take up so much time forget just how long it takes them to feed cattle during the winter with conventional practices. It is not unusual for a farm with a 30-40 cow herd to spend 2-3 hours a week on a tractor, or

more, feeding cattle. Many of these same farmers also forget about the foot-deep mud or near-zero temperatures that they will invariably have to deal with when feeding hay in a normal Kentucky winter, and all the extra time that will be needed in these situations when feeding with a tractor.

I have heard cattle farmers say that they could see bale grazing work with smaller herds but that there is no way it could be done with a 100-cow operation. This simply is not the case. A cattle farm that I've been to and that I correspond with regularly in south-central Missouri winters over 400 head each year by bale grazing and spends about an hour a day feeding, and this includes the pro-rated time of staging the hay. Before switching to bale grazing, they would spend half the day feeding cattle during the winter. Bale grazing completely transformed winter feeding on this farm.

Bale grazing also gives you the flexibility of having someone helping when you are gone or just want a break. With conventional feeding you would have to find someone that you trust to operate a tractor. With bale grazing you could set up the next 1-2 moves ahead of time and all someone would have to do is take down fences and possibly roll hay rings. Imagine being able to go away for 1-2 weeks in the winter and not have to worry about feeding the cattle?

It is also a feeding technique that lends itself well to family help. Brad Hodges has trained his two oldest sons, Owen and Knox (ages 11 and 9), to help with bale grazing and they are just about to the point where they can do this without supervision. According to Brad: *"It has been a great way to get them out of the house, away from the electronics, and learn functional lessons in life. We are typically only out an hour or two setting up the fences on the weekends which makes it a quick farm trip and gives them an excuse to drive the side by side. They quickly caught on to the process and could easily go out and move fences for me if I was ever in a pinch"*.

Most cattle farmers that have feeding pads or enclosed feeding barns don't realize that most of the nutrients will be gone in the manure they spread in the spring, if they bother spreading it. This is because 90% of the potassium and roughly 67% of the nitrogen coming out the back end of the cow are in the urine. You simply won't be able to capture this in dry lot, feeding pad, or feeding barn unless you have a deep carbon source like sawdust. Bale grazing uses cattle to spread the nutrients directly on pasture on a daily basis. You are getting the cows to work for you, rather than you working for the cows.

Dorris Bruce was sold on the fertility aspects of bale grazing after the first year stating: *"When I was informed that each bale grazed had a fertilizer value of \$14 that was the statement that convinced me to try bale grazing. That first summer, I realized I had made a good management decision as there was significant increase in the amount and quality of the forages compared to areas that had not been bale grazed"*.

Dave Burge has been even more impressed with the improvements he has had related to soil fertility: *"When I move cows off one section, it is covered with evenly-distributed cow pies. What is fascinating to me is that 60 days later, they are almost all gone and*

incorporated into the soil. I don't fertilize pastures anymore, and I don't worm mature cows. All that helps promote biological activity like bugs, worms, bacteria, and fungi that break down the manure and put it in the soil. I don't even apply nitrogen to my pastures anymore to stockpile fescue, and I have good fall growth. That has been a real money saver". Think about this benefit the next time you are writing out a check for pasture-applied fertilizer.

With bale grazing, cattle are being constantly moved forward to new ground that has not seen cow hoofs since at least late fall. Consequently, these feeding areas will have an intact sod and will generally be dry and clean. If you can avoid the mud typical of conventional hay feeding, you can avoid the problems that go with it. David Burge has been particularly impressed with this secondary benefit of bale grazing:

"That first winter people kept asking how I kept my cows so clean. It was because I was moving them to fresh sod every four days. They didn't have time to muddy things up and then have to lay in the mud. I think the cows body conditioning scores improved compared to the sacrifice lot. I attribute this to two things. First, the clean coats allow the cows to stay better insulated and spend fewer calories trying to stay warm. Second, they don't have to expend as much energy getting through the mud to get to the hay. I hated the mud in the sacrifice area. Having cows knee deep in mud, having to pick different routes with the tractor to get hay to the cattle while making deep ruts, all that just made me miserable. I like walking onto grass to check cows, and I like knowing they are comfortable".

The 60'x80' feeding barn that the Hodges previously used on the home farm but that now sits idle is estimated to cost nearly \$100K if built today. I asked Beth and Brad how much they have invested in bale grazing equipment:

"We were already using temporary fencing, reels, posts, and solar chargers for rotational grazing, so we had most of what we needed for bale grazing. We bought four plastic hay rings specifically for bale grazing so we could flip and roll them by hand easier. Those cost about \$1200 total. If we added in the cost of the rotational grazing supplies that would bring the total to around \$3,000".

That seems amazing to me. At a small fraction of the initial infrastructure cost, bale grazing can enhance pasture fertility, decrease tractor costs, and improve cattle health. For some that will seem too good to be true, and the whole concept of bale grazing might seem like pie in the sky. However, for farms that implement bale grazing the pie will take on a different meaning: Beautiful "pies" that are evenly distributed out on pasture enhancing fertility and pasture growth. Better yet for some, bale grazing can transform winter feeding from a dreaded chore into a pleasant task that provides an occasional excuse to get outside and enjoy the fresh winter air rather than breathing diesel fumes. As Dorris Bruce nicely stated: *"What is not to like about bale grazing? My only regret is that I did not start 10 years earlier".* How will you be feeding your cattle this winter?

For questions or assistance with bale grazing contact the author:

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Below are links to video's on bale grazing. The first is a recorded presentation on bale grazing, and the second two were recorded by the Virginia Forage and Grassland Council:

https://www.youtube.com/watch?v=_M3zs0TWmrg&t=1s

<https://www.youtube.com/watch?v=mKP8T27dIto>

https://youtu.be/EEwUoXWW2_M