Economic & Policy Update
E-newsletter Volume 25, Issue 7
Editors: Will Snell & Nicole Atherton
Department of Agricultural Economics
University of Kentucky
JUL 2025

Bale Graze Your Way Through a Drought

Author(s): Greg Halich

Published: July 30, 2025

DROUGHT can be a debilitating experience for any farmer but is particularly difficult for livestock farmers. Last year was an especially bad drought year in much of the eastern United States, and it was devastating in some areas such as West Virginia and southeast Ohio.

A major challenge during even a moderate drought is keeping your pastures healthy by not overgrazing them and making sure every pasture that is being grazed has had adequate rest. Failing to do this results in an insufficient solar panel and depleted plant energy reserves. These weakened plants struggle to take advantage of good growing conditions once rain returns. This results in reduced forage production and likely an abundance of weeds the following year.

Overgrazing pastures during a drought is probably the biggest mistake I see, even with experienced graziers. They typically respond to the drought by slowing down the rotation to allow more time for the remaining pastures to recover. However, this strategy will only work for a short period of time as you burn through the forage buffer you built up in the spring and early summer.

After each successive drought rotation, there will be less and less forage accumulation from the combined slowed forage growth and higher removal rate from trying to slow the rotation down. This results in fewer available grazing days in each pasture, and thus, you will start going through the rotation at an accelerated rate as the drought continues. This is what André Voisin coined “untoward acceleration” almost 70 years ago. You are soon completely out of pasture.

Don’t wait too long

Getting through a mild drought in early to mid-summer by slowing down the rotation and making no other management changes works, assuming you have built up an appropriate amount of spring surplus. The problem, of course, is that we never know how long a drought will last and if it will intensify. If the drought doesn’t break, you will quickly run out of options, and it will be too late to make any meaningful adjustments.

I gave a presentation at a field day in late September last year in an area of Kentucky that had been hit particularly hard by drought from mid-summer on. As I drove toward the field day location, the pastures kept looking worse and worse. The main question participants were asking was what could be done at this point that would help them deal with the drought. Unfortunately, it was too late for any meaningful drought planning. Action was needed one to two months earlier.

A lot of the cattle in that area were being fed a diet of 100% hay and other commodity feeds. The pastures were gone. Again, the fundamental problem was that they waited too long before starting to feed hay. Most of these farms reached “untoward acceleration” a month or so into the drought and then grazed their pastures into the ground. Even with rain forecasted the following week, these severely stressed pastures would be slow to come back to life.
Why do many farmers delay hay feeding until after their pastures are grazed into the ground?

Part of the answer is psychological: Feeding hay is difficult for most cattle farmers while they still have available pasture. It can seem like surrender or defeat to do so when they have neighbors who are still grazing burnt up pastures. Part of the answer is practical: Most cattle farmers do not like the idea of penning their cattle up in a dry lot to feed hay, as this is the typical method during a drought.

A better approach

Bale grazing at low densities during a drought is an option to avoid the practical problem of penning cattle up for hay feeding. It also is an effective way to utilize pasture and feed hay at the same time. You don’t have to do one or the other — you can do both simultaneously. This is the beauty of bale grazing, as it allows you to get through most mild to medium-intensity droughts fairly easily.

Since the focus of this article is on bale grazing during droughts, the basics of bale grazing won’t be discussed but can be referenced in previous articles I’ve written for Hay & Forage Grower.

The concept for effective bale grazing to mitigate drought is simple and incremental. Determine the number bales needed to be fed in the current pasture so that the next pasture has adequately recovered. When you get to the recovered next pasture, determine the number of bales needed to be fed on that pasture to make sure the pasture after that is adequately recovered. The key to making this work is to start bale grazing while you still have reasonably good forage accumulation in the pastures. If done at this time, bale densities should be low and comprise a small percentage of the diet.

Below is an example of how this might work assuming a 30-cow spring- calving herd with an appropriate stocking rate. Assume we are moving to an 8-acre pasture.

Step 1: Estimate how much recovery time you need before starting to graze the next pasture (after you finish the 8-acre pasture). You estimate 10 days.
Step 2: Estimate how many grazing days you will get on the 8-acre pasture, assuming no hay was fed. You estimate four grazing days.
Step 3: Calculate the number of hay-feeding days needed to reach the desired recovery time. 10 total days - 4 grazing days = 6 hay-feeding days
Step 4: Estimate how long one bale will last without pasture. You estimate one bale will last 1.5 days
Step 5: Calculate the number of bales needed on the 8-acre pasture. 6 hay feeding days divided by 1.5 days per bale = 4 bales

In this example, you would set out four bales over the 8-acre pasture. This works out to one-half bale to the acre. In my experience, one-half bale to the acre is a reasonable bale density during a drought, assuming you start bale grazing while you still have a reasonable amount of pasture accumulation. This would be around 0.2 to 0.25 tons per acre, which is a low density compared to the typical 1 to 3 tons per acre that I like to feed during winter bale grazing in my region.

Again, the assumptions here are that you started early and the drought hasn’t gone on for months. Otherwise, the hay density could easily double or triple. Most people are surprised at how little hay needs to be fed in order to not overgraze pastures and get through typical droughts.

For effective bale grazing at any time of year, you need to subdivide pastures and limit access to the bales currently being fed. Since the hay is typically going to provide a small percentage of their diet during a drought, you may be able to get by with only providing one bale at a time for this 30-cow herd (you would not be able to do that in the winter).

Less pasture, frequent moves

During drought feeding, give small strips of pasture so that the cattle don't have quite enough pasture each day, providing the remainder of their diet with hay. Daily moves are best, but you can get by with moving every couple of days, if needed. The problem going beyond this length of time is that unless you have really good-quality hay, they will eat nothing but pasture for the first few days and then eat nothing but hay after the pasture strip runs out. Ideally, you want to force them to eat a little bit of hay each day.

Some people think that it doesn't really matter if you start feeding early in a drought or later on because you are still going to feed the same overall amount. This is simplistic thinking that doesn't account for potential physiological changes to plants caused by drought and overgrazing. The farm that is kept from being overgrazed will grow much better during the drought but, more importantly, will respond much quicker and with resilient forage production once the rains finally arrive.

One consideration when bale grazing during a drought is good hay quality, which is more important than feeding during the winter. As the hay quality declines, cattle will hit the pasture harder and progressively leave less residual in the pasture sward. Forcing the cattle to eat poor-quality hay is counterproductive when pastures are drought challenged and you are trying to retain adequate forage residual.

Additional benefits

The primary reason to bale graze during a drought is to help prevent pastures from being overgrazed. However, other positive outcomes include:

1. Bale grazing during the drought will add nutrients to pasture areas that can use them once the rains come.
2. Since the ground is dry, you can set out bales in places that would be unthinkable during the winter. I especially like to feed around gates and other areas that get beat up, which helps add organic matter and heal these areas.
3. A major benefit of feeding hay on pasture during a drought is that the hay becomes a forage buffer. It is difficult to not push the cattle too hard on pasture during a drought as you are trying to stretch out grazing days, and cattle performance will suffer accordingly. When bale grazing, the cattle will always fill up on hay before going hungry.
4. One of the most difficult aspects of drought is that it can be emotionally and psychologically debilitating. You feel like you are at the mercy of Mother Nature. Bale grazing in the early stages of a drought is a proactive way of taking control of the situation, and it provides comfort in knowing you can make it through the drought and still keep your pastures productive. It is hard to put a value on this benefit, but it may make bale grazing worth doing, even if you didn't have any of the other benefits.

Early bale grazing as a part of your drought plan is an effective strategy. I've been through four mild to moderate droughts since 2019, and I can't imagine getting through a drought now without it. The key is to start bale grazing while you still have an adequate forage buffer.

This article first appeared in the January, 2025 issue of Hay & Forage Grower magazine.

Recommended Citation Format:

Halich, G. "Bale Graze Your Way Through a Drought." Economic and Policy Update (25):7, Department of Agricultural Economics, University of Kentucky, July 30, 2025.

Author(s) Contact Information:

Greg Halich | **greg.halich@uky.edu**