



# A Winning Combination

## Bale-grazing and rotational grazing combine to foster vigorous grass growth with less fertilizer.

*Story & photos by Becky Mills, field editor*

In Texas, it would barely be considered a respectable dry spell. However, last summer, when central Kentucky didn't get rain from June 6 until July 6, and temperatures hit the very un-Kentucky-like mid-90s every day, it was serious.

"If we hadn't begun bale-grazing, we would have had very little residual left on most of our pastures by early July," says Greg Halich, University of Kentucky forage economist.

As it was, his own operation was a green oasis of fescue, orchard grass, bluegrass and clover.

Drought relief is just one of the reasons he prefers the combination of bale-grazing and rotational grazing. When Halich bought the farm in 2012, fertility was low, and grasses didn't grow very well.

"It was easy to seed in clover, as there was no competition from the grasses, but it has drastically changed," he says.

"The grass growth is so good now it is hard to have a good clover stand. Good, basic rotational grazing combined with bale-grazing creates vigorous grass growth."

Even better, it was accomplished with no commercial fertilizer. The organic matter

*"It is remarkable how much you can stretch your grass when you feed hay."*

**Michael Harlow**





"I encourage people to never put more than 2 tons of hay per acre, at least in the Fescue Belt," says Kentucky cattleman Greg Halich. "That is four 5-foot-by-5-foot bales. That's less than half a percent of the total area."

on the 30-acre farm has also risen to 5.5%-6.0%. At first, Halich just grazed stocker cattle from spring through fall. Now, along with another 30-acre farm, he forage-finishes 20 steers a year.

The nutrients come from purchased hay bales and the manure and urine from the cattle. Mississippi State University (MSU) Extension Forage Specialist Rocky Lemus says the amount of nutrients from hay can vary. How much depends on how the hay was fertilized and how much of the hay has been lost in storage and transport. For example, on a 1,000-pound (lb.) bale, if 20% is lost, that leaves 800 lb.

"If nitrogen makes up 1.75%, that is 14 pounds," he points out, adding the amounts can also vary with potash and potassium.

With the added nutrients from manure and urine, he says the potassium (K) and phosphorus (P) in manure are very available, with around 4 lb. of phosphorus per ton of manure, 9 lb.-10 lb. of potassium and 14 lb.-15 lb. of nitrogen (N).

### Wait, there's more

There are even more benefits.

"The simple view is bale-grazing is rotational grazing with hay bales, but feeding the hay by itself," says Halich. "Hay can be used as a buffer."

He uses bale-grazing on his stockpiled forage in the fall and winter.

"One of the biggest mistakes people make with stockpile is pushing it too hard and reducing daily intake," he explains. "With



Greg Halich uses a combination of rotational grazing and bale-grazing to forage-finish cattle on his Kentucky farm.

bale-grazing, you can get good utilization with stockpile, but animal performance doesn't go down as the cattle can always fill up on hay."

The practice requires him to move the hot-wire fence half as much, he says. By using his hay buffer, he still has stockpiled forage in March.

Bale-grazing is a simple addition to Halich's rotational grazing. He and his hay supplier spread the bales out in the fall and winter, then Halich moves the hot wire to take in more hay and stockpiled pasture as needed. He says the cattle let him know by their behavior when it is time to move the fence.

"If it is dry or the ground is frozen, you get almost no damage from the bales," Halich says. "I encourage people to never put more than 2 tons of hay per acre, at least in the Fescue Belt. That is four 5-foot-by-5-foot bales. That's less than half a percent of the total area."

### Impact zones

Even at that low rate, though, there can be damage during the normally wet and muddy

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Kentucky winters. Halich refers to the damaged area between the bale and the hind feet of the cattle as the impact zone, and he uses it as an opportunity to improve the soil even more.

“We plant forage chicory and forage plantain in the impact zone,” he says. “They have strong tap roots and can break through the compaction.”

Annual lespedeza is another of his go-to forages for this seeding. It has good summer growth and helps compete with the weeds, but grass will outcompete it, he says. “You can plant whatever else you want in the stand long-term — like orchard grass and clover, but that changes by region.”

As for timing, he reseeds at the end of winter. In his soil, the thatch from the waste hay and manure breaks down quickly, he says, but adds: “On farms with poor soil health, in the beginning, you may need to harrow.”

### From sand to grass

Boyle, Miss., cattleman Michael Harlow is another fan of bale-grazing and rotational grazing.

“We started bale-grazing in 2016, and have seen a dramatic improvement in the soil and forages,” says Harlow. “Bale-grazing is one of the main things that’s helped. This land used to be sand. Now it is lush Bermuda grass.”



Bale-grazing captures nutrients from hay bales via manure and urine from the cattle. MSU Extension Forage Specialist Rocky Lemus says the amount of nutrients from hay can vary, but, for example, with the added nutrients from manure and urine, can offer around 4 lb. of phosphorus per ton of manure, 9 lb.-10 lb. of potassium and 14 lb.-15 lb. of nitrogen.

Like Halich, he has been able to accomplish the improvements with no commercial fertilizer. As a bonus, on his Bermuda grass and Bahia grass sod, he doesn't have to reseed.

However, Mississippi State's Lemus says, “If you practice bale-grazing, make sure you have well-drained soils.”

Lemus also cautions that weeds, particularly Pennsylvania smartweed and pigweed, are a byproduct of feeding hay.

In Harlow's case, if rains set in and his pasture gets boggy where he is bale-grazing, he'll temporarily move the cows and calves to another pasture. He also tries to unroll his hay bales, so the cattle spread out more and don't damage one area.

Along with the fertility boost, helping to reseed the sod, and providing nutrients to the cattle in his contract-grazing operation, Harlow says, there is another advantage to bale-grazing: “There are times in the winter when I don't start my tractor for 45 days at a time.”

However, he keeps a close eye on both the amount of hay he rations out to the cows, as well as the growing winter forage, since he normally drills in wheat or cereal rye.

“We take half and leave half, then rotate the cows so we don't overgraze it,” he explains.

“It is remarkable how much you can stretch your grass when you feed hay,” says Harlow. Plus, he emphasizes, “It has gone from sandy white to good black dirt.” **ABB**

Editor's note: Becky Mills is a field editor and cattlegirl from Cuthbert, Ga.



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