

A Bale Grazing Farm Demo: Winter of 2020 - 2021

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Setting Up the Bale Grazing Demo

Finding a Cooperator



Mr. Watt Gills

- ▶ Works full-time public job
- ▶ Farm has 100 cow calf pairs, fall calving
- ▶ Typically feeds hay from mid November to mid April (+/-150 days annually)
- ▶ Looking for a better way of feeding to...
 - ▶ Save time and money
 - ▶ Cause less damage to pasture
 - ▶ Increased nutrient capture and utilization
 - ▶ Build nutrient levels on low fertility soils
 - ▶ Spend less money on fertilizer long-term

Up Front Planning and Preparation



- He soil tested each paddock in September to determine soil fertility and pH levels
- Typically feeds between 450 – 500 bales
- We targeted higher bale density on low fertility fields
- He avoided the historic feeding site

Hay Stocking Rates and Placement

Consider the size of your paddocks and the existing soil fertility



- On moderate fertility soils stock hay bales at 1-2 tons per acre
- On low fertility soils that need the additional nutrients you can stock the bales up to 4 tons per acre if you are willing to withstand more sod damage
- Entire hay supply can usually go on about 1/2 of the total pasture
- Avoid stocking bales in drainage swales or near streams

Set Out the Hay



- Stage the hay in November when pastures are dry
- In our demo Mr. Gills was able to put out about 50 bales in 3 hours
- Do not put out more than an estimated 80% of the total hay needs in the beginning
- **What about the bales rotting?**

Next set up the charger and fence



Don't Flip Bales Up Until its Time To Feed



This results in less wasted hay

Impact Varies Depending on Weather at the Time of Feeding

Dry weather grazing



Wet weather grazing



High Impact Bale Sites

- Total 25 ft across
- 13 ft covered in hay residue
 - Thick mat
 - Grazed when wet
- 6 ft pugged outside ring



Low Impact Bale Sites

- Total 21 ft across
- 15 ft inside hay residue
 - Grazed when dry
- 3 ft thin hay outside ring
- No pugging in outside



Early Season Bale Site

- Avg 26 ft across
- 18 ft inside hay residue
- 4 ft outside ring of thin hay
- Patches of grass coming through



Despite the Wet Winter this Year We Documented Very Little Sod Damage

Runoff from Disturbed Areas Filters Across Sod



Frost-Seeded Pugged Areas (Jan 24 and Mar 7)



All drone photos and video taken by Mike Parrish, Senior Extension Agent, VCE

Hay Bale Stocking Density

2 Tons Per Acre



1 Ton Per Acre



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Benefits to the Farmer



- I put most of my hay out in November when the weather was pretty and the ground was solid and I don't have any ruts from my tractor this winter."
- "It's nice because I work a full-time day job. I don't have to fool with the tractor when I get home. I just jump on the 4-wheeler, check the cows and take one fence down and put another one up. It has worked out nice."
- "I found the cows don't waste as much hay when I turn the bale on its end and leave the strings on."
- I have fed with hay rings, fed with a hay wagon but I've been looking for a better way to feed and I may have found it. "
- "The nutrient benefit has got to be a plus because the cows are spreading it on the pasture instead of it all being in one concentrated area."
- "I was skeptical at first but I have liked it real well."

Maximum Capture and Reuse of Manure and Urine Nutrients on Pasture



Nutrient Value per Acre by Bale Grazing Densities

Bale Grazing Density	N	P ₂ O ₅	K ₂ O	Organic Matter
(1 ton/acre)	18	21	47	???
(2 tons/acre)	36	41	94	
(4 tons/acre)	72	82	188	???
(6 tons/acre)	108	124	282	???

Note: Assumes 75% of P and K and 50% of N in hay are *effectively* utilized.



Cost of Hay?
\$60-80 per ton

Fertilizer Value Estimation for Hay Feeding

Excellent Nutrient Distribution

	Price (\$/unit)	<u>lbs</u> per Ton Hay	% Effective as Fertilizer	Nutrient Value /Ton
Nitrogen	\$0.40	35	75%	\$10.50
P ₂ O ₅	\$0.30	12	75%	\$2.70
K ₂ O	\$0.30	53	75%	<u>\$11.93</u>
Total				\$25.13

Quite A Difference Compared to A Traditional Winter Feed Site





Dr. Greg Halich says,...
“Bale grazing can work in
the Mid-Atlantic region.”

A few requirements to make it
work include...

- Have an open mind
- Capacity for advanced planning
- Ability to turn hay bales on end
- Cattle trained to electric fence

Special Thanks To....

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Farm Demo Cooperator

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Alston Horn and the Chesapeake Bay Foundation provided the portable fencing materials