## Strip-Grazing Stockpile Over the Winter: Easier, Quicker and Cheaper!

Mr. Charlie Drumheller of Bellevue Farm in Swoope, VA, tried something new last year to overwinter his cow herd and the results actually surprised him. I was introduced to Charlie by Bill Patterson, Regional Grazing Specialist with USDA. Bill said, "Charlie has a field that lays just right for strip-grazing stockpiled fescue and I think he would be a good cooperator for an on-farm grazing demonstration." After talking with Charlie, I learned he had stockpiled grass before but had never strip-grazed the resulting biomass. After a short discussion, Charlie and his son Bobby stepped up to the challenge to conduct the structured grazing demonstration including keeping detailed grazing/feeding records and hosting an educational field meeting on their farm to share the good and bad (if any) about the experience to other interested farmers.

Bill was right, the two fields available for stockpiling were fairly long and rectangular, both having access to water troughs with well drained soils capable of supporting winter grazing. The plant mix contained about 50% fescue and 30% clover with the remaining species primarily bluegrass, orchardgrass and common forbs. Visibly the stand was thick and vigorous so it was no surprise the soil test results came back showing no additional lime or fertilizer was needed.

Fig. 1. Field selection is important.

A few key components are necessary for any field demonstration to be a success including clear communication, a committed farmer, and third party support to track progress, answer questions and supply information when needed. This project was set up for success because I quickly learned when Charlie Drumheller tells you he will do something, he does what he says. He implemented the basic strategy below which provided a great start to the project.

Goal: To stockpile 14.2 acres of pasture for 90+ days between late-August and late-November for winter strip-grazing to fully meet the needs of his developing Red Angus herd.

Objectives:

1. Graze the designated pasture to remove summer growth by late-August
2. Remove livestock by late-August and do not apply N fertilizer since legume composition (30%) is sufficient
3. Let forage grow and accumulate (stockpile) without livestock access until December
4. Strip-graze the stockpile with the cattle by moving the temporary poly-wire every 3 days
5. Maximize grazing days, evenly distribute manure and urine nutrients, maintain good ground cover, and save over 50% on winter feed costs

In addition to a committed farm cooperator, there was buy-in from several local partners to track and support this project at the local level. With coordination from the Va Forage and Grassland Council three key partners signed on to be a part of this demonstration. Specifically I'm referring to Matt Booher, Va Cooperative Extension Agent, Bill Patterson, Regional Grazing Specialist with USDA, and Alston Horn, Field Technician for the Chesapeake Bay Foundation. These specialists are local to this area of the state and were used to working together in support of educational demonstrations that benefit production, economics and conservation of forage-livestock systems.

Fig. 2. Alston Horn collects forage samples for nutrient analysis

By not applying any fertilizer or N to the pasture in August, Charlie wondered would the accumulated forage have enough plant food to provide high quality forage to his cattle throughout the winter. This would be a factor of plant-available soil moisture during the fall and soil nutrient availability in this pasture. Field measurements were taken in late November to measure stockpiled yield and forage samples were collected and analyzed monthly throughout the winter to track nutritional quality.

Charlie implemented the proposed stockpiling plan in a timely manner with just enough rainfall to accumulate approximately 3,000 lbs./DM/acre between late August and late November. The resulting stockpile tested high in nutritive value (13% CP and 69% TDN see Table 1) just before grazing was scheduled to begin.

**Table 1. Forage Quality Comparison Over the Winter Grazing Season (2012-2013)**

| Forage Sampled | Stockpiled Fescue | Stockpiled Fescue | Stockpiled Fescue | Stockpiled Fescue | Switchgrass Hay |
|---|---|---|---|---|---|
| **Sample Date** | **Nov 29th** | **Jan 2nd** | **Feb 2nd** | **March 7th** | **1st Cut** |
| **Crude Protein (%)** | 13.1 | 9.2 | 11.6 | 10 | 7.8 |
| **Total Digestible Nutrients (%)** | 69.3 | 57.9 | 56.3 | 55.1 | 51.2 |

The grazing demonstration began when the cattle were turned into the stockpile on December 12th. Using the existing electric perimeter fence, Drumheller cross fenced with a single strand of high quality electric polybraid (9 strand stainless steel filament) while comparing two different styles of step in posts. As Charlie began strip-grazing his herd, there were several questions he was hoping to answer through the course of the demonstration:

1. How would the animals react to strip-grazing with polywire?
2. How far will I need to move the fence for the next strip of grass?
3. Could I really stretch the grazing days and get through winter just by strip-grazing?
4. Would stockpile quality meet cattle needs to maintain body condition?
5. Would the change in management from traditionally feeding hay over the winter to strip grazing be cost effective and a good value of my time?

**Fig. 3. Cattle quickly adjusted to management with poly-wire.**

By checking the cattle daily and watching how the livestock were utilizing the forage, Charlie learned within a week how far to move the temporary fence for the next strip of stockpiled grass. Charlie admits, "I quickly realized it was rather easy to move the fence every other day and it was faster than hauling out a bale of hay.

Based on forage clippings it was calculated to be approximately 42,000 lbs of stockpiled forage dry matter in the 14.2 acre field at the end of November. Of the 5 cows 3 bred heifers and a bull, we estimated weights and calculated a total of 11 AUE's (animal unit equivalents). Based on these livestock, the intense strip-grazing management and the estimated 85% forage utilization rate, one might figure the stockpiled forage would last approximately 120 days (through April 12th). By assessing the remaining stockpile supply on February 13th, Drumheller realized he had more than enough forage to get him until pasture green-up, so he began to move the cattle faster and not make them utilize as much of the stockpiled forage. Fortunately Charlie easily strip–grazed until March 10th, he could have stretched it longer but other pastures were already greening up so he transitioned to new spring growth. (Note: The high clover content in this particular pasture caused faster forage deterioration as winter progressed compared to a pure fescue stand, therefore the forage would not stretch 120 days.)

Intense strip-grazing management, providing just enough forage to graze for 1-3 days, increases the utilization of stockpiled forage and typically doubles the number of grazing days compared to just turning the livestock in to graze the stockpile continuously. In this demonstration Mr. Drumheller only fed 2- 800 lb. bales of hay, due to a heavy ice crust one day and one short trip away from the farm and not being present to move the fence.

Charlie admits, "The cattle seem to perform very well on the stockpile. I was really surprised that the stockpiled forage tested significantly higher in quality compared to my hay!" Monthly analysis of the forage samples, recorded in Table 1 above, show the typical decline of quality over the winter but considering that approximately 50% of the stand was not fescue, forage quality held up well. Some decline in quality is expected over the course of the winter but it still remained above 10 % crude protein and 55% total digestible nutrients until spring green-up.

Based on visual observation of the livestock, the forage quality seemed to meet the nutritional needs of this small herd very well throughout the winter.

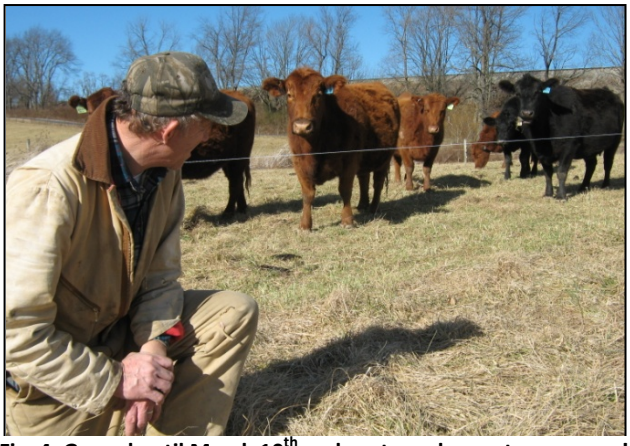
**Fig. 4. Grazed until March 10th and pastures began to green-up!**

Nutrient management is an important topic on the farm and managed grazing systems lead the way to healthy nutrient cycling. Strip-grazing stockpiled forage takes nutrient distribution to a higher level and maximizes manure and urine distribution across the pasture while preventing nutrient concentrations and bare soil commonly associated with feed areas. The pasture surface remained completely covered with grass stubble and residue over the winter preventing the opportunity for erosion. Looking back over the stockpiling and strip-grazing season Drumheller explains, "The biggest thing I saw first-hand was how easy and effective winter grazing can be. In comparison to my hay feeding years it was easier, quicker and cheaper! Strip-grazing most certainly paid for itself and based on this experience, I plan on making the transition to do this for all the cattle on the farm. My biggest challenge is to have enough grazing acreage during September, October and November to stockpile for winter. I am developing a simple plan to convert my hay fields into grazing paddocks over the next two years. In most years this should allow me enough grazing acres to stockpile between ½ and 1.0 acre per animal unit equivalent and provide the winter grazing I need. Learning by doing is a saying I have heard before, and it most certainly applies to this experience. I have definitely become a believer in this system!"

In addition to the success of this winter grazing demonstration, Charlie and Bobby are looking at ways to intensify grazing management throughout the entire year. Currently they are developing an annual grazing plan on the entire grazing operation to meet their goals for production, wildlife and overall conservation on the farm to guide them through these improvements. To find out more information about this project you can contact Mr. Charlie Drumheller at c.drumheller@meat-pro.com .

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