



Feeding Your Livestock: Do I have Enough Hay?

Volume 7, Issue 9

September 2014

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As the weather starts to take a turn towards cooler temperatures, we see a decrease in summer perennial grasses forage production. At the same time, producers start to plant annual ryegrass for winter grazing. Although stockpiled forages could be an alternative to close the gap until ryegrass is ready for grazing, producers rely heavily on hay to accomplish such task. Extreme cold temperatures during the last couple of winters have decreased the grazing potential of annual ryegrass or small grains and leaving producers scrambling for extra hay to meet the daily feeding requirements of their cattle. Cattle need a balanced amount of good quality hay to meet their nutritional needs and sustain health. Now is the time to develop an accurate hay inventory on the hay on hand and its quality.

On average, a dry cow will consume approximately 2.0 to 2.5 percent of its body weight on quality hay each day. This is equal to roughly 20 to 24 lbs of hay per day if the fiber content and the digestibility of the hay are optimum. Knowing this information along with the quality of the forage will lead to a basic estimation of how much hay an animal will consume during the winter feeding period. To even help narrowing down the amount of hay needed for one animal during the feeding season, the livestock producer should determine how long (days or months) he/she will be feeding hay. Knowing these factors along with feeding methods and how the hay has been stored, will help estimate the hay inventory needed for the feeding season. Once that hay inventory has been developed, a rule of thumb is to increase that hay inventory by 30 to 40 percent to account for weather adversities that might prolong the feeding season.

Let's look at a quick example that might help to illustrate better some of the points mentioned above.

Let's assume that a dry cow weighing 1000 lbs will be fed a mixed hay that has a forage quality on a dry matter basis of 8.0 % crude protein (CP), 38.9% acid detergent fiber (ADF), 68.9% neutral detergent fiber (NDF) and 54.4% total digestible nutrients (TDN). Taking into account the fiber content (NDF) of

the hay, this dry cow will require approximately a daily intake of 29.2 lbs of hay. Now let's assume that the hay was not stored properly and it was left outside and there is a 15% dry matter loss and also there is a 10% loss at feeding that get refused or trampled by the livestock because hay was not fed properly. The average feeding season in Mississippi is 110 days. By taking all those factors into account, to maintain a single cow for 110 days, the producer will need to have 1.61 tons of hay. Now, earlier we mentioned the need to a 30 to 40 percent surplus. That means that the actual amount for a single cow will be 2.1 to 2.3 tons per cow. If we take the average herd size for Mississippi (35 cows) that means that to feed that herd for 110 days, approximately 77 tons of hay (~192, 4'x5' bales weighing 800 lbs) will be needed.

Although these calculations are simple and straight forward, a key to develop a hay inventory is knowing the require-

Table 1. Forage quality of perennial grasses grown in Mississippi. Values expressed on dry matter basis.

Variable	N	Mean	Maximum	Minimum	Range	Std Dev
----- Bahiagrass -----						
CP, %	333	10.95	17.79	5.45	12.34	1.67
ADF, %	334	38.83	46.71	33.27	13.44	2.02
NDF, %	334	63.75	69.63	57.09	12.54	2.35
TDN Est., %	334	50.70	57.09	41.63	15.46	2.32

----- Bermudagrass -----						
CP, %	1316	13.49	20.36	6.91	13.45	2.40
ADF, %	1317	33.96	43.60	26.47	17.13	2.73
NDF, %	1317	63.63	75.58	52.24	23.34	3.44
TDN Est., %	1317	56.29	64.91	45.21	19.70	3.14

----- Tall Fescue -----						
CP, %	686	13.97	24.91	7.16	17.75	3.62
ADF, %	686	32.82	40.89	25.36	15.53	3.24
NDF, %	686	56.45	67.02	45.14	21.88	4.65
TDN Est., %	686	57.60	66.18	48.33	17.85	3.73

Source: Lemus, 2014.

ments of the livestock and the quality of the forage being fed. Mississippi State University Forage program has developed a hay calculator that will help producers to develop a hay inventory to better plan their winter feeding. To download the instructions and the calculator, please visit: <http://msucares.com/pubs/publications/p2590.pdf>



Despite of the availability of better grazing management strategies for extending the grazing season, hay is still a very important commodity in the southern USA. Establishing a feeding program will depend on: (1) developing a hay inventory, (2) checking for forage quality, (3) using better hay harvesting techniques (cutting at right maturity and storing hay properly), and (4) implementing a good nutrient management program. Integrating all these factors might be the key ingredients to decrease the amount of hay produced and reduce the number of acres allocated to hay production. This approach could lead to an economic advantage by decreasing the amount of fertilizer needed during hay production and also the cost of supplementation during the feeding period.

For upcoming forage related events visit:
<http://forages.pss.msstate.edu/events.html>

October 1, 2014— Mississippi Grasslander Award Nomination Due
October 3, 2014— Mississippi Hay Contest Entries Due
November 14, 2014— Mississippi Forage & Grassland Annual Conference, Verona, MS.