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Forage Testing Results from the Forage Extension Laboratory RCREC

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WHY TEST YOUR FORAGE?

Forage testing provides useful information about the nutritive value of the forage. This information can be used to adjust the amount and composition of the supplements that are fed with the forage to livestock in order to meet the needs of the animals. Providing the right supplementation not only can decrease cost of supplementation but also reduce the amount of nutrients imported to the property.

HOW TO COLLECT A SAMPLE

Properly collecting and identifying a sample is very important. A sampling device or tool is needed for collecting hay samples. Several commercial types are available. They usually consist of a tube with a cutting edge on one end and a shank on the other that is fastened in the chuck of an electric drill or hand brace. The sampler is driven into the end of a rectangular bale or the rounded side of the round bale. Collect a single core sample from each of 12 bales for a particular lot of hay. Combine the 12 cores into one sample. This will ensure that the sample is representative. The outer layer of weathered round bales should be pulled away before sampling.

Each hay cutting, type of hay, etc. should be sampled and analyzed separately. Each hay cutting or lot should be identified and stored separately.

Silage samples can be collected from the face of a bunker silo as it is being fed and from the unloader of an upright silo. Bagged silage can be sampled by cutting small slits along the side of the bag and penetrating the hay sampler to collect the material. Producers must reseal the slit with waterproof tape after collection. Collect silage from 5 or 6 places along the bag, mix well, and extract a small sample to send to the laboratory.

Immediately place the sample in a plastic bag and seal it. If not mailed right away, place the sample in a refrigerator or freezer.

Pastures samples can be collected and analyzed by plucking the forage with your fingers at the height the animals are grazing it. When adequate pasture forage is available, cattle may select better nutritive value forage than what is being sampled by hand plucking. i.e. on limpoggrass pastures with good forage availability, cattle can select leaves that have greater nutritive value than samples collected with leaves and stems. In this case, forage testing results may suggest that cattle would respond to protein supplementation, but the animals are consuming adequate amounts of protein from the forage and may not need supplementation.

Scissors or some other cutting device also could be used. If possible, these samples should be dried before sending to the laboratory. If drying is not possible, mail the sample immediately after it is harvested.

Your results are only as good as your sample!

WHERE TO SEND YOUR SAMPLES AND WHAT RESULTS ARE PROVIDED

The Forage Extension Laboratory is located at the Range Cattle Research and Education Center at Ona, FL and provides forage testing for livestock producers in the state of Florida. The results provided by the Forage Extension Laboratory are crude protein (CP) and total digestible nutrients (TDN). Mail samples to: Forage Extension Laboratory, 3401 Experiment Station, Ona, FL 33865.

The summary results of the forage samples submitted to the Forage Extension Laboratory from October 2006 to July 2008 are presented in Table 1. Nutritive value results are reported by forage species. Forage species not included in this publication means that the laboratory did not receive significant numbers of samples to be included in this report. Crude protein and TDN were analyzed in all samples. Dry matter (DM), NDF, and ADF were analyzed in selected samples.

HOW TO USE THE RESULTS

The results of forage tests may be compared to the requirements for TDN and protein of different classes of animals. An example for growing beef heifers is in Table 2 . The TDN requirements of heifers increase with higher weights and higher gains. Many residual pastures and hays available during the fall and winter have a TDN concentration of 50% or lower. Forages with lower TDN concentrations also have lower levels of voluntary intake. If the forage alone will not meet the requirements for TDN or protein, then supplements will be needed.

Table 1. Dry matter (DM), crude protein (CP), total digestible nutrients (TDN), acid detergent fiber (ADF), and neutral detergent fiber (NDF) of forages samples submitted to the Forage Extension Laboratory at the

RCREC - Ona, FL.						
Forage Species ¹	Number of Samples	DM	CP	TDN	ADF	NDF
		----- % -----				
Bahiagrass						
Hay	36	85±4	7.5±2.4	49±5	-	-
Pasture	8	24±2	9.5±0.8	53±3	-	-
Bermudagrass						
Hay	82	89±2	10.3±3.5	53±7	44±5	79±3
Pasture	18	31±5	8.8±1.8	50±3	45±1	77±1
Stargrass						
Hay	18	84±2	9.9±2.7	53±5	59±2	73±3
Pasture	26	36±3	13.1±3.6	58±7	50±20	58±15
Silage/Haylage	56	34±8	10.1±2.5	57±7	52±13	59±16
Limpograss						
Hay	48	83±3	4.2±1.2	54±6	38±5	78±8
Pasture	13	35±3	7.5±1.3	57±3	-	-
Silage/Haylage	28	40±4	6.1±0.9	49±6	40±4	70±6
Corn						
Silage/Haylage	18	28±2	8.4±0.8	75±5	28±1	48±9
¹ Values represent means followed by standard deviation.						

Table 2. Daily TDN and protein requirements of heifers at various weights and gains.¹						
			Daily TDN Requirements		Crude Protein Requirements	
Heifer	Daily	Dry	lb/day	% of	lb/day	% of Total Dry

Weight (lb)	Gain (lb)	Matter Intake (lb/day)		Total Dry Matter		Matter
500	0	9.8	4.9	50.0	.75	7.6
	0.5	11.0	6.2	56.0	.94	8.5
	1.0	11.8	7.3	62.0	1.11	9.4
	1.5	12.1	8.3	68.5	1.25	10.3
700	0	12.6	6.3	50.0	.89	7.1
	0.5	14.1	7.9	56.0	1.11	7.9
	1.0	15.1	9.1	62.0	1.27	8.4
	1.5	15.5	10.6	68.5	1.40	9.0
¹ National Research Council Nutritional Requirements of Beef Cattle, 1984.						

For additional questions about the Forage Extension Laboratory - RCREC, Ona, FL, please contact Joe Vendramini, jv@ufl.edu