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The Importance of Forage Testing

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Warm-season grasses are the dominant forage crops used for cow-calf production in Florida. Bahiagrass (*Paspalum notatum*), limpograss (*Hemarthria altissima*), stargrass (*Cynodon nlemfuensis*), and bermudagrass (*Cynodon dactylon*) are the most cultivated species. Despite some differences in yield and nutritive value, decreased production during the fall and winter months associated with low nutritive value at great maturities are common characteristics of most warm-season grasses. In order to meet the requirements of the cow herd during these periods, supplementation is often necessary. In general, winter feeding can account for 20% of the overall annual cost of cow ownership.

Hay is the most popular source of conserved forage for beef cattle producers. While reducing the need for hay is desirable, some quantity of hay is sometimes required to avert risk in most livestock production systems. Increased price of fertilizers and fuel are making hay production a less attractive option for cattle producers.

Stockpiled forage is a feasible alternative for beef cattle producers in South Florida. Mild winter allows for having forage standing on the field for longer periods of time. Most warm-season grasses can be used as stockpiled forage; however, limpograss has been the most used specie in South Florida. Limpograss fits South Florida production systems because it tolerates soils with poor drainage and maintains digestibility even at long regrowth periods. Floralta is the most planted cultivar of limpograss in South Florida.

Regardless of the management practice used to conserve and feed forage during the winter, some concentrate supplementation is commonly necessary to meet the cow-calf requirements. A description of the total digestible nutrient (TDN) and crude protein (CP) requirements of cows at different ages and lactation stages are presented in Table 1.

Table 1. Nutrient concentration requirements of cows at different ages		
Animal Category	TDN	CP
	%	
Dry cow mid pregnancy	48	7
Mature lactating cow (10 lb milk)	56	9
2 yr old lactating cow	63	11

An estimate of the nutrients present in the forage is essential to maximize the efficiency of concentrate supplementation. The most accurate way to predict forage nutritive value is through FORAGE TESTING. A lot of producers allege that they own the forage and it will be fed anyway, so why to test? Two different scenarios can happen when you do not have an estimate of the forage nutritive value: 1) The forage has high nutritive value and the producer will be overfeeding concentrate, or 2) The forage has low nutritive value and the concentrate is not supplementing the cow adequately. In the first scenario, the producer inflates the production cost without benefits in production, and in the second scenario, the cows may experience decreased body condition, pregnancy rates, and finally resulting in fewer calves harvested and a consequent decrease in profitability.

Producing forage with better nutritive value during the fall and winter is one of the easiest ways to reduce the need for concentrate. A simulation of forages with different TDN concentrations and the concentrate required for pregnant first calf heifers to achieve 1 lb gain/d is shown on Table 2.

Table 2. Concentrate required for pregnant replacement heifers to achieve 1 lb gain/d when fed with hay with different TDN concentrations.				
Hay (% TDN)	Gain (lbs/d)	lb corn/heifer/d	lb corn/100 d	\$/heifer/100d*
48	1.0	4.4	440	33
54	1.0	1.1	110	8.3
56	1.0	0	0	0
* Considering \$ 150.00 / ton of dry corn, 80% TDN.				

Considering the importance of forage testing in Florida, the Range Cattle Research and Education Center at Ona will reactivate the Forage Extension Laboratory with the objective to provide accurate estimates of forage nutritive value for forage and cattle

producers in Florida. The two parameters that will be analyzed by the Forage Extension Laboratory will be crude protein and digestibility (TDN). All nutrients are very important on the nutrition stand point; however, these two are required in greater quantities and generate a greater impact on the economics of winter feeding.

Sampling

Properly collecting and identifying a forage sample is very important. Hay samples should be taken with a core whereas the sampler is driven into the end of a rectangular bale or the rounded side of a round bale. Several cores should be combined in one composite sample. Each cutting should be sampled and analyzed differently.

Pastures can be collected by "hand-plucked" samples or cut with scissors from different places around the pasture. Samples should be sent to the laboratory immediately after they are placed in a plastic bag. Remember, your results will be as good as your sample.