

# Houston County Fall Agriculture Newsletter

Fall 2014

Nov 10, 2014



## *Dates of Interest*

**Nov 21** 5 Hour Pesticide Re-Certification CEU course AND Pesticide License Training -  
*Livingston*

**Dec 29** - Deadline to Pre-Register and Pre-Pay for the 2015 Master Gardener Class.

**Jan 23** - Madison County 5 Hour Pesticide Re-Certification CEU course  
*Madisonville*



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## **Understanding Forage Quality Analysis**

Forages with good quality are the main assets of any livestock production operation, and they are also the foundation of most rations in a forage based diet. Forage analyses are important because they reflect the quality of the forage. They are also a relatively inexpensive tool to evaluate the nutritive value of the forage grazed or hay fed.

Forage Quality indicators include crude protein (CP), neutral detergent fiber (NDF), acid detergent fiber

(ADF), relative feed value (RFV), relative forage quality (RFQ), dry matter (DM) and moisture and Total Digestible Nutrients (TDN).

*Crude Protein* - proteins plus energy are the most important nutrients for livestock. True proteins make up 60-80% of the total plant nitrogen (N). CP is measured indirectly by determining the amount of N in the forage plant and multiplying that value by 6.25. Generally forages harvested at early vegetative stages of growth

have higher CP contents than more mature forages harvested at (or later than) flowering stages.

*Fiber* - The primary source of ration fiber comes from forages. As the fiber content of a forage increases its energy content generally decreases. Ruminates need a minimum amount of fiber to maintain good rumen function by stimulating cud chewing, rumen movement, and production of saliva for buffering. The forage variety and its

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## **Supplement Feeding In Winter**

Cattle graze pastures all year long, but the nutrient composition changes with the seasons. Fall and winter diets are generally low in protein,

minerals, and vitamins. This change in forage quality usually warrants the need for supplemental feeding.

The grass that just a few weeks ago was

lush and full of nutrients will start to turn coarse and fibrous. Crude protein content of the grass decreases and the forage becomes harder

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stage of maturity at harvest influence the fiber content of the crop. Fiber extraction in forages is accomplished with detergent analyses system - a process defined by the following:

- *Neutral Detergent Fiber (NDF)*. This value represents the total fiber fraction that make up cell wall within the forage tissue. Values vary from 10% in corn grain to 80% in warm season grass straw. Values of NDF for grasses will be higher than legumes. A high NDF content indicates high overall fiber in forage; so the lower the NDF value, the better.
- *Acid Detergent Fiber (ADF)*. This fraction of forages is moderately indigestible. Forages range from 3% in corn grain to 50% in warm season grass straw. Testing has shown that high ADF values are associated with decreased digestibility; therefore, a low ADF is better.

NDF has traditionally been used as a predictor of forage intake, while ADF has been used as a predictor of forage digestibility. These relationships often hold true for mixed diets, but they can be misleading when forage is fed alone. These relationships are used to calculate relative feed value (RFV).

*Relative Feed Value (RFV)* is an index representing forage quality. The NDF content is correlated with intake and ADF with digestibility of the forage within the context of temperate forages - particularly, alfalfa. More specifically, the index ranks forages according to a calculation based on intake and digestible dry matter (DM) of alfalfa at full bloom.

The calculated value of RFV=100 is an indicator of a forage quality that can be equated to alfalfa at full bloom. Since this index is a valid comparison only when applied to temperate species because it was developed using alfalfa, the RFV should not be applied to warm season forages.

*Relative Forage Quality (RFQ)* index is a newer system that was developed to have the same meaning and range as RFV. While it can be substituted for RFV when necessary, its calculations are different. They are based on values of CP, NDF, ADF, fat and ash. The advantage of RFQ over RFV is that RFQ considers the digestible fiber. This becomes relevant when testing southern forages - particularly, warm season grasses that are high in fiber that is highly digestible. The grass will be more accurately tested when using RFQ, resulting in better matching of forage nutrient supply with cattle nutrient demand.

*Dry Matter And Moisture* - Moisture content is reported usually as a wet and dry matter basis. Wet basis is important because it indicates how “fresh” forage would be required to meet DM requirements of the animal. DM is calculated as if the forage had no moisture and makes valid comparisons among different forages. Forage moisture will vary depending on how the forage is fed.

*Total Digestible Nutrients (TDN)* is the forage nutritive value that refers to concentration of available energy and concentration of crude protein. The main source of energy for ruminants come from carbohydrate fermentation in the rumen. These carbs are either associated with cell contents (soluble carbs, highly digestible, easily broken down by rumen microbes) or those more resistant to degradation. As an indicator of concentration of available energy, TDN is calculated as the sum of the digestible proteins, digestible crude fiber, digestible nitrogen free extract and 2.25 times the digestible fat. These nutrients vary with maturity; the older the forage the lower the TDN value it will have.



*“Agriculture is our wisest pursuit,  
because it will in the end contribute  
most to real wealth, good morals,  
and happiness.”*

*Thomas Jefferson*

## Supplementing continued...

for cattle to digest. Animals consuming diets low in protein, lose their appetite, develop a rough appearance, become weak and possess a lowered resistance to disease. Calf weights and reproductive efficiency are also adversely affected if the herd is not maintained on an adequate plane of nutrition.

A seemingly easy answer to this problem is to have the cows consume more forage to make up the needed nutrients. However, because the grass is slowly digested, consumption is lowered and the animal receives even less nutrients.

The key to increasing consumption of low quality forage is to add protein to the diet. Protein will assist in increasing the rate of digestion, thereby, allowing the cow to graze more. Protein supplements are available in many types and forms such as cubes, cakes and blocks. Each will vary in nutrient composition and you need to be aware of the protein amount.

Protein is required for growth and milk production, therefore, the requirements for developing heifers and lactating cows are higher than for dry, pregnant cows. Also, an adequate amount of dry matter (energy), minerals and vitamins need to be provided to avoid nutritional deficiencies in your herd.



## AgriLife Extension challenges Texans to save 40 gallons of water daily

**Municipal water conservation is expected to account for approximately 7% of new water supplies by 2060, part of which would be achieved through education.**

In 2011, Extension became involved in the 40 Gallon Challenge – a program that calls residents and businesses to reduce the region's average water use by 40 gallons per household each day. The challenge initially began as a volunteer campaign to increase water conservation. Through the 40 Gallon Challenge program, AgriLife Extension has also provided residential water education to more than 1,050 people attending 80 programs in 89 Texas counties.

The economic benefit of the 40 Gallon Challenge program is measured in terms of water savings and water cost savings associated with new, efficient water-saving practices. Texas participants have indicated their intentions to adopt practices that would save millions of gallons of water annually—and more counties are implementing the program each week. Using an average municipal water price, the water cost savings to participants is estimated in the hundreds of thousands of dollars a year. The 40-Gallon Challenge allows Texans to compete against other Americans who are taking the challenge in their states. At the program's website, [www.40gallonchallenge.org](http://www.40gallonchallenge.org), Texans can pledge to adopt water-saving practices and see how many gallons of water they can expect to save.



## Houston County Result Demonstration on Cattle Shrink

I started a result demonstration project in 2013 on



studying the effects of shrink on fresh weaned calves brought into the East Texas Livestock Auction.

The objective of this project is to evaluate the percentage shrink and cost associated with it in these times of high cattle prices. The results of this study will provide data to determine the cost shrink plays in the cattle market for the producers.

Some cattle were put on feed for 4 days, some 3 days and some cattle were brought in the day before sale and placed on water only.

This study will continue in the coming years as it becomes increasingly important to producers to gain more from their cattle if they are replacing these sold calves with bought replacement heifers.

If you have non-creep fed, fresh weaned calves that you would like put into the study, please call me at 544-7502 or Paul Craycraft at 544-2246 to let us know.



## 2015 Master Gardener Classes

The Texas A&M AgriLife Extension Service in Houston County will be offering a Master Gardener training.

The training will start in January 2015 and continue through March. Classes are tentatively scheduled on Tuesdays and Thursdays from 1:30pm-4:30pm. The cost of the training is \$120 per person. You must preregister and prepay by December 29, 2014.

The program offers a minimum of 50 hours of instruction that

covers topics including lawn care, trees and shrubs, insect, disease, and weed management; soils and plant nutrition, vegetable gardening; fruit production; garden flowers; and water conservation.



In exchange for training, participants are asked to volunteer time to their County Extension program. At least 50 hours of volunteer service within one year following the training is required to earn the title of "Texas Master Gardener."

If you are interested in becoming a master gardener or to sign up call the Houston County Extension Office at 936-544-7502.



**Texas Master Gardener<sup>SM</sup>**



# Texas Quail Index



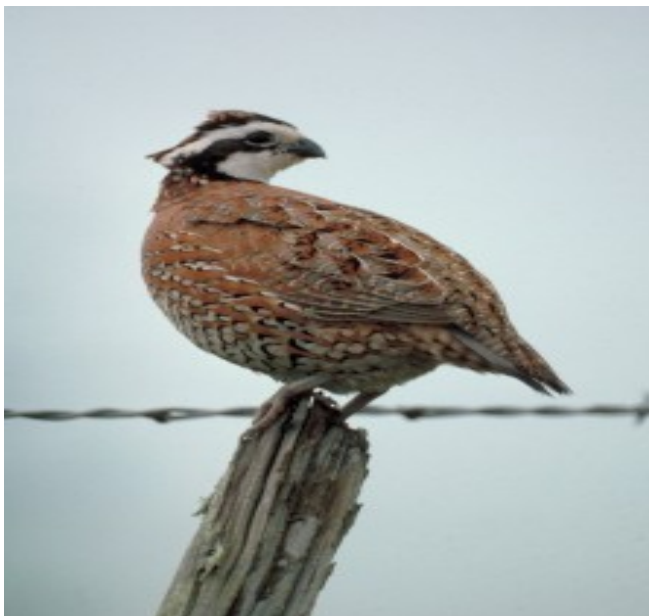
The **Texas Quail Index (TQI)** is a series of hands on demonstrations designed to educate land managers, hunters, and others about population dynamics, habitat requirements, and other factors affecting bobwhite and scaled quail in Texas. At the county level, TQI fosters landowner and community involvement and provides tools for interested stakeholders to assess the “quail-equation” in their community. Statewide, the TQI provides an important opportunity to use citizen-science to help monitor the abundance of quail and bring attention to their importance, plight, and needs.

To date there are 41 counties and 7 Wildlife Management Areas involved in the project. The goal is to keep these 48 sites and perhaps expand into other areas. If you are not currently enrolled in this program and would like to know how you can help, email Dale Rollins ([d-rollins@tamu.edu](mailto:d-rollins@tamu.edu)) or Becky Ruzicka ([becky.ruzicka@tamu.edu](mailto:becky.ruzicka@tamu.edu)).

You can visit these sites for more information:

<http://wildlife.tamu.edu/quail/texas-quail-index/> for the overview, mobile apps and data sheets.

<http://wildlife.tamu.edu/quail/> and Facebook page [www.facebook.com/TAMUQDI](http://www.facebook.com/TAMUQDI)



*Jo Smith*

**If you would rather receive an email version of our newsletter and other program information instead of a mailed copy—please call our office and request to be added to our email list.**

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