



# BEEF CATTLE TIME

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## Variability of 2005 Hay Crop Will Require Better Feeding Management

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Wide variations in the nutritional value of the 2005 hay crop will create challenges for producers. Most Tennessee farms have mature cows (both dry and with calves), first-calf cows, bulls, replacement heifers and possibly some stocker calves. Each of these classes has different nutritional requirements.

### Analysis of the 2005 Hay Crop

Forage samples taken from the 2005 hay crop show variability in protein and energy content. Sixty samples of fescue and orchard grass hay were taken from farms across Tennessee by Tennessee Farmers Cooperative feed fieldmen during May and June. A commercial laboratory calculated crude protein and total digestible nutrients (TDN) for each sample. The results of the analyses are presented in Table 1 on a “dry matter” basis to accurately reflect the nutrient concentration without bias due to differing moisture contents.

Many samples were low in protein and TDN, but others were high (Table 1.). Note that the crude protein for all samples varied from 5.8 percent to 19 percent and averaged 8.8 percent. The TDN ranged from 41 percent to 66 percent and averaged 53 percent.

Hay testing below 8 percent CP would be of poor quality and generally require protein supplementation for all classes of cattle. A hay between 8 and 11 percent

CP (dry matter basis, see Table 2 on the next page) may need to be supplemented, particularly with high-producing cows, replacement heifers, first-calf cows and stockers. Hay over 11 to 12 percent CP often contains legumes and may not need significant protein supplementation. On average, the hays fell into the mid-quality range, but only barely. Many of the samples were in the low range in terms of crude protein.

TDN, expressed in percentages or pounds, provides a reasonable estimate of the energy value of hay or feed. The TDN of a high quality hay will be over 55 percent while poor quality is below 50 percent (dry matter basis). Cows fed poor quality hay will almost always need supplemental concentrate feeding, while cows fed hay over 55 percent TDN may need little or no supplementation. Thin cows, first-calf cows, replacement heifers and growing calves may need additional supplementation even with good hay, but will almost always need it with marginal or low-quality hay.

### Making Supplement Decisions

Table 2 provides the nutritional requirements, crude protein and total digestible nutrients (TDN) for three classes of cattle and suggests the quantity of supplemental feeds that may be needed for various classes based on cattle being fed an “average” hay from the 2005 harvest.

### Forage Testing Will Be a Necessity

It is impossible to guess the nutritional value of hay. A forage test is the only way to know. Then, if needed, a supplement program that will make up for the deficiencies can be developed. Regardless of the quality of 2005 hay, beef producers will have to feed what was harvested. The critical thing is to know whether it is necessary to provide supplementation as indicated in Table 2.

### Effects on Cattle

But what if lower quality hay is not supplemented? These are some production traits that will be reduced if

**Table 1. Crude Protein and TDN Values of 2005 Hay Samples (Dry Matter Basis)**

Species	Crude Protein, % (range)	TDN, % (range)
All	8.8 (5.8 – 19.0)	53 (41 – 66)
Fescue	10.5 (5.8 – 15.1)	54 (42 – 65)
Orchardgrass	9.1 (6.7 – 11.0)	54 (41 – 66)
Fescue - Orchardgrass	9.4 (6.8 – 12.5)	53 (44 – 63)

**Table 2. Suggestions for Supplementing Cattle Being Fed Average 2005 Tennessee Hay**

Class of Beef Cattle	Supplement Specifications		Amount of Supplement
	Crude Protein, %	T.D.N., %	
1100 lb. Dry Cow	9 – 12%	65 – 72%	Maybe none except minerals, dependent on body condition
1100 lb. Lactating Cow	13 – 16%	65 – 73%	3 to 5 pounds
700 lb. Replacement heifer	14 – 15%	67 – 75%	5 to 6 pounds

cattle do not receive adequate nutrients:

- **Loss of Condition** Cattle cannot eat enough low-quality hay to meet their nutritional needs. In general, cows need to consume approximately 2.5 percent of their body weight per day. Since low-quality hay is less digestible, feeding it can result in cows consuming only 1.5 to 2.0 percent of their body weight, with consequent loss of body condition.
- **Reproduction** Cows are less likely to rebreed on time when fed poor quality hay during the winter. In one study where inadequate energy was provided, the calving percentage decreased from eighty percent to sixty-nine percent. In another study where protein was insufficient, pregnancy rates were cut in half. Reproductive rates are additionally depressed by inadequate mineral levels (especially phosphorus and copper) in poor-quality hay.
- **Calf performance** Calves born to cows maintained on poor hay are more likely to be sick and/or die and subsequent growth can be affected. One study reported a 28 pound decrease in weaning weight due to inadequate energy from winter hay supplies.

To prevent these performance problems, profit-minded cattle producers will test forages and build a supplementation program based on the results. Unfortunately, supplementation programs will cost more if forage quality is low, but it is cheaper than failing to meet the cattle’s nutrient needs.

**Getting the Most Out of Supplements**

Here are some things producers should consider when selecting feeds to supplement hay:

- **Select a feed supplement that improves the digestibility of lower quality hay.** For example, supplemental feeds with lower starch and higher “friendly fiber” components have been shown to improve forage utilization. Soybean hulls, corn gluten or similar supplements are known to improve forage utilization. If hay protein is below 8 to 9 percent, higher protein supplements may improve forage utilization.
- **Consider “convenience supplements” like blocks and lick tanks if hay is of average quality.** But, cows being fed very low quality hay may need a daily, hand-fed supplement. Daily feeding also provides an opportunity to check on cows.
- **Maintain mineral supplementation.** Low quality hays are also low in mineral content. We have come

a long way in the past four years, but there are still problems out there.

- **Know the relationship between nutrition and body condition.** Body condition is the best indicator of the nutritional status of cattle; therefore, it is an excellent tool to assist decisions on supplement levels. Cows that are thin are in a poor nutritional status.
- **Maintain cows in good body condition.** This is easier than trying to add body condition to thin cows, especially during the winter. **WATCH YOUR COWS!**

In summary, the hay available for the winter of 2005 -2006 appears to be quite variable in quality. In order for producers to know how to properly and economically supplement the beef herd, forage testing will be essential. Contact your county Extension agent or feed dealer for details about obtaining an analysis on your hay or silage or to learn more about any item mentioned in this article.

**Have No Fear of Premises Registration**

*Emmit L. Rawls, Professor  
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Since the premises registration process began on July 1, 2005, nearly 2,000 Tennessee producers have registered their operations. Many others are taking a wait and see attitude — which may mean waiting until registration is compulsory. Meanwhile, several unfounded concerns are circulating along with questions about premises registration and the whole animal identification process.

**“I do not want the government knowing about my business.”** Under the Tennessee Homeland Security Law, your information is confidential. Legislation now being proposed in the Congress would exempt animal identification information from the Freedom of Information Act. Registering your premises will allow federal and state animal health officials to isolate animals, should there be need, because of a foreign animal disease or bio-terrorism event. Without this capability, many more farms and animals would have to be isolated, creating greater expense and hardship for live-stock operations.

A second concern comes from many producers who may not have good livestock handling facilities: **“If I am going to have to start tagging my animals, I will just sell out.”** If someone wants to get out of the cattle business, prices are certainly favorable; but having to tag animals is not a good reason. There will be opportunities to have

animals tagged at the livestock market, veterinary office and perhaps other locations. There may even be people who would come to the farm and tag animals while performing some other needed management practices. Yes, these services will cost money, and many producers will apply the tags at home just before movement or marketing. If an animal never leaves the farm, it does not need a tag. Tags are required only when the animal enters commerce.

**“What if one person buys from another without going through the market?”** This scenario will probably be the last part of animal identification to be enforced. At some point, however, those buyers will want tags already in the cattle when purchased so that they will be able to resell the animals. Currently radio frequency identification (RFID) tags cost between \$1.75 and \$2.50. When tags are required in 2008, larger numbers will be produced and prices could come down slightly.

**“Will it be worth the cost?”** It may be hard for the individual to realize the benefit directly, but if the changes help open new export markets or regain the ones we have lost, then it should be worth it. Also, if it keeps animal health officials from having to quarantine a large number of farms while getting to the source of a problem more quickly, then the cost to the government and the taxpayers will be less. Several thousand dollars were spent looking for the other cows that came across the border with the Canadian cow that “stole Christmas” on December 23, 2003.

Another question has been, **“If my cow gets out and someone’s vehicle hits it, can they use the RFID tag to track it to my farm?”** Again the confidentiality assured under the Tennessee Homeland Security Act should prevent trace-back using an RFID tag number. The RFID tag is used only for disease trace-back purposes. As currently proposed, the animal identification process should be relatively simple. Producers will take their premises registration cards to a tag manager, such as your farm supply store or veterinarian. Your card and any tags you purchase will be scanned, which will associate your premises with the tags you will be putting on your animals. The information will go into a private or government database (data warehouse). Each time an animal goes through a market, a feedlot or changes hands, that location will be noted in the database. When an animal is finally processed at the packing plant, its number will be retired along with the record of every premises that animal has been on in its life. Furthermore, if there should be a need, for example an outbreak of foot and mouth disease, the state and federal animal health officials could access the database (data warehouse) and locate within 48 hours any animals that had been in contact with the diseased animal.

**“If producers place a RFID tag in an animal, will they be able to get data back on the animal when processed?”** This is highly unlikely. Several third party systems are currently in place that can help trace animals and obtain data. If all parties (owners) want that information passed back to previous owners, then it

could happen. Basically, the owner of the animal owns the data/information on that animal, while it is in their possession. If ownership of cattle is being retained when cattle are sent to the feedlot and if the feedlot and packer know that data is to be collected and returned to the owner, then it could happen. Usually, there is an additional charge of \$6 to \$10 per head. We have gotten feedlot and carcass data back on cattle for many years when ownership has been retained. However, if the cattle change hands, it is much less likely to occur.

**“How do I get a premises registration card?”**

Please go to your Farm Service Agency office, Extension office, Farm Bureau office or local co-op and get a premises registration form. Fill it out and turn it in to one of those offices. In a few weeks you will have your premises registration card. This is another opportunity to be a true “Volunteer.”

## **Rotational Grazing Improves Pasture Use**

*Gary Bates, Professor  
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Abundant forage growth is wonderful to see in pastures. Following basic recommendations like fertilizing according to soil test results, controlling weeds and planting clovers will help provide this growth. However, don’t follow good forage production with poor harvest procedures. One of the mistakes that occurs every year in Tennessee pastures is poor utilization of excess pasture growth.

A tall fescue plant’s initial growth during the spring is good quality forage. The new leaves are high in protein and energy. But as the spring progresses, the plant matures and produces a seedhead. The main goal of the plant changes from trying to grow leaves to filling the seeds in order to reproduce itself. The amount of leaf growth drops because energy is going to the seedhead instead of the parts of the plant that produce leaves. Forage quality also drops. As the leaves are growing older, the protein and energy levels are decreasing and the fiber level is increasing. The result is a lower quality forage.

The problems of low quality and reduced leaf growth in the late spring and early summer are the result of excess forage growth in pastures. The plants are growing faster than the cattle can eat them. The difficulties caused by this excess growth can be minimized if good grazing principles are used.

Controlled grazing is simple if you understand one basic concept. The goal is to force the cattle to eat all the forage available in the pasture without overgrazing. If cattle are given a large area to graze, they will do the most of their grazing close to water and shade. Other areas of the pasture will not be grazed, resulting in wasted forage. If forage on the edges of the pasture is not grazed, it will get mature, drop in quality and be wasted.

In a good grazing program, pasture size is reduced and cattle are concentrated on a smaller area where they

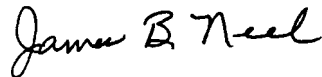
cannot be selective as to where they graze. They are forced to graze the entire pasture and remove all of the forage. Little forage is wasted. After cattle graze the forage in this smaller pasture (or paddock), they are moved into a new paddock, and the process starts over again.

Utilizing this type of management helps in two basic ways. First, as mentioned earlier, it decreases the amount of wasted forage. In the spring some of the acreage can be cut for hay because not as many acres are needed for grazing. As spring progresses and high temperatures develop, forage growth will decrease. The acres that were used for hay can then be put into the grazing rotation. The early forage growth that in the past was wasted on the edge of the pastures will now be put up as hay.

Second, this form of management allows a rest period for the plants. Once the paddock is grazed down,

cattle are moved to a new paddock, and plants in the previous paddock are allowed to regrow. This important during the summer, when high temperatures and drought are stressful for tall fescue. Instead of being, the young regrowth is allowed to fully regrow, restore depleted root energy reserves, and recover. This will result in quicker regrowth and a healthier stand.

The advantages are clear: decreasing pasture size and concentrating cattle on a smaller area of land will improve forage utilization, decrease stand loss from overgrazing, and improve per acre production.



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## Beef Cattle Time

From:

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Leader/Agent

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