

## THE LINGERING EFFECTS OF LOW QUALITY HAY

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This season's near daily rainfall caused a lot of delays in our hay and silage fields. The consequence is that a lot of very poor quality forage was put up this year. The standard joke has been that we're measuring forage quality this year in terms of board feet! However, this is no laughing matter. Hay that is this low in quality can have lingering effects for months to come.

### Poor Hay Can Lead to the Poor House

In previous articles, I have addressed the fact that cattle producers must start emphasizing forage quality. Bermudagrass or tall fescue hay can quickly mature to the point that high rates of supplementation are needed to keep the animals in a body condition score (BCS) of 5. When bermudagrass is cut after having 8 weeks of growth or tall fescue is cut so late in the season that the seeds have already shed, then the resulting hay is not much better than wheat straw! Consequently, it may require 8+ lbs of concentrate to make up the difference. Even though grain prices have eased a little, supplementing at this rate may add as much as \$1.00 per head per day to one's already expensive feed bill.

Of course, I realize it is easy for folks in the ivory towers of the University to point out such challenges. (Incidentally, my office is in a 4-story brick building. I've yet to see an ivory tower.) The unfortunate reality is that the near daily rainfall made it nearly impossible to make good quality hay this year, even here at UGA.

### Just How Bad Is It?

Recently, one of our County Extension Agents asked me what the average quality of hay in his area was looking like this year. I thought that was such a great question that I'd share a summary of the statewide results with you all. Unfortunately, the picture is not pretty.

Several hundred samples have already been processed through our lab since July 1. Average Relative Forage Quality (RFQ) is substantially down across each of our major forage categories (Fig. 1). For example, the 7-yr average RFQ for bermudagrass is a score of 95. However, the average RFQ for bermudagrass this year was 80. That is nearly a 16% decrease compared to normal. (The full summary of 2013 vs. the 7-yr average is available on [www.georgiaforages.com](http://www.georgiaforages.com).)

Total digestible nutrients (TDN), a measure of digestible energy and the principal component of the RFQ calculation, is exceptionally low this year. Figure 2 shows this year's average TDN values for five major forage types and the variability that we've seen. Behind this summary are two patterned ranges, one that illustrates what is needed for maintaining dry

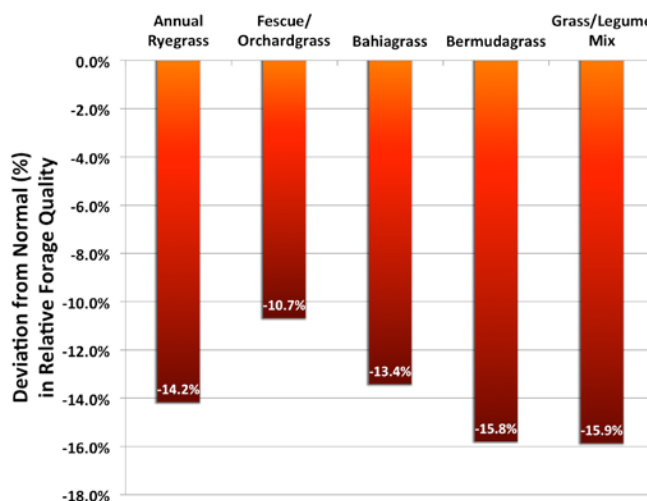


Figure 1. The departure from a 7-year average RFQ score for five major forage categories in Georgia.

cows and the other for lactating beef cows. Notice that the average TDN in bahiagrass and bermudagrass is extremely low, even for feeding dry cows. Since the width of the vertical lines illustrates the range within which 95% of all samples will fall, one can see that 95% of this year's bermudagrass and bahiagrass hay won't even come close to meeting the energy needs of a lactating beef cow.

Incidentally, the average CP in bermudagrass this year is approximately 10.3%. Though this is about 10% lower than normal, that is nearly the exact amount of CP that is needed by even a lactating beef cow. So, trying to take a short cut by offering a high CP supplement (like a lick that is heavy on urea and light on energy and other nutrients) is unlikely to address the fundamental problem of a lack of energy.

### Starving a Profit out of a Cow

There are a few truisms that have served me well over the years. One of my favorites is that “you can't starve a profit out of a cow.” With forage quality as low as it is in our hay this year, I know that a substantial number of cows will lose weight despite having a full belly. This has long-term repercussions. If our cows aren't fed appropriately in late gestation or while in milk, they will lose weight and condition. If a cow drops from a BCS of 5 to 4, it is very likely that she'll cycle 4-6 weeks later than if she'd been a 5. Even then, she may not take. With the whole herd losing condition like this, one can expect pregnancy rates to drop from ~90% down to something in the 60% range (Fig. 3)! Plus, a lot of those that do calve will calve late into the calving season, driving up the average calving interval and eating into the annual profit per cow.

### What Should One Do?

The first thing to do is to sample your hay. If you think the hay is bad, find out just how bad. Once the forage results are in, sit down with your County Extension Agent or nutritionist and work out a least-cost supplementation strategy. Don't be afraid to sell a lot of poor quality hay to buy the supplemental feed you need. Limit feed the supplement and/or winter grazing to stretch it out, but keep an eye on the cows' BCS. Also, avoid putting lipstick on pigs. Putting additives on or in poor quality hay may encourage the cattle to eat more of the hay, but they could still lose weight if the quality is poor. Remember that a little ranch dressing on celery sticks is still filling one up on celery sticks.

Finally, let me remind you that it is a lot easier (and cheaper) to keep a beef cow at a BCS 5 than to get her back to that. Dr. Lawton Stewart, our beef cattle nutritionist, often points out that it takes 70

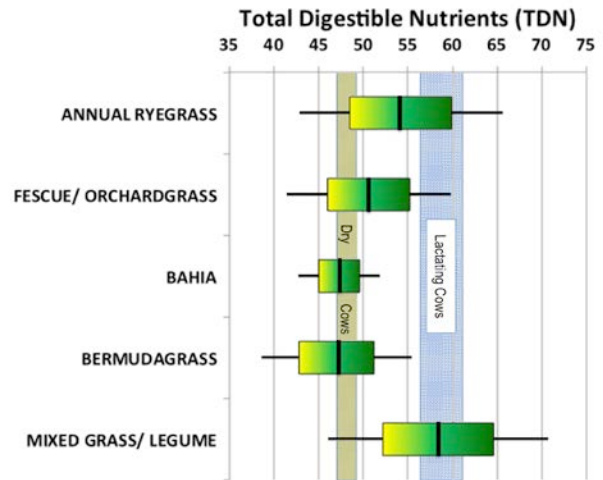


Figure 2. The average TDN (vertical black bars), typical range (green-yellow), and range that includes 95% of samples (extent of horizontal black bars) for hay from the 2013 season relative to TDN needs for dry cows (tan range) and lactating cows (light blue range).

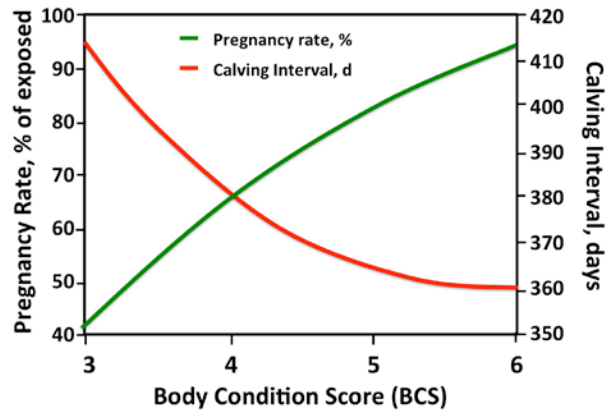


Figure 3. Body condition score affects pregnancy rate and the calving interval.

days on a diet that is 9 percentage points higher in TDN than what she needs in order to get a cow's BCS up from a 4 to a 5. Even with more moderate grain prices, getting a good cow back in condition is an expensive proposition.

### **More Information**

More information about forage quality and meeting the needs in a beef cow's diet can be found on our website, [www.georgiaforages.com](http://www.georgiaforages.com). If you have additional forage management questions, visit our website or contact your local University of Georgia Cooperative Extension office by dialing 1-800-ASK-UGA1.

**Table 1.** Observations from UGA’s Feed and Environmental Water Laboratory database regarding the forage quality of samples submitted during 2013 versus the average of the previous 7-years.

**2013 Growing Season**

| Forage Type         | RFQ  |               | TDN  |               | NDF  |               | ADF  |               | Lignin |               | CP   |               |
|---------------------|------|---------------|------|---------------|------|---------------|------|---------------|--------|---------------|------|---------------|
|                     | Mean | Typical Range | Mean | Typical Range | Mean | Typical Range | Mean | Typical Range | Mean   | Typical Range | Mean | Typical Range |
| <b>Grass</b>        |      |               |      |               |      |               |      |               |        |               |      |               |
| Annual Ryegrass     | 103  | 78 - 128      | 54.2 | 48.5 - 59.9   | 61.8 | 55.4 - 68.2   | 38.8 | 34.9 - 42.7   | 5.4    | 3.9 - 6.9     | 10.4 | 7.5 - 13.3    |
| Fescue/Orchardgrass | 92   | 73 - 111      | 50.6 | 46 - 55.2     | 65.3 | 60 - 70.6     | 38.6 | 34.2 - 43     | 6.1    | 5.1 - 7.1     | 12.0 | 9 - 15        |
| Small Grain         | 144  | 75 - 213      | 60.9 | 48.7 - 73.1   | 54.0 | 43.6 - 64.4   | 34.6 | 30.9 - 38.3   | 4.0    | 1.5 - 6.5     | 10.6 | 9.7 - 11.5    |
| Bahiagrass          | 71   | 63 - 79       | 47.3 | 45 - 49.6     | 70.7 | 68.6 - 72.8   | 43.7 | 42.1 - 45.3   | 5.8    | 5.3 - 6.3     | 7.2  | 6.1 - 8.3     |
| Bermudagrass        | 80   | 63 - 97       | 47.0 | 42.8 - 51.2   | 70.0 | 65.7 - 74.3   | 38.7 | 35 - 42.4     | 6.6    | 5.5 - 7.7     | 10.3 | 7.3 - 13.3    |
| Pearl Millet        | 84   | 65 - 103      | 49.1 | 44.7 - 53.5   | 67.4 | 61.7 - 73.1   | 40.8 | 36.3 - 45.3   | 7.8    | 5.7 - 9.9     | 11.6 | 8 - 15.2      |
| <b>Legume</b>       |      |               |      |               |      |               |      |               |        |               |      |               |
| Alfalfa             | 117  | 88 - 146      | 58.0 | 53.3 - 62.7   | 50.2 | 42.8 - 57.6   | 38.7 | 32.9 - 44.5   | 7.9    | 6.3 - 9.5     | 18.3 | 15.4 - 21.2   |
| Other Legume        | 77   | 56 - 98       | 49.9 | 44.3 - 55.5   | 58.0 | 50.5 - 65.5   | 47.2 | 43.7 - 50.7   | 6.3    | 4.7 - 7.9     | 14.9 | 11.7 - 18.1   |
| Peanut              | 131  | 102 - 160     | 59.9 | 55.3 - 64.5   | 44.6 | 40.5 - 48.7   | 38.6 | 35.5 - 41.7   | 5.8    | 4.6 - 7       | 10.3 | 9.4 - 11.2    |
| Perennial Peanut    | 132  | 111 - 153     | 60.4 | 58 - 62.8     | 42.9 | 38.4 - 47.4   | 33.9 | 30.6 - 37.2   | 6.3    | 5.4 - 7.2     | 12.8 | 10.3 - 15.3   |
| <b>Other</b>        |      |               |      |               |      |               |      |               |        |               |      |               |
| Mixed Grass/Legume  | 122  | 86 - 158      | 58.4 | 52.2 - 64.6   | 50.5 | 37.4 - 63.6   | 36.1 | 28.5 - 43.7   | 5.4    | 4.2 - 6.6     | 16.6 | 11.4 - 21.8   |

**7-yr average**

| Forage Type         | Mean | Typical Range | Mean | Typical Range | Mean | Typical Range | Mean | Typical Range | Mean | Typical Range | Mean | Typical Range |
|---------------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|
| <b>Grass</b>        |      |               |      |               |      |               |      |               |      |               |      |               |
| Annual Ryegrass     | 120  | 89 - 151      | 54.2 | 49 - 59.4     | 59.1 | 52.2 - 66     | 37.7 | 33 - 42.4     | 6    | 4.4 - 7.6     | 11.3 | 8.2 - 14.4    |
| Fescue/Orchardgrass | 103  | 76 - 130      | 55.2 | 49.7 - 60.7   | 61.7 | 55.5 - 67.9   | 38.1 | 33.4 - 42.8   | 6.2  | 4.5 - 7.9     | 12.5 | 9.1 - 15.9    |
| Small Grain         | 125  | 81 - 169      | 57.7 | 49.7 - 65.7   | 56.7 | 45.9 - 67.5   | 35.2 | 28.1 - 42.3   | 5.6  | 2.2 - 13.4    | 12   | 7.4 - 16.6    |
| Bahiagrass          | 82   | 64 - 100      | 50.9 | 46 - 55.8     | 67.7 | 62.9 - 72.5   | 41.5 | 37.3 - 45.7   | 8    | 6.1 - 9.9     | 9.6  | 6.4 - 12.8    |
| Bermudagrass        | 95   | 76 - 114      | 56.5 | 51.7 - 61.3   | 65.5 | 60.2 - 70.8   | 36.6 | 32.2 - 41     | 5.6  | 4 - 7.2       | 11.5 | 8.3 - 14.7    |
| Pearl Millet        | 97   | 63 - 131      | 55.8 | 49.2 - 62.4   | 61.6 | 53.4 - 69.8   | 36.8 | 30.4 - 43.2   | 5.5  | 3.6 - 7.4     | 12.3 | 7.4 - 17.2    |
| Sorghum             | 104  | 78 - 130      | 52.2 | 46.2 - 58.2   | 60.7 | 53.2 - 68.2   | 39.5 | 33.6 - 45.4   | 6.6  | 4.3 - 8.9     | 10.4 | 6.7 - 14.1    |
| <b>Legume</b>       |      |               |      |               |      |               |      |               |      |               |      |               |
| Alfalfa             | 152  | 102 - 202     | 63.4 | 56.7 - 70.1   | 38.5 | 29.9 - 47.1   | 30   | 24.2 - 35.8   | 6.2  | 4.9 - 7.5     | 20.2 | 16.1 - 24.3   |
| Other Legume        | 128  | 87 - 169      | 56.9 | 50.8 - 63     | 43.7 | 32.9 - 54.5   | 34.6 | 28.5 - 40.7   | 7.9  | 5.5 - 10.3    | 15.3 | 10.9 - 19.7   |
| Peanut              | 120  | 91 - 149      | 59.4 | 53.2 - 65.6   | 40.2 | 34 - 46.4     | 34.7 | 28.6 - 40.8   | 11.3 | 6 - 16.6      | 11.2 | 8.4 - 14      |
| Perennial Peanut    | 133  | 102 - 164     | 61.3 | 57.6 - 65     | 38.4 | 33.5 - 43.3   | 30.7 | 27.2 - 34.2   | 8.7  | 7.6 - 9.8     | 12.9 | 11.3 - 14.5   |
| <b>Other</b>        |      |               |      |               |      |               |      |               |      |               |      |               |
| MIXED GRASS/LEGUME  | 145  | 76 - 214      | 58   | 49.1 - 66.9   | 51.6 | 40.5 - 62.7   | 33.6 | 25.9 - 41.3   | 5.1  | 2.8 - 7.4     | 14.5 | 8.8 - 20.2    |