

**DAIRY.**  
**LIVESTOCK**  
**AND**  
**FIELD CROPS**  
**NEWS**

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## Managing Your 2005 First Cutting

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### Lessons from the 2004 Forage Quality Project

Last we sampled four alfalfa fields and four grass fields during the spring, had the quality analyzed and posted the results to our web site:

<http://www.cce.cornell.edu/programs/cny-dairy-livestock-crops/index.html>

Taking samples roughly every four days and with a fairly quick turn around from the lab we were able to give fairly accurate picture of the current quality in the field and provide a guide as to when first cutting should begin. We have been pleasantly surprised at the number of people telling us they actually checked out the website to see what was happening. We will also be sampling fields this year and reporting back so keep watching the web site in 2005.

Our goal was to be consistent in our sampling so each time we made an effort to sample the same part of the field and only sampled pure grass or alfalfa. We recognize that most fields are a legume and grass mix but decisions to harvest really need to be made on whether or not you are considering the field grass or alfalfa. The best schedule for harvesting first cutting that needs to be milk cow quality is to begin with pure grass stands, then move to mixed stands and then to legumes. With mixed stands take the grassier pieces first then the those that are more legume. Although in mixed stands the grass may be getting a little more mature than you would like with these mixed stands you are balancing that out with legume that is of superior quality.

We can not emphasize enough to budget your forage needs before the growing season begins. Balancing this mix of forage species, maturities and acres with your needs and storage can be difficult but it should not be left to chance. If you know your needs you can then line up the equipment and labor needed with the acres and forage species to get the quality you need. Forage budgeting also helps with determining which grass fields will benefit most from nitrogen applications. A common complaint is that producers put on nitrogen fertilizer for more yield but with poor weather conditions they just end up with more poor quality feed. Unless you have a market for some late cut first cutting grass hay don't put fertilizer on acres you know you aren't certain of harvesting on time.

### Legumes and grasses matured early in 2004

Warm April and early May temperatures matured legumes and grasses earlier in 2004. **Figure 1** shows Growing Degree Days (GDD) for cities in and near our six county area. Note the GDDs in Figure 1 are for a base temperature of 50°F not 41°F which is usually associated with alfalfa.

**Figure 1.** 2004 Growing Degree Days (GDD) data from the New York Agricultural Statistics Service for April 1 thru May

City	GDD (Base 50°F)	
	From April 1 to May 16	Departure from normal
Utica	240	+ 118
Binghamton	252	+ 145
Cobleskill	218	+ 125
Morrisville	168	+ 81
Norwich	223	+ 126
Oneonta	258	+ 176

The base temperature is the one at which you would expect growth to begin and cool season plants like alfalfa and grasses have a lower base temperature than a warm season plant like corn which is 50°F.

We are using Neutral Detergent Fiber (NDF) to determine the optimal time to harvest for yield and quality. NDF is a good indicator of dry matter intake so the lower the value the greater the intake will be. The preferred value for alfalfa (legumes) is 40% NDF is and this is when alfalfa is typically 32 inches tall and in the late vegetative to early bud stage. For grasses it is 50-55% NDF

Dave and I debate the right NDF value for harvest all the time but it isn't really a debate, the range we agree on, 50 to 55% NDF most accurately describes the situation. 55% NDF is consistently boot stage, which is the last leaf out but no head showing out of the stem. The problem with grasses in the spring is that when the ste

### **How Much Forage Will/Can Your Cows Eat?**

With good feeding management many herds are able to achieve forage intake levels at or above 1% of Body Weight as F-NDF (Forage Neutral Detergent Fiber). To understand what that really means let's look at an example:

Let's say you're feeding a diet to your cows that's 50% hay crop and 50% corn silage. To make things simple let's say both are 40% NDF. The weighted average NDF of the forages you're feeding would obviously be 40% NDF. Let's assume you have cows that weigh 1,400 lbs. If this is a high producing herd, DMI (Dry Matter Intake) could be 50 lbs. per day. With good feeding management practices and great forage we might expect forage intake to be at 1% of body weight To determine how much forage that is we can do the calculations:

1,400 lbs.

$\times .01$  (1% of BW)

14 lbs. of (F-NDF)

$14 \div .40$  (40% NDF in our forages) = 35 lbs. of DM from forages.

The balance would be coming from grain (50 – 35), which would be 15 lbs. of DM from grain. That could come from about (15  $\div$  .89) 16.85 lbs. of grain as fed. .89 represents 89% DM which would be quite common for most dry grain mixes.

At 35% DM for both the C.S. and Haylage our as fed forage intake could be 100 lbs total, 50 lbs. for each C.S. and Halyage. The calculations are below:

35 (lbs. of forage DM we previously calculated)  $\div$  .35 (35% DM of both C.S. and Haylage) = 100.

Since C.S. and Haylage were fed 50:50,  $100 \div 2 = 50$  lbs. each.

### **Now what might happen if the hay crop ended up being 60% NDF (cut quite late)?**

If we assume that same size cow and the same total DMI (50 lbs.) our calculations would look like this:

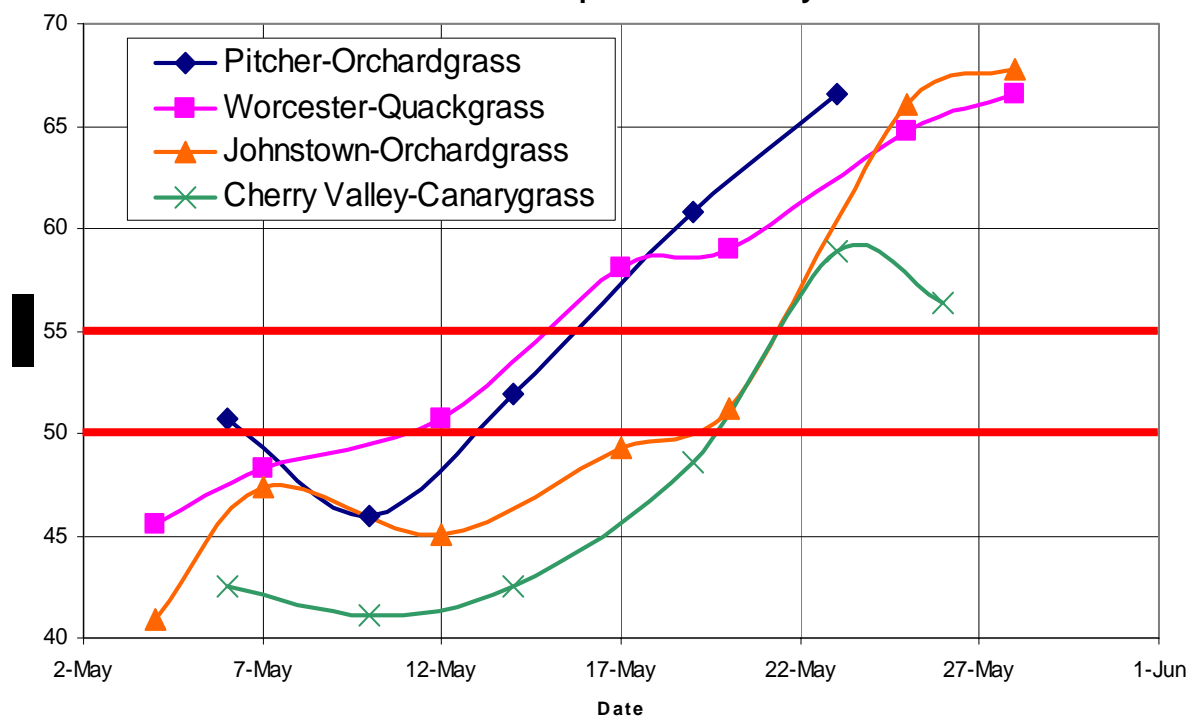
Forage NDF would equal 50% (40 + 60 = 100,  $100 \div 2 = 50$ ) C.S. NDF stayed at 40%, but our Haylage NDF went up to 60%.

$14 \div .50$  (50% NDF in our forages) = 28 lbs. of DM from forages.

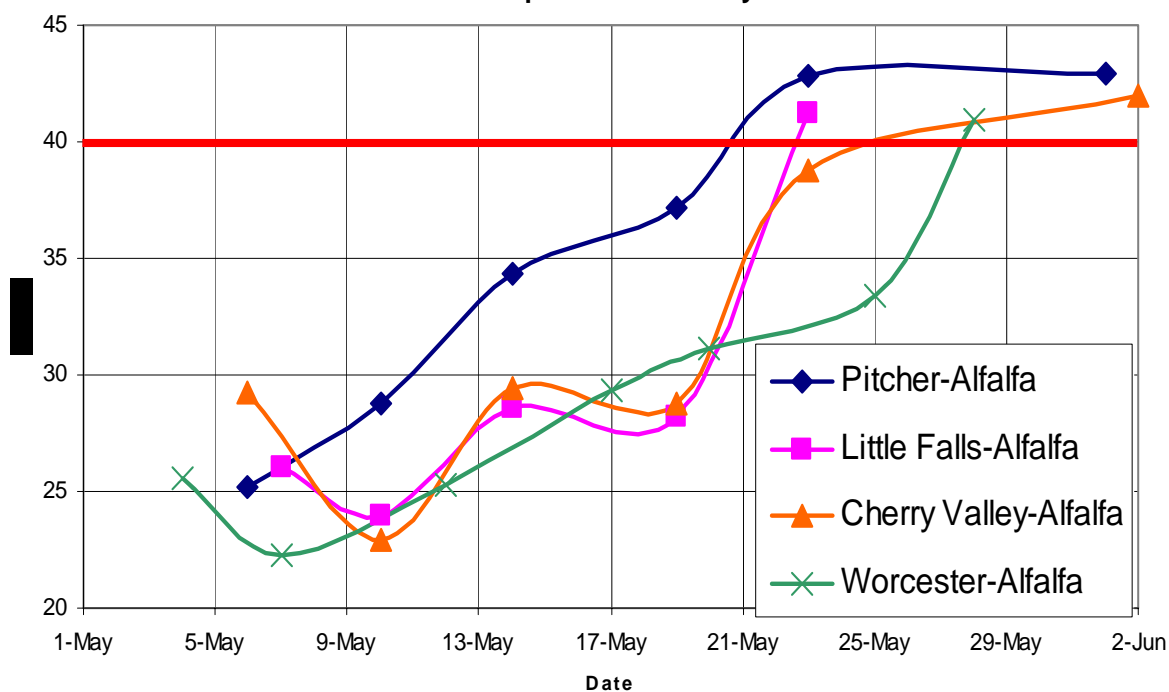
The balance from grain would be (50 – 28) 22 lbs. of DM from grain. That would come from about (22  $\div$  .89) 24.7 lbs. of grain as fed.

Again at 35% DM for both C.S. and Haylage, our forage feeding levels (as fed) would now be:

**Figure 2. Grass Quality - %NDF**  
**50-55%NDF is Optimal for Quality and Yield**



**Figure 3. Alfalfa Quality - %NDF**  
**40% NDF is Optimal for Quality and Yield**





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