



## Important News...

# ACS Update Regarding Timing of First Cutting

**With minimal effort** you can make an assessment of current crop maturity and quality, and then use that information to predict future crop quality. This tool may aid you in deciding when to start cutting, as well as provide some indication of the quality to expect at harvest.

There are three methods currently used for predicting or estimating alfalfa quality: 1) Predictive Equations for Alfalfa Quality [PEAQ]. 2) Scissors-cut method. 3) Growing Degree Days [GDD]. Of the three methods, PEAQ seems to be the most practical for providing fast, inexpensive and relatively accurate estimates of alfalfa Neutral Detergent Fiber (NDF) in individual fields. The PEAQ method is most accurate, however, as actual harvest date approaches (alfalfa must be

at least 16 inches tall), so for early spring planning, samples should be analyzed using the scissors-cut method combined with GDD accumulation in order to predict when harvest should begin. In an effort to assist in this process, we have analyzed alfalfa samples from hay fields across New York State and Vermont to establish a baseline level for NDF in different geographic areas. We have also included several analyses from grass hay fields for comparison.

40% NDF is generally accepted as optimal for alfalfa, and 55% is considered optimal for grass. Since alfalfa typically matures at a different rate than most grass species, it is difficult to optimize NDF for both alfalfa and grass in the same field. Usually, calendar date and visual inspection of grassy hay fields are used to

determine proper harvest timing. However, your individual management preference will dictate the target NDF values for first cutting.

There are two general rules that apply for managing the cutting of high quality mixed alfalfa/grass forage for lactating cows:

1. Rate all fields. Fields with the highest percentage of grass should be harvested first. Fields with the highest percentage of alfalfa should be harvested last.
2. Time the middle of harvest for the day when alfalfa NDF is at the preferred level for your management, e.g., if it takes 10 days to harvest all fields, on day 5 of harvest NDF should be at your preferred level.

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**On May 19<sup>th</sup>, 2011, we sampled alfalfa from multiple sites throughout New York and hand-delivered the samples to Dairy One.**

**The results are included in Table 1. This table also includes a comparison of the lab analysis value and PEAQ value as measured in the field. This information, along with historic growing degree day (GDD) information can be used to estimate NDF and help to time harvest. If you have access to local GDD information, it may provide a higher degree of accuracy for making these calculations. Since one GDD adds about 0.04 points to NDF, it can be assumed that NDF will increase by about half a point on a cool day, and one point on a hot day.**

Town	County	Crop	Stage	Height	PEAQ	NDF
Fleming	Cayuga	A/G	Vegetative	20	31.3	32.8
Genoa	Cayuga	A/G	Vegetative	21	32	23.5
King Ferry	Cayuga	A/G	Vegetative	18	29.9	26.1
Scipio	Cayuga	A/G	Vegetative	17	29.2	28.9
Cato	Cayuga	Reed/Alf	Vegetative	22	32.7	34.2
Owasco	Cayuga	Grass Hay	Heading	29		59.8
Owasco	Cayuga	A/G	Vegetative	23	33.4	46.8
Auburn	Cayuga	A/G	Vegetative	21	32	30.9
Auburn	Cayuga	A/G	Vegetative	17	29.2	38.1
Auburn	Cayuga	A/G	Vegetative	23	33.4	32.8
Auburn	Cayuga	Reed Canary	Vegetative	25		57.8
Hartford	Cortland	Alfalfa	Vegetative	16	28.5	37.3
Hartford	Cortland	Alfalfa	Vegetative	22	32.7	32.2
Cincinnatus	Cortland	Alfalfa	Vegetative	22	32.7	30.6
Elba	Genesee	A/G	Bud	19	31.8	37
Byron	Genesee	A/G	Bud	19	31.8	35.5
Oakfield	Genesee	A/G	Vegetative	15		34.1
Oakfield	Genesee	A/G	Vegetative	20	31.3	25.6
Oakfield	Genesee	A/G	Vegetative	13		39.8
Leroy	Genesee	A/G	Bud	18	31.1	36.3
Elba	Genesee	A/G	Bud	18	31.1	36.2
Frankfort	Herkimer	Grass Hay	Boot	20		52.8
Litchfield	Herkimer	A/G	Vegetative	18	29.9	31.2
Lima	Livingston	A/G	Bud	16	29.7	34.3
York	Livingston	A/G	Bud	17	30.4	36.6
Groveland	Livingston	A/G	Bud	20	32.5	40.2
Caledonia	Livingston	A/G	Bud	19	31.8	35.2
Avon	Livingston	A/G	Bud	20	32.5	36.4
Hamilton	Madison	A/G	Vegetative	22	32.7	29
Ogden	Monroe	A/G	Vegetative	20	31.3	41.5
Fultonville/Glen	Montgomery	Grass Hay	Heading	24		56
Fultonville/Glen	Montgomery	A/G	Vegetative	20	31.3	31.4
Amsterdam	Montgomery	Grass Hay	Heading	26		59.3
Canajoharie	Montgomery	Grass Hay	Boot	26		57.9
Sprakers	Montgomery	A/G	Vegetative	22	32.7	32.6
Somerset	Niagara	A/G	Vegetative	14		40.2
Fabius	Onondaga	Alfalfa	Vegetative	21	32	28.9
Fabius	Onondaga	A/G	Vegetative	23	33.4	29.2
Elbridge	Onondaga	A/G	Bud	28	38	30.7
Lafayette	Onondaga	A/G	Bud	27	37.3	30.1
Marcellus	Onondaga	A/G	Vegetative	23	33.4	31.8
Otisco	Onondaga	A/G	Vegetative	27	36.1	34.5
Stanley	Ontario	Alfalfa	Bud	23	34.6	33.3
Stanley	Ontario	Alfalfa	Bud	22	33.9	35
Albion	Orleans	A/G	Vegetative	21	32	34.3
Worcester	Otsego	Grass Hay	Heading	17		56

Town	County	Crop	Stage	Height	PEAQ	NDF
Waterloo	Seneca	Alfalfa	Vegetative	19	30.6	33.5
Seneca	Stanley	A/G	Bud	23	34.6	31.8
Wheeler	Steuben	A/G	Bud	20	32.5	31.7
Prattsburg	Steuben	A/G	Vegetative	16	28.5	29.7
Bath	Steuben	A/G	BUD	15		28.4
Bath	Steuben	A/G	Bud	17	30.4	27.7
Lansing	Tompkins	A/G	Vegetative	21	32	33.7
Lansing	Tompkins	Reed Canary	Vegetative	42		63
Lyons	Wayne	A/G	Bud	25	35.9	32.1
Wolcott	Wayne	A/G	Bud	25	35.9	32.6
Wolcott	Wayne	Reed Canary	Vegetative	36		52.3
Wethersfield	Wyoming	A/G	Vegetative	10		30.4
Castile	Wyoming	A/G	Vegetative	18	29.9	31.6
Castile	Wyoming	A/G	Vegetative	16	28.5	32.6
Castile	Wyoming	A/G	Vegetative	13		34.1

<sup>1</sup>Average height in inches of stems sampled.

<sup>2</sup>NA = not applicable.

<sup>3</sup>% NDF if measured using PEAQ method.

<sup>4</sup>Actual analysis result using scissors-cut method.

**Table 2. Estimation of alfalfa NDF using PEAQ with a simplified staging scale**

**Step 1:** Choose a representative 2-square-foot area in the field.

**Step 2:** Determine the most mature stem in the 2-square-foot sampling area using the criteria shown in the table at right.

**Step 3:** Measure the length of the tallest stem in the 2-square-foot area. Measure it from the soil surface (next to plant crown) to the tip of the stem (NOT to the tip of the highest leaf blade). Straighten the stem for an accurate measure of its length. The tallest stem may not be the most mature stem.

**Step 4:** Based on the most mature stem and length of the tallest stem, use the chart at the right to determine estimated NDF content of the standing alfalfa forage.

**Step 5:** Repeat steps 1 to 4 in four or five representative areas across the field. Sample more times for fields larger than 30 acres.

**NOTE:** This procedure estimates alfalfa NDF content of the standing crop. It does not account for changes in quality due to wilting, harvesting, and storage. These factors may further raise NDF content by 3 to 6 units, assuming good wilting and harvesting conditions. This procedure is most accurate for good stands of pure alfalfa with healthy growth.

Length of Tallest Stem (from soil to stem tip) -- inches --	Stage of Most Mature Stem		
	Late Vegetative no buds visible on stem	Bud Stage 1 or more nodes with buds visible	Flower Stage 1 or more nodes with 1 open flower
	% NDF		
16	28.5	29.7	31.4
17	29.2	30.4	32.0
18	29.9	31.1	32.7
19	30.6	31.8	33.4
20	31.3	32.5	34.1
21	32.0	33.2	34.8
22	32.7	33.9	35.5
23	33.4	34.6	36.2
24	34.0	35.3	36.9
25	34.7	35.9	37.6
26	35.4	36.6	38.3
27	36.1	37.3	38.9
28	36.8	38.0	39.6
29	37.5	38.7	40.3
30	38.2	39.4	41.0
31	38.9	40.1	41.7
32	39.6	40.8	42.4
33	40.3	41.5	43.1
34	40.9	42.2	43.8
35	41.6	42.8	44.5
36	42.3	43.5	45.2
37	43.0	44.2	45.8
38	43.7	44.9	46.5
39	44.4	45.6	47.2
40	45.1	46.3	47.9

## Heavy Rain and Alfalfa: Effects on First Cutting

Consistently saturated soils from heavy spring rainfall have taken their toll on forage crops in some areas of the country, especially in alfalfa grown on soils that are less than moderately well drained.

Alfalfa samples that Purdue University extension forage specialist Keith Johnson has seen have suffered from too much moisture.

"Alfalfa is the most prone to problems," Johnson said. "The plants are yellowing or showing a pea green color, which means soils have been too water-saturated for nitrogen fixation to occur." As weather improves, Johnson urged producers to harvest their alfalfa crop when the crop is in late bud to very early flower.

"The best alfalfa growers can do at this point is hope for drier days and get out there and harvest the first cutting," he said. "They should evaluate which fields can be driven upon without damage to cut legume crowns or grass stem bases."

But even if producers are able to harvest the crop soon, the first cutting may not be a "grade A" feed crop, Johnson said.

"The stress means the protein content is down and that the energy content could be in question," he said. "As livestock producers balance livestock rations they should certainly analyze stressed crops before feeding them to their animals."

*Source: Purdue University*

