



Agricultural Consulting Services, Inc.

1634 Monroe Avenue Rochester, NY 14618

“Helping You Grow Your Business”

Important News...

Volume 5, Special Edition, May 2009

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 on 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% 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.

On May 19th, 2009 we sampled alfalfa from multiple sites throughout New York and Vermont 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.

County	Town	Crop	Height ¹	Stage²	% NDF⁴	PEAQ³
Cayuga	Auburn	Alfalfa	29	VEG	38.8	37.5
Cayuga	Aurelius	Grass	16	2% HEADED	55.7	N/A
Cayuga	Genoa	Alfalfa/Grass	30	VEG	34.2	38.2
Cayuga	King Ferry	Alfalfa/Grass	28	VEG	31.4	36.8
Cayuga	Sennett	Alfalfa/Grass	29	VEG	33.9	37.5
Cayuga	Springport	Alfalfa/Grass	22	VEG	34.4	32.7
Cayuga	Venice	Alfalfa/Grass	26	VEG	28.0	35.4
Chenango	Sherburne	Alfalfa/Grass	21	VEG	32.1	32.0
Clinton	Chazy	Alfalfa	21	VEG	31.1	32.0
Cortland	Preble	Alfalfa/Grass	21	BUD	30.4	33.2
Erie	Arcade	Alfalfa	14	VEG	29.2	N/A
Franklin County, VT	Fairfax	Alfalfa/Grass	17	VEG	33.9	29.2
Genesee	Byron	Alfalfa/Grass	26	BUD	33.8	36.6
Genesee	Byron	Alfalfa/Grass	22	BUD	33.7	33.9
Genesee	Elba	Alfalfa/Grass	25	VEG	29.7	34.7
Genesee	Leroy	Alfalfa/Grass	28	BUD	32.6	38.0
Herkimer	Illion	Alfalfa/Grass	16	VEG	27.2	28.5
Livingston	Avon	Alfalfa/Grass	28	VEG	33.0	36.8
Livingston	Avon	Alfalfa/Grass	26	BUD	40.3	36.6
Livingston	Caledonia	Alfalfa/Grass	28	BUD	35.0	38.0
Livingston	Geneseo	Alfalfa/Grass	26	VEG	36.1	35.4
Livingston	Groveland	Alfalfa/Grass	23	VEG	35.9	33.4
Livingston	Groveland Hill	Alfalfa/Grass	26	BUD	38.0	36.6
Livingston	Groveland Station	Alfalfa/Grass	22	BUD	33.2	33.9
Livingston	Mt. Morris	Alfalfa/Grass	30	BUD	34.6	39.4
Livingston	Springwater	Alfalfa	23	VEG	29.5	33.4
Livingston	York	Alfalfa/Grass	18	VEG	36.5	29.9
Madison	Hamilton	Alfalfa/Grass	21	BUD	28.9	33.2
Montgomery	Florida	Grass	21	VEG	50.5	N/A
Montgomery	Glen	Alfalfa/Grass	20	VEG	34.7	31.3
Montgomery	Sprakers	Alfalfa/Grass	22	BUD	31.4	33.9
Montgomery	Sprakers	Alfalfa/Grass	20	VEG	32.2	31.3
Niagara	Barker	Alfalfa/Grass	22	VEG	33.1	32.7
Niagara	Gasport	Alfalfa/Grass	21	VEG	33.5	32.0
Onondaga	Camillus	Alfalfa/Grass	24	VEG	27.3	34.0
Onondaga	Elbridge	Alfalfa/Grass	26	BUD	29.0	36.6
Onondaga	Fabius	Alfalfa/Grass	18	VEG	28.5	29.9
Onondaga	Jacks Reef	Alfalfa/Grass	24	BUD	31.3	35.3
Onondaga	Marcellus	Alfalfa/Grass	25	VEG	32.0	34.7
Onondaga	Navirino	Alfalfa/Grass	17	VEG	31.3	29.2
Ontario	Seneca Castle	Alfalfa/Grass	25	VEG	33.2	34.7
Orange County VT	Bradford	Alfalfa/Grass	27	BUD	48.0	37.3
Orleans	Alabama	Alfalfa/Grass	25	VEG	30.4	34.7
Orleans	Oakfield	Alfalfa/Grass	22	VEG	31.2	32.7

¹ Average height in inches of stems sampled.

² NA = not applicable.

³ % NDF if measured using PEAQ method.

⁴ Actual analysis result using scissors cut method.

County	Town	Crop	Height ¹	Stage ²	% NDF ⁴	PEAQ ³
Seneca	Geneva	Alfalfa	28	VEG	35.7	36.8
Steuben	Bath	Alfalfa/Grass	21	VEG	38.3	32.0
Tompkins	Groton	Alfalfa	28	VEG	29.9	36.8
Tompkins	Hartford	Alfalfa	18	VEG	30.9	29.9
Tompkins	Lansing	Alfalfa	30	VEG	34.4	38.2
Vermont	Burlington	Alfalfa	24	BUD	27.5	35.3
Washington	Easton	Alfalfa/Grass	29	BUD	30.8	38.7
Wayne	Savannah	Alfalfa	22	VEG	31.9	32.7
Wyoming	Castile	Alfalfa/Grass	18	VEG	27.5	29.9
Wyoming	Gainesville	Alfalfa/Grass	15	VEG	26.2	N/A
Wyoming	Silver Springs	Alfalfa/Grass	21	VEG	29.1	32.0
Sutton	Vermont	Alfalfa/Grass	21	VEG	42.1	32.0

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



First cutting decision guide

Please Open Immediately

Directions for using the PEAQ method to estimate alfalfa NDF have been included in Table 2. (Adapted from the article: Update On Predicting Harvest Time For Alfalfa, R.M. Sulc, et al.) Remember, alfalfa should be at least 16 inches in height for best results using PEAQ.

Please call at your convenience if you would like to discuss the report or review further strategies for harvest timing.

To remove your name from our mailing list, please email bwallace@acsoffice.com.
Questions or comments? Call us at 877-310-1100 or e-mail at acs@acsoffice.com.



Agricultural Consulting Services, Inc.

corporate office:

1634 Monroe Avenue
Rochester, NY 14618

Toll Free Tel: 877-310-1100

Toll Free Fax: 877-315-2200

E-mail: acs@acsoffice.com

www.acsoffice.com