2012 Alfalfa Field Project Impact of Spring Weather on Alfalfa Quality – Week of May 21st Sample Results

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MSU Extension field project to examine the unusual weather's effect on alfalfa quality continues for fourth week.

Questions have been asked about the effects of this spring's unusual weather conditions on the growth and quality of alfalfa across the state. MSU Extension has coordinated a short-term field project to collect data related to alfalfa quality.

Research at Michigan State University (http://www.extension.org/pages/25471/predicting-optimum-time-of-alfalfa-harvest) demonstrated that both GDD (growing degree days, base 41degrees Fahrenheit) and PEAQ (predictive equation for alfalfa quality) are good tools for predicting the timing of first cutting alfalfa harvest in normal years. These methods are based on estimating neutral detergent fiber (NDF). The optimum concentration of NDF for alfalfa fed to lactating dairy cows is 40 percent.

According to data collected in the upper Midwest over several years, alfalfa typically averages 38 percent NDF at 680 GDD and 40 percent NDF at 750 GDD. Because of multiple frosts after substantial alfalfa growth in many locations across the state this spring, we don't know if these relationships hold this year.

Beginning May 1, scissors-cut samples have been collected weekly from alfalfa fields in various areas in Michigan (south, west central, central, Thumb and northwest). Samples were analyzed by wet chemistry for NDF and correlations with PEAQ stick measurements and GDD (base 41) were evaluated.

Results of the May 21 or 22, 2012 sampling

City	**5/1-2 LAB NDF**	**5/7-8 LAB NDF**	**5/14-15 LAB NDF**	**5/21-22 LAB NDF**	**5/21-22 PEAQ**	**5/21-22 GDD**	**5/21-22 GDD NDF**
Brown City	26.4	30.2	32.3	36.2	36.3	801	41.2
Brown City	28.1	32.8	35.0	38.1	37.8	840	42.2
Marlette	26.4	30.0	30.5	33.8	35.9	792	41.0
Falmouth			27.6	30.4	29.4	656	37.2
McBain			26.9	30.9	29.0	656	37.2
Marion			30.6	33.3	31.9	656	37.2

Six fields in the project, which had not yet been harvested, were sampled on May 21 or 22. Data for the fourth week of the project include the NDF lab analysis, PEAQ estimate of NDF, GDD total for the date samples were collected, and the predicted NDF based on GDD for a normal year.

LAB NDF for these 6 fields increased 3.3 percentage units from 30.5 percent to 33.8 percent during the previous 7 days. The increase ranged from 2.7 to 4.0 percentage units across locations.

NDF predicted by GDD was 5.6 percentage units higher (39.4 percent) than the LAB values (33.8) with a range of 3.9 to 7.2 units. NDF predicted by PEAQ was 0.4 units lower than the LAB values with a range of -1.9 to 2.1 units. NDF values predicted by PEAQ were relatively close to the lab analyses.

This year, because of setbacks in growth by the multiple frosts, we are predicting that alfalfa should be at 40 percent NDF around 900 GDD. Weather forecasts in the Missaukee/Osceola counties area predict GDD to reach ~900 by June 3. Visit the MSU Enviro-weather website (http://www.enviro-weather.msu.edu) for a wide range of information regarding alfalfa and other field crop management.

The final alfalfa samples for this project were collected on May 29. NDF based on PEAQ measurements were:

McBain	35
Falmouth	35
Marion	38

Lab analyses for these samples will be reported on June 4. For the articles which report results from the first three weeks of May, go to http://news.msue.msu.edu.

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