2012 Alfalfa Field Project Impact of Spring Weather on Alfalfa Quality – Week of May 28th Sample Results
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MSU Extension alfalfa quality field project concludes with final samples from northwest lower Michigan.

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

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 wanted to determine if these relationships would 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 29, 2012 sampling

City	**5/15 LAB NDF**	**5/22 LAB NDF**	**5/29 LAB NDF**	**5/29 PEAQ**	**5/29 GDD**	**5/29 GDD NDF**
Falmouth	27.6	30.4	37.3	35.0	824	41.8
McBain	26.9	30.9	36.5	35.0	824	41.8
Marion	30.6	33.3	40.3	38.0	824	41.8

The final samples for fields in northwest lower Michigan were sampled on May 29. Data for the fifth 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 3 fields increased 6.5 percentage units from 31.5 percent to 38.0 percent during the previous 7 days. The increases ranged from 5.6 to 7.0 percentage units across locations.

NDF predicted by GDD was 3.8 percentage units higher (41.8 percent) than the LAB values (38.0) with a range of 1.5 to 5.3 units. NDF predicted by PEAQ was 2.0 units lower than the LAB values with a range of -1.5 to -2.3 units.

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 ~895 by June 4 and ~912 on June 5. 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.

For the articles which report results from the first four weeks of May, go to http://news.msue.msu.edu.

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