



First Cut - Weather or Management

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Precipitation around harvest time has the potential to make or break a forage crop, especially if such weather persists for several days or longer. Working with [MFGA's Green Gold Program](#) over the past 24 years it has occurred more times than I care to remember that about the time we reach Hay Day we seem to get into a period of rainy weather.

But it's not just about rain showers after the hay is cut or about to be. Temperature, moisture, and sunlight conditions up to that point play a major role in determining yield and quality.

First cutting is the most important and critical of the alfalfa growing season. A late start to this growing season will determine multiple things during the year's production. It is important to know that the success of the entire production will be based in determining a proper date to cut for highest yield and quality. As rule of thumb, forage quality varies with the environment and cutting management. If you are forced to delay the first cutting due to environmental conditions (rain or drought), this could have negative consequences such as a slower regrowth or a reduction in future yield production.

When it comes to quality, stage of maturity and date, although useful, often don't work well as a guide for timing of harvest, especially for the first cut. We have commonly heard through the years how forage cut at early-bud stage has come back looking horrible or the cows won't milk on it. Or how delayed cutting by a week or more ends up with a forage test result that looks better than expected.

Why? It's due to the interaction between temperature, moisture, and sunlight. After taking weekly spring cuttings of alfalfa for forage quality analysis over the course of 24 years, I have seen how changes in weather conditions can speed up or slow down quality changes in alfalfa. Since moisture was usually not a limiting factor in the spring, most of the change was driven by temperature and days of sunshine.

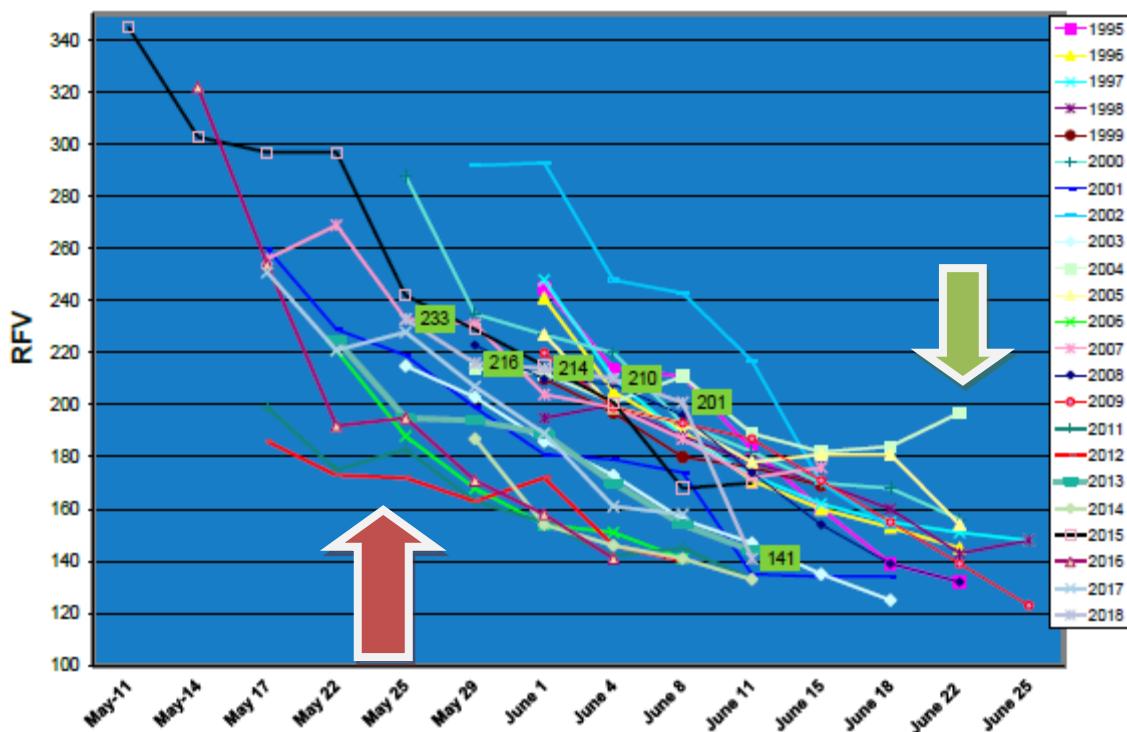
In addition to my observations, there is plenty of science-based evidence out there. For example, alfalfa research confirms that as temperatures rise, plant maturity accelerates lignification ramps up, fiber digestibility drops, and leaf to stem ratio declines. In contrast, a moisture deficit condition tends to delay plant maturity (if it occurs early in the growth cycle), reduces plant height, enhances leaf to stem ratio, and lowers plant neutral detergent fiber (NDF). Similar relationships have also been documented for grasses.

Environmental factors like temperature and soil moisture status cannot be disregarded when trying to explain or predict forage quality. Making a prediction of forage quality based solely on plant stage or calendar date often is wrong when environmental conditions exist that aren't average. These environmental factors are also interactive. The positive forage quality impact of dry conditions could be negated by high temperatures during a hot drought when forage quality drops fast and maturity accelerates.

The environmental conditions that exist in spring are unlike that of any other cutting. It can be cold, hot, wet, or dry to every extreme; sometimes it's all of the above, each having an impact on developing forage quality metrics.

Over the past 24 years, MFGA's Green Gold Program average cutting date for first cut alfalfa (RFV 170) is June 7th but because of variation in the environment, we've seen the range of first cut dates go from May 25th to June 22nd. 2012 was a very early spring and 2004 was very dry, but even if we remove those 2 extremes there is still a wide variation in the date when alfalfa reached 170 RFV. Basing your crop cut on a calendar date or stage of growth in these cases would have meant losing some quality or quantity.

Historic Relative Feed Value of 1st Cut Alfalfa



There are some research-based methods that were developed in the US and made available for taking some of the guesswork out of first-cut forage quality. Most alfalfa growers are familiar with the widely used [Predictive Equations for Alfalfa Quality](#) (PEAQ). Here in Manitoba, we track PEAQ along with our Green Gold samples to see how close they are and, although the method isn't perfect, it seems to be fairly good for average years. By comparing your PEAQ results with the Green Gold results you can make adjustments for some of the environmental variations that we see from time to time.

There is also a method of prediction by tracking base 41°F growing degree-days. This one hasn't been given much exposure here in Manitoba but it may have some merit for predicting quality. Some farmers and consultants simply clip samples of alfalfa similar to our Green Gold Program and send them into a lab for analysis. [Central Testing Laboratory](#) has a fresh alfalfa test that we use for the Green Gold Program that is available to producers that want to get a snapshot of their alfalfa quality when trying to determine when to cut.

First-cut alfalfa or grass has the potential to be the worst or best quality forage that you make all season. Understanding the interactions the environment has on forage and using the available predictive tools will help to ensure it's the best rather than the worst.

Remember, no method is perfect, but there's a case where doing something is better than nothing. These predictive systems generally eliminate forage quality train wrecks caused by underestimating the impact of temperature, moisture, and sunlight on harvested forage quality.

If you haven't signed up yet for the MFGA Green Gold Program, a free alfalfa testing service, you may do so here: <https://www.mfga.net/green-gold-sign-up>.