



Getting the Most Out of Your First Cut

By John McGregor, MFGA Extension Support

It's generally well-known that first-cut haylage or hay when harvested at the optimum stage provides one of the most digestible feeds. However, it can be a real challenge to harvest first cut timely, and any delays only increase acid detergent fibre (ADF) and neutral detergent fibre (NDF) as well as lignin content and reduced CP, non-fibre carbohydrate (NFC, sugars) and digestible energy levels, hence reducing overall digestibility by the animal.

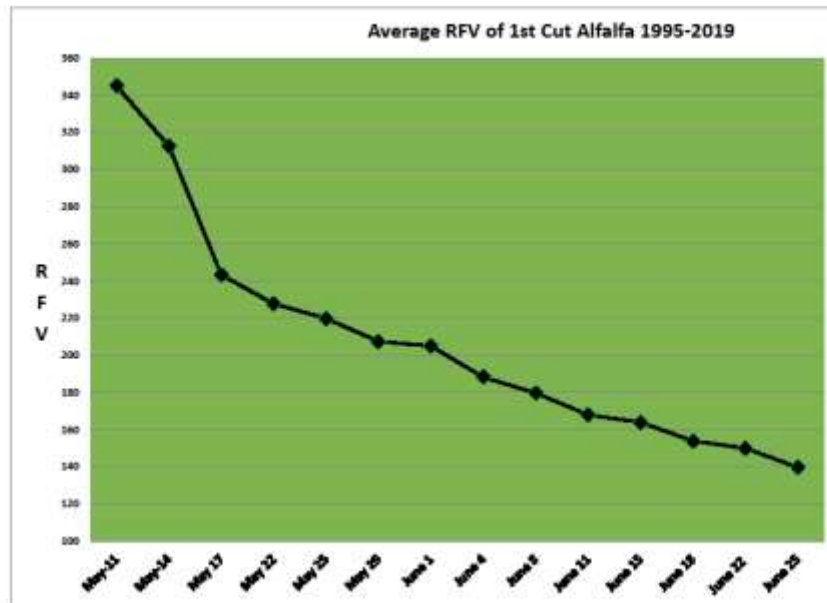
The quality of the first cut of hay is affected by growing conditions, maturity, harvesting and storage conditions. Under wet, cool conditions, more structural fibre and lignin is created reducing digestibility. The lack of sunlight further impacts digestibility by the reduced sugar content in plants. Nitrogen fixation in alfalfa is also hampered by the lack of energy from photosynthesis and the limited oxygen in some soils due to water saturation which leads to lower crude protein (CP) levels.

<https://fyi.extension.wisc.edu/forage/forage-quality-of-first-cutting-due-to-wet-spring/>

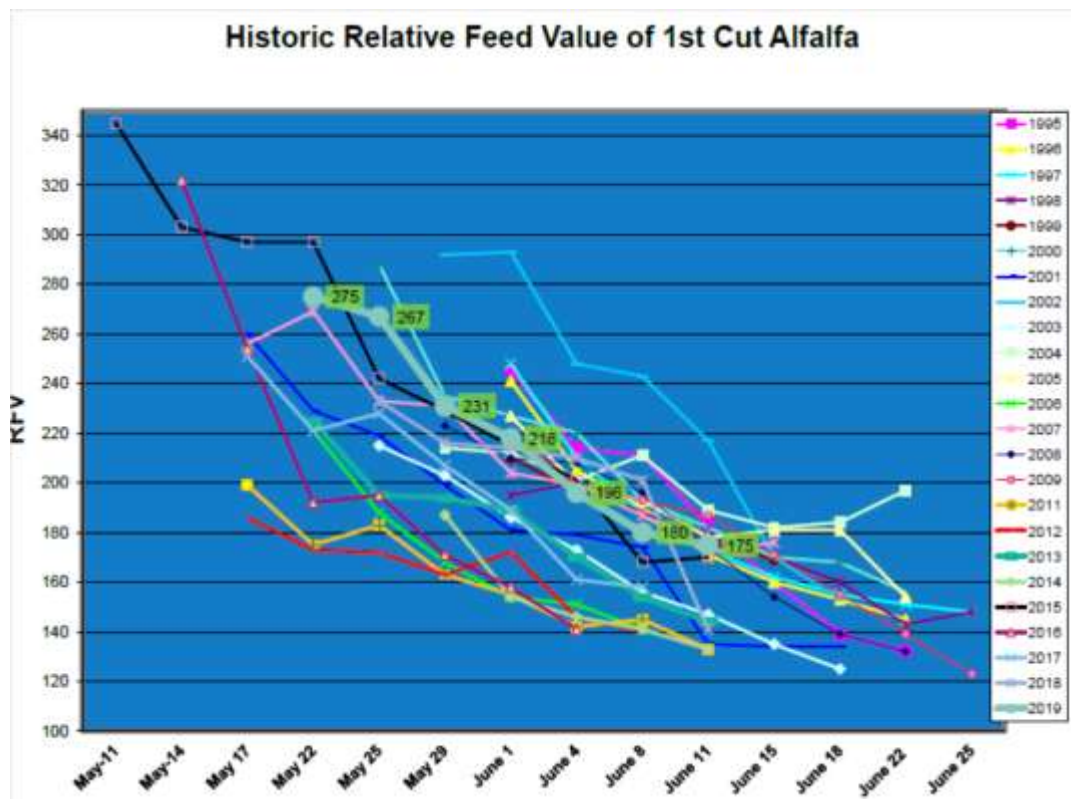
The ideal growing conditions from the standpoint of forage quality would be a lower temperature-featuring drought. Drought conditions tend to delay plant maturity (if it occurs early in growth cycle), decreases plant height, increases leaf: stem ratio, and generally decreases NDF percent. However, the positive forage quality impact of dry conditions would be negated by high temperatures during a hot drought when forage quality drops fast and maturity accelerates.

Environmental conditions are often the reason why forage quality is not what is expected in a harvested crop based on calendar days or stage of maturity. For this reason, knowing how these factors interact and impact forage quality can be a valuable knowledge base. Heading into our 25th year designed to take some of the "guesswork" out of this first cut, [MFGA's Green Gold Program](#) follows the decline in the RFV of alfalfa to help you target the optimum first-cut harvest date.

This graph illustrates the average decline in RFV from information collected thru the [Green Gold](#) program. If a producer was targeting a RFV of 160 the graph would indicate the optimum date as June 15th. If you were to look (below) at the year to year variation in



the RFV decline over the past 24 years, you would see that the range in date for a target of 160 RFV would be between May 29th and June 22nd.



The Trade-Off – Quality versus Quantity

Moving cutting to early bloom rather than bud stage does have some quality consequences.

First-cut provides us with the most yields, good protein levels, and if harvest is timed properly, there's the opportunity to achieve the highest digestibility of any cut you will take. It's almost impossible to beat the protein per acre of a good first-cut alfalfa field (even if we do plant a little bit of grass or other forage with it).

Plant maturity is by far the biggest driver of alfalfa yield and, even more so, nutritional quality. Unfortunately, these two factors are inversely related. As alfalfa plants mature, yield is increased; however, quality and digestibility are reduced. Finding the right balance is important and may be different for every operation. Clearly weather plays a large role in terms of when we are able to harvest. **Getting hay off rain-free is more important than cutting it on the exact perfect day.**

Hay that has been rained on will have lower yield and quality due to in-field leaching of nutrients (mostly soluble sugars and minerals).

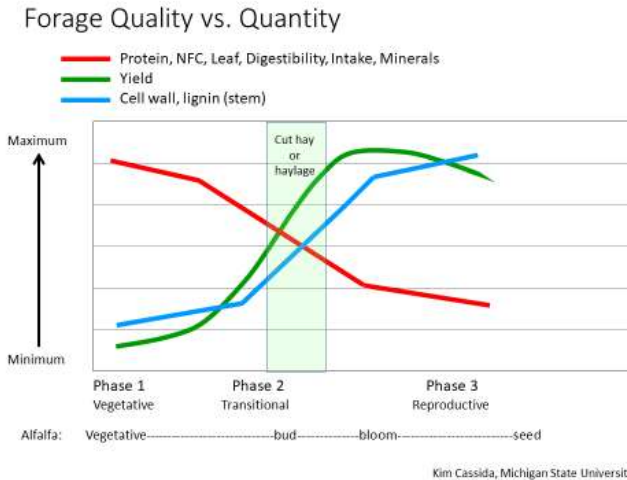
Table 1 Expected forage quality values as alfalfa advances in maturity

Stage of maturity	Crude protein	Acid detergent fiber	Neutral detergent fiber	Digestible dry matter	Relative feed value
	% of dry matter				
Vegetative	>22	<25	<34	>69	>188
Bud	20-22	25-31	34-41	67	166
Early bloom	18-19	32-36	42-46	62	131
Late bloom	16-17	37-40	47-50	60	115
Seed pod	<16	>41	>50	<58	<108

Source: N.P. Martin and J.G. Linn. University of Minnesota.

When it comes to first-cut alfalfa, it's best to start with the end in mind – know what quality and yield is needed for your dairy or beef cows. Higher-quality alfalfa can increase your relative feed value. For dairy and beef producers, this can help improve animal performance while maintaining profitability.

When addressing areas of concern, it always starts with forage quality. It's important to realize that forage quality is always a trade-off between the time that you are harvesting and the maturity of the stand itself, especially in first cutting.



For dairy cows, you may want to have very high-quality forage due to milk production. Phil Kaatz, Michigan State University Extension says. *“To have high quality, producers will end up decreasing the yield that comes out of the field, especially in first cutting. I tell my dairy producers, ‘I would rather be a day early cutting alfalfa than a day late.’ Because if I’m a day late, the quality I have out there is going to decrease very quickly.”*

However, beef producers may be willing to sacrifice quality a little for some or their entire crop to gain more yield, depending on their overall forage needs (i.e., pounds of gain for growing heifers or steers or maintaining body condition for lactating beef cows).

The perfect harvest time can be a moving target with constant changes like temperature, moisture and drying conditions to consider. Missing it by a day might mean a week before you can get back in the field if rain comes in. However, if harvest has been delayed, it can still fit into your ration.

All of the decisions that we make between now and the fall can have an impact, either positive or negative, on how well our alfalfa fields overwinter, and subsequently, how they perform next spring.

Forage Quality Needs of Animals

