



## **High Quality First Cut Alfalfa**

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Here we go - the start of another growing season. While we are just starting to watch for the first signs of growing plants, the initial spring cutting of alfalfa can make or break a harvest season. It's fascinating how forage quality can change ever so quickly or instead at a tortoise-like pace depending on the year. ([Green Gold chart 1995-2016](#))

Forage producers have long recognized the economic importance of growing high quality forages. Herds fed top quality alfalfa have increased milk production and decreased grain requirements but to get these benefits, producers rely on proper harvest timing of first-cut alfalfa.

Alfalfa grows primarily in response to temperature and other environmental influences. No other cutting of alfalfa grows under the environmental conditions offered by spring. Early in the season, temperatures are for the most part cool, which is good news from a forage quality standpoint but as we move towards first cut the range of environmental conditions can vary widely.

This range of environmental conditions makes it difficult to gauge forage quality. Light, temperature and moisture vary from year to year and have a direct effect on maturity. With normal conditions, growth is predictable. Too often, however, the weather is extremely cool and cloudy for an extended period in the spring, which causes delayed budding. Hot and wet brings much different results. Further, environmental conditions change from day-to-day more in the spring than at any other point in the growing season. This makes it difficult to explain the fickle nature of the first cut but it also helps explain why it's important to pay attention and monitor forage quality in the spring more so than any other cutting.

Relative forage value (RFV) can be as much as 100 points different from year-to-year on the same date; the same can be said for forage quality at a given stage of maturity. Ideally, timing for first cutting should be based on plant development. If dairy-quality alfalfa is the goal, producers need to check fields for the first signs of budding. Harvesting alfalfa at the bud stage normally allows producers to get more cuttings per year, increase production and improve the quality of their forages.

Determining a proper forage harvest date is imperative because nutritive value drops as the crop matures. Even a slight delay in the first cutting can have negative

repercussions on the rest of the growing season, possibly slow regrowth and reduce future yields. Low quality alfalfa also directly impacts herd performance.

First-cut fiber digestibility can be the best of the season; those mostly cool days and nights are the hay producer's friend. Once warm to hot weather sets in, or if wet weather delays the harvest, fiber digestibility can quickly move from the best to the worst of the year. This is true for pure alfalfa stands and even truer for alfalfa-grass stands.

The rate of fiber digestibility decline is unmatched by any other alfalfa cutting. This means that the harvest window is usually smaller, unless extended cool weather prevails.

**Each day's delay in alfalfa harvest does three things:**

- First, the level of crude protein in the plants is reduced.
- Second, the level of acid detergent fiber (ADF) increases.
- Third, the amount of neutral detergent fiber (NDF) found in the alfalfa increases.

The ideal measurements for each are 20 percent crude protein, 30 percent ADF and 40 percent NDF. Going to 17 percent, 34 percent and 45 percent, respectively, takes only five to six days. When not accounted for in ration balancing, these higher fiber levels can reduce feed intake by a half pound per day, which can equate to a loss per day in milk production or lbs of gain in beef.

First cutting is the only cut of the year when there is not a count of days since the previous harvest. The first-cut harvest decision often dictates the schedule for the rest of the season. When the first cut is made may impact how many future cuttings will be possible, the interval between cuttings, and how late in the fall the final cutting will be harvested.

There are a number of methods that producers can use to help determine the right time to harvest their forage:

**Green Gold**

MFGA's Green Gold program is used to determine harvest timing for first-crop alfalfa. Mb Ag staff and local area producers take small samples from a square yard area in a chosen field. Sampling begins early in the season and continues two times a week throughout the first harvest. Samples are taken in the same spot in each field to chart, through lab analysis, the development of a trend in the rise and decline of RFV which accounts for fiber digestibility. It's the trend that allows producers to predict the average decline in quality and know when to harvest fields.

**PEAQ Method**

Researchers at the University of Wisconsin, Madison developed equations to help predict the Relative Feed Value (RFV) of standing alfalfa. Called predictive equations for alfalfa quality (PEAQ), this method allows growers to use simple formulas and maturity charts in conjunction with field measurements of plants to determine maturity. To harvest high-quality hay for dairy animals, RFV on the PEAQ stick should be in the range of 175-200 with the expectation of final alfalfa forage quality after harvest of >150 RFV.

### **GDD Method**

Using growing degree days (GDDs) to gauge alfalfa's neutral detergent fiber (NDF) level is another reliable method of determining when to take the first cut. With this method, daily minimum and maximum temperatures are recorded, usually beginning in early May. These temperatures are converted to GDD units with the help of a formula. The GDDs then can be used to determine approximately how fast the NDF level in the alfalfa is rising. The goal is to harvest alfalfa at approximately 40 percent NDF

### **Calendar (Fixed Interval) Method**

A fixed-interval harvest schedule is based on the theory that it takes a certain number of days for alfalfa to reach harvest maturity following a cutting. Depending upon the variety and goals for quality, yield and persistence, producers establish a certain number of days between cuttings and harvest their stands at these points during the season. Longer intervals are used if yield and stand longevity are primary goals; shorter intervals are used when quality is a priority. The most common intervals range from 28 to 34 days.

First cutting is complicated, unique, and fickle. The harvest options are many but often dictated by weather conditions during the spring and precipitation patterns as the preferred harvest time approaches. The consequences of when first cutting is taken have huge ramifications on the remaining alfalfa harvests, but more importantly it impacts future livestock performance or the ability to sell the hay at a premium price.

Proper harvest timing is critical to growing high quality alfalfa. When crop maturity and weather conditions are right, good harvest management can help provide producers a better nutrient and economic return.

Be ready for that first cut.