



## **Fine Tuning Your Alfalfa Cutting Height to Maximize Forage Yield Summary of 2000 and 2001 data**

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### **Introduction**

Current recommendations regarding cutting height of alfalfa are designed to maximize yield while maintaining high quality forages and stand longevity. Forage growers frequently cut forages at a height of 3-inches or more. Research indicates that dry matter yields and nutrient yields are higher for shorter cutting heights as compared to leaving taller stubble.

Research was initiated at the Marshfield Agricultural Research Station and a site in Clark County during 2000 and 2001 to explore the relationships among; cutting height, forage yield and forage quality. This paper will discuss the influence of cutting height on yield and quality of alfalfa at the Clark County site.

### **Materials & Methods**

During the summer of 2000 and 2001, cutting height studies were established near Granton (Clark County), Wisconsin. For the first cutting of the summer, alfalfa plots were cut on 10-day intervals beginning in mid-May and ending in mid-June. At each harvest date, replicated cutting height treatments of 2-in, 4-in, and 6-in were evaluated for forage yield. All plots were harvested with small-plot harvesters. Actual cutting heights averaged 2.5-in, 4.5-in, and 7-in based on measurements immediately after harvest.

A second replicated study was established to evaluate 3-cut versus 4-cut systems. These studies were harvested three or four times during the summer with a small-plot harvester. The fourth cut of the 4-cut system was harvested in mid-October. For each cutting system treatments of 2-in, 4-in, and 6-in (2.5-in, 4.5-in, and 7-in actual height) were evaluated for forage yield.

### **Results & Discussion**

For each cutting of each year, forage yield increased as cutting height was reduced. Significant differences among cutting height treatments were measured in all three summer cuttings in both years. Very small or no forage yield differences were measured on fall cut (4<sup>th</sup> cutting) alfalfa plots. Comparison of the cutting height effect of alfalfa 1<sup>st</sup> crop harvested at different spring dates showed that alfalfa yield differences among cutting heights is greater for alfalfa that is cut later in the spring. On average, total alfalfa yield for the season increased by nearly 0.5 tons DM/acre for each 1-inch reduction in cutting height. However, the yield increase was more diminished for the 2<sup>nd</sup> and 3<sup>rd</sup> cuttings.

## Summary

This central Wisconsin research indicates that alfalfa yield is highest when cutting at the lowest possible height. Current recommendations for alfalfa cutting height in Wisconsin include the following:

1. Cut healthy, non-stressed alfalfa fields at 2-inch heights or the lowest possible height according to field conditions. If possible, implement this practice on 1<sup>st</sup> cutting where the greatest yield advantage has been seen.
2. In fields where plants are experiencing moisture or flooding stress, or where the crop has been cut early and frequently, root carbohydrate reserves may be low and cutting height should be adjusted upward to avoid additional stress or plant death.
3. If harvesting forages in the fall, growers should leave a 4-inch or greater stubble to help capture snow.