

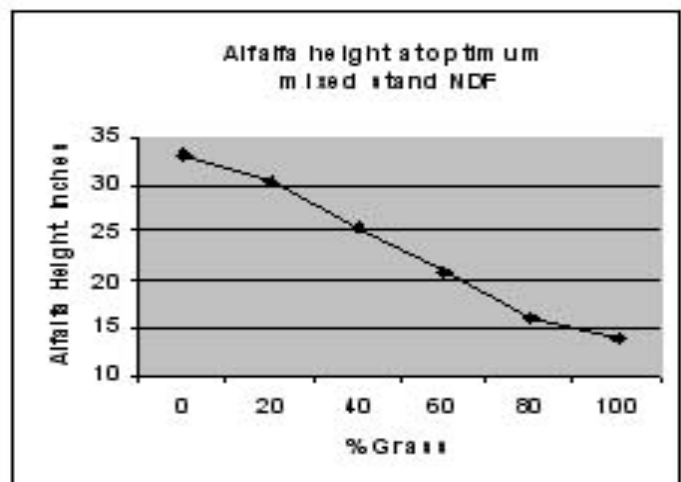
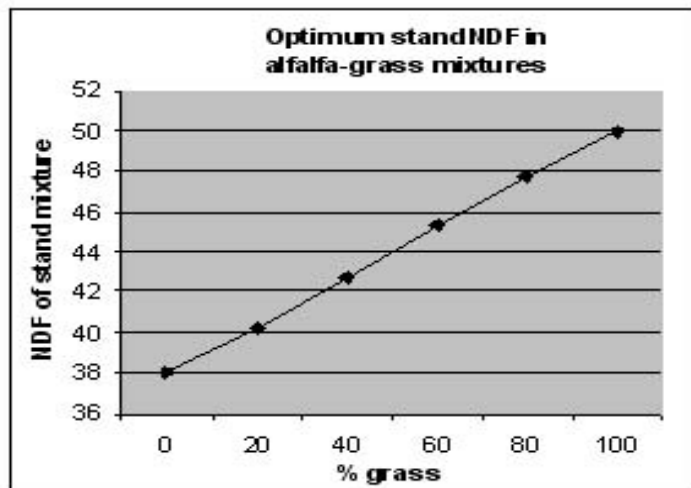
## Maximizing Milk From Forage: When to Cut, How to Cut

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More dairies in the Northeast are maximizing profit and minimizing the impact of low milk price by growing and feeding large amounts of high quality forage. The PROFITABILITY of your dairy is dependent on your ability (through cutting, harvesting, and storing) to have that forage reach the cow's mouth.

### WHEN TO CUT

The very first step is to time the start of your harvest so the majority of your forage is harvested at peak quality. **Quality forage is alfalfa of 39 NDF or a grass of 50 NDF. These numbers are key to maximizing milk from forage.** The traditional harvest starting at bud stage, first flower, or boot stage of grasses, has given a wide variety of results from high quality to very poor quality, depending on the year. You need peak quality feed to optimize profitability. **Each day you miss the optimum** increases haycrop NDF one point, which in turn **removes \$3,000 of profit** for 100 cows. Growing degree days are a more accurate predictor but few farms have a GDD calculator. Even with this piece of equipment, you'll only get the average for the specific site where the machine is located. Dr. Cherney of Cornell University has clearly shown, at the Eastern NY Alfalfa Expo in December, that because alfalfa NDF depends on growing degree days and the height of the alfalfa can predict the NDF, alfalfa height can be used to determine WHEN to start harvesting. He has also found that grasses parallel the alfalfa and are also affected by growing degree days. The NDF accumulation is about 25 points AHEAD of alfalfa. Thus alfalfa can be used to predict when to start cutting grass. The alfalfa can also be used to predict when to start cutting alfalfa grass mixes. **The method is simple, when alfalfa in a nearby field is 15 inches tall; it is time to cut your pure grass stands. When alfalfa in a 50% alfalfa: 50% grass field is 24 inches tall, it is time to cut that field. When alfalfa in a clear alfalfa stand is 32 inches tall, it is time to cut that field.** These numbers are slightly shorter than what we had originally told you as cutterbar height and targeted NDF are slightly different. The principle remains the same.



This opens a sequence of peak quality windows, enabling you to select fields for harvest at peak quality based on how much grass there is in the stand. South facing fields are far ahead of north facing fields and should be harvested first. Well drained fields are ahead of poorly drained fields. Thus the order of what field is harvested can help you achieve highest quality when the mower hits the field.

In order to harvest on time you need to measure your forage by feed quality, and to be half finished with your haylage when it reaches peak. THOSE WHO OPTIMIZE PROFIT, HAVE 1/2 THEIR FORAGE HARVESTED BY OPTIMUM.

**GRASS OPTIMUM = 50 NDF**  
**ALFALFA OPTIMUM = 39 NDF**

### HOW TO CUT

As we have written in earlier articles, the traditional haylage system puts you at a disadvantage for both rapid dry down, and losing forage quality. Because silage dries through evapotranspiration, your management can enhance or hinder this process.

**The two key factors are:**

First, maximizing the amount of forage exposed to sunlight. This increases the moisture loss from the leaves and stem plus the heating of the forage itself. As the swath narrows, the percent of the swath shaded and kept at high humidity increases. So does your drying time and the respiration that reduces the NEL of the forage. You should strive for a swath that is a minimum of 85% of cutter bar to maximize the drying rate.

Second, wet laundry does not dry in a pile, neither does haylage. The rate of water loss is dependent on the weight of grass per unit area of ground and that this factor had a greater impact on the rate of water loss than either conditioning, mixing, or turning the mown swath. The narrow swath covered 18% of the ground compared to 100% for the wide swath, which resulted in a narrow swath that was 5.5 times denser than the wide swath.

The bottom line is that mowing without conditioning and laying into a swath greater than 85% of cutter bar width will maximize the drying rate of the forage for silage.

Cutting in the evening in order to have higher sugars in the forage does not work in the humid east where night time maintains the swath at 100% humidity – thus prolonging respiration. Mowing should be delayed if possible until the sun has had time to refill the digestible energy lost over the night. Further research will quantify when this re-fill time occurs.

**Bottom line:** Width matters more than conditioning for silage. You are not getting the majority of the wide swath benefit unless your mower leaves a swath greater than 85% of the cutter bar width. If your mower does not allow this, then open it as wide as you can to achieve as much drying benefit as possible (until you can acquire the right mower). If you have a 13-14 foot mower that can only leave a swath of 6 feet, then the added cost of tedding may be beneficial until you can trade it in for the proper mower.

Photos by Dr. J. Cherney, Cornell University

