10 Ton Alfalfa: Is this Goal Achievable?

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Is producing 10 tons of alfalfa hay per acre realistic? It may be surprising, but if the right steps are taken, it is more realistic than one may think. Improving forage yields will make an operation more profitable.

With perennial shortages of quality forage, increasing yields on each acre of production is crucial. This needs to happen not only to improve supply but to make alfalfa more competitive with high yielding corn silage. The question is: *What can alfalfa producers do to increase their yields?*

In an attempt to gain answers to unlocking higher yields in alfalfa, Dairyland Seed conducted a survey of successful alfalfa producers and crop consultants in order to better understand some of the techniques being used to increase alfalfa yields. Included are some highlights from the knowledge that was gathered, intended to offer producers some guidelines. While each farm requires different management strategies, many of the following principals can be useful on any farm.

Establish Production Goals. Make a plan, set goals and measure progress. Organize a consulting team to lay out a production plan for your operation to maximize forage yields. Advice from various experts can stimulate new ideas and encourage the implementation of a production plan.
Team members may include:

1. ***Seed reps and agronomists –*** varietal recommendations for soil types and management strategies.
2. ***Independent crop consultants –*** unbiased recommendations and help in monitoring progress of decisions.
3. ***Successful growers –*** share proven practices.
4. ***Financial advisors –*** monitor economic feasibility, cash flows and market values for the products for production.
5. ***University forage specialists –*** inform on latest technologies and management research.
6. ***NRCS –*** describe a healthy soil profile.

When making changes to an operation, start with a measurable scale to document progress, always leaving a check (untreated/unchanged) area which to compare with. Once successful on minimal acres, the idea can be adapted on a larger scale. Once the first goal has been achieved, move on to the next. If weather, equipment, personnel or anything within or outside one's control creates a setback, do not be discouraged, stay focused. (Del Glanzer, Glanzer's Consulting, Alexandria, MN)

Select the Best Alfalfa Variety. Each farm has a range of soil structures and management practices that need to be considered before choosing the best varieties. There are many alfalfa varieties, including hybrids, from which to choose. Many products are very respectable but finding one that yields even 10% more across the farm can make an enormous difference in the amount of alfalfa produced. There are numerous alfalfa technologies among suppliers. Many of these technologies may benefit the crop only once or for only a few cuttings. Choose a high yield technology that will consistently deliver the greatest forage yield over all cuttings.

To help make this decision, on farm tests are very helpful. Producers have measured corn and soybean performance on their farms using strip trials for years. This can and should also be done with alfalfas to choose the best varieties by measuring and weighing windrows or by weighing or counting bales from strips of side by side varieties. Loren Wolfe of Cochrane, WI, documented a 10.4 ton yield with hybrid alfalfa in a 2005 strip trial. It out-yielded the non-hybrid alfalfas by an average of 1.55 tons/acre. Each cutting was independently verified by Dennis Deitelhoff, Farm Business Production Management instructor at Western Wisconsin Technical College.

Know Soil Fertility. This may be one of the most overlooked aspects of alfalfa production. Ted Heslink, Farm Manager for over 5,000 acres of alfalfa near Lakin, KS, soil tests every field on an annual basis. Be sure to check both macro- and micronutrients. If it is not available in the soil, it will need to be added to avoid lowering production. Whether it is a major or minor element, the weakest link in the chain will limit production. After starting with soil tests, plant tissue tests can give a more accurate level of nutrients taken up by the plant. Watching soil fertility levels can show what the plant is utilizing.

Monitor Soil Profile. The equipment used to till, plant and harvest alfalfa continues to get heavier and larger. Thus, soil compaction continues to be a concern for restricting alfalfa root systems from reaching their full potential. To monitor alfalfa root development, Del Glanzer uses a back hoe to dig four to six foot deep pits to determine root mass and presence of hard pan layers. Where there is a hard pan, the alfalfa root will grow to the solid layer and stop. If a hard pan is present, it will be necessary to make appropriate decisions on how to deal with it.

Seed Bed Preparation and Planting. A common mistake that occurs is with the spring tillage of fields before conditions are right. This can result in cloddy seed beds and poor seed-to-soil contact. Often, farmers will broadcast alfalfa seed with their fertilizer and drag it into the soil. If not carefully managed, this can result in variable planting depth and mixed emergence depending on how it is accomplished. Roger Elliott, a farmer near Evansville, MN, and independent hay broker, successfully uses a drill with press wheels to get good seed to soil contact and proper seed depth. *Monitor your planting depth to make sure the seed is .25-.50 inch deep*. Elliott likes to establish around 40 plants/square foot. Starting off with a thick productive stand will improve chances of maximum forage yield potential.

Have a Harvest Plan. Set harvest goals to identify the quality of forage desired. The intended use of the end product will determine how often forage should be cut. Dairy hay will be on a shorter cycle than hay intended for beef market animals. In the harvest plan, be sure to stage it to utilize the entire growing season. For example, do not plan the last cut in the middle of August or two weeks of growth will be wasted before the September rest period.

An initial plan may be to harvest four or more times in a growing season. Oftentimes, weather interferes with those plans. Even if a cutting gets rained on, there will still be two to three more harvests that can make excellent forage quality hay. To help manage this, balance risk versus reward in harvest plans. The bottom line is that *the less times harvested, longer persistence and potentially lower forage quality. The more times harvested, better quality but less persistence of the plant. Shorter rotations will reduce the risk with aggressive forage quality goals.*

Get help with a team of advisors to make good management decisions. Monitor those changes to know if the right steps are being taken. Achieve the first goal, move on to the next and do not give up. Ten tons per acre yield goals are not beyond grasp!