ALFALFA FORAGE YIELD IN THE SEEDING YEAR: GET YOUR ALFALFA’S POTENTIAL IN THE BALE

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As the spring planting season approaches, many decisions need to be made and growers will get busy soon. For growers planning to establish alfalfa this spring, this article provides a few tips to have a successful alfalfa establishment and high forage yield in the seeding year.

1. Select a well-drained, non-saline, suitable field, deep enough for alfalfa’s deep roots.

2. Check soil pH and fertility.
   a. Apply lime, especially if the pH is below 6.0. Low pH might cause poor nodulation and slow down the initial growth.
   b. Phosphorus is a very important nutrient for rapid establishment and growth in alfalfa. Phosphorus deficiency will result in stunted growth and reduce yield in the seeding year and thereafter (Fig. 1).

3. Prepare a firm seed bed. Your footprint must be less than ½ inch deep; if greater, the seed bed is too soft and the planter will likely place the seed deeper than recommended.

4. Select the right variety for your field. There are many high yielding varieties in the market - conventional or Roundup Ready.
   a. In our region (ND, MN, SD, WI), select among varieties with winter survival rating (WS) 1 or 2 and fall dormancy (FD) 4 or 5. Fall Dormancy ratings indicate the ability of the variety to grow in the fall. The higher the FD number the more growth it will have in the fall. (FD 6 or greater are not winter hardy for our region.) Varieties for 2015 are listed in the 2015 alfalfa variety leaflet available at: https://www.alfalfa.org/pdf/2015%20NAFA%20Variety%20Leaflet.pdf.
   b. Select alfalfa varieties with high yield in the last three years in a replicated variety trial near to your farm. Plant high quality certified seed with a high yield potential.
   c. Select a variety with high disease resistance for at least six diseases. If Aphanomyces race 2 is present in your area; make sure to get a variety with resistance to both Aphanomyces races 1 and 2.

5. The recommended seeding rate is 9-13 lbs/acre.
   a. Overseeding does not increase forage yield in the seeding year and the additional cost is greater than the incremental increase in forage yield.
   b. Alfalfa stands self-thin and reduce stands to optimum levels.
   c. Some growers claim to get higher forage yield and quality in the seeding year with 30-35 lbs/acre, but they are also cutting more frequently (every 21 days) and doubling fertilization rates (P and K). A combined high intensity management might result in higher forage yield, but is yet to be proved. Also, rainfall and temperature during the season will influence forage yield.
   d. Be cautious and inform yourself before overseeding alfalfa. Seed is expensive and all published replicated research indicates it does not pay to overseed.

6. Inoculate alfalfa seed. Inoculation is cheap and by inoculating you will get early and effective nodulation that will enhance alfalfa growth.

7. Plant as early as possible in the spring - April if possible. The sooner you plant the sooner you will be able to harvest. Alfalfa seeds can germinate at 35°F. Fall seeding is not recommended unless you plant 6 weeks before a hard frost which in many northern areas would be about August 15. Dormant seeding in the fall is very risky and usually not recommended.

8. Use proven seeding methods and seed shallow, ¼ to ½ inch. A firm seedbed is a must.

9. Weed control: Use herbicides at the recommended rates and times of application. In conventional alfalfa, the use of Pursuit herbicide will cause some stunting or slow down the growth after application, but it will recover quickly. Early weed control is important to avoid competition.

10. Diseases and insect control:
   a. If you select resistant varieties to six root diseases you probably will not have problems unless brown root rot or Aphanomyces race 2 are present in your field.
   b. Watch for potato leafhoppers and alfalfa weevils. These two insects can reduce alfalfa growth resulting in lower forage yield if not controlled.
   c. Leafhopper symptoms are characterized by a V-shaped yellowing at the leaf tip. There are a few varieties available with resistance to potato leafhopper.
d. Alfalfa weevil causes defoliation. The best way to reduce damage is to harvest early if you have 35-40% of plants with feeding damage and/or 2 live larvae/stem.

11. Harvest frequency: Harvest according to stem height and growth stage. Usually you will get two cuts in the seeding year, but you can squeeze a third cut in the fall if climate cooperates and you plant early in the spring. Fall harvest in the seeding year rarely will increase winter-kill.

12. Cutting low to leave less stubble will increase your forage yield. If your field is leveled and doesn’t have stones, you can go as low as 1 inch, but most growers leave 3 inches of stubble.

13. Swathing, raking, baling, and storage: Losses from alfalfa during harvest vary according to the moisture and timing of the operation. You might lose up to 40% of your yield in the operation if harvest management and moisture are not appropriate. The drier the hay during the baling operation the more leaves and dry matter you will leave on the field. New research in Wisconsin indicates that wider swaths dry faster, suffer less rain damage, and are of better forage quality.

In summary, good hay-making practices include:

a) Mow at correct maturity;
b) Condition when appropriate;
c) Put in wide windrows;
d) Rake at 40-50% moisture;
e) Bale at 18-20% moisture;
f) Store hay under cover to protect from rain.

Good luck in your alfalfa seeding in 2015!

Figure 1. Phosphorus fertility trial in alfalfa in Fargo. Notice the clear differences in height, growth, and color between a non-fertilized and fertilized plot - 100 lbs/acre of P₂O₅ 11:52:0 fertilizer.