

IS THE ALFALFA STAND WORTH KEEPING?

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Now, before the ground freezes and snow accumulates, is a good time to walk alfalfa fields and decide whether they are good enough to keep, need some remedial action, or should be replaced. Both new (2018) seedings and established stands should be evaluated.

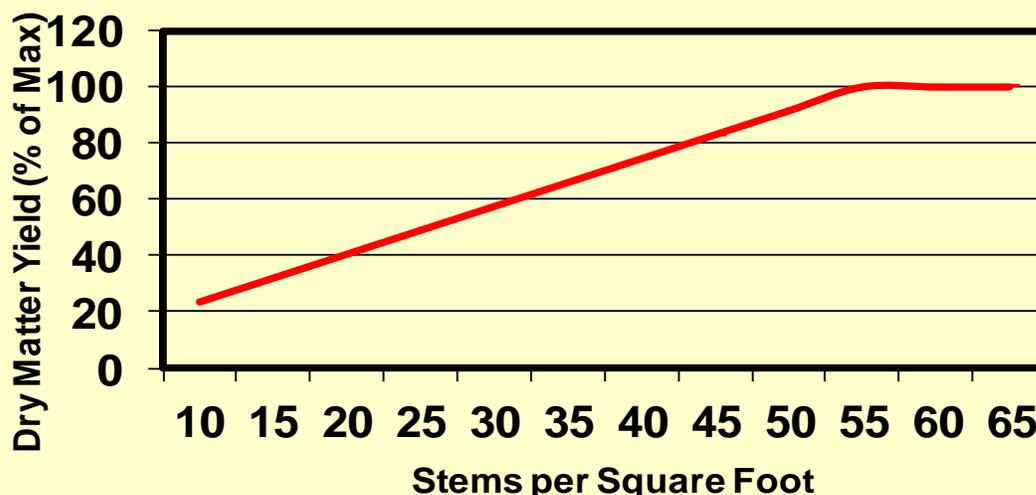


Evaluating 2018 Seedings

Farmers are generally seeding 60-120 seeds/ft². Of the seed planted, 50 or more seedlings/ft² usually emerge and then the stand thins to 25-35 seedlings/ft² by fall, regardless of seeding rate. The number of alfalfa plants/ft² normally will decline to about 20 seedlings/ft² after the first winter and continue to gradually thin over the life of the stand (as individual plants get bigger).

Less-than-optimum stands, with as few as 15 plants/ft² this fall from a spring seeding, will still provide good yield for next year under most circumstances. These plants will likely have 3-4 or more stems per plant and be above the 55 stems/ft² required to maximize yield (Fig 1). The stand will need to be evaluated for stems/ft² in the future to determine if stand density is adequate for optimum yield. With less than 15 plants/ft², the stand will likely be low-yielding and weedy next year.

Fig 1. Alfalfa Stem Count and Yield



Before any remedial action is taken, I recommend trying to determine why the stand is less than desired. Some stands are poor due to weather conditions beyond our control. But before blaming the weather consider the following:

- Was the soil pH at 6.8? Soil pH below 6 may inhibit germination and growth.
- Was the soil firm at seeding and was it packed around the seed? Seed planted in loose soil is unable to absorb sufficient soil moisture for germination.
- Did the seed get placed at the proper depth? Alfalfa seed needs to be at ¼-½” depth; deeper seed will have reduced emergence. Five to 10 seeds/ft² should be visible on the soil surface after seeding with a drill; if none are visible, then the rest of the seed likely went too deep.
- Did the stand come up in strips (from a drill) such that portions of adjacent rows have poor stands? This is generally indicative of poor seeding depth control and/or failure to pack the soil around the seed (especially if seed came up better in wheel tracks than in between them).

These factors, coupled with less-than-optimum weather for establishment, are the most common causes of alfalfa stand failure. Alfalfa is more difficult to establish than corn or soybeans, and the equipment needs to be at least as good to get an acceptable stand.

If none of the above factors apply, we have seen other causes of stand failure over the last couple years:

- Was there herbicide residue? Note that some corn, soybean, and wheat herbicides have a 12- to 24-month waiting period after application before it is recommended to seed alfalfa.

- Was soil fertility adequate? In addition to phosphorus, potassium, and boron, many soils now need sulfur for adequate crop growth (due to reduced acid rain).
- Did the alfalfa variety have good aphanomyces race III resistance? Much of the country now has aphanomyces race III in the soil and lack of resistance can result in poor establishment.
- Was the cover crop removed quickly enough? Wet weather kept some farmers from harvesting oats. Then slugs, potato leaf hoppers, and other insects came in to damage the alfalfa seedlings. One potential solution is to seed oats with the alfalfa for erosion and weed control, then spray with a grass herbicide or Roundup (if a Roundup-resistant variety of alfalfa was planted) when the oats are 4-6" tall.

After determining if any of the above factors contributed to the poor stand, remedial action can be considered. While alfalfa can theoretically be interseeded into alfalfa one year or less after the initial seeding, it seldom provides good results. Reseeded stands often still have variable stand density. If you want a good alfalfa stand, I recommend fixing any of the above problems, if possible, and then disking and reseeding the field.

Another choice is to seed a grass into the thin alfalfa stand. Ryegrass or festolium can be interseeded for short-term (one-year) benefit next spring. Tall fescue or meadow fescue can be interseeded either this fall or next spring if the stand is to be kept for two or more years. Always be sure to choose grass varieties carefully for yield, rust resistance, medium to late maturity, and winterhardiness.

Evaluating Established Alfalfa Stands

Early September, shortly after cutting, is a good time to evaluate stand density to make plans for next year. Simply count the cut ends per square foot and use Figure 1 to determine yield potential. Thin stands will have reduced yield next year equal to or less than that indicated in Figure 1.

As a second step, dig a few plants to examine the top 6" of taproot. Split the taproot vertically and compare to Table 1. Examining the roots in the fall will give an idea of winter survival potential and indicate whether the stand density will be similar next year (if rating 3 or less) or significantly less.

Table 1. Rating Alfalfa Crown and Roots		
Rating	Condition	Winter Survival
0	Healthy	Excellent
1	Some discoloration	Excellent
2	Moderate discoloration/rot	Good
3	Significant discoloration/rot	Good for mild winter; poor for hard winter
4	Greater than 50% discoloration	Poor
5	Dead	-----

If the stem count is low and/or roots show significant rot to indicate likelihood of winter thinning, then consider turning the stand over. Remember that there is a rotational benefit of 15-20% corn yield increase when planted into fields previously in alfalfa. This should more than pay for the cost of reseeding.

Fall applications of herbicide are more effective than spring applications for killing alfalfa. Apply when temperature is >50°F to avoid reduced control by herbicide.