GUEST COLUMN

# Spring Alfalfa Assessment: What Can Your Plants Tell You?

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While much of the country is still experiencing cold temperatures, the first signs of spring will be coming soon. So, now is a great time to work on your spring checklist.

Everyone knows the annual "basics"– new seeding ground prep, soil test to identify fertilizer needs (*important this year*), and pest control. What else should you be considering for a successful crop this year and beyond?

Winter injury with uneven spring growth. *Photo: J. Gano, FGI*

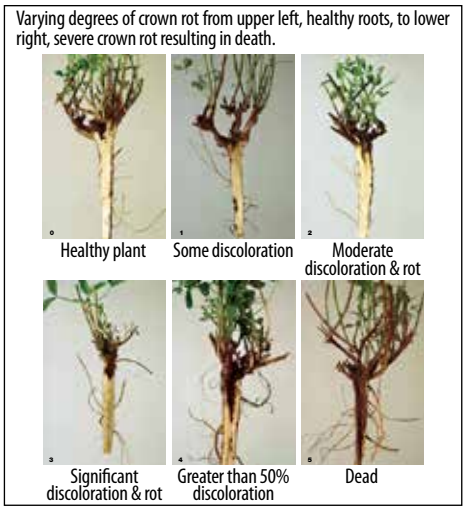
An important action item is to check the health of your existing alfalfa stands. During the busy season, it can be easy to forget about them and focus on new seedings. Assessing their health can really pay off later in the year.

How should you assess your stands? First, once alfalfa starts growing, walk through and look at the plants. What do the crowns look like? Are they symmetrical with new shoots coming off all sides? Or, does one side appear to have more shoots? Is there any "splitting?"

If there is asymmetry or crown splitting, it may be due to winterkill or winter injury. The severity depends on many factors, but if affected enough, productivity can diminish. Unhealthy plants are typically slower growing and more susceptible to other issues (e.g., disease, insect pressure).

Also assess plant density. Select several areas in each field and count the number of stems in a square foot. Many prefer to count plants per square foot, which is also valuable. However, in older stands it can be hard to determine what is one plant or two when many become intertwined.

Next, consider production estimates. Generally, if you have >55 stems/ft$^2$, it is an optimal stand. At 40-55 stems/ft$^2$, the stand is likely still producing, but not at optimal production. At <40 stems/ft$^2$, it is marginal and renovation should be considered.




Root scoring system. *Source: Alfalfa Management Guide*.

Next, dig up some plants after a couple of weeks of growth to ensure nodules are forming. Assessing belowground growth can tell a lot about the state of your stand. Take a careful look at the roots. Are nodules evident? What color are they? How many? It can be easy to lose nodules when digging up plants, so it is best to allow dirt to remain around the plant until it can be removed. Carefully remove remaining dirt, searching for nodules the closer you get to the taproot.

You want 10-50 nodules per plant (number varies according to your reference). They should be red or pink when cut open, indicating whether they are actively fixing nitrogen. If most are white or grey, little nitrogen fixation is occurring. This may be due to an inefficient strain of Rhizobia, poor plant nutrition, or other stresses such as saturated soils or disease presence.

It is also important to take a closer look at roots. Look at the taproot, its size, and number of lateral roots (important for scavenging nutrients and water). Healthy plants have a significant number of lateral roots coming off the main taproot.

Evaluate the crown, again. Take a look at new shoot symmetry. Do all sides allow for growth? Is there discoloration? Any rotting? This helps identify disease problems.

Finally, carefully split the taproot and evaluate color inside. Does it have a white, fleshy appearance throughout? Do you notice brown discoloration in the middle? Does the end of the taproot appear to be rotted off, or have a nice healthy appearance? All of this can help determine whether your alfalfa field is healthy or if it may have a disease.

It is unusual to evaluate a 3+ year-old stand that does not have evidence of discoloration (disease presence). What is important is the severity of the damage. Is it going to inhibit production?

There is an alfalfa taproot scoring system to help you in this assessment. Based on scores, you can decide whether to address the issue immediately, or wait, especially if you are towards the end of your alfalfa rotation.

Plan early. Choosing strong disease-resistant varieties can help in improving persistence and preventing deleterious impacts of many diseases. With new varieties emerging, particularly ones that now have resistance to diseases like Anthracnose Race 5, you are becoming better equipped to handle pressures an alfalfa field faces.