

Get up close and personal with your alfalfa this spring

by Janet Fallon, CCA

Spring is a busy time of year. It's time to finalize planting plans, get equipment ready, and schedule fertilizer applications. And all of this must be done on a timely basis which isn't always easy considering the unpredictable nature of spring weather here in the northeast!

One more thing you should do early each spring, is take a close look at your perennial forages to see how they survived the winter and begin planning for harvest (or reseeding if the news isn't good). Home grown forages are essential to your bottom line, so this is something you really need to do! And if you can't, consider hiring a crop scout to do it for you.

Winter damage is influenced by a combination of things including the variety, plant composition (clear alfalfa vs. mixed stand), stand age, soil fertility, drainage, fall harvest management and winter weather risk factors. Risk factors include things like a mild fall that can reduce winter hardiness, or a winter thaw that begins to break alfalfa dormancy making it more susceptible to cold temperatures. Late winter/early spring freeze thaw cycles can pop alfalfa taproots right out of the ground. Other factors include a lack of insulating snow that expose crowns to fluctuating cold and warm temperatures or rapid thaws and winter rains that can result in ponding and suffocating ice sheets when cold temperatures return.

The simplest way to evaluate your stands is to take a stroll across your alfalfa fields and take some plant counts. Early in the spring, you will have to count alfalfa crowns but, later in the season, stem counts are a better way to determine yield potential and management strategy.

Crowns per square foot	Stems per square foot	Comments
New Seedlings 25 - 40 seedlings	> 75 stems	Reseed or renovate with interseeded grass or red clover if < 15 plants or 50 stems per square foot.
Established Stands 6 - 8 crowns	> 55 stems	Needed for top yield potential & quality.
4 - 5 crowns	40 - 55 stems	Justifies fertilizer & crop protectants to maintain average yields.
< 25% legumes	-	There may be an economic response of forage grasses to applied N even if you plan to plow it down next year.
< 4 crowns	< 40 stems	Consider replacing plant stand.

Another useful tool from researchers at the University of Wisconsin can be used to determine alfalfa yield potential if you need to decide what to do with a certain field;

$$\text{Alfalfa Yield Potential (Tons/Acre)} = (\text{Stems/sq. ft.} \times 0.1) + 0.38$$

So, you have a yield potential of 5.38 tons per acre if you have 50 stems per square foot or $(50 \times 0.1) + 0.38$. It's crude but it gives you some idea of what you might expect.

While you are in the field, you may as well take a closer look at overall plant health too.

- **Healthy crowns** are large, symmetrical and have many shoots. Be on the look out for delayed green-up, lopsided or uneven growth which may indicate root damage or death resulting from disease, mechanical injury or cold damage.
- **Check root health** by digging up a few plants and cutting the root lengthwise. Healthy roots should be firm and white. Dying plants will have discolored crowns and roots with a spongy texture. The plant will probably die if more than 50% of the root shows sign of decay. Look for signs of insect feeding on the roots since this can provide an avenue for diseases to enter the plant.
- **Heaving:** take a closer look at alfalfa plants that are "popped" out of the ground. If the tap root is broken, the plant will probably die, even if it greens up at first. Plants heaved less than 1 inch may remain productive, but it may be necessary to raise the cutter bar to avoid adding insult to injury.

What to do?

The best action depends on many things. How extensive is the injury, what are your current forage inventories and needs, how much grass is left in the stand, what is the weed pressure, where are you in your planned crop rotation, and so on.

Take it easy on winter damaged fields if you still have enough plants. Delay first harvest until half bloom to provide more plant recovery time. Make sure soil pH & fertility are adequate, control weeds, avoid fall harvests and unnecessary trips across the field.

If you find less than 4 or 5 healthy alfalfa plants per square foot, you may want to consider replanting. If you need the forage from the current damaged field, consider taking a first cutting, destroying the damaged stand and establishing an alternative forage crop such as annual ryegrass or forage sorghum. Or, get some nitrogen on at green-up if you have a good stand of grass to boost grass yield and quality.

As you can see, it's a farm by farm and field by field decision. It's a busy time of year but it may pay big dividends to get up close and personal with your perennial forages this spring. So, take a stroll or hop on the 4-wheeler and take a look. I can't think of a better way to spend a sunny spring day when it's still too wet to do any serious field work.

For further information on this topic check out "Alfalfa stand assessment, Is this stand good enough to keep." at <http://s142412519.onlinehome.us/uw/pdfs/A3620.PDF>



Cross section of a healthy alfalfa taproot.
Photo by Mike Collins, University of Kentucky