

Check Alfalfa Stands This Spring and Make A Plan

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Low forage inventories and increasing risk for alfalfa winterkill makes assessing spring alfalfa health essential. Walking fields early this spring to determine if the alfalfa stand has thinned, and assessing if plants are dead or unhealthy is a proactive strategy to determine management options. Making the decision whether to manage an existing reduced stand or replace it with a new establishment can sometimes be difficult. However, with tight forage inventories there isn't much room for ignoring the issue until you find yourself with a feed shortage. Don't wait until it is too late to implement useful options, such as timely reseeding a new stand in the rotation.



Alfalfa Winterkill Risk Factors: Although it is always difficult to predict alfalfa winterkill, there are some risk factors lining up for this spring:

- Alfalfa was stressed in 2013 with low yields.
- There was significant potato leafhopper damage across much of the province.
- Aggressive 4-cut systems are at a higher risk of winterkill and stand thinning than 3-cut systems.
- Significant cutting during the Critical Fall Harvest Period due to forage shortages

- Alfalfa prefers cool, dry fall weather for good winter hardening, but much of Ontario was wet into October and November.
- 2012-13 winter temperature fluctuations, melted snow followed by cold temperatures and some ice sheeting.
- Hopefully, we will not experience late-winter freeze-thaw cycles that can result in alfalfa heaving.

Refer also to fact sheets on:

- [Risk of Alfalfa Winterkill](#)
- [Frost Damaged Alfalfa](#)

Check your older fields, fields that are slow to green-up, poorly drained fields, fields with low fertility or pH, and fields that were aggressively cut last fall during the Critical Fall Harvest Period.

Plant Counts: Assessing whether to keep an alfalfa stand or not, can begin in early spring at green-up after the plants have broken dormancy. Counting the number of plants (crowns) can give you an estimate of stand density. The limitation of using plant counts is that it doesn't account for the size of the crown or the number of stems potentially growing from each plant.

Alfalfa plant populations decline with age, but crowns get larger with more stems. Table 1 provides the minimum number of healthy plants per square foot for a desirable alfalfa stand. Mature stands (3rd year after establishment or older) should ideally have at least 4 plants/sq ft, but crown size and health should also be considered.

Table 1. Alfalfa Plant Count Guidelines (per square foot)

Stand Age	Good Stand	Consider Replacement
Seeding Year	25 – 40	< 15
1 st year	> 12	< 8
2 nd year	> 8	< 5
3 rd year	> 6	< 4
4 th year or older	> 4	< 3

Stem Counts: Stem density is the best indicator of yield potential from a stand. Initially, counting stems per square foot seems very tedious, but with some practice it can be done visually fairly easily and accurately. The limitation for measuring stem counts is that you can't do this until there is enough growth to count, about 4 – 6 inches. This may delay your decision and possibly the seeding date of resulting necessary new seedings. Like plant counts, stem count numbers assume no significant additional yield contribution from grasses. As a general rule, at least **55 stems per square foot** provide a maximum yield. The **critical level of 40 stems per square foot** or less will result in a 25% yield reduction and should be rotated.

Dig & Check For Plant Health: It is very important to consider the health of alfalfa plants in addition to plant or stem densities. To properly assess forage stands you must inspect the field in several locations. This involves digging up plants with a shovel to get at least 6 inches of root. Look for large, symmetrical crowns with good leaf and bud vigour, and resistance to bark peeling. Lateral roots should be healthy and with good nodulation. (Figure 1) Using a sharp knife, slice the crown and root longitudinally. (Figure 2) Healthy plants will have a good internal root colour (white to cream colour) and firm in texture. Diseased plants will have dark

brown, mushy areas of crown and root rot. Damage from disease get worse with time, not better. Dead or dying plants will not contribute to yield.

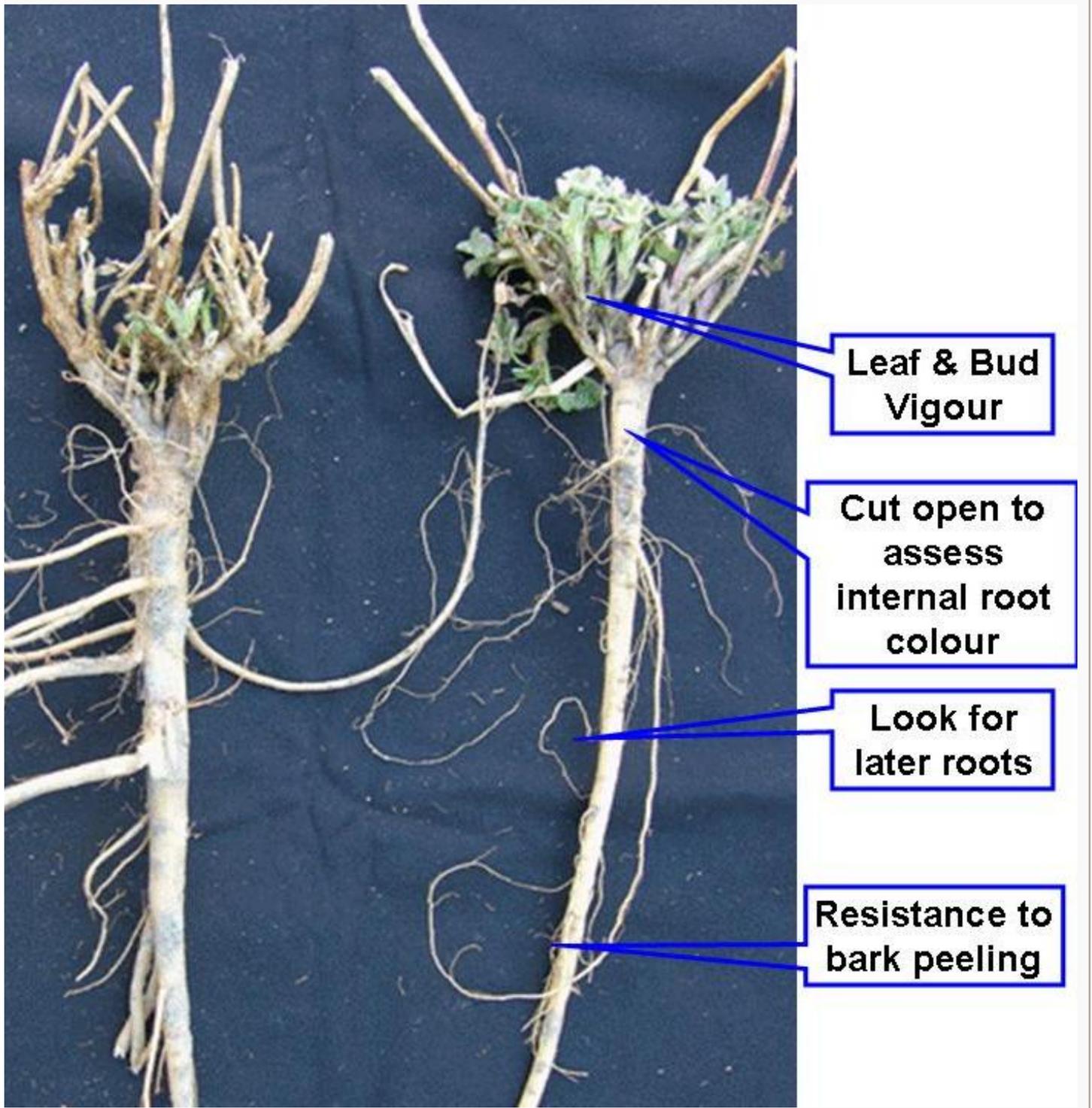


Figure 1

Figure 1

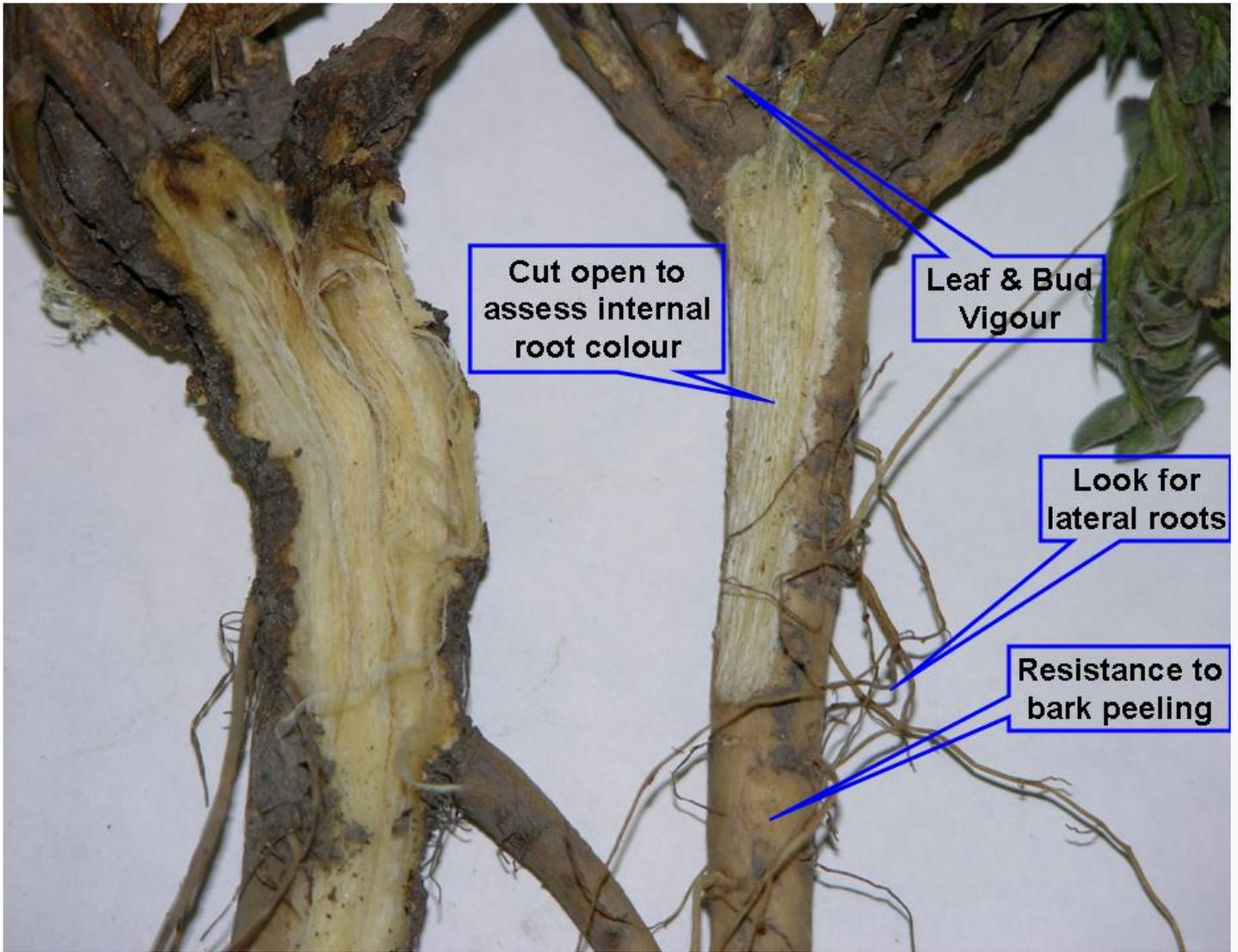


Figure 2 – Cut alfalfa crowns and roots to assess internal root colour and texture. (Banks, OMAFRA)

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