

## 2017 Spring Green Up Alfalfa Assessment

2017

### Overview

- Assessing alfalfa fields as they green up in the spring is critical to assuring high yielding alfalfa fields for the coming year. Fields with adequate stand counts and low levels of crown rot, winter kill, and alfalfa heaving will maximize yields.
- Alfalfa assessments were documented by Pioneer Sales Professionals in an "Alfalfa Assessment App" to evaluate alfalfa fields coming out of the winter. Over 100 fields were visited where plant counts were collected and crown rot severity, percent winter kill and percent alfalfa heaving were estimated.



### Alfalfa Assessment

- Early green up assessment should find a minimum of 4-5 plants per square foot. Older stands have fewer plants per square foot, however older plants produce more stems than younger plants.
- Healthy crowns are large, symmetrical and have many shoots. Weakened plants may grow but have only one or a few stems. Watch for delayed green-up, lopsided crowns, and uneven shoot growth. If any of these characteristics exist, investigate further by checking for root rots and broken roots.
- Watch for alfalfa heaving or plants that have the crowns pushed above the soil line. Alfalfa plants with only an inch or less of heaving that can not easily be pulled from the ground likely still have their tap root intact and can remain productive; adjust cutting height to avoid damaging the crown. Alfalfa heaved greater than one inch that can be pulled easily from the ground have severed their tap root and will likely die later in the spring or summer.
- When alfalfa growth is 4 to 6 inches in height, use stem counts (stems per square foot) as the preferred density measure. A stem density of 55 per square foot has good yield potential. Expect some yield loss with stem counts between 40 and 50. Consider replacing the stand if there are less than 40 stems per square foot, and the crown and root health is poor.



A square foot made out of PVC pipe is useful for assessing alfalfa fields. Collect multiple counts and plant health assessments across the field before making your management decision.

### Alfalfa Assessment Takeaways in 2017

- Overall, alfalfa stands were slower to green up due to the cool cloudy conditions in April.
- Winterkill and frost heaving were more common in fields or parts of fields with a late cutting versus those with the last cutting in August.
- Frost heaving was more severe in heavier soils and in wetter parts of the field.
- Crown rot, while common, was low to moderate in most fields.
- Alfalfa plant counts came back across the area on the lower end of the desired plant stand with weeds such as dandelions coming in.
- Many of the fields that were left as alfalfa will be candidates for rotation next year.



Alfalfa crowns split to observe the plant health. Note the crown rot developing and the differences in stem regrowth between the plants.



**Image 1.** (left) Frost heaving around 1 inch with tap root still intact. Alfalfa will survive and remain productive.



**Image 2.** (right) Frost heaving over an inch with severed tap root. Alfalfa will likely die later in the spring or summer.

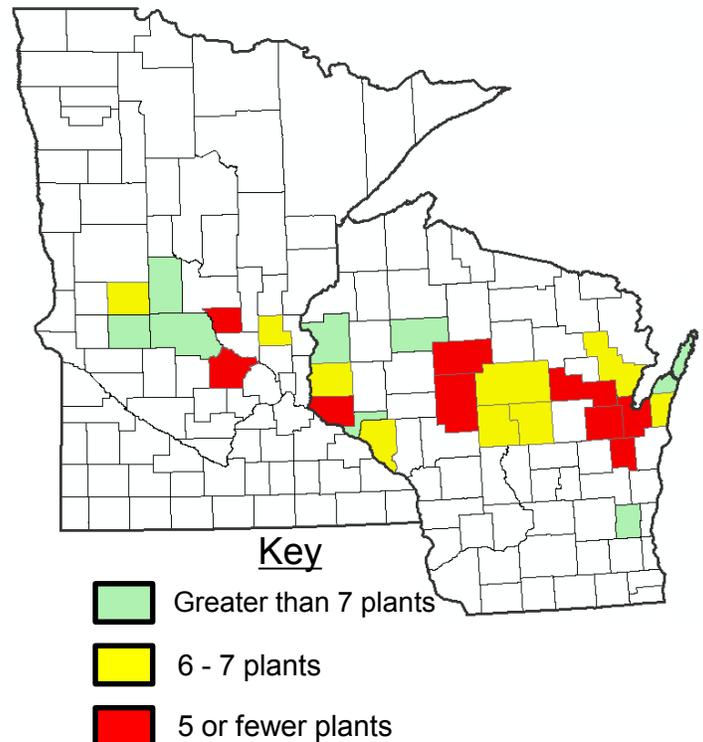
## Assessment Results

- There was a total of 105 fields assessed; 81 in Wisconsin and 24 in Minnesota.
- Average alfalfa plants per square foot was 6 plants. Minnesota was slightly higher at 7 plants per square foot versus 5.9 plants per square foot in Wisconsin.
- Average estimated winterkill in fields was 10% and was similar in both Wisconsin and Minnesota.
- Average estimated frost heaving in fields was 10% in Wisconsin with very little frost heaving reported in Minnesota.
- Winterkill was reported in 55 (52%) fields and frost heaving was reported in 51 (49%) fields.
- 29 (28%) fields reported both winterkill and frost heaving while 28 (27%) fields reported no winterkill or frost heaving.



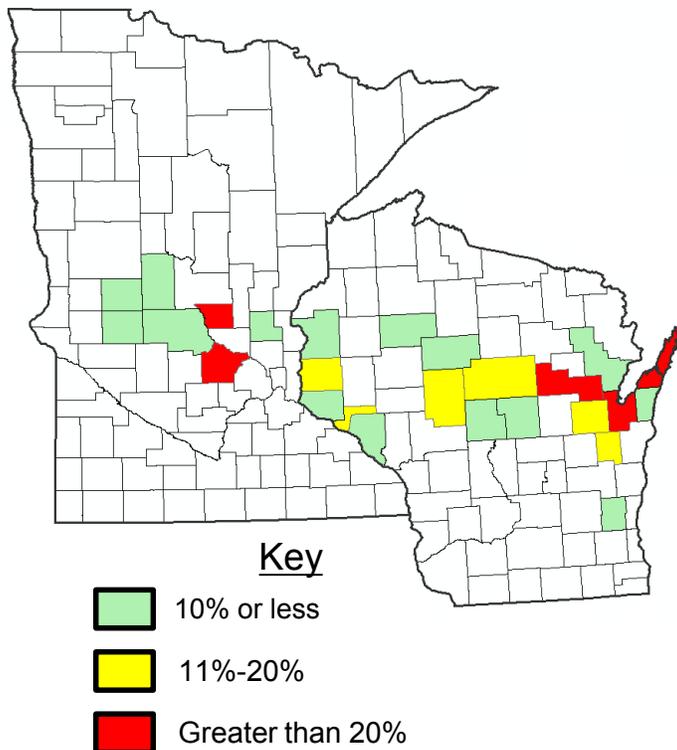
Alfalfa assessments were made at green up by Dupont Pioneer Dairy Account Managers, Account Managers, Field Agronomists, and Pioneer Sales Professionals.

### Average Viable Plants per Square Foot By County



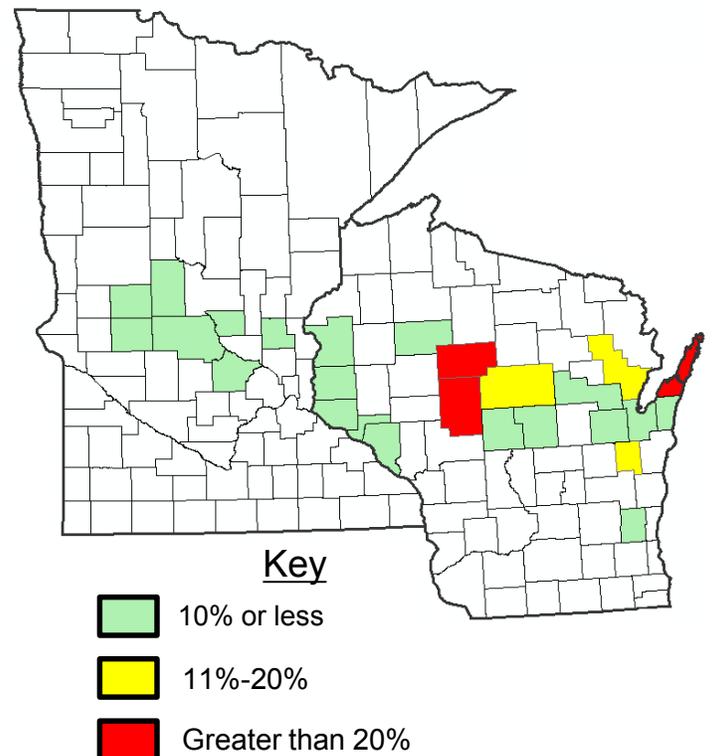
**Figure 2.** Average viable plants per square foot by county in 2017 Alfalfa Assessment. No assessments were reported in counties in white.

### Average Estimated % of Field Winterkilled by County



**Figure 1.** Average estimated % of field winterkill by county in 2017 Alfalfa Assessment. No assessments were reported in counties in white.

### Average Estimated % of Frost Heaving in Field by County



**Figure 3.** Average estimated % of frost heaving in fields by county in 2017 Alfalfa Assessment. No assessments were reported in counties in white.