

Assessing Forages Stands

This week was a great example of Ohio weather. If you waited long enough it changed. Now that it is officially spring, forage stands are beginning to green up. Wet soil conditions and widely fluctuating temperatures have presented tough conditions for forage stands this winter. This is especially true of taprooted legumes like alfalfa and red clover. Many forage stands suffered significant fall armyworm feeding damage late last summer and into the fall, so those stands should be carefully evaluated this spring as they green up. According to Mark Sulc, Ohio State University forage specialist, it is time to start walking forage stands (especially in southern and central Ohio) to assess their condition so decisions and adjustments for the 2022 growing season can be planned if necessary.

According to Sulc, forage stand evaluation can be performed when 3 to 4 inches of new shoot growth is present. Select random sites throughout the field and count the plants in a one-foot square area. Check at least 4 to 5 random sites in each 20- to 25-acre area. Random sampling will give the best unbiased overall evaluation of the field.

Crops such as alfalfa and red clover are particularly susceptible to heaving damage. The likelihood of heaving is greater in wet, saturated clay soils with high shrink/swell potential that were exposed to rapid freeze/thaw cycles. Plants can be physically lifted (heaved) out of the soil, exposing the plant crowns to low temperatures and/or physical injury from wheel traffic at harvest time. In severe cases, the plant can be heaved several inches or more out of the soil, breaking the taproot and killing the plant.

Crown and root tissue should be evaluated for an indication of how the plant will hold up to stresses in the coming growing season.

Sulc recommends, digging up 5 to 6 plants in each random field location you sample and split the crowns and roots lengthwise. A healthy plant will have a creamy white color with little to no discoloration in the crown and taproot. These healthy plants will also have numerous shoots that are evenly distributed around the crown of the plant.

Damaged plants often have fewer stems, and those stems often are more numerous on one side of the crown. Splitting roots and crowns will reveal darker tissue than the creamy white color of healthy plants. The color tends towards a tan color. There also may be obvious areas of root and crown rot that are dark brown to black in color. Streaks of brown might be seen running down the length of the taproot. Generally, these plants green up in the spring of the year and might appear productive, but because of their compromised root system, they may not survive the entire production year, especially if we have a hot, dry year, or periods of excessive wetness followed by dry spells.

Sulc suggests, in general, yield potential is significantly reduced if more than 30% of the split roots have brown streaks running down the root and/or black areas of root/crown rot that cover greater than 30 to 50% of the root diameter. The grower may want to consider alternative forage options such as terminating the stand after a first cutting and planting to silage corn or possibly to a warm season annual forage crop such as sudangrass or sorghum

x sudangrass. Interseeding with other forage species may also be considered to thicken the stand, just don't try to interseed alfalfa seed into an existing alfalfa stand because of autotoxicity.

Although winter temperatures, snow cover, and soil wetness are primary driving factors affecting tall forage legume winter survival, there are several management factors that can affect the degree of winter injury suffered by forage stands. Those factors include:

- Variety selection: varieties with good winter hardiness and disease resistance generally survive longer.
- Soil fertility: adequate soil potassium is associated with enhanced tolerance to winter injury.
- Soil drainage: tiling and improving drainage helps prevent ice-sheeting and heaving and slows development of crown and root diseases.
- Harvest management: frequent cutting is associated with a higher risk of winter injury, particularly if the last fall cut was made in late September to mid-October.

As you walk your forage stands, be sure to check for the presence of winter annual weeds! You will want to act early this spring if winter annuals are abundant

Assessing grass hay and pasture stands should also be walked early to assess their spring vigor and growth as the stands green up. This is especially true where armyworm feeding was severe last fall.

Taking the time to do a stand evaluation and further assess forage plant health and the extent of winter injury will allow the grower to have a better idea of the yield potential of the stand. This will help inform whether the stand can continue another year or would be better suited as a rotational crop this year.



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