

Freeze Damaged Forages

After 7 weeks of above normal temperatures followed by 4 days of record setting cold there has been significant damage to forage crops across the state of Kentucky.

Garry Lacefield and Ray Smith accessed stands across the state on Sunday and Monday (along with reports from many agents) and damage ranges from minimal on existing grass stands to total burn back and even flattened stands in some alfalfa and red clover fields. White clover shows freeze damage on leaves.

With temperatures below the critical 24 degrees for extended periods over the weekend, the terminal bud (growing point) of alfalfa and red clover has been killed. In other words, top growth is finished, and regrowth now will only come from crown buds at the base of the plant or axillary buds at the base of the stems. Fortunately, our initial observations indicate that crown buds of alfalfa and red clover have survived the cold temperatures with little or no damage.

We are recommending that stands with significant growth should be harvested to remove dead topgrowth and stimulate new regrowth from crown buds. Leaving dead material will reduce regrowth rate by shading of the crown buds or causing growth from less vigorous axillary buds. Harvest options include silage, grazing, hay, or simply mowing the stand. Removing dead topgrowth should proceed as soon as possible, but with projected cool temperatures to continue there is an approximate one week window before harvesting will cause damage to new regrowth. With rain in the forecast for this week, remember that wheel or hoof traffic on wet soils should be avoided.

Cutting and ensiling is probably the best option in that the drying window is short and the quality of the spring growth legume can be maintained. Although silage inoculation may not be needed during the summer months, the extended cold temperatures has significantly reduced the beneficial bacteria necessary for proper ensiling. Therefore, we recommend adding a commercial silage inoculum for this crop.

Grazing freeze damage alfalfa and red clover stands is another good option, but use caution because bloat is a concern when livestock consume frost damaged legumes. Watch animals closely and use bloat prevention strategies which include: 1) Do not turn hungry animals into lush legume pasture, 2) Prefill animals with dry hay to slow down ingestion of the soluble proteins which cause bloat, 3) Give animals access to dry hay when grazing lush legume pasture, 4) Provide animals access to bloat blocks. Some have raised concerns about potential nitrate problems in frost damaged alfalfa, but reports of high nitrates in frost damaged legumes are rare.

Haying is a consideration, but not a very practical one with cool temperatures and significant rain in the forecast.

Simply mowing frost damaged stands to remove the dead topgrowth is a feasible option in many cases. The goal is to mow to a normal hay cutting height and insure that mown material is chopped and scattered uniformly across the field. When you do mow watch closely behind mower. If plant material is bunching up behind the mower, wait until topgrowth is dry enough to be scattered.

We have had several questions about height of regrowth and removing topgrowth. Regrowth on alfalfa stands ranged from 6 to 10 inches in northern KY to 12 to 20 inches in western areas of the state. The taller the regrowth, the more important it is to remove the dead material and stimulate new growth from crown buds. If spring growth was only 8 inches tall, removal or even mowing is less important, but even with short regrowth, removing dead topgrowth will stimulate faster regrowth from crown buds.

Damage to Spring Forage Seedlings

At this point we have observed significant damage for spring seeded alfalfa and red clover and some damage to newly seeded grass stands, but it will take several more days before anyone can accurately assess stand loss. We will send out another report in a few days, but at this point we can make the following observations:

- The most significant damage occurred on new legume stands still in the cotyledonary leaf stage.
- Stands that had plants in the trifoliate leaf stage experienced burnback, but many will recover.
- With rain and warmer temperatures more seed may emerge over the next week so wait a week to assess full the impact of stand damage.
- Fortunately newly seeded fields of alfalfa can be overseeded since allelopathy does not become a concern until stands are over 6 months old.
- If your assessment indicates that a newly seeded stand is severely damaged then go ahead and interseed with a no-till.

Information concerning freeze damage on wheat and corn is available on the UK Grains Homepage www.uky.edu/Ag/GrainCrops/

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