



Farm Views

Now is the Time to Utilize Fall Alfalfa

Effects of a Freeze on Forages

When plants freeze, changes occur in their metabolism and composition that can poison livestock. But you can prevent problems.

Sorghum-related plants, like cane, sudangrass and shattercane, can be highly toxic for a few days after frost. Freezing breaks plant cell membranes. This breakage allows the chemicals that form prussic acid to mix together and release this poisonous compound rapidly. Livestock eating frozen sorghum can get a sudden, high dose of prussic acid and potentially die. Fortunately, prussic acid soon turns into a gas and disappears into the air. So wait three to five days after a freeze before grazing sorghums; the chance of poisoning becomes much lower.

Freezing also slows down metabolism in all plants. This stress sometimes permits nitrates to accumulate in some plants that are still growing, especially grasses. This build-up usually isn't hazardous to

grazing animals, but green chop or hay cut right after a freeze can be more dangerous.

Alfalfa reacts two ways to a hard freeze. Nitrate levels can increase, but rarely to hazardous levels. Freezing also causes alfalfa to be more likely to cause bloat for a few days after the frost. Then, several days later after plants begin to wilt or grow again, alfalfa becomes less likely



PHOTO: State Research and Extension

Alfalfa bales of hay

to cause bloat. So waiting to graze alfalfa until well after a hard freeze is a good, safe management practice.

Frost causes important changes in forages, so manage them carefully for safe feed. (TD)

Source: Dr. Bruce Anderson, Extension Forage Specialist.

The summer drought reduced production of alfalfa forage and prevented the normal deposition of energy into the root systems. That energy is necessary to sustain the plant roots and crown over the winter months and to provide the energy to establish new buds and shoots next spring. When we finally got rain in late August, I encouraged producers not to harvest too soon. Alfalfa needed a period of uninterrupted growth to build root energy reserves.

Alfalfa goes through a winterization period from mid-September until mid-October.

I also discouraged cutting during that time because it would have disrupted the winterization cycle, forcing the alfalfa to draw on precious energy reserves to establish new top growth. By the time this NebLine issue arrives, alfalfa will have completed its winterization cycle. Therefore, if you have resisted the temptation to harvest alfalfa since early September, now is the time to utilize the forage. If you need hay, go ahead and cut alfalfa now.

Alternatively, don't overlook the benefits of grazing, rather than cutting late fall alfalfa.

Many growers find that grazing alfalfa in the fall provides some special flexibility that often is useful this time of year. Dr. Bruce Anderson, extension forage

specialist, says that alfalfa makes an outstanding weaning pasture for spring calves; yearlings continue to gain weight rapidly on fall alfalfa even after summer grass starts to die off; cows gain excellent condition before winter by grazing alfalfa during the fall; and ewes and lambs perform very well on fall alfalfa.

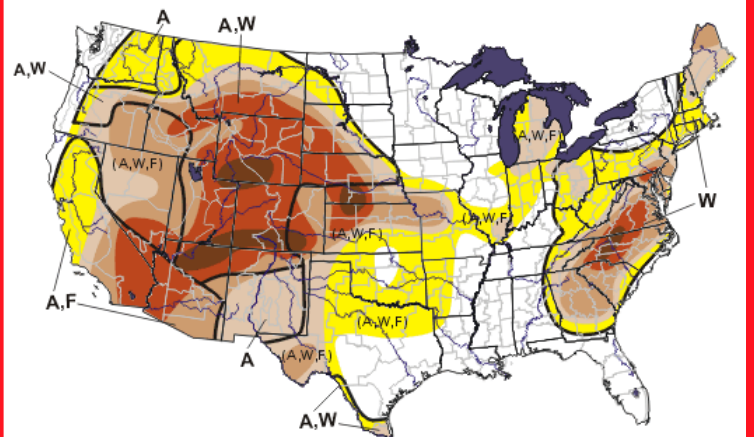
Fall grazing of alfalfa is not without its problems. Bloat always must be a concern, after alfalfa has been frosted and has started to dry down, it has less tendency to cause bloat than summer alfalfa. To protect your livestock from bloat, fill them

with hay before turning them onto alfalfa. Also, maintain access to dry hay or corn stalks while grazing alfalfa to help reduce bloat. Finally, bloat protectants like poloxalene can be fed as blocks or mixed with grain. This can be an expensive supplement, but it works well when animals eat a uniform amount each day.

Also be careful not to damage your alfalfa stand. Only graze when fields are dry and firm. Reserve a small sacrifice area to graze and for feeding when soils are wet to avoid damaging the entire field. (TD)

Latest U.S. Drought Monitor Map

As of Oct. 3, Lancaster County is in Moderate Drought conditions.



Drought Impact Types:
 A = Agriculture
 W = Water (Hydrologic)
 F = Fire (Forest)
 *Dashes also denote impact (A,W,F)
 (No type = All impacts)

For the most recent map, visit www.drought.unl.edu/dm

Grain Stubble Rental Rates

Occasionally, the extension office is asked about fair rental rates for grazing stubble fields. The extension office cannot judge what is fair, but we can help people think through a process that can help them derive a range of prices based on the estimated cost of alternatives.

From the point of view of the landowner, the first factor is what does it cost the landowner to allow the stubble to be grazed. A second factor is that stubble has a value as a feed and could be considered a part of the income stream from the crop; just as the grain is a part of the same income stream. The landowner should therefore try to maximize his return from both the grain and the stubble.

The tenant needs to calculate what benefit he/she will gain by grazing the stubble. Obviously, the rental rate should not exceed the cost he/she would incur if alternative feed sources were used.

A "fair" rental rate is a rate that more than covers the land owner's costs (and contributes to his income stream from the crop) but one that also provides an economic incentive to the tenant.

Considering the cost to the land owner, the most obvious cost is associated

with the loss of plant residues. Plant residues contain nutrients which otherwise would have been recycled by microorganisms in the soil and utilized by future crops. Nutrients, especially nitrogen and phosphorus, removed by grazing the stubble, may need to be replaced with additional purchased fertilizer.

The nutrient loss is not as great when stalks are grazed as when they are cut for silage or hay and removed from the field, because most of the nutrients will be returned to the field in the manure as stalks are grazed. An estimate of the nutrient value lost from grazing stalks is around \$2 to \$3 per acre. It is this author's opinion when downed grain is present in the field, the value of the nutrients lost is generally more than offset by the yield benefit of reducing the number of volunteer crop plants next season. In normal years with heavy residues, many people chop stalks prior to planting. Grazing residues may eliminate the need to chop stalks before planting next spring. This could result in saving \$4 to \$6 per acre in operating cost which more than offsets the loss in nutrients.

One very important consideration is whether residues are needed to control soil erosion. Topsoil is a commodity that is hard to put a value on. Nevertheless, one should try to preserve the long-term productivity of the field by leaving adequate residue

Cost of Alternate Feed Sources Example

*1,100 lb mature cow, middle third of pregnancy.
 Daily nutrient requirement: 21.60 lb dry matter, 10.5 lb TDN, 1.6 lb crude protein*

Source 1: early-bloom brome hay @\$69/ton:
 55% TDN, 10.5% crude protein, 10% moisture

Source 2: drought corn silage @\$23/ton:
 65% TDN, 10% crude protein, 70% moisture

FORAGE MIX 1: 100% early-bloom brome hay.
 Required: 24 lb per head per day (as fed)
 Forage cost: \$0.83 per head per day.

FORAGE MIX 2: 40% early-bloom brome hay and 60% drought corn silage (as fed basis).
 Required: 16 lb brome + 24 lb silage per head per day (as fed).
 Cost: brome = \$0.55 + silage = \$0.28
 Total forage cost: \$0.83 per head per day

to protect the soil from erosion.

Finally, will the animals be fed hay while on the stalks? If the animals are fed hay containing weed seeds, what is the effect of the extra weed pressure on yield or what is the cost of additional herbicides and management to keep weed pressure down in future crops?

Stubble fields can be quite variable in terms of pounds of stover per acre and in terms of the amount of grain left in the field. University specialists have estimated each acre of irrigated corn or grain sorghum stalks will provide approximately two animal unit months (AUM) of grazing. Dryland crops provide about one-half as much forage or one AUM of grazing in a "normal" year. (An animal unit month is the feed eaten by a

1,000 pound cow with a calf at her side, or the equivalent). The amount of forage available per acre in a drought year like 2002 will be considerably less and could range from 1/4 to 3/4 AUM per dryland acre.

Given the variability between fields, the fairest way to rent stubble fields is to pay on a head-per-day basis. That way, the amount the renter pays is based on the amount of feed that is available. The tenant also has incentive to move the animals as soon as the stalks are "cleaned up" thus reducing compaction. There can also be much variability on how well animals utilize the residues that are present in the fields due to weather factors. Paying on a per-head, per-day basis reduces weather risk. The existence or condition of fences,

proximity to the renter's "home base" and the availability of water can vary greatly from field to field, making some fields more desirable than others from the renters point of view.

Traditional stalk rental rates in southeast Nebraska run from a low of \$0.10 to more commonly around \$0.25 to \$0.30 per head per day. Are these rates reflective of the "fair" market price in a drought year? Normally, one would expect around five bushels of corn per acre is left in the field. In a drought year with yields much below normal, there may only be one or two bushels of grain per acre but usually the stalks will be higher in nutrient content when little or no grain was produced.

The upper limit for stubble grazing rates might be estimated by comparing to alternate forage sources (see box). Assuming average nutrient values for the forage sources, one could meet the protein and energy needs (minerals not considered) for a mature 1,100 pound cow in the middle third of pregnancy by feeding 24 pounds per day of early-bloom brome hay. Alternatively, a ration consisting of 16 pounds of early-bloom brome hay plus 24 pounds of drought-stressed *see STUBBLE on page 11*