The Veterinary Link

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Drought considerations

Every year, some part of the United States deals with a shortage of rainfall and reduced feed resources heading into the winter. This year a large area of the country is faced with a particularly severe drought. If your feed resources are limited, you may be able to receive advice from local nutritionists, university specialists and your veterinarian on how to stretch available forages or to utilize unfamiliar feedstuffs.

Managing feed during drought

One part of a drought management strategy is to carry as few animals as possible. Weaning calves and moving them into a feedlot earlier than usual removes some pressure from your pastures and winter feed supplies. Culling open, old and less productive cows also allows you to reduce feed needs, and it allows you to concentrate on supplementing the most productive portion of your herd.

Energy is the first limiting nutrient in most drought situations, but drought-affected pastures may also be low in vitamin A, phosphorus and protein, requiring supplementation of these nutrients, particularly in mid- to late pregnancy. If hay is available and cost-competitive, it is an excellent feed for cows when standing forage is lacking. Corn and other grains, byproduct feeds, crop residues, and weeds are also feeding alternatives.

When corn and other grains are used to supply energy to cows on pasture, the amount that should be fed is limited by the negative effect grains have on the digestion of forage. Generally, corn should only be supplemented at a level of 0.2% to 0.4% of a cow's weight to minimize the negative effects on forage digestibility (that would be 2.2 to 4.4 pounds (lb.) of corn for a 1,100-lb. cow). Of course, if the cows are on a minimal-forage diet due to scarcity and are being fed in a drylot situation, greater amounts of grain can be fed because the forage is not supplying much energy anyway.

Many byproduct feeds such as corn gluten, soy hulls and wheat midds are excellent energy and protein sources for cows and are generally much less likely to cause digestive upset than whole or processed grains when fed at high levels. Specific byproduct feeds may have characteristics that limit their inclusion in the diet, so you should work with a nutritionist or veterinarian who is familiar with locally available byproduct feeds.

Potential feed sources

Crop residues such as baled wheat straw or cornstalks can supply some of the herd's energy needs, particularly if the feedstuffs are ammoniated. Ammoniating crop residues involves covering a stack of square or round bales, loaves or stacks with plastic and piping anhydrous ammonia under the plastic to treat the forage.

Ammonia treatment improves forage nutritional value in several ways. First, it increases the digestibility of crop residues by breaking down lignin-cellulose bonds in the plant fiber. Ammoniation also solubilizes plant carbohydrates and improves dry matter digestion by swelling the plant tissue.

Treatment of crop residues with ammonia improves the palatability vs. nontreated residues, so feed intake is increased 15%-20%. Ammonia treatment usually doubles the crude protein (CP) content and serves as an excellent source of nonprotein nitrogen (NPN), which can be utilized by calves and brood cows. Find more information about this practice in the September 2000 "Vet Call" in the *Angus Journal* or from your local Extension service.

Standing crop residues are a potential feed source, but for corn, sorghum and other crops, one must be aware of the risk of nitrate toxicity. Nitrates will accumulate in plants due to stress from drought, during the night, on cloudy days or when environmental temperatures are cool.

Rain following a drought will also cause a rapid buildup of nitrate levels. After a drought-ending rain, one to two weeks is required for nitrate concentrations to be reduced to safe levels. Nitrate levels are highest in the roots and stems, levels are lower in the leaves, and almost no nitrate accumulates in the flowers and seeds.

If forages contain more than 6,000 ppm (parts per million) nitrate, they should be considered potentially toxic. A simple test can be run by gathering several plants from around the field and making a cut in the lower 6 inches (in.) of the stem. Place a drop of a sulfuric acid solution on the cut surface (most veterinary clinics have this solution). The cut surface of plants with high levels of nitrate will turn purple in color.

A more accurate determination of nitrate levels can be obtained by sending a sample of the suspect forage to a reliable laboratory. Nitrate levels of hay will not change once the hay is cut, but grazed forages will change concentrations on a daily basis.

Using weeds in cow diets

Poisonous weeds can be a significant problem during a drought because they may be the only green plants in a pasture. Normally, cows would avoid these poisonous plants; but, they will consume them during periods of limited forage availability.

On the other hand, some weeds may provide a significant portion of the diet during a drought without negative effects. Kocia and Russian thistle are weeds that may be present on crop- or pastureland in some parts of the country and can be used in cow diets when other, more desirable feeds are not available.

Again, care must be taken. Toxic levels of oxalates or nitrates can be present in Kocia diets, and other weeds may have toxic components that limit the amount that can be included in the diet.

If you are facing a feed shortage due to drought, you will very likely have to utilize an unfamiliar feedstuff. It is important to learn about the feedstuffs you will be using by talking to your nutritionist, veterinarian and Extension specialist. By utilizing feeds that are unfamiliar to you, you may be able to supply your herd's nutrient needs at a reasonable cost. But be aware that toxicity, nutrient deficiencies and palatability may be significant problems if you don't plan ahead to limit the negative aspects of a new feedstuff.

Editor's Note: *If you don't have a copy of the September 2000 issue of the* Angus Journal *referred to by Dr. Larson, do a back issue search of archived articles at* www.angusjournal.com *to retrieve "Ammoniate crop residue to improve feeding value."*