

Drought Tips from Noble Foundation Consultants

Cattle Tips

Consider early weaning

Early weaning of calves is common during drought. Removing calves from cows at approximately 300 pounds or 75 days of age decreases cow nutritional requirements and gives producers the ability to stretch limited forage resources.

Drought conditions in 2011 are forcing producers to wean calves early; many of which have already been marketed. Supply and demand principles are in evidence as an increased supply of calves is decreasing market price.

Noble Foundation consultants suggest that early weaning and preconditioning calves for at least 45 days can still result in profit. During preconditioning, calves are vaccinated, de-horned, bull calves are castrated, and all calves are fed for an additional 45 days post-weaning. Calculate your cost of preconditioning prior to retaining ownership of calves. For help with budgeting or developing a feeding program for preconditioned calves, please see *Optimizing Weaned Calf Value* (www.noble.org/Ag/Economics/optimizing-calf-value).

Cull cattle

Sell all open, old or injured cows. It is not economical to maintain these females – particularly when resources such as pasture, feed and hay are costly and in short supply. The immediate advantage to removing animals from the herd is that grazing pressure on pastures will be decreased and less money will be spent on supplemental feed. Additionally, cull cow prices have remained relatively strong. Cull cow marketing reports are available through the Agricultural Marketing Service (www.ams.usda.gov). Selling cull cows now can provide immediate assistance for producers who are in a difficult cash flow situation.

Drought may also provide the opportunity to make improvements to your cow herd. Consider tightening up your calving season by selling late calving cows. Calves

born later in the calving season are typically lighter weight at weaning and less uniform than the calves born earlier in the calving season.

Evaluate cow herd liquidation costs

Many producers may be tempted to liquidate the cow herd during persistent drought conditions. However, before selling the herd, compare the cost of maintaining a cow through the drought and winter months to the cost of purchasing replacement females next spring. To do so, calculate the cost of feed and hay on a per-cow basis from now until spring. Add this feed cost to the current value of cows sold. If the sum of feed cost and cow value is greater than the cost of buying cattle next spring, then liquidate the cow herd now and take advantage of tax benefits associated with drought-related sales.

If you decide to maintain ownership of the cow herd, be prepared to maintain cow numbers for approximately six to eight months. It is not advantageous to begin feeding cattle through the drought only to sell them in the fall at seasonally low prices.

Plan ahead

Have a livestock management plan ready for the next step. Consider what you will do if you run out of pond water or if a well goes dry. Is it an option to fertilize bermudagrass this fall or plant ryegrass? Think about potential situations and solutions, and prepare now. Those that plan ahead and are prepared to act quickly will have the best results.

Pasture, Hay and Feed Tips **Shop for feed and hay supplies**

Weather reports suggest the drought will persist; therefore, consider having excess feed on hand if you desire to maintain cow numbers throughout the drought. ►

Deciding how much hay and feed you will need to provide adequate nutrition for your livestock is the easy part; locating it, especially hay, will be the challenge. Feed prices remain volatile and hay supplies are tight. Shop alternative feeds and lock in prices when possible. For more information on shopping alternatives, please see *Managing Feed Costs* in the August 2011, *Ag News and Views*.

Hay directories are available through the Noble Foundation (www.noble.org/webapps/weblistings/hayandpasture); the Oklahoma Department of Agriculture, Food & Forestry (www.oda.state.ok.us); and the Texas Department of Agriculture (www.agr.state.tx.us). However, do not limit yourself to Oklahoma and Texas suppliers. The right deal can overcome shipping costs.

Test Hay Before Purchase

It is always important to test hay to know the quality and develop a complementary supplementation program that is both efficient and economical. In times of drought, it can be even more important since hay costs more, and there are potential toxicity issues that could kill your cows if left undetected. Test sudan/sorghum-type forages for nitrates. Test corn stalk hay for nitrates and aflatoxin.

For more information on hay testing, read the following articles.

- *Understanding and Interpreting Noble Foundation Forage Tests* (www.noble.org/Ag/Livestock/UnderstandingForageTests/NobleForageTests.html)
- *Understanding and Preventing Aflatoxin Poisoning* (www.noble.org/ag/pests/aflatoxin/prevention.html)
- *Avoid Nitrate Poisoning in Cattle During Drought* (www.noble.org/ag/research/articles/avoidnitratepoisoning)
- *Nitrate Poisoning* (www.noble.org/ag/livestock/nitratepoisoning)

Determine reserve forage demand

Most mature cows consume about 25 to 30 pounds of forage dry matter per day. That equates to 750 to 900 pounds per month, which is about the size of one round bale of hay. Therefore, it takes the equivalent of about 12 round bales of hay per year to feed a cow. If drought conditions require a rancher to feed a herd of 40 cows from September to April, it will require eight bales of hay (or the equivalent) per cow or 320 bales total. Ideally, on introduced pasture a rancher should feed no more than three months of hay and on native grass pasture no more than one month of hay. Otherwise, one would be considered overstocked.

Control grazing

Opening all the gates to let the cattle have what is left results in everything being overgrazed. Identify a sacrifice area and begin feeding when pasture residual is at a minimum height. This is especially true on native grass pastures where recovery from severe overgrazing may take years if not decades to overcome. Use introduced grass pastures, such as bermudagrass, for sacrifice areas when possible, as these pastures can more easily overcome the damage by application – often within a year or two – of fertilizer and weed control.

Overseed introduced pasture with cool-season annual grass

If conditions are favorable in the fall, overseeding an area of overgrazed bermudagrass with cool-season annual (CSA) grasses such as ryegrass, wheat, rye or oats is a viable consideration even for grazing by mature cows. With favorable weather conditions, the general rule of thumb is to plant about 1 acre of winter pasture per mature cow in September. Select a pasture with good phosphorus and potassium levels. Select CSA grass varieties that are adapted to pasture soils and area. Apply nitrogen after the stand emerges. Do not graze until the newly established CSA grass plants can't be pulled out of the soil (usually six weeks after emergence or 8 inches tall). Do NOT overseed native grass pastures as it will further inhibit growth of the native plant communities.

Scout for toxic plants

As dry matter availability declines in pastures, grazing livestock may consume plants that would not ordinarily be a part of their diet. Sometimes they will be forced to consume poisonous plants. Johnsongrass and other plants in the sorghum family, for instance, can cause poisoning due to their ability to accumulate toxic levels of prussic acid. Other plants that can be toxic include cocklebur, silver leaf nightshade, Carolina horsenettle, cudweed and even acorns. More information on toxic plants is available from Texas A&M University (<http://essmextension.tamu.edu/plants/toxics>), and the USDA's Poisonous Plant Research Laboratory (www.ppri.ars.usda.gov). Detailed photographs of many regional plants can be found in the Noble Foundation's Plant Image Gallery (www.noble.org/webapps/plantimagegallery).

Water Tips

Monitor water quantity and quality

Water is one of the most important nutrients for livestock and can quickly become limiting in a drought. Monitor water sources at least weekly to be sure there is adequate water for all livestock. As ponds shrink, nutrients are concentrated and water can become unhealthy for livestock. If possible, supply fresh water when pond water is limited or poor in quality. If you notice a bad odor or suspect a blue-green algae bloom, provide fresh water or relocate animals.

For more information on water quality, read *The Importance of Monitoring Livestock Water Quality* (www.noble.org/Ag/Livestock/WaterQuality) and *Livestock Water Guidelines* (www.noble.org/ag/Livestock/livestock-water-guidelines).

Factor in water hauling costs

Hauling water is an alternative for producers whose water source has diminished. However, this presents a large, unexpected expense. Refer to the calculations in "evaluate cow herd liquidation costs" before hauling water, as the choice to keep or sell the cow herd involves similar considerations. When making this decision, the cost of water would be included with feed and hay costs. Again, if the sum of feed, hay, water and cow value is greater than the cost of purchasing cows next spring, then liquidate the cow herd and take advantage of tax benefits associated with drought-related sales

Wildlife Management Tips

Anticipate reduced deer antler quality

White-tailed deer antler growth generally takes place between April and August. A prolonged reduction of quality and quantity of forage during this period can negatively impact antler production. Antlers of young deer whose bodies are still developing will likely be more impacted than those of older deer. The prolonged nature of the current drought will probably result in a below average antler year. There will be some exceptional animals harvested; however, they will be fewer than normal. Smaller than average antlers on yearling bucks does not necessarily indicate inferior genetics.

Evaluate the appropriateness of feeding deer

This is a complex issue, and there is not one correct answer. The management strategy preferred by Noble Foundation consultants is to manage habitat and deer numbers within carrying capacity. Feeding probably is unnecessary in this scenario. However, deer will likely

respond to feed during a prolonged drought. If the management goal is to supplement and concentrate a few deer, then a feeding station may accomplish that. If the management goal is to positively impact the herd at the population level, then it probably will require numerous feeding stations and significant expense. We do not recommend feeding, but if you decide to feed, a complete ration with at least 16 percent crude protein is recommended. Corn can be part of the ration, but should not be the sole feed.

Reconsider white-tailed deer harvest

If maintaining a stable deer herd is a management goal, then doe harvest may need to be reduced or eliminated for the upcoming season to compensate for the possible lack of recruitment (number of fawns alive in the fall). On the other hand, if reducing the herd is a management goal, then doe harvest should probably continue. On most well managed properties with conservative buck harvest limits, buck harvest rates can likely be maintained. On less managed properties, buck harvest should probably be reduced to ensure adequate carryover of adult animals into the following year.

Understand the effect on fawn survival and recruitment

The effect of drought on fawn survival is related to how it affects deer habitat, specifically, forage quality and quantity and cover. Lack of suitable-quality forage this growing season probably will not have a large impact on adult survival. However, if does cannot acquire adequate nutrients, fawn survival and recruitment may be adversely impacted.

A drought-induced reduction in herbaceous growth will result in reduced herbaceous cover, which, in turn, may also lower fawn survival due to increased coyote predation. For more information, read *What to do About Deer and the Drought* (www.noble.org/Ag/Wildlife/DeerandDrought) and *White-tailed Deer: Their Foods and Management in the Cross Timbers* (www.noble.org/Ag/Wildlife/DeerFoods).

Properly manage wildlife habitat

Grazing management and prescribed burning are two of the best tools available for managing wildlife habitat. During drought, these tools can have positive or negative effects on wildlife habitat, depending on how they are applied and on the wildlife species.

Destocking is usually the best way to protect wildlife habitat during drought, but that's not always possible. Keep cattle in one paddock to reduce the time and expense needed to recover from degradation to wildlife habitat and

livestock forage on the remainder of the property. Also, explore ways to allow recovery to pastures that have been burned immediately before or during the growing season. Know habitat requirements for your target wildlife species and plan for recovery accordingly.

Be aware of changes to northern bobwhite habitat

During drought, many pastures are overgrazed, causing more disturbance to the ground than during normal years. If weather conditions are favorable next growing season, forbs – broad-leaved herbaceous plants such as croton, sunflower and ragweed – will probably take advantage of the situation and increase in quantity. Forbs are an important group of plants to bobwhites, providing both food and cover.

Forbs also provide habitat for many insects. These insects are the primary diet of bobwhite chicks during the first several weeks after hatching as well as an important part of an adult's diet during the spring and summer months. Assuming all other habitat requirements are met, having both extra forbs and insects help bobwhites lay multiple clutches and hopefully raise multiple broods. The capacity to lay multiple clutches gives the bobwhite the ability to rebuild their numbers.

Reevaluate northern bobwhite hunting practices

Northern bobwhite numbers probably will be down this hunting season. In most situations, hunting northern bobwhites does not have a negative effect on the overall population level on a landscape scale such as a county or state. However, heavy harvest may have a negative effect on isolated and depressed populations of northern bobwhites.

To reduce the risk of harming bobwhite populations, hunt early in the season and remove no more than 10 percent of the estimated population. Northern bobwhites have the reproductive ability to rebound in future years with favorable weather and habitat conditions.

Avoid fish die-off

Occurrences of fish die-offs in ponds typically increase during exceptionally hot, dry periods. This usually is caused by inadequate water depth, excessive cyanobacteria blooms or low dissolved oxygen (DO). To avoid drying up or becoming too shallow, ponds should have maximum depths appropriate for each region. Pumping water to fill a pond or maintain its level is seldom practical.

To minimize risks of cyanobacteria blooms, limit nutrient inputs (such as feed, fertilizer and hay), avoid stirring up sediments and avoid introducing organisms or water from other impoundments or streams. Cyanobacteria can

produce toxins, and when a bloom produces toxins, there is not much that can be done. To minimize risk of low DO, limit nutrient inputs and avoid high fish densities, stirring up sediments and killing aquatic plants. Consider emergency aeration when low DO is anticipated. For more information about low DO, refer to *Pond Managers Can Take Steps to Avoid a Fish Kill* (www.noble.org/Ag/Wildlife/AvoidFishKill).

Renovate fish population

Low water levels in ponds present opportunities to renovate undesirable fish populations by draining or applying rotenone. Because of less water during drought, time and labor required to drain a pond is reduced.

Low water levels are also ideal for treating a pond with rotenone to kill fish. It takes less rotenone to treat a pond because application rates are based on water volume, thus reducing expenses. In warm water, rotenone more effectively kills fish due to higher fish metabolism and lower dissolved oxygen levels; however, it breaks down faster in warm water. In nutrient rich ponds, there is a possibility that not all fish will be killed, so inspect the pond at dawn following treatment. Do not restock fish until the pond has at least 7 feet of water depth and rotenone detoxifies (usually two to four weeks). For more information refer to *Rotenone Can Remove Undesirable Fish From a Pond* (www.noble.org/Ag/Wildlife/Rotenone).

Horticulture Tips

Avoid "drench or drought" plant watering

Flood watering between wilting events results in additional stress on plants, resulting in reduced growth and fruit production. The use of drip irrigation, soil moisture meters (irrometers) and mulch to maintain proper soil moisture levels at or near the field's capacity results in better plant performance. Soil moisture is required for plants to dissipate heat. Consistent soil moisture levels can be maintained more easily when water is delivered through a drip irrigation system based on accurate readings from an irrometer. Mulching the soil surface underneath plants can also help by insulating the soil from heat and reducing the evaporation rate.

Prepare for delayed pecan weevil emergence

Pecan weevils can cause extreme damage to a pecan crop if not controlled. The weevils usually emerge from their soil cells (four to 10 inches beneath the surface) starting in August or September, and normally during rain. Emergence can be monitored using a number of different trapping methods, with a trunk circle trap being the most common. During drought, soils can become imperme-

able, making pecan weevil emergence more difficult and sporadic. Some pecan weevil emergence will occur through cracks in the ground, but a sufficient rainfall (one to three inches) will be needed to soften the soil for normal emergence. With delayed emergence, timing sprays for weevil becomes more difficult.

For more information on pecan weevil control, see *Anticipated Pecan Weevil Emergence in 2006. Normal or Drought-delayed?* (http://pecankernel.tamu.edu/insect_update/index.html) and *Biology and Control of the Pecan Weevil in Oklahoma* (<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-4530/EPP-7079web.pdf>)

Reduce temperature and solar radiation on plants

Mist, shade or coat garden plants to mitigate plant stress during extreme daytime temperatures. Irrigation is not enough. Overhead misting applied at short, regular intervals during the heat of the day can effectively reduce air temperatures. Overhead shading using 50 percent transparency shade fabric in combination with misting provides the best results. If shading and misting is not an option, applying a powdered clay material called Surround® crop protectant to garden plants following moisture application provides a layer of coating to plant tissues insulating them from the heat and preventing sun scald. ■