



Ridin' Herd

► by **Rick Rasby**, Extension beef specialist, University of Nebraska

Have a drought management plan

Drought seems to happen somewhere every year. The key to getting a cow-calf enterprise through a drought is to have a management plan. Drought forces producers to develop strategies that deal with indirect economic and biological effects of too many animals for the available feed resources, as well as direct effects of reduced water supply for plants and animals. Trying to feed the whole herd through a drought with purchased feeds can be financial suicide, especially if drought conditions last more than one growing season.

Many strategies can be used to reduce forage demand. Let's look at them in three categories: livestock inventory, use of existing forage resources and alternative feeding programs.

Livestock inventory

Adjusting livestock inventory to reduce and balance total forage required with available forage supply usually is the most economical alternative. Individual production records can help identify low-producing females. Cull late-calving cows, older cows and less-productive cows. Cull early to avoid selling when prices are low because everyone else is selling.

Consider culling females that are in the bottom 15%-20% of production for two to three years in succession. These females may be telling you that they don't "fit" for some reason. If there is a time when individual records are valuable in management decisions, this is one.

Remove yearlings from pasture early and sell or drylot. One of the advantages of having a yearling enterprise along with a cow-calf enterprise is that yearlings can be sold or moved to the feedlot if pasture becomes limited, allowing the cow herd to be kept intact.

Usually during drought conditions, early-weaning calves is more effective than creep-

feeding. Lactational pressure is not removed from the dam when calves are creep-fed. Data from the University of Illinois indicates early-weaned calves are efficient at converting feed to calf gain (see Table 1). If calves are early-weaned, consider retaining them to take advantage of the efficient gain. Another reason to consider retaining early-weaned calves is they are light at weaning and, if sold right off the cow, usually don't generate enough dollars to cover annual cow costs.

There is a body of data that indicates that early-weaned calves exposed to high-energy diets have a high propensity to grade USDA Choice or better. So, know your annual cow-calf enterprise production costs and determine when calves should be marketed for the greatest potential profit. With the current prices of lightweight calves, this must be thought through carefully.

Finally, data would suggest that for every 2.5 days a calf is weaned from its dam, there is one more day of grazing available for the cow. Data collected at the University of Nebraska indicate that 250- to 350-pound (lb.) calves will consume about 5 lb. of grass daily on a dry-matter (DM) basis. There is also a savings in forage intake between a lactating and nonlactating female. Bred cows can get by on minimal forage if not suckling calves.

Consider not keeping replacement heifers. It may be more economical to retain young, healthy, open cows instead of heifers. Heifers require high-quality feeds and forages, and this expense is costly without a calf for income. In addition, first-calf cows will wean the lightest calves. When managing drought effects by reducing cow numbers, having

more prime-age cows will result in the greatest pounds of calf weaned.

Use of existing forages

Use existing forage resources efficiently. The greatest benefit of crossfencing pastures for a rotational grazing system is during drought conditions. Grazing systems don't have to be extensive, but allowing pastures to have a rest period in drought conditions aids grass persistence. In addition, if carrying capacity is lowered during drought, improved grazing management minimizes the effects of drought on grasses. Consider some of the following grazing management techniques during a drought.

- Delay turnout to permanent pastures by feeding carryover hay or by grazing meadows, early alfalfa growth or winter cereal-grain pastures. A one- to two-week delay in turnout can increase forage production 10% or more when soil moisture is limited.
- Construct temporary crossfences within larger pastures to concentrate grazing. This encourages cattle to more completely use whatever forage is available and defers grazing on other pastures, allowing them to accumulate more growth before being grazed.
- Be sure to provide enough time for adequate plant recovery before grazing the pasture again.
- Skim- or flash-graze each pasture very briefly with a high concentration of livestock early in the grazing season to use plants that otherwise would become mature and left ungrazed if grazing is delayed. Typical examples include sedges, cheatgrass and downy brome, bluegrass, and early forbs. Temporary electric fencing and hauling water may be needed to control when and where cattle graze certain areas.
- Be especially cautious of poisonous plants, nitrates, prussic acid and grass tetany. Some plants that are not normally consumed may poison livestock when the forage supply is low.
- Avoid overgrazing rangeland; otherwise, recovery following drought will be slow and production depressed for an extended time.
- Time-grazing can be used in pastures with questionable water supply or quality early in the grazing season when water demand by cattle will be less.

Alternate feeding opportunities

Additional forage supplies can be developed. These options, though, must be

Table 1: Calf performance by weaning age

Weaning age, days:	90	152
In-weight, lb.	195	365
Feed:Gain	5.1:1	5.6:1
Yield Grade	2.45	2.33
% grading Choice	98%	96%
% grading avg. Choice or better	76%	62%

Source: University of Illinois.

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chosen with great care because they may be expensive compared to other alternatives, such as destocking. Following are some forage feeding opportunities.

- ▶ Cut winter wheat for hay instead of grain, especially if low grain yields are expected.
- ▶ Plant oats as early as possible for grazing or hay. Oats use spring moisture very efficiently to produce forage.
- ▶ Use alfalfa for pasture instead of hay. In this situation, other winter feed supplies will be needed. Protect cattle from bloat.
- ▶ Green-chop alfalfa or hay meadows and feed daily instead of grazing or harvesting as hay. This minimizes losses and stretches the feed supply to its maximum, but it can be expensive.
- ▶ Plant summer annual forage grasses like Sudan grass and millets. These plants are drought-resistant, but will need some summer moisture for economical growth.
- ▶ Always test summer annuals for nitrates. If nitrates are high, mix with low-nitrate feeds and adapt cows.
- ▶ Graze corn, especially dryland corn with depressed yields. Corn provides high carrying capacity and quality for a "salvage" operation, but crossfence and introduce cattle slowly to avoid digestive problems.

If there is grass still available in the pasture, then supplementation with grain

such as corn is not recommended to extend the pasture. Supplementing corn will actually reduce forage digestibility. Also, supplementation with a protein cube will not reduce forage intake. Actually, it will increase forage intake and therefore not extend the pasture.

Because of the dry conditions, grasses tend to produce seedheads earlier than usual, and quality is likely lower than anticipated.

To extend existing pasture, consider feeding alfalfa hay. It provides some protein and energy, but also fills the rumen and reduces pasture intake. Basically, alfalfa is being substituted for pasture. If pasture is available and you want to extend it, feed 4-6 lb. of alfalfa per head per day. Alfalfa could be fed three times a week to save on fuel and labor.

Consider grain coproducts when trying to extend existing pasture. Grain coproducts don't appear to reduce digestibility of forages, so feeding them in a diet that is primarily forage will not have negative associative effects. There is research being conducted at the University of Nebraska evaluating the use of grain coproducts as a feed to extend existing pasture in cattle-grazing situations.

Treating crop residues such as wheat straw with anhydrous ammonia can make straw almost as digestible as average-quality prairie hay. Ammoniation will increase digestibility of low-quality forages, therefore

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increasing intake. Cattle don't quit eating straw because they don't like it; reduced intake is due to its low digestibility and slow rate of passage. They can't stuff any more into the rumen.

Ammoniation is a management practice for straws and crop residues. The process is temperature-dependent and occurs faster at higher environmental temperatures like those that occur in July and August. Ammoniation of low-quality forages must be done right. Bale straw soon after grain

harvest, preferably with some moisture or dew on it. Gather bales into rows that are stacked like a pyramid, leaving a couple of inches between pyramids for the ammonia to filter around the bales. Cover the entire stack with one sheet of 6- to 8-millimeter (mm) black plastic. Make sure the edges of plastic on the ground are sealed with loose soil to prevent leaking of ammonia. Insert a pipe placed on the ground into the center of your stack and attach the pipe to the anhydrous tank. Slowly leak anhydrous into the bales sealed with plastic.

Ammonia can be dangerous. Don't inject ammonia too fast or the plastic can rupture.

Check and repair any leaks with duct tape. Continue to add anhydrous slowly until you have added 60 lb. per ton of straw. This process will take about 10 minutes for each ton of straw ammoniated. When completed, turn off the tank, remove the pipe, and seal its opening. Keep the stack sealed for 10 days to two weeks in the summer. About a week before feeding, open one end of the stack to allow excess ammonia gas to escape.

Because grains, especially corn, have been inexpensive, consider designing diets that have forage in limited amounts and mostly grain. Because corn is high in energy, these diets will not be fed to the animals' full daily

intake (see Table 2) while still meeting their nutrient needs. It is important when feeding limit-fed grain rations that there is plenty of bunk space [30 to 36 inches (in.) per head] so boss cows don't get all the grain while the timid, young cows get thin. Space also helps manage around the possibility of subacute acidosis if one or more cows eat more than their share of grain. Rations in Table 3 (page 103) are example diets, assuming no pasture is available. The concentrate part of the ration will supply the energy and protein needs. Medium- to low-quality forage is used so rumen health is not compromised.

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Table 2: Guidelines for limit-fed rations based on corn grain

Stage of production	Amount to be fed (DM)		
	Corn, % of body wt.	38%-44% protein, lb. per day	Long-stemmed hay, % of body wt.
Gestating	0.75%	2	0.5%
Lactating, avg.	1.0%	3	0.5%
Lactating, high	1.1%	3.5	0.5%

Source: Oklahoma State University.



Table 3: Limit-fed corn rations for 1,200-lb. gestating and lactating cows

Ingredient	Gestation (lb. per head per day "as is")	Early lactation
Grass hay	6.7	6.7
Whole corn	10.0	13.3
Supplement, 38%-44%	2.2	3.3
Salt and vitamin/ mineral	free choice	free choice

Hay = 89% DM, 5% CP, 50% TDN; corn = 90% DM, 90% TDN; supplement = 90% DM.
 Supplement contains an ionophore.
 Mineral supplement needs to concentrate on calcium.
 Mid- to late-lactation rations need to account for calves eating 1% of their body weight.

Consider including a supplement that contains an ionophore. An ionophore will help reduce the occurrence of subacute acidosis and increase efficiency of use of the ration by the cows.

Because these rations supply all the nutrients, they need to be fed daily. For the first week, consider feeding 50% of the ration in the morning and 50% in the evening. After a week, it is probably more economical to feed the ration once a day. Because cows are not fed to capacity, they will seem hungry, but they should adapt in about 10-14 days. Lots or exercise pastures will need to have good fences. If straw or cornstalk bales are available, consider letting cows have access to these forages as filler to the main diet. In this feeding situation, it may be best to wean the calf.

Final thought

Have a management plan, and be prepared to implement it when a drought occurs. There are economical options to keep the productive cows in the herd. Records will be critical in drought situations, both from cow-culling and pasture-management standpoints. Be creative in designing feeding alternatives.



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Editor's Note: Now in the Angus Journal column lineup is "Ridin' Herd," a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column will focus on beef nutrition and its effects on performance and profitability.