

In the wake of drought: Getting Cows in Calving Condition

by Troy Smith

Ponder, for a minute, the few hundred years that cattle have been a serious commercial pursuit in North America. During that time, what might have been the leading threat to maintaining a livestock operation? What challenge, more than any other, could have overwhelmed the most cattlemen and put them out of business?

If drought doesn't top the list of factors, it had to be the leading natural force. Countless cattle enterprises failed for lack of feed and often water because of extended periods of dry weather. It has affected virtually every region periodically, and some parts of cow country always seem to be on the verge of another drought. Often, the operations that survive the really bad ones are changed forever.

It still happens today, of course. Fortunately, cattle producers have more and better management tools. Applying knowledge born of practical experience and scientific research, they use range and pasture management, harvested forage supplies and other alternative feed resources to buffer the effects of drought. Even so, a string of long, dry years can take a toll on cattle performance. Managers of cow-calf operations often have to be resourceful to maintain reproductive performance, for without reproduction, there is no production.

A look at the U.S. Drought Monitor map shows which parts of the country are currently in the grip of drought. Much of the West has suffered drought conditions for more than seven years. And while some areas received a bit of relief during 2007, vast areas to the west of the Rockies and in the Northern Plains remained abnormally dry. But it's the Southeast that suffered most.

Regardless of region, cattle-savvy folks don't have to look at precipitation records or even the parched pastures to know it has been exceptionally dry. It shows in the cattle. Particularly in the hardest hit areas, more cow herds went into the winter exhibiting

less than optimal body condition.

That's usually a bad sign for spring-calving herds. Unless they carry sufficient condition [body condition score (BCS) 5 to 5½ is recommended], cows are more likely to deliver weak calves. Colostrum antibody levels could be compromised, and cows may not reach optimum levels of lactation. And, of course, they may not return to estrus and breed back in a timely fashion.

During December, we talked with producers from drought areas to see how they were dealing with the challenge, and to find out how they were attempting to keep their breeding females in acceptable body condition.

Poor condition

We started in South Carolina, where William Bell farms and maintains a cow herd. He starts calving in December, with most calves due to arrive

during January and early February. Talk about the drought has dominated producer conversation at local cafés, he says.

"It got so bad that many of them don't know what to do next," Bell says. "They don't have any grass, and they've been feeding high-dollar hay for months. For a lot of them, that's about gone, too."

Area auction markets have seen record runs of cattle, as producers sold down their herds. They reduced numbers to save feed for the cows they kept. Still, Bell says, a lot of cows all across the Southeast are in relatively poor condition. Producers whose cattle used to go into winter with a condition score of 6 would score 4 to 4½. Some were worse.

"We sold our calves earlier and culled the fool out of our herd too," he adds. "But we're more fortunate than some others. We still have hay."

Bell received enough rain last summer to raise a little Sorghum-Sudan grass hay, but his irrigated Coastal Bermuda grass hay has made all the difference. He normally markets hay, mostly to horse owners for \$155 per ton,

but he had to keep more for his own use. He also cut and baled soybeans that had dried out and begun to drop pods.

"We usually supplement cows in the winter with whole cottonseed, which has helped our reproductive performance," Bell says. "The price is twice as high as a year ago, but the cost per unit of nutrient is still favorable compared to the alternatives. So, we're feeding a little more cottonseed and rationing our hay, trying to keep our cows at a condition score 5."

Recovering range

Jon Means manages Means Ranch Co., near Van Horn, and has cattle interests across west Texas. That region enjoyed some timely rains last spring and summer following one of its long and frequent dry spells. The last one was long enough that the range has been slow to recover. Means says cows on a lot of ranches "got behind" well before 2007. Condition scores suffered, and many herds experienced reduced reproductive performance.

Means calls large-scale hay feeding impractical for many of the large ranching operations of the area. There is limited hay production locally, and freight costs are prohibitive. Cattle typically graze expansive pastures throughout the year with supplemental protein provided when forage quality is lowest.

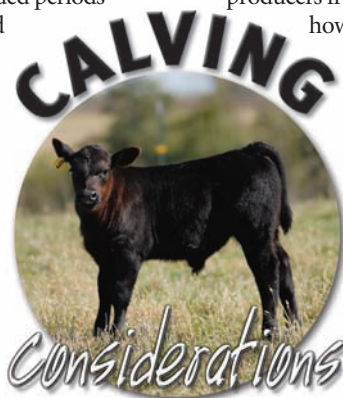
Means' cows also calve during late winter, supplemented with whole cottonseed, protein cubes or liquid supplement. The choice depends on purchase price, relative nutrient value and which product best complements the available forage.

"We've just been trying to hold our herd together and keep them in acceptable condition. We've had to move some cattle to where there was feed — in northern Texas, Oklahoma and Kansas," Means explains. "Besides making sure cows get enough protein and energy, our mineral program has helped us maintain reproduction, too. We test the soil and the grass and have a mineral supplement made that provides the trace minerals that were lacking, along with a good source of phosphorus."

Where dry is normal

Ranching near Fort Stockton, Texas, Houston McKenzie says "dry" is normal. Ranchers there have to learn how to make things work, even if it means cows get a little thin at times. However, McKenzie does have access to alfalfa grown under irrigation.

His mature cows receive the worst of it, along with a little cane hay or other low-quality forage, plus protein cubes as a supplement. Replacement females receive the best-quality hay. He has culled aggressively,



keeping females that fit the environment best. He also sold yearlings earlier to save grass for the cows.

“You won’t see our cows getting over-fat, but we try to keep them from getting too thin,” McKenzie says. “My family also has a ranch in New Mexico, and we have the option of moving some cattle there if our grass and hay runs too short.”

Making sure cattle fit the environment is the philosophy of John Verbance, manager of Acord River Ranch, near New Plymouth, Idaho. That area received 6 inches (in.) of precipitation in 2007, compared to an average of 10 in.

Verbance has worked hard at reducing the mature size of the ranch’s cows. He has developed an intensively managed grazing system, allowing cattle to graze during more of the year. And he has moved calving to later in the spring, closer to grass green-up.

“Most people around here calve in the late-winter to early-spring period. If you calve in January and February, like most of them do, it takes a lot of feed to keep any condition on the cows. With hay costing \$150 a ton, I can’t make it pencil out,” Verbance says.

His strategy for maintaining cow condition starts with early weaning. That gives the cows a chance to put on some weight before winter. Barring a stretch of really severe weather, he doesn’t have to provide much extra feed before February.

He raises hay under flood irrigation and has it tested to determine nutrient content. Normally, during the last trimester of gestation, he provides cows with a liquid supplement that is high in energy and protein. Bred heifers have access to the supplement at 60 days prior to calving.

“A couple of weeks before breeding, I start feeding a complete ration consisting mostly of ground hay — grass hay and a little alfalfa — plus liquid protein and mineral. It might include some silage if we have it,” Verbance offers. “We artificially inseminate (AI) or plant an embryo in every cow and keep the length of our calving season at 45 days. We feed [well] when we have to, but the grazing system has allowed us to cut feed costs while maintaining reproduction and improved animal performance.”

Flexibility with yearlings

Much of Nebraska saw welcome rains in the spring and summer of 2007, but the far southwestern corner of the state and the panhandle remained dry. Extreme drought hung on in the upper corner of the panhandle, near the Wyoming and South Dakota borders. Rancher Joe Nunn of Harrison says the area’s cows, on average, carry less-than-optimum condition.

Nutrition critical in third trimester

As a cow’s pregnancy progresses to the third trimester, it’s important that her diet meet increasing nutrient requirements. Inadequate body condition at calving time poses a risk to the health and performance of her calf, and it can delay the cow’s return to estrus and lengthen her calving interval.

Jim Neel, University of Tennessee animal scientist, reminds producers that the optimum body condition score (BCS) for mature cows at calving is 5. However, Neel recommends first-calf heifers be in BCS 6 and maintained in that condition through breeding. That can be challenging during periods of drought, or anytime producers rely on low-quality forages. It’s always wise to have feedstuffs tested for nutrient content.

Forages low in crude protein (CP) content (less than 7%) are more slowly digested. A slowed passage rate generally results in lower feed intake, but providing a source of supplemental protein increases forage digestibility by enhancing rumen function.

According to Neel, nonlactating mature beef cows in the second trimester of pregnancy need diets containing at least 7% protein. In the last trimester, however, the need increases to 9%. Late-gestation diets for first-calvers should contain 11%-12% protein. Mature cow requirements rise again, to at least 11%, during lactation.

Table 1 illustrates how the nutrient requirements for range cows with average milk production change during a yearlong production cycle. Note that requirements are expressed in pounds of nutrient needed per day, showing differences among cows of different weights.

Table 1: Intake nutrient requirements in pounds per day for range cows with average milk production during 12 months of production (data from NRC 1996)

	Dry gestation	Third trimester	Early lactation	Lactation (spring, summer, fall)
		1,000-lb. cows		
Dry matter	21	21	24	24
Energy (TDN)	9.64	10.98	14.30	13.73
Crude protein	1.30	1.64	2.52	2.30
Calcium	0.03	0.05	0.07	0.06
Phosphorus	0.02	0.03	0.05	0.04
		1,200-lb. cows		
Dry matter	24	24	27	27
Energy (TDN)	11.02	12.62	15.85	15.23
Crude protein	1.49	1.87	2.73	2.51
Calcium	0.04	0.06	0.08	0.07
Phosphorus	0.03	0.04	0.05	0.05
		1,400-lb. cows		
Dry matter	27	27	30	30
Energy (TDN)	12.42	14.28	17.40	16.71
Crude protein	1.67	2.13	2.94	2.70
Calcium	0.04	0.07	0.08	0.08
Phosphorus	0.03	0.05	0.06	0.05

“It’s been dry here since ’96, and [it’s] getting worse. The last three years have been really extreme. Both forage quantity and quality are lower,” Nunn says. “We’ve been cutting back on cattle, culling deeper every year. And we stopped buying calves to run over, with our own calves, as yearlings. We also stopped taking in pasture cattle like we had done previously.”

If he has any edge over other area ranchers, Nunn says it’s because of the ability to flood-irrigate hay meadows lying along the Niobrara River. Even so, last summer’s hay crop was about one-third of what he once considered normal.

Unfortunately, Nunn felt it necessary to start feeding hay to cows in October. Normally, he doesn’t start until December. They weren’t hurting, Nunn says, but they were thinner than he likes to see.

Yearlings were marketed early, which left more grass for cows to graze. Nor are there any first-calf heifers to calve this spring, since the mature cow herd now includes no cows more than 7 years of age. They are on rather short pastures saved for winter range and supplemented with just enough hay. Instead of the 20% protein range cubes Nunn traditionally fed to boost protein, he has switched to molasses-based lick tubs containing 30% protein and added vitamins and minerals.

“Most of the neighbors are doing the same kinds of things — reducing numbers of cattle and trying to stretch their grass and hay. We’re still trying to pay close attention to nutrition, in the most cost-effective way,” Nunn says. “I think we can have our cows in condition score 5 by calving time.”

