

Dealing with DROUGHT

This summer farmers and ranchers were hungry for information and tips on how to deal with the drought. Here, we summarize some of the releases our Hereford World team received.

Drought has a potential three-year "tail"

Livestock producers who fail to properly manage the drought could find themselves dealing with the consequences long after the rains return, says Ron Lemenager, a Purdue Extension beef specialist.

Exceptionally high temperatures and extremely low rainfall have combined to stress livestock and reduce their feed supplies. Producers can take steps to manage a situation that might cost some money now but could pay off in big ways in the long run.

"The tail on this can be pretty long if we don't manage things right in a drought year," Ron Lemenager said. "One thing that I think is really important for producers to consider this year is body condition. If you use condition scores of these cows as a barometer of where you're at nutritionally, we can't do much about the heat or drought, but we can make sure we don't have any nutritional deficiencies."

In a drought year, forages are low in both quality and quantity, situations that can leave cows thin and undernourished. Less-than-optimal body conditions can have reproductive consequences not only this year but next year as well.

Heat stress coupled with poor nutrition can create a double whammy by lowering oocyte and sperm quality, as well as embryo survival if fertilization does occur, Lemenager said.

"The environmental conditions we are experiencing have ratcheted stress forward into the heart of the breeding season for

those that calve in the spring, meaning it's very probable we'll see more open cows than normal this fall," he said.

Lemenager said the likely increase in open cows this year means producers need to pregnancy-check cows to minimize the use of expensive feeds. When forages are in short supply, there is little reason for producers to feed nonproductive animals. Instead, they can consider marketing culled cows earlier than normal to take advantage of higher market prices.

"If we're short on forage we have the option of sliding by, but if cows are thin going into the fall, fewer will be bred, calves will be lighter at weaning time this year and fewer calves will be born next year," Lemenager said. "Then, if cows are thin heading into next breeding season, fewer cows will be bred and colostrum quality will be lower, meaning a lower calf survival rate which affects productivity in years two and three."

To avoid the three-year "tail," he said producers might need to pay the price now to supplement feed and make sure cows are healthy and in moderate body condition. Healthy cows will breed better and can shorten the time producers face fallout from the drought.

In addition to monitoring body condition, Lemenager and Purdue Extension forage specialist Keith Johnson offered producers a list of steps they can take to manage drought and heat stress:



Hereford breeders from across the Midwest were affected by the drought. This photo was taken July 4 at Van Newkirk Herefords, near Oshkosh, Neb. The Van Newkirk family weaned the following week after having only 3 inches of rain in 12 months.

- Avoid overgrazing and employ rotational grazing.
- Creep-feed calves to create near normal weaning weights.
- Early-wean calves to take pressure off of both cows and pastures.
- Identify and manage poisonous plants in pastures and hay fields.
- Establish summer annuals to increase late-season forage production.
- Pregnancy-check and market cull cows earlier than normal to reduce feed needs.
- Inventory hay and other feed resources.
- Analyze feeds for nutrient profiles to help determine supplemental feed needs.
- Use alternative feeds to supplement and stretch forage supplies.
- Limit hay access time to stretch forage supplies.
- Limit-feed a high-concentrate diet to stretch forage supplies.
- Graze crop residues and stockpiled forages to reduce harvested feed needs.
- Use drought-stressed corn for grazing, green chop or silage.
- Make sure cattle have access to a clean, cool water supply.
- Moisten the soil around ground rods of electric fences.

— Purdue University

Drought conditions make corn dangerous to feed to livestock

As the hot summer and severe drought continue across much of the Midwest, thousands of farmers are being forced to abandon ruined corn crops. With much of the year's corn crop expected to yield much less grain than anticipated, many farmers are left to harvest their fields early to salvage what nutritional value they can to feed their animals, especially cattle. Tim Evans, an associate professor of veterinary pathobiology and toxicology section head at the Veterinary Medical Diagnostic Laboratory at the University of Missouri (MU) College of Veterinary Medicine, warns farmers and livestock producers that drought-damaged corn plants can pose a risk to animal health.

"During severe drought conditions, corn plants, especially those heavily fertilized with nitrogen, can accumulate a chemical called 'nitrate,'" Evans said. "This chemical can be very harmful to animals, especially

cattle, if they eat corn plants or other vegetation containing too much nitrate. Eating plants with too much nitrate can cause damage to red blood cells, resulting in lethargy, miscarriage, and even sudden death."

Evans says that in normal conditions, corn crops typically absorb nitrate into only the lower 12-18 inches of the stalk, which does not have to be fed to animals. However, during severe drought conditions, high concentrations of nitrate can accumulate in the upper portions of the stalk, which cattle and other livestock often eat.

Evans also says that many naturally growing plants and weeds in grazing pastures can accumulate nitrate during drought conditions, as well. These plants include many types of grasses and some weeds, which animals might be forced to eat because of limited pasture or hay available as forage for livestock. Evans encourages farmers to test the nitrate levels of their crops and pastures before allowing their

animals to eat any of the plants. In addition, Evans suggests that corn plants being harvested early for making silage, which generally contain lower concentrations of nitrate, should be tested for nitrate prior to and after fermentation to determine the concentrations of nitrate being fed to cattle.

"...farmers should definitely contact their local Extension offices for help in the preliminary stages of testing the nitrate concentrations in their crops," Evans said. "...Extension workers have their boots on the ground all across the state and are truly a valuable resource for farmers who are worried about their crops and livestock."

Evans says that high nitrate levels in plants are generally not a danger to humans but only to ruminant animals such as cattle, which eat very large amounts of plant material daily.

— University of Missouri



Preconditioning strategies for drought-stricken areas

The U.S. Drought Monitor continues to show the spread of severe and extreme drought into larger areas of cow-calf country. Producers are seeing the effects of more heat, reduced forage quality and dwindling water supplies in cows and calves.

Three Boehringer Ingelheim Vetmedica Inc. (BIVI) professional services veterinarians share regional insights and recommendations to help producers work through the fall preconditioning challenges.

Northern High Plains

Dr. Travis Van Anne, BIVI senior professional services veterinarian based in western Nebraska, says at this point calves have experienced severe heat stress, and in many cases, producers will wean earlier than usual.

"With the lack of feed resources, it may not be possible to do a 45-day wean on calves before they are sold," says Dr. Van Anne. "However, we can help that calf handle the stress of weaning and immediate transport by making sure the calf is vaccinated and ready for disease challenges."

Assuming that calves received a clostridial vaccine, like Alpha-7®, at birth and a modified-live virus vaccine, such as Pyramid® 5 + Presponse® SQ, at pasture turn-out, Dr. Van Anne recommends the following preconditioning program this fall:

Mineral: Three to four weeks before calves leave the ranch, make sure to offer a chelated or amino acid complex mineral free choice. Poor forage quality leads to lack of micronutrients; the mineral mix helps boost calves' immune systems.

Vaccination: Two to three weeks before calves are sold, give them another round of modified-live virus

respiratory vaccine that protects against viral and bacterial causes of bovine respiratory disease. He also recommends a booster to the clostridial vaccine.

Parasite control: While calves are in the chute for vaccinations, don't forget to use a pour-on deworming product to control internal and external parasites. Dr. Van Anne explains that if the parasite load is reduced, calves can have a better immune response to vaccinations.

Dr. Van Anne says while it is tempting to skip vaccinations this fall due to high input costs, he cautions against that management practice.

"Cattle buyers have good memories," says Dr. Van Anne. "Northern High Plains producers have a reputation of producing high quality, healthy calves that go on to perform in the feedlot. Preconditioning calves with the right animal health products is good for the producer's image, as well as the industry's image. We don't want to risk our reputation for a small cost savings."

Southern High Plains

Producers in the Southern High Plains are feeling the long-term effects of an extended drought.

"We are experiencing an atypical year," says Dr. Mac Devin, BIVI senior professional services veterinarian. "We are seeing a lot of immune function issues with calves this year."

Dr. Devin, based in central Texas, points out that if one counts back seven or eight months ago and looks at the stress those dams were under, that stress is showing up in the calves.

The reduced forage quality and other drought stress affected the amount and quality of colostrum that

the cow produced in the last trimester. Past research has shown that calves not receiving an adequate amount of high quality colostrum were more prone to disease challenges, shares Dr. Devin.

At the ranch level, Dr. Devin suggests that producers make sure to have a mineral mix in front of calves prior to vaccination to help the calves' immune systems respond. "We want to make sure we don't do anything that could impede the response to vaccination," says Dr. Devin.

Dr. Devin gives the following recommendations for calves arriving from stressed environments:

Nutrients: Ensure that calves have access to fresh water and have adequate intake of feed and energy upon arrival.

Handling: Don't add to the stress; make sure to handle cattle quietly and efficiently.

Vaccinations: Vaccinate calves with a modified-live virus vaccine, like PYRAMID 5 + PRESPONSE SQ, that protects against respiratory disease caused by BVD, BRSV, IBR and PI3 as well as Mannheimia haemolytica.

"We do many of these things already, but this year it is really important that we follow through," concludes Dr. Devin. "We need to recognize that we may have a subset of calves that won't respond due to stress. We need to watch the calves closely, and follow up with a second dose of modified-live virus vaccine if needed."

Southeastern states

"We are really dry in the Southeast this year and our grass is really thin," says Dr. Jody Wade, BIVI senior professional services veterinarian. "In many places, producers are already feeding hay."

Dr. Wade, who is based in eastern Tennessee, says cattle, both cows and calves, may be nutritionally behind unless producers are supplementing due to short pastures.

"We had some folks take advantage of higher calf prices when they pulled fall-born calves this spring and they skipped preconditioning," explains Dr. Wade. "Unfortunately, those calves are now really struggling through the production cycle, whether at a stocker level or in a feedyard."

"If it is at all possible, producers need to precondition their calves this fall," stresses Dr. Wade. "Preconditioning sets calves up for success."

Dr. Wade makes the following recommendations for Southeastern producers preconditioning spring-born calves this fall:

Minerals: The poor forage quality really puts emphasis back on providing the right mineral pack for the herd to provide key micronutrients.

Use the right vaccines: Vaccinate to cover the big five viruses — BVD Types 1 & 2, BRSV, PI3 and IBR. It is also crucial to protect against clostridial disease and pasteurilla.

Wean at 45 days: If you have the ability to wean calves at 45 days, it really does provide the healthiest calf for the buyer.

"Sickness and disease challenges in the next steps of the production cycle can be prevented with preconditioning," says Dr. Wade. "If sickness rates are high for buyers it is bad for everyone, including the cow-calf producer. Reputation is everything in this business and preconditioning helps make a reputation calf."

For more information, please visit: bi-vetmedica.com

— Boehringer Ingelheim Vetmedica Inc.

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Drought impacts on the cattle industry

The beef industry has already experienced a number of difficult years characterized by declining cow numbers and per capita beef supplies. There was hope in the first half of this year that this downward production phase was coming to an end, but the drought of 2012 has erased those hopes, according to Purdue University Extension economist Chris Hurt.

So, where is the cattle industry today, and what do we know about the impacts of this year's drought?

The midyear cattle inventory report from the U.S. Department of Agriculture (USDA) indicated that beef cow numbers had dropped by an additional 3% over the past year. Since 2006, beef cow numbers have dropped by 8% due to much higher feed prices and the long drought in the Southern Plains. The 2012 calf crop is expected to be down about 2% and also down 8% from 2006.

Hurt said this year's drought likely means further decreases in cow numbers over the next 12 to 14 months.

"The impacts of the drought are just beginning to show up in some of the national data," Hurt said. "We do know the direction, but not the final magnitude of those impacts. The cattle industry is negatively affected by feed costs and lack of availability of forages. Higher corn and soybean meal price

have dropped the value of calves and feeder cattle that will eventually go to the feedlots. Lack of pasture is also causing some early movement of cattle," he said.

Since feed prices started rising in mid-June, corn prices have increased around 60% and soybean meal prices are up 25%, Hurt reported.

"Forage conditions have been horrible across the Midwest," Hurt said. "At the end of July, pastures that were in 'very-poor' and 'poor' condition totaled from 82% to 98% for the states of Indiana, Illinois, Arkansas, Missouri, Iowa, Kansas, Nebraska and Colorado.

"There have been many reports of producers forced to feed hay that was intended for this winter's forage supply. Those producers are hoping for late-summer rain that may restore some pasture this fall. If that does not come, a deeper liquidation of cows can be expected," he said.

Hurt reported that in the wake of high feed prices and uncertainty regarding forage availability, calf and feeder cattle prices plummeted. Oklahoma steer calf prices were \$173 per hundredweight (cwt.) in mid-June and collapsed to \$138 by late July. How much loss of value is that? A \$35 per cwt. decline on a 550-lb. calf is nearly \$200 per head reduction in value.

Multiplying that across a national calf crop of 34.5 million head totals a potential decline in value of over \$6 billion. Hurt said that it is still too early to count the actual damages, but this illustration shows it is likely large.

Reduced value of calves and feed uncertainty will most likely result in further declines in cow numbers this fall and winter. National slaughter data so far during this drought indicate only modest increases in cow slaughter. However, most Midwest producers have had hay to feed, helping them to avoid panic liquidation. How the drought unfolds in coming months will influence how much cow liquidation occurs. More rain and, thus, grass will reduce liquidation. Continued drought will increase fall and winter cow culling.

"The largest negative financial impacts of the drought will be felt by cow-calf producers and by feedlot managers who did not have feed prices locked in at the lower spring levels," Hurt said. "Assuming most large feedlots are primarily hedged on feed and feeding margins, this means that moderate- and small-sized family feedlots are the primary category that suffered large losses. Some of those family farms may also have large losses from crops, especially if they did not

have crop insurance, and thus could be in financial difficulty," he said.

Hurt said the message for cow-calf producers is to hold on to the cows, if possible. "The short-term losses of the next 12 to 14 months will be replaced by large profits in late 2013, 2014 and 2015. These anticipated 'golden' days are based on continued reductions in per capita beef supplies which will mean higher and higher retail beef prices; on an expected return to more normal crops in 2013 and beyond; and record-high calf prices and profits in late 2013 and beyond. The problem for some producers in a weakened financial condition is that they have to survive the pain in the short run to secure the prize in the long run," Hurt said.

Hurt said the message for family feedlot managers is "risk management."

Any thoughts of industry-wide expansion are pushed off for another year to late 2013, when pastures are restored and feed prices drop, Hurt said. The exception is for producers in areas of the country that have abundant forages. For them buying cows sold this fall by distressed owners appears to be a strategic move.

— University of Illinois

Drought-damaged pastures require special care next spring

Agricultural experts with The Samuel Roberts Noble Foundation have words of wisdom for farmers and ranchers following the recent historic drought — be careful with your pastures.

The record-setting drought rivaled the long maligned dry spells of the mid-1950s and even the Dust Bowl period. Agricultural producers across the southern portion of the U.S. — 14 states in all — experienced varying degrees of drought conditions with Oklahoma and Texas receiving the brunt of the heat and lack of precipitation in 2011.

Despite fall rainfall, ramifications of the drought were still being felt

throughout the Southern Great Plains as farmers and ranchers prepared for the 2012 forage production season. (Forages are plants such as grasses and legumes that ruminant animals consume.) The hot, dry summer of 2011 left many pastures severely damaged and thin from overgrazing, meaning producers should take extra precautions this spring.

"Livestock producers should be aware that the roots of forage plants have weakened, making them even more susceptible to any additional drought damage," said James Rogers, assistant professor. "Even if favorable

growing conditions return in 2012, producers should keep stocking rates reduced to give forages a chance to generate leaf growth and regenerate lost root mass."

Last fall, growing conditions improved somewhat in the region. Combined with overgrazed lands, these improved conditions resulted in a strong presence of cool-season annual grasses, such as ryegrass, in pastures typically dominated by warm-season grasses. "Cool-season grasses provide excellent early spring grazing or hay production, but can present a downside," Rogers said.

"However, if not removed by mid-May, these annuals will compete with and delay warm-season grass production, further hindering the drought recovery process."

Additionally, weakened pastures provide opportunity for weeds to come sooner and in greater numbers this spring. To prevent infestation, Rogers recommends producers begin scouting for weeds early and apply the appropriate herbicide for the target species, if necessary. "Failure to control weeds will result in reduced forage production and further stand thinning," Rogers said. "Weed control is a serious topic that requires additional education. We encourage producers to get as much information on weed control as possible. They can call agricultural consultants at the Noble Foundation or a local county extension office."

Despite some positive indications this winter, the seasonal U.S. drought outlook (available at droughtmonitor.unl.edu) is predicting that drought conditions will persist. "Even though many perennial grass stands in the Southern Great Plains have been weakened or damaged, pastures can recover with proper management," Rogers said. "Producers must evaluate the current conditions of their pastures and assemble a plan, being mindful of the potential for drought, decrease in stocking rates and proper control of weeds and other annuals."

— The Samuel Roberts Noble Foundation

