



# Pasture Gazette

Department of Soil & Crop Sciences

Volume 2, Issue 1

January 2006



## Editor's Corner

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### Drought continues.....

Drought continues to plague Texas livestock producers. Hay

with drought management for the future and some management tips on how to treat your pastures as part of a drought recovery strategy.

supplies are short and winter pasture just may not make it...we will simply have to wait and see if there is a break in the weather pattern in the very near future. I know there are several of you that do not have enough hay to feed until spring greenup, and you may be faced with making some rather difficult decisions regarding the sale of breeding stock.

If you raise livestock, you will always be subject to the negative effects of drought. The experienced rancher learns to build drought management into his overall management plan so that the negative effects of drought are reduced. Learning to plan and manage for drought can keep you from "buying high, selling low, and using lots of Maalox."

**NOTE: DO NOT BE AFRAID TO SELL CATTLE!** And, the

sooner you make the decision, the more value you will realize from your cattle sales. With the continued high prices for calves and replacements heifers, many producers will be tempted to hold on at all costs. This strategy can result in an economic catastrophe for the ranching operation. This issue of The Pasture Gazette contains an excellent article on how to cull your cow herd and unfortunately, that does not simply mean selling your calves early. Read the article carefully and learn from the experience of Drs. Ron Gill and Bill Pinchak. Their advice can help cull the cow herd in an appropriate manner. Also in this issue are a couple of articles dealing

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*"If you own livestock, you will always be subject to the negeative effects of drought"*

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Remember, if it weren't for drought and winter, raising cattle would always be fun and profitable. This is one of those times that it is not fun or profitable...but those times will come again.

Good luck and let us know if we can help you with anything!

For additional information:  
<http://www.drought.noaa.org>  
<http://webgis.tamu.edu>

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# Destocking Strategies During Drought

Ron Gill, Extension Livestock Specialist, Stephenville  
Bill Pinchak, Range Animal Nutritionist, TAES, Vernon

Producers who have gone through forced liquidations appreciate the complexity of management decisions to be made and fully understand potential financial ramifications. The following discussion will probably be more valuable to producers who infrequently face major herd reductions or those who will face their first in the future. Ranchers with more experience in drought-prone areas can probably add as much or more to this discussion than they get from it.

A primary objective of partial herd reductions is to optimize animal performance of the remaining breeding herd relative to forage supply. There are four primary rules in destocking:

1. The sooner the problem is identified the sooner appropriate actions can be taken.
2. The sooner stocking adjustments are made the less severe the herd reductions will need to be.



3. Maximize available options and minimize long-term negative impacts on the forage resource.

4. During drought maximize the effective use of precipitation by having enough residual forage to capture and utilize limited precipitation and reduce evaporative loss.

## Common Destocking Mistakes

There are three common mistakes ranches make when faced with forced liquidation of the breeding herd:

1. Do nothing now in hopes rainfall will occur or additional grazing can be leased until conditions improve.
2. When the decision to reduce stocking is made, the most common strategy is to early wean calves and then hope conditions will improve and cows will not have to be sold.
3. The practice of retaining young cows (less than 4 year old females) at the expense of more productive middle-aged cows (4 to 7 years old), when culling is finally initiated.

Culling spring calves, under six months of age, will not appreciably decrease herd forage demand. Calves only consume 15% to 25% of the forage consumed by their dams. Light weight, early weaned calves have little value when marketed during widespread drought conditions. Use early weaning as a management tool to improve cow condition before calving, not to decrease forage demand.

As stated earlier, many producers try to “hang on” just a little longer in hopes adequate rainfall will occur or additional grazing for the cow herd can be found, so destocking will not be necessary. The longer decisions to decrease stock numbers are delayed the sooner the forage supply will be exhausted. Research in the Rolling Plains has shown that 60% to 80% of the annual forage production on native pastures occurs by the end of July. If the drought were to break and average precipitation occurred from July on, only 20% to 40% of average forage production could be expected. Ranchers who believe they are short on forage relative to livestock demand need to make immediate destocking decisions to balance forage demand and

supply. Months of peak forage growth vary among regions of Texas. Contact the local NRCS office or the local county Extension Agent to find out when most forage growth is expected to occur and destock accordingly. “Wait and see” management will decrease both short and long term forage production and availability.

Forage plants have a minimum residue requirement in order to maintain adequate root and above ground growth, ensure plant health, and make effective use of limited precipitation. When the forage base is taken below a certain residue level, ability to recover is severely reduced. More rainfall is needed to sustain forage regrowth in overgrazed pastures when compared to those with adequate standing reserves. When limited amounts of rain are received and no leaf is available to absorb sunlight there will be inefficient utilization of the precipitation. By the time roots can absorb enough moisture to initiate leaf growth there is insufficient moisture left to sustain leaf and root growth. Successful grazing managers always leave sufficient root and leaf tissue for plants to respond to rainfall.

“Hanging on” also raises havoc with marketing options and sale value of cattle. Local markets decline in drought and during periods of high feed prices. Delayed destocking inevitably leads to lower cattle income. Sell cattle early to avoid the inevitable decline in market value.

A commercial ranch generally cannot afford to purchase hay to survive drought or overstocking. Even short term practices such as hay feeding are expensive and are seldom the best alternative. Decreasing forage demand is imperative during drought and requires the sale of breeding livestock! Producers should not cull cattle and use that income to buy feed or forage for the remaining cows. To do so, will cause a ranch to come out of a drought without any cows or money.

## Destocking Strategies Under Drought Conditions

The following discussion will focus on what cattle to cull first and why. The first culls should be any spring or summer calving cow that does not have a calf at side. Normal rates of pregnancy loss and calf death loss will result in 5% to 15% of the cow herd meeting these culling criteria. If a cow calved last fall, winter or this spring and lost a calf, sell regardless of age or pregnancy status. This is no time to wait for next year’s income. This just accelerates recommended or normally practiced culling procedures. Also included in this first round of culling are replacement heifers that have been purchased or raised but not already in production. During drought, first calf heifers will wean the lightest calves and have the lowest rebreeding potential of any age class. Removing replacement heifers (at a 15% replacement rate), will result in a 7% to 10% reduction in stocking rate and forage demand. Supplemental feed requirements will also be reduced because replacement heifers have high nutrient requirements. At this stage of culling, herd size can be reduced 12% to 25% without impacting this year’s weaned calf crop.

Next, cull short-bred fall calving cows and long-bred spring/summer calving cows. Few cows will meet these criteria unless the breeding season was extended last year due to dry conditions. In contrast, 5% to 15% of the cows may be identified as late-bred in herds with extended or year-round calving seasons. Palpation and identification of cows by stage of pregnancy will be required to use this culling practice. At this point, a 15% to 40% reduction in cow numbers can be attained without significantly impacting this year’s weaned calf crop.



While cattle are penned, carefully inspect all aspects of the cow's anatomy and current production levels. This would include teeth, feet, legs, udders, and calf-at-side. Consult any production or herd records during this process to prevent overlooking cows with marginal production history. If records are not available, a visual assessment of calf-at-side will have to suffice. Be sure to individually identify cows if they are to be commingled after evaluation. Future labor cost can be reduced if cows are sorted into culling groups at this time. Sorted cattle can be moved and marketed without unnecessary stress on the remaining cows. Much of future culling will be based on these characteristics of production soundness.

Continued decline in forage conditions will require culling cows raising the current year's calf crop. While such drastic measures will affect this year's income, culling marginal cows will improve production capability in the remaining herd. Shipping cows with calves is difficult for most producers. Therefore, culling producing cows should be based on historic production records, the current calf-at-side, or soundness. The goal of this culling phase is to remove a sufficient number of cows to ensure adequate forage is available to carry the remaining herd at least through weaning. Short and broken mouth cows should be culled first because they will not have acceptable productivity under drought conditions. The next step would be to cull the genetic bottom of the herd until targeted levels of herd reduction are met. At this stage, the culling priority on 40% to 70% of the cow herd has been established.

Before culling deeper into the productive cow herd, determine whether the remaining cows are bred and consider whether to sell open cow-calf pairs before weaning. If calves weigh 400 pounds or greater consider weaning and selling the calf and open female separately. Calves weighing less than 400 pounds and their dams should be marketed as pairs.

At this point all the easy culling decisions have been made. The wholesale recommendation to wean calves and sell them has not been made. When a ranch is running out of grass, remember, the need is to eliminate cattle that consume the greatest amount of forage; that is the cow, not just the calf. Any calves weaned off marginal cows, that are heavy enough, might be considered for growing to a heavier weight before marketing. This alternative is feasible only when forage is available and/or feeding is cost-effective. Feed must be cheap for retaining ownership of calves to make economic sense. Careful budgeting is needed before the decision is made to retain calves. Above average rainfall received in some areas of the country may make summer grazing available for calves or cows. Exercise extreme caution when selecting and negotiating with unknown entities.

Another consideration is whether to cull the cow herd to the point that enough forage is available to grow calves to the heavier weights that are in demand in the feeder cattle market. Again, only careful budgeting under each ranches' economic and production constraints will identify the most appropriate management strategies.

If animal demands still exceed forage supply, cull cows with the lowest rebreeding potential. When forage supply is severely restricted, these cows will need to be moved no matter what their current production status is. Cows retained need to be able to rebreed for next year's calf crop and the following one as well. Cows that fall into this category are thin (BCS 3 and under) middle-aged cows and thin to moderate (BCS 4 and under) first and second calf cows. Both groups will have lower conception rates and wean lighter calves than cows in better body condition. This process will normally identify up to 10% of the remainder of herd. When cows were sorted on calf quality or pregnancy status, most cows with low

rebreeding potential would have been identified for culling.

Further culling will require 8-year-old or older cows to be sold despite condition or current production status. Aged cows will be the first to decline in production potential in the future. Many producers will sell all older cows (6 and over) and keep all replacement heifers, first-, second- and third-calf cattle. By doing so, the most productive animals are sold and cows that will wean the lightest calves and have the lowest rebreeding potential are kept. Age culling will normally identify another 5% to 10% of the cow herd. Many cows in this category will have been culled in previous culling steps.

After the herd is culled to this point, the only cow culling option left is based on uniformity. Sell the smaller and larger end of the cows. Some culling on uniformity can be done a step or two earlier in this strategy outline, but other steps will identify cattle with lower production potential.

Beyond this point, destocking options are limited to selling remaining calves and liquidating the herd. By this time all that will be left is 4- to 7-year-old cows that represent only 10% to 30% of the original cow herd. Most producers will try to purchase feed to keep the nucleus of the breeding herd together. At times a lifetime of work and dedication to building a herd is at stake. From a purely economic standpoint purchasing forage to maintain the remaining

cows cannot be justified. There are times when emotions overcome common sense and sound economics. There is nothing wrong with that phenomenon as long as the short term emotions do not jeopardize the long term survival of the ranching enterprise or the economic security of the family.

### Summary

Destocking decisions are never easy to make and are seldom made without substantial cost. Drought is an inevitable consequence of ranching in Texas. Management strategies need to include plans for drought so that ranch managers are never caught unprepared. Destocking management requires maximizing the options available to the operation through monitoring current and future forage supplies and animal demand. Early destocking adjustments will be less severe than later adjustments and will afford more marketing flexibility. Destocking strategies outlined earlier are designed to cull cows of least immediate economic benefit and maximize individual animal production in the remaining herd. Integrated financial and management plans are necessary to reduce negative impacts from destocking on cow equity and/or income tax liability. Decisions should not be based solely on equity and tax implications. Potential long-term impacts to the forage base may ultimately cost more than immediate tax liability and losses in equity.

## Livestock and Pasture Strategy Points for Dealing with Drought and High Energy/Fertilizer Prices

Larry Redmon, Professor and State Forage Specialist, College Station

### DROUGHT

- **DO NOT BE AFRAID TO SELL CATTLE - NOW!** Cull the cow herd deeply to reduce forage requirements and to minimize winter feeding requirements. If you wait,

prices become depressed and you will wind up receiving much less for your cattle than you could otherwise. See the associated publication on destocking for more details.

- Consider reducing the current **STOCKING RATE** to 75% of what is possible during average years. During years with excess forage production, use calves as *flex grazers* to take advantage of the additional forage.
- If pond water shortages have been an issue during drought, consider the development of alternative water sources using well water. This will result in considerable additional expense, but is part of building drought into the overall livestock management plan.
- Consider using corn or other feedstuffs and plant by-products to substitute for hay to stretch hay supplies. Maintain 50% of the diet as roughage under any and all circumstances.
- Be aware that warm-season annual grass hays, such as forage sorghums, sorghum-sudan hybrids, and millets may very likely contain accumulate nitrates that may be toxic to cattle. Always obtain a **NITRATE ANALYSIS** for these hays to determine they are safe to feed. **NOTE:** This analysis is different from a typical forage analysis and you must ask for the nitrate analysis specifically.
- Even if you follow all guidelines, **DO NOT** conduct prescribed fires during a drought. Reduced fall/early winter precipitation levels, and thus low soil moisture levels, suggest that prescribed fires should not be conducted during late winter, especially in arid and semi-arid areas. Chances of the prescribed fire becoming a wildfire are also increased during drought, forage will be burned that could serve as an emergency feed supply needed to get cattle through the remainder of the winter, and societal perceptions of burning during a drought are very negative.
- If your property has been subjected to a wildfire, burned areas should be fenced separately to prevent livestock from “camping” on the burned areas. Burned areas will likely be higher in nutritive value early in the spring and livestock will spend more time on these sites. Excessive grazing pressure may prevent the area from re-establishing as it should.
- Remember that close grazing is common during a drought. This close grazing, however, impairs the plant’s ability to recover from drought stress. Pastures that have been subjected to both drought and close grazing should receive adequate protection (and thus, rest) from grazing pressure to facilitate a more rapid recovery.

#### **FERTILITY:**

- **SOIL TEST** and apply only those fertilizer nutrients your soil needs.
- Ensure soil pH is adequate to enhance fertilizer uptake efficiency.
- Understand limestone **QUALITY** and purchase the best limestone available.
- **SHOP** for the best fertilizer and limestone value. Understand the concept of purchasing N by the pound and limestone based on ECCE number.
- Remember that proper fertility can aid in forage grass recovery from drought stress by improving both shoot development that is necessary for optimum photosynthesis that leads to improved root development. Lack of proper fertility will impair drought stressed forage grass recovery.
- Use herbicides appropriately to ensure your **GRASS** gets the fertilizer and moisture. Do not, however, use herbicides during a drought as efficacy will be reduced.

- Purchase hay rather than produce it, but get a **FORAGE ANALYSIS** on any purchased hay.
- If producing hay, pick your best ground and fertilize it **WELL** attempting to get all the hay you require from the first cutting. Get a **FORAGE ANALYSIS** on the harvested hay.
- Consider the use of municipal sludge, broiler litter, or other alternative sources of fertilizer nutrients to reduce fertilizer input costs.
- Consider the use of clover or other adapted forage legumes in the pasture this fall to reduce winter feeding costs and provide N for subsequent warm-season perennial grass.



## Preparing for the Next Drought

Larry Redmon, Professor and State Forage Specialist, College Station

Hindsight, as they say, is 20-20. Be that as it may, it is quite possible that you find yourself in the middle of a drought and are wondering what steps to take to minimize the negative effects of a drought the next time around. And believe me, there *will be* a next time.

Unless the production system is irrigated, drought will always be part of the risk associated with forage production, and by extension, livestock production. One immediate, and dramatic, strategy that can mitigate the negative effects of future drought events is to adjust the stocking rate of the cow herd down to the point where only 75% of the available forage is utilized. This stocking rate *should* be based on several years' observations of how much forage is produced under typical management strategies. Therefore, a forage sampling program that provides information on the amount of forage produced annually from each pasture should be initiated. Although one year of information will seldom provide the information required, it is a start.

When stocked at 75%, livestock producers will typically not be overstocked during drought years. This will prevent having to purchase hay at elevated prices while attempting to “feed your way out of a drought” during years with below normal precipitation. The 75% stocking rate will also reduce the need to sell stock at a time when many other producers will likely be selling their stock. During years of good forage production, stocker calves may be used as flex grazers to utilize excess forage. Calves may come from the producer's own herd wherein calves are weaned and pastured until the excess forage is utilized. Calves may also be purchased and pastured in the same manner. Pasture may also be provided for other producers looking for additional forage and charged based on the quantity of gain realized or on a per-head per-month basis. Excess forage in good years may also be harvested and conserved as hay, or sold to local hay producers wishing to harvest more acres.

Forages should never be grazed “to the roots” under any circumstance; removal of most or all green photosynthetic material (leaves)

deprives the plant of the ability to convert sunlight into carbohydrates (energy) vital to plant growth. Decreased carbohydrate production results in decreased root production, thus reducing the plant's ability to obtain necessary moisture and nutrients from the soil profile. The relationship between leaves and roots is critical at all times, but much more so during periods of moisture stress. Therefore, it is important that an adequate level of forage residue be left in the pasture. Besides allowing the plant to carry out optimum photosynthetic activity, adequate forage residue also reduces the amount of soil evaporation of vital moisture and allows for better infiltration of any precipitation that is received, rather than being lost as overland flow from the site. Pastures where there is little or no forage residue have very low infiltration rates of precipitation and most of the moisture received leaves the site as runoff. For bermudagrass, a target residue height should probably be no less than 4" in height; other species will be different depending on their growth habit. Sod forming grasses may generally be grazed to a shorter height than bunch grasses, and some of the tall grasses should not be grazed shorter than 8" to 10". NOTE: Close grazing usually occurs *during* drought, but this same close grazing impairs forage grass recovery *from* drought.

During drought, hay supplies are in short supply and are higher priced. Emergency supplies of hay should generally be purchased early in the season when prices are typically lower. Waiting until the need for hay becomes apparent only increases your feeding costs unnecessarily. To stretch limited hay supplies, use corn or other plant by-products as substitutes for hay. Remember, however, that forage roughage should comprise 50% of the diet. Corn will substitute for good quality hay typically at a 1:2.25 ratio. That is, one lb of corn will take the place of 2.25 lbs of hay. An example of the substitution would be to use 450 lbs to substitute for a 1000-lb round bale of hay.

Be aware, however, that attempting to "feed your way out of a drought" can be very expensive and is difficult to recover from in an economical sense. Don't be afraid to sell cattle when the need arises!

Fertilizer is never inexpensive, but during 2005 all fertilizer nutrients have increased in cost dramatically compared with 2004 prices. Thus, the first inclination of forage and forage-based livestock producers is to withhold fertilizer during a time of drought. This is seldom a wise strategy. Maintaining the proper soil nutrient status helps forage plants tolerate and survive drought better than plants that do not have proper nutrients for optimum growth. While nitrogen is generally the most limiting factor to plant protection behind moisture, phosphorus is critically important for root development and overall vigor of the plant. Potassium is an essential element for plant production and is important in water use relations. Plants that receive adequate potassium can tolerate drought better than plants that do not. Thus, a well-balanced fertility program can help plants survive drought better than plants that are poorly fertilized or not fertilized at all. Good fertility will also enable drought stressed plants to recover more rapidly after the drought has ended.

If fertilizer has already been applied, but there has been no significant precipitation, the fertilizer is still in the upper soil profile. With the exception of urea as a nitrogen source, which is subject to volatilization loss as ammonia gas to the atmosphere under certain conditions, the fertilizer investment in the pasture program will not have been wasted. When precipitation does occur, the plant will re-initiate growth and plant uptake of the fertilizer nutrients will take place.

In summary, the following key points should be remembered regarding preparation for the next, and inevitable, drought event. Paying attention to these points can help forage and

livestock producers to reduce the negative effects of drought.

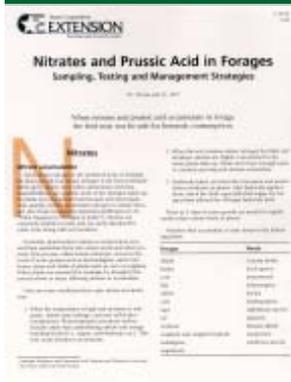
- Realize that drought will always be part of the risk associated with forage and livestock production; no one is immune.
- For livestock producers, attempting to feed their way out of a drought with hay, plant by-products, or grain-based rations, remember that this strategy may not be economically viable and careful consideration should be given as to whether or not this strategy should be attempted.
- The cow herd should be stocked for 75% utilization of the forage produced based on long-term records.

- Well-fertilized forages tolerate drought better than poorly fertilized forages.

Well-fertilized forages recover from drought more rapidly than poorly fertilized forages.

- It is generally better to have fertilizer in the field waiting on a precipitation event, than to withhold fertilizer until “times get better”.
- Do not be afraid to sell cows. Cull deeply before the drought becomes too severe.

## Remarks



Due to the extremely dry growing conditions in Texas this year, producers should be aware of the potential for nitrate accumulation to the point of being toxic in plants belonging to the genus Sorghum (grain sorghum, forage sorghum, sorghum-sudan hybrids, johnsongrass) and other warm-season annual forages such as the millets. A quick and simple test kit is available to producers to test their forage prior to baling and additional information

is available from the publication “Nitrate and Prussic Acid in Forages, L-5433. This publication may be found at <http://forages.tamu.edu>, click on the button marked “Publications” and then click on “Nitrate and Prussic Acid”.