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# RANGELAND DROUGHT MANAGEMENT FOR TEXANS: SUPPLEMENTAL FEEDING

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**When forage quality and/or quantity is affected by drought, livestock producers are usually faced with decisions about supplemental feeding. First, they must determine whether they can afford to supplement, and if so, they must decide what to supplement and how to manage feeding.**

**Animal nutritional needs are paramount for production. If a drought continues or worsens, a producer may need to reevaluate the cost of supplementation to meet the herd's nutrient needs and possibly cull lower-priority animals.**

## WHETHER TO SUPPLEMENT

When deciding whether to feed during a drought, a producer should consider the mindset, "Can I afford to meet my animals' nutrient needs?" rather than, "How much can I afford to spend on feed?" (and hope that whatever is fed keeps animals productive).

A good place to start is with a regular body condition monitoring program. In fact, body condition scoring should be a routine part of management. Then, to further define which specific dietary nutrients may be lacking, livestock managers can use additional tools, such as forage testing. Results from these tests can indicate the diet quality of free-ranging animals. In combination with body condition scoring, these tools will help determine what kind of and how much supplement will fit the bill.

For more information on these techniques, see the AgriLife Extension publications *Using Body Condition Scores to Manage Range Cows and Rangeland* and *Sampling Hay Bales and Pastures for Forage Analysis on AgriLife Learn.*

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## SUPPLEMENTATION IN RELATION TO FORAGE QUALITY AND QUANTITY

The goal of a supplemental feeding program is to add lacking nutrients to a forage-based diet. Therefore, a proper stocking rate is critical because even in drought situations, most of the dry matter consumed by livestock should come from forage.

This typically means adjusting the stocking rate to a level appropriate for forage supply, and then supplementing protein to improve diet quality and forage consumption. While planning, remember that an average 1,300-pound cow will consume 20 to 25 pounds of dry forage per day (or 2 to 2.5 percent of its body weight).

Either hay or concentrated energy supplements may be used to extend or partially replace existing forage supplies. Note, however, that concentrates are more costly than hay, and when more than 3 pounds per day of high-energy concentrates are supplemented, it may result in lower efficiency of feed conversion. Therefore, this technique is probably best reserved for specific, short-term situations. Supplementing large amounts of energy in any form for long periods is usually uneconomical for rangeland animals.

Remember also that if high-energy grain supplements are chosen to compensate for a short grass supply (fed at more than 2 to 3 pounds per day), feeding frequency may affect animal performance. Feed grain supplements daily, as opposed to skipping days and increasing amounts. This will help keep acidosis problems in check and minimize the inhibitory effects of grain on digestibility of pasture forage.

As an alternative, supplements that are high in digestible fiber, such as wheat middlings, soybean hulls, peanut skins, etc., can also be used to extend forage supplies. These supplements provide energy,

but because they are lower in starch, they lessen undesirable effects on the digestibility of pasture forage.

For more information, see the AgriLife Extension publication *Supplementation Strategies for Beef Cattle*.

## WHAT TO SUPPLEMENT

When considering supplements, remember that there are no "magic bullets." Animals will only improve in performance if the supplement compensates for the nutrients that are lacking in the diet.

A dry cow or ewe requires a minimum of 7 percent crude protein in her diet just to keep the digestive system microbes healthy and working on forage digestion. Therefore, the first limiting nutrient for livestock consuming dormant or drought-stressed forage is usually protein.

When evaluating supplements, the most important factors to consider are nutrient content and price per pound of nutrient(s) in the supplement. To choose the right one for a herd, calculate not only the cost per pound of supplement, but also consider the supply and quality of available forage.

For example, a producer compares two types of range cubes to add crude protein to the livestock diet. One cube contains 38 percent crude protein and the other 20 percent. Which is the better buy?

First, calculate the cost per pound of crude protein. The 38-percent cube provides 760 pounds of crude protein per ton of bulk feed. At $571 per ton, it costs $0.75 to provide a pound of protein.

The 20 percent cube provides 400 pounds of actual protein per ton of bulk feed. At $438 per ton, it costs $1.10 to provide a pound of crude protein.

If protein was the only concern, then the 38 percent cube would be the better buy. However, if grass is not only dormant but also in short supply, then the 20 percent cube, fed at twice the rate, would probably be a more complete feed because it would provide some extra energy as well. Note, however, that this would add 35 percent to the overall cost of the supplemental feeding program.

The form of supplement—be it block, tub, cube, meal, etc.—is unimportant if the animal consumes enough of it to compensate for nutrients lacking in the pasture diet. If animal supplemental requirements are particularly high, some types of self-fed supplements may limit intake to a level below what is needed.

Molasses is another energy supplement that is often used to stretch forage supplies. It is convenient because

it can be self-fed, and in most cases, it also contains some type of protein additive.

Be cautious. Some pre-formulated molasses supplements may use high levels of nonprotein nitrogen (NPN), such as urea, as their primary "protein" source. As the name implies, NPN does not contain true protein but, rather, nitrogen that can be utilized by rumen microbes. High NPN supplements are not drought supplements. They should only be fed if forage is abundant but dormant, dietary protein requirements are low (dry mature females), and protein deficiency is only minor.

## FEED MANAGEMENT TIPS

Sort and feed livestock by age, body condition, and production status (growing versus mature, lactating versus nonlactating, etc.).

If reductions in stocking rates are needed, begin by culling the open cows, or dry spring and summer ewes. If numbers need to be reduced further, follow by culling lactating females in poor body condition, as they probably will not re-breed anyway.

Other feed management tips during drought include:

- Buy and store feed in bulk. Forward contracting can sometimes trim a few dollars.
- Feed protein supplements less often. Supplements high in natural protein may be fed as infrequently as twice or even once per week. Conversely, feed high-energy supplements daily to avoid chances of acidosis.
- For cattle, the total diet should not fall below a 1.1:1 ratio of calcium and phosphorus. Under most range situations, a 2:1 mineral should be adequate to meet animal needs. For more information, see the AgriLife Extension publication, *Mineral Supplementation of Beef Cows in Texas*.
- Ensure vitamin A is supplemented if it has been more than 3 months since the diet has included any green

forage. Most quality mineral supplements include adequate amounts of vitamin A. Read feed tags to verify vitamin A levels. Injectable vitamin A can also be used, but it may need to be re-injected every 3 to 4 weeks.

In many situations, supplementation strategies are just a best guess, unless something is known about diet quality in relation to animal requirements. A lot of that guesswork can be removed by sampling and testing available forage to predict pasture diet quality.

Knowing diet quality can help producers evaluate supplements for their biological benefits to the animal. Livestock and feed prices will tell if that answer is economically feasible.

Other drought-management publications include:

- *Rangeland Drought Management for Texans: Planning: The Key to Sustainability Before and After Drought*
- *Rangeland Drought Management for Texans: Livestock Management*
- *Rangeland Drought Management for Texans: Stocking Rate and Grazing Management*
- *Rangeland Drought Management for Texans: Toxic Range Plants*


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