

## **DRAFT DROUGHT TIP** **AUGUST 2015**

### **Drought strategies for feeding cattle grazing annual grassland**

*Josh Davy, Larry Forero, Jeff Stackhouse, and Glenn Nader, University of California Cooperative Extension*

Drought leads to predictable lack of forage production on rangelands. This leaves two possible management scenarios: sell animals to reduce forage demand or supplement to maintain herd genetics. In some cases producers may choose a combination of both to prevent complete herd dispersal. This publication is designed to help producers think through the supplementation of cattle during drought years.

During drought it is imperative to reduce grazing pressure on rangelands to avoid causing subsequently diminished production in the years following drought. If the amount of feed to sustain the animals exceeds 50% of the diet it ceases to be supplemental feeding and becomes replacement feeding. If replacement feeding is necessary, often the best option is to bring cattle to a holding field to feed them. This preserves the dry forage remaining on rangelands which acts as a mulch that reduces runoff and increases infiltration when rains come. This residual dry matter (RDM) will be the most important factor for range recovery once rains return. To determine if adequate amounts of RDM are left for range recovery view ANR publication number 8092 "Guidelines for residual dry matter on coastal and foothill rangelands in California" <http://anrcatalog.ucdavis.edu/pdf/8092.pdf>.

#### **Consider the stage of cow production**

The quantity and nutrient value of supplemental feed necessary varies based upon the production requirements of the cow. Peak nutritional demand for a cow is 60 days post calving. As the calf grows, the necessary milk production decreases, along with cow nutritional requirements, however the calf begins to require forage to meet its maintenance and production requirements. Generally, a dry cow has the lowest feed requirement. The stage of cow production can be manipulated by management and is the very first consideration prior to supplementing.

#### **Pricing and ration development considerations**

When considering the decision to cull or feed, the cost of supplemental feed needs to be considered first. This cost can be applied against economic factors that include the increased weight of weaned calves before selling as well as the cost of replacing genetics when cows are sold.

When considering supplemental feeds, cost per ton is not a good way to compare different types of feeds. Cost per ton does not account for varying nutrient values of diverse feeds. For example, almond hulls are almost always cheaper than the cost of corn, however the energy value of almond hulls is around 52% total digestible nutrients (roughly the same as oat hay) as compared

to corn which is approximately 88% total digestible nutrients. This means almond hulls provide roughly 59% of the amount of energy as corn when fed at the same rate.

Determining the appropriate supplement is complicated because energy, protein, and often calcium need to be considered. For example, corn is high in energy, but low in protein and calcium, where canola meal and cottonseed are high in both protein and energy and have higher calcium than most other concentrates.

### **Ration Balancing Software**

Ration balancing software can help determine the appropriate supplement for a given situation for a given production scenario. It is important to determine the price and availability of supplement options as well as the animal production parameters (dry cow, pairs, etc) prior to sitting down at the computer. The University of California has developed a ration balancing program available called 'Taurus' (<http://animalscience.ucdavis.edu/extension/Software/index.htm>). A demonstration version of the program is available for free download. The Taurus program can evaluate a current ration or develop a least cost ration for most cattle production scenarios. Most cooperative extension offices in California have copies of the program and livestock farm advisors that can assist with a ration that fits the specific class of cattle and amount of supplementation needed. While rations can be balanced by using reference tables and a calculator, using computer software allows for a producer to consider many production and feed options quickly.

### **Alternative feeds**

When pricing out commodities many producers consider nontraditional feeds. These non-traditional feeds can possibly save money when other roughage or concentrate prices are high. Recent improvements in the methods of putting-up rice straw have improved intake and nutrient availability, potentially providing a low-cost roughage source that could be supplemented with small amounts of concentrates. In some cases other byproducts such as prune pumice may be available from local dryers after fall orchard harvest.

### **Ability to feed alternative feeds**

Concentrate feed types are efficient because they contain high amounts of protein and energy compared to roughages, but typically they are more difficult to feed. The difficulty for many ranching operations is storing these feeds and delivering them to cattle in the quantity specified by the ration. Most concentrate supplemented rations only feed 4-9 lbs of grain per head on a daily basis. There are many examples of feeders that help keep grain off the ground such as long feed bunks and conveyor belts rolled out over the ground, etc. If equipment designed to meter out grain by weight is not available, the added labor to deliver the appropriate quantity needs to be considered before purchase.

### **Graduating rations**

Most droughts cannot be predicted until late fall which means cattle have been consuming lower quality dry forage left over from the season before. This makes it very important to graduate the feeding of high quality concentrate or hay feeds. Sudden shifts in feed quality can result in health problems. It is suggested that producers work up to the final concentrate ration by slowly increasing rations over a two week period. Feeding whole concentrates rather than cracked or rolled make the product slightly less digestible and can help limit some potential problems. Adding an ionophore to the ration can also help lessen the incidences of acidosis.

## **Freight**

When pricing commodities it is very important to consider the delivery cost. This cost needs to be added to the per ton cost of the feed being considered. Freight has a direct impact in determining a least-cost ration. Most feed companies are able to provide an estimated freight cost per ton based on the distance of the ranch from the feed mill. Pricing is usually discounted by purchasing large quantities. Smaller operators might consider partnering up with neighbors to make large enough orders to receive the discounted pricing.

## **Vitamin A**

In livestock, adequate vitamin A is obtained from carotene in green forages, which includes most hay sources. Deficiency occurs when poor quality hay is fed, or when cattle graze dry grass such as RDM that is low in carotene. Cattle can store vitamin A in the liver, so deficiency does not generally occur unless green feed is not available over a long time period. Although adult cattle may appear normal, when deficient, the most common problems are seen in fetuses and calves. Thus, abortion is a common concern. Blood serum sampling, particularly of pregnant replacement heifers, is the best method to assess vitamin A deficiency. Supplemental vitamin A in mineral mixes may not last very long when exposed to sunlight. Injectable vitamin A can alleviate part of the deficiency.

## **Excess protein**

Adequate protein is essential for all classes of cattle, but excess protein in the diet can be detrimental to reproductive performance. Protein in the diet should be monitored closely, especially when high nitrogen supplements such as urea are included in the diet. Most problems occur when cattle have access to high protein feeds such as pasture clover or filaree and are simultaneously provided high protein supplements.



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