Cooperative Extension System

Cattle Producer's Library

Cow-Calf Section CL1130

Beef Cattle Feed Management During a Drought

Roger Brownson, Beef Cattle Specialist
Montana State University

Drought conditions shorten the available grazing and increase the time for supplemental feeding of beef cattle of all classes. This situation increases the demand for feed and this, coupled with the reduced feed supply, creates a need for producers to look closely at key factors of feed availability, feed quality, and feed purchases. This paper discusses these factors in relationship to the drought situation.

Alternative Feeds for Cattle

The West has a large variety of alternative feeds available. Feeds such as straw, grain hays, corn stalks, and other low quality feeds have always been used to some extent, but during an extensive drought, will have to be used as a larger portion of the feed source. Table 1 lists the total digestible nutrients and protein content of several of these feeds and compares them with good quality alfalfa hay. This table estimates the average composition of these feeds. An actual analysis of these feeds can provide a more accurate determination of their feed value, but for comparison purposes, this may be useful in comparing feeds that may be available to individual producers.

Feeding Management

1. Design your feeding program to get the most mileage from available feeds on the ranch or in your locality.
2. Supplement low-quality feeds correctly.
3. Carefully balance every ration against the animal's requirements.
4. Underfeeding nutrients lowers production. Overfeeding nutrients increases feed expense and reduces the net return over feed expense.
5. Make every effort to reduce feed losses.
6. Feed the highest quality feeds to animals that have the higher feeding requirements, such as growing replacement heifers or growing calves.
7. Feed the lower quality roughages to cows in the middle-third stage of pregnancy.
8. Save the better quality feeds for those periods just before and after calving.
9. Consider substituting grains for hay when these substitutions can balance the ration more adequately at a lower price (see section on substituting grain for hay).
10. Consider treating low-quality roughages with various feed additives. They will improve their palatability and their feeding quality when appropriate (see section on treating straws).

Buying Supplementary Feeds

Limit your purchases of feeds to those that complement your existing feed supplies. For example, if you have good quality alfalfa hay on hand, you need not purchase more alfalfa hay for wintering beef cows. A lower quality roughage such as straw or other equivalent roughage will provide much of the energy for beef cattle at a lower cost. If you need supplemental ingredients such as minerals, protein, or energy, purchase additional supplemental feed carefully and on a quality basis. Have feed analyzed where necessary for moisture and crude protein. Your county Extension agent can help you with feed testing.

The choice of feed for cattle depends upon its nutritive value for energy and protein in most cases, its cost in relation to both energy and protein content, its suitability for the kind of livestock being fed for such things as palatability, and the physical effect on the animals.

Table 2 lists several feeds common to the West and shows the average cost of protein and energy content of each based on three different feed costs. While the costs may not be suitable to your area or time, they can be adjusted based on cost laid into your ranch.

This principle can also be applied to feeds that are purchased for supplementing minerals and vitamins as well. In many cases these will be commercial supplements, but a similar comparison can be made.

When comparing costs of feeds, be certain that the average composition being used is equivalent to the unit and price for which you are purchasing it. For example, silages and other high moisture feeds contain a high percentage of water. On a weight basis these feeds are low in protein and energy, even though they may be a highly palatable, good feed to use. Be certain that comparisons are based on energy, protein, and water content if that is included in the price. Buying a feed on an "as fed" basis and comparing it with a table containing 100 percent dry matter content can be very misleading, particularly when comparing feeds with high moisture content.

Harvesting and Storing

During drought, the method of harvesting and storing feed can become more important. When hay and forage prices are high, storage losses can steal a larger share of the feed nutrients you buy or harvest. Carefully cover alfalfa stacks with plastic if they are exposed to weather. Cover silages within 4 to 6 hours after filling to eliminate top spoilage.

Don't fail to review the alternative way of harvesting each crop that you plan to harvest. Your method of harvesting and storing in a drought period may change from what you would do in an average year when prices are not as high.

Summary

Your total feed management is extremely important in surviving a drought. Take a careful look at your feed supply and the feeds available to you for purchase. Review the alternatives, and plan a feeding program that will return the greatest income or reduce the loss in your feeding program until better years return.

Table 1. Comparative TDN and crude protein in selected roughage feeds.

	Total digestible nutrients		Crude protein	
Feeds	Percent	Relative energy value*	Percent	Relative value protein*
Alfalfa (early bloom)	57	100	18.4	100
Alfalfa (mid-bloom)	51	89	15.3	83
Alfalfa straw	49	86	8.5	46
Beet tops (with crown)	54	95	12.7	69
Barley	78	137	12.0	65
Barley hay	58	102	8.9	48
Barley straw	41	72	3.6	20
Corn stalks	55	96	5.9	32
Grass hay (brome or orchard grass)	52	91	10.2	55
Native hay (mid-bloom)	51	89	9.1	49
Oats	65	114	12.0	65
Oat hay	61	107	9.2	50
Oat straw	43	75	3.6	20
Wheat	88	154	14.4	78
Wheat hay	66	116	7.5	41
Wheat straw	43	75	3.2	17
Cottonseed meal	43	132	41.0	223

*Compared to alfalfa hay harvest (early bloom).

Table 2. Some current prices for protein and TDN in various feeds.

	Cost/ton	% protein	Cost/cwt protein	TDN %	Cost/cwt TDN
Alfalfa hay	$ 70	15	$23.33	51	$ 6.86
Alfalfa hay	100	15	33.33	51	9.80
Alfalfa hay	120	15	40.00	51	11.76
Corn silage	15	2	37.50	20	3.75
Corn silage	20	2	50.00	20	5.00
Corn silage	25	2	62.50	20	6.25
Barley straw	15	3	25.00	41	1.83
Barley straw	20	3	33.33	41	2.44
Barley straw	25	3	41.67	41	3.05
Bromegrass hay	50	11	22.73	47	5.32
Bromegrass hay	60	11	27.27	47	6.38
Bromegrass hay	70	11	31.82	47	7.45
Barley grain	100	12	41.67	78	5.78
Barley grain	110	12	45.83	78	7.05
Barley grain	120	12	50.00	78	7.69
Oats grain	90	12	37.50	65	6.92
Oats grain	100	12	41.67	65	7.69
Oats grain	110	12	45.83	65	8.46
Wheat grain	170	15	56.67	88	9.66
Wheat grain	180	15	60.00	88	10.23
Wheat grain	190	15	63.33	88	10.80
Corn grain	100	7	71.43	83	6.02
Corn grain	110	7	78.57	83	7.53
Corn grain	120	7	85.71	83	8.22
Soybean oil meal	190	50	19.00	80	11.80
Soybean oil meal	200	50	20.00	80	12.50
Soybean oil meal	210	50	21.00	80	13.13
Cottonseed meal	120	45	13.33	75	8.00
Cottonseed meal	130	45	14.45	75	8.67
Cottonseed meal	140	45	15.56	75	9.33

Issued in furtherance of cooperative extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, by the Cooperative Extension Systems at the University of Arizona, University of California, Colorado State University, University of Hawaii, University of Idaho, Montana State University, University of Nevada/Reno, New Mexico State University, Oregon State University, Utah State University, Washington State University and University of Wyoming, and the U.S. Department of Agriculture cooperating. The Cooperative Extension System provides equal opportunity in education and employment on the basis of race, color, religion, national origin, gender, age, disability, or status as a Vietnam-era veteran, as required by state and federal laws.
Second edition; January 2000 Reprint