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Drought Information

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Drought Feeding Strategies

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In times of drought and high feed costs, the cattleman must take steps to make the most efficient use of feeds and to search out feeds that produce the most profitable gains. Practices that were not profitable when corn was $1.50 may pay with corn at $3.00 a bushel.

Wheat Straw

A process that greatly improves the feeding value of straw, corn stalks and other low quality roughages is ammoniation. Sealing these roughages under plastic and treating them with anhydrous ammonia (60 lb/ton) makes them equivalent to a medium qualitiy grass hay. Ammonia treatment has increased the intake of straw by 15 to 25% and improved its digestibility by 8 to 15%. It has been approximately equal to alfalfa haylage in energy when the straw made up 1/3 to 1/2 of the dry matter in the ration. Ammoniation will cost from $12 to $14 a ton plus labor costs but it will be a profitable practice when hay is high priced and it will make these low quality feeds acceptable roughages for beef cattle growing rations. There have been some toxicity problems associated with grass hays and sorghum hays treated with anhydrous ammonia but this has not been a problem with the cereal straws and stover.

Drought Corn Silage

Silage is an excellent method to salvage cattle feed from a corn crop that is cut short by the drought. The feeding value of drought silage has been close, on a dry matter basis, to well-eared corn silage when fed in growing rations. This has been true when the corn has made as little as 8 to 25 bushels per acre. On the basis of extensive research trials, it appears the feed value of drought silage ranges from 75 to 95% the value of normal corn silage, depending upon the extent of drought damage. Drought silage usually has 1 to 1.5 percentage units higher protein values on a dry matter basis than normal silage. This higher protein value probably has little worth for formulating rations for growing calves since it is mostly non-protein nitrogen which requires higher energy to be effective. Plant proteins were superior to urea supplements to supplement these higher protein drought silages for calves in Nebraska studies. Nitrates usually aren't a major problem with drought corn silage even though the forage was high in nitrates when it was ensiled, since nitrates are usually reduced by 30 to 50% in the ensiling process. However, it is a good practice to check the level of nitrate before feeding drought silage. Levels up to 0.50% nitrate (NO_3) in the dry matter of the ration can be fed to cattle with little danger if the drinking water is low in nitrates.

High grain prices make silage more competitive for backgrounding and finishing cattle. The non-grain costs of the corn silage will not have increased at the rate the grain has in the short run. Some modeling by R.D. Goodrich and S.D. Plegge, University of Minnesota, indicated that when corn grain is $2.50/bu total farm profits are maximized by feeding cattle rations with 20-30% of the dry matter from corn silage. When corn is $4/bu, profits are maximized by feeding 40-50% of the ration dry matter as corn silage.

Poultry Litter

Broiler and turkey litter are a source of feed for cattle. The nutrient level in poultry litter will depend upon the number of broods reared so it should be analyzed for nutrient content. Litter usually has from 20 to 30% protein equivalent and 50 to 55% TDN on a dry basis. Calves self-fed a mixture of equal parts litter and corn have gained from 1.25 to 1.6 lb daily. Feeding a couple of pounds of grass hay per head daily has improved results with litter rations. Litter can be deep-stacked and mixed with silage and grain at feeding time for protein and other nutrient sources.

Limited Roughage

Because of limited roughage, some backgrounders may want to limit feed a high grain-low roughage ration to gain feeder cattle at 1.5 to 2.0 lb daily. Limit-fed grain rations with 20 to 30% silage or hay on a dry matter basis have been used successfully to grow beef cattle. This level of roughage amounted to as little as 3 to 5 lbs per head daily. It takes good management, plenty of bunk space and careful ration formulation to make high-grain, limit feeding work.

Least-Cost Feeds

Drought causes soybean meal prices to increase sharply. Using as much urea as possible in growing and finishing rations will cut costs. Cattle that are weighing over 650 lb and fed medium to high grain rations will have similar performance when urea replaces soybean meal in their ration. The feed saving from replacing soybean meal with urea at present prices can be seen by this simple illustration (table 1). When corn costs $3.00/bu and urea $300/ton, soybean meal is worth $147.25/ton to supply energy and protein in a beef ration, assuming the same animal performance from the two protein sources. For every $0.50/bu increase in the price of corn the value of the soybean meal increases $16/ton and for every $50/ton increase in the price of urea the value of soybean meal increases $6.75/ton. These prices can be used to increase or decrease the comparative values of soybean meal.

Table 1. Value of Soybean Meal ($/Ton) with Urea and Corn at Various Prices

Value Urea ($/ton) / Corn ($/bu)	200 Value SBM $/ton	250 Value SBM $/ton	300 Value SBM $/ton
2.00	101.75	108.50	115.25
2.50	117.75	124.50	131.25
3.00	133.75	140.50	147.25
3.50	147.75	156.50	163.25

By-product feeds like corn gluten feed, soy hulls, distillers grains and wheat mids may be a cheaper source of nutrients than corn or milo. Least-cost ration formulation is helpful in identifying feeds that supply nutrients at least cost. Most University Extension offices have access to computer programs that compare the values of alternative feeds. An abbreviated printout from one used at the University of Missouri is shown in table 2. Feeds are evaluated on the basis of their TDN and crude protein content with with corn and soybean meal or corn and urea serving as the base feeds to arrive at the cost of TDN and protein.

Table 2. Feed Value Program - Compares Values of Alternative Feeds for Beef Cattle

			Feed Values (SBM-Corn)		Feed Values (Urea-Corn)	
	TDN	CP	$/cwt	$/ton	$/cwt	$/ton
Corn	80	8.6	5.36			
SBM	75	44	18			
Urea	0	281	16			
Alfalfa hay, bud	54	16.2	7.37	147.42	4.21	84.20
Brewers grain, dry	61	27.1	11.50	230.07	5.26	105.13
Corn gluten feed	75	23	10.42	208.36	5.88	117.51
Cottonseed meal	74	41	16.89	337.77	6.84	136.79
Disillers gr/ws	81	23	10.59	211.74	6.24	124.82
Milo	73	10.3	5.78	115.53	5.03	100.61
Oats	69	11.8	6.21	124.11	4.87	97.45
Soy hulls	72	10.9	5.96	119.30	5.00	100.08
Wheat mids	75	16.8	8.18	163.59	5.52	110.45
Wheat, soft	78	11.4	6.31	126.29	5.40	107.95
Fescue hay	50	8	4.30	85.95	3.50	69.99
Ammonia wheat straw	45	6	3.43	68.69	3.08	61.62
Corn silage	23	2.7	1.62	32.46	1.55	31.08
Drought corn slg	20	2.7	1.54	30.77	1.37	27.43

Implants and Feed Additives

Higher feed prices mean a bigger return from growth implants, MGA®, Bovatec®, Rumensin® and other practices that improve feed efficiency. Using a combination of implants and feed additives can improve feed conversions by 8 to 12% or even more. With corn at $3.00 a bushel the feed cost for putting 400 pound of gain on a 700-lb steer will amount to about $200. Thus, a 12% improvement in feed efficiency cuts feed costs by $24. If these products are costing $1.50 to $2.00 a head, the return is $12 to $16 for every dollar invested.

Feeding Grain on Pasture

If your practice is to feed cattle grain supplements on pasture, you should figure the cost of the extra gain that results from feeding grain at these higher prices. If cattle extensively substitute grain for grass, the grain needed for the extra gain will be large and costly. Matching the stocking rate with the grass so there is not an excessive surplus of forage, feeding around 0.5 to 1.0% of the body-weight of the cattle in grain and including an ionophore (Rumensin or Bovatec) in the supplement, will decrease the amount of grain needed for the extra gain. Following these practices has decreased the grain to gain conversions from 8 to 10 down to 4 to 5 in experimental trials.

You may full-feed cattle on pasture to finish them for slaughter. If you graze cool season grasses, waiting until early summer when the grass has matured to start grain feeding will make better use of the pasture and decrease the amount of grain needed to finish cattle. In a University of Kentucky study, delaying full feeding of grain until July to heifers grazing fescue pastures decreased the amount of corn needed to finish by 10 to 12 bushels per head, compared to starting the grain in early spring.

A sharp increase of grain and other feed prices during a severe drought makes the profit penalty from overfeeding cattle greater and should encourage producers to sell cattle before they become overfat. Higher feed prices will increase the value of feeder cattle that have the ability to make efficient gains in the feedlot. Measures to rid cattle of parasites and diseases that impair performance will pay even bigger dividends with higher feed costs. In summary, feed efficiency is a key word when feed prices soar.