

## What's Ahead for Cows on Drought-stricken Pastures?

The answer to this question may be good or bad, but it will surely be costly unless the producer pushes his pencil.

Currently in Iowa, pastures vary widely from location to location. Some areas have adequate grass growth giving sufficient nutrition availability, while other pastures only 10 miles from the abundant area can be totally depleted.

On short pastures, essentially four problems will be occurring if they haven't already:

Number 1 - the cows will go down in condition and lose weight.

Number 2 - because of weight loss, if the cows are not already bred back, they will not cycle regularly, thus resulting in slower rebreeding and lowered conception rates.

Number 3 - the cows will fall off in milk production reducing the calves' nutrition, resulting in poor weight gains.

Number 4 - if cows lose too much weight, next winter's feed bill will likely be more costly because the cows must gain back this needed weight.

These problems may exist even in areas of moderate rainfall. During low rainfall and hot weather situations most grasses go into dormancy and become dry and stemmy. With dormancy comes lower feed availability for grasses. In some instances grass quality may become poor as well, thus the cows cannot consume enough quantity to meet their energy demand. Again--the result is weight and condition loss with poor rebreeding and calf performance being the end result.

The critical need--energy! A cow nursing a calf of 90 to 150 days of age is under strain to rebreed while trying to satisfy the calf's demand for energy. Research has shown the calf's energy needs usually surpass the cow's milk production at approximately 110 days, thus the need for either creep feed or lush pasture to achieve high calf performance.

What are the solutions or partial answers to this dilemma. There are four partial solutions to this short pasture situation.

The first partial solution is dump your "free-loader" cows. In other words, cows which are open, have lost their calves, have soundness problems, or have not calved yet should be culled from the herd as soon as possible. They are competing with productive cows for feed which will return more dollars per unit of feed consumed.

The second partial solution might be splitting the cow herd into two groups for proper nutritional management. The first group would consist of first and second calving cows plus old and thin cows, while the second management group would be the main mature cow herd that is likely to be in better flesh. With this type of split, supplemental feed can be given to those cows that likely need it without overspending on those that don't.

A third partial solution to short pastures is to creep feed the calves. Creep feeding eases the stress on the cow and will lower her feed consumption rate. This practice is sound if the cows are being fed. It also tends to be a sound practice when pasture conditions are short. Research has

shown that the best creep feed conversions occur when stressful situations are present and forage supply to the cow are low.

The fourth partial solution is to wean the calves from the cows. Work at Iowa State University and other universities has shown this practice to work exceptionally well in making cows cycle regular and rebreed early. Best results with early weaning is when calves are over 90 to 120 days old and have been eating a creep ration for at least 10 days.

After the calves are weaned, the cow's energy needs are cut 30 to 40 percent, while her protein needs are cut in half. Due to these requirements, cows gain weight and rebreed easier. Early weaning of calves should strongly be considered on first and second calving cows. Because of more efficient conversion, it makes sense economically to feed the concentrates through the calf rather than to the cow.

### **Other Considerations**

Drought conditions can have an adverse impact on cattle health. In addition to the effect of poor quality forage and limited energy intake on reproduction, excessive heat itself can adversely affect fertility. High environmental temperatures cause an increase in early death of the embryo. Although fertilization occurs, the embryo dies at an early stage of development. If this occurs before the 16th or 17th day of pregnancy, cows will usually cycle on schedule the following heat period. If death of the embryo occurs after implantation in the wall of the uterus, return to estrus may be delayed for several days or weeks. High environmental temperature reduces the intensity of estrus activity.

Bulls are especially vulnerable to heat stress. Overheating can cause damage to semen quality that may last for up to six weeks. Provide artificial shade if ample natural shade is not available in areas where cattle spend most of their time during the heat of the day. It is especially important to have cows pregnancy tested in the fall after drought conditions.

Short pastures can potentially increase parasite loads. It is known that parasite eggs tend to concentrate more in the lower part of the forage plants, thus short pastures due to drought conditions can increase the potential parasite load. This would tend to suggest that strategic parasite control programs are more important during drought situations.

Cattle will sometimes consume potentially toxic weeds when pasture conditions are poor. Some drought stressed weeds accumulate high levels of nitrates and have, on occasion, caused problems. The risk of plant poisoning is minimal, however, if adequate hay and other feeds are provided during drought periods.

Oat hay can accumulate high levels of nitrate if it is grown on highly fertilized soil and has a short period of rapid growth and recovery from drought due to rainfall shortly before cutting. Oat hay harvested from diverted acres is usually not a high risk feed, since high levels of nitrogen fertilizer are seldom used in this situation. Small oats fields near farmsteads that have been heavily fertilized with manure can lead to an accumulation of potentially toxic levels of nitrates. Oat hay should be thoroughly cured prior to baling. Cattle are much more resistant to nitrate toxicity if adequate levels of energy are fed.

## **Feeding Strategies During Drought**

What about feeding the cows? The first thought by everyone is hay, but let's do some thinking and pencil pushing.

Our goal is to supply feed dry matter, but also the cow must receive sufficient energy to maintain weight, nurse the calf and rebreed. This must be done as economically as possible.

Table 1 gives a cost breakdown on feedstuffs available to many cow-calf producers. During drought hay values can run in excess of \$75 per ton. At this price, the cost per pound of total digestible nutrients (TDN) is extremely high when compared to concentrates like corn and wheat. High quality hay at \$80 per ton and 10% waste is 54 percent higher than corn at \$2.50 per bushel when looking at cost per pound of TDN.

It is likely corn silage will be a lower cost feed energy resource this year. However, this distinct advantage on paper may not be a reality unless the producer does a good job of storing silage. The process of putting corn silage in a pile on the ground leads to severe dry matter and nutrient loss. Either creating a storage structure for the corn silage harvest or utilizing currently available silage bagging systems is an important management consideration. Temporary storage systems like movable wooden A frames or the use of large round bales can reduce storage losses if managed properly and used with safety in mind.

Many may not have the silages available for purchase; however, most do have corn and possibly wheat available, thus allowing them to partially substitute grain for hay. It seems very practical to feed about 3 to 5 pounds of grain and limit hay consumption to 5 pounds daily. The best situation would be to feed corn stover or corn cobs with grain on the side. The stover and cobs would act as a filler while 3 to 5 pounds of grain would help meet the energy needs.

Another efficiency move that many producers used successfully in the 1993 flood year was tub grinding a total mixed ration. Using this process allowed them to incorporate in the right proportions of low quality forages with high energy grains and protein supplements. Producers reported back that never had they fed their cow herds more efficiently and observed better performance than in 1993.

Some producers are saying, "Oats are really cheap. I believe they are the good buy." As can be seen in table 1, on a TDN basis, oats have to be below \$1.50 per bushel before they are as low cost as \$2.50 per bushel corn.

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**Table 1. Energy cost breakdown on various feedstuffs.**

<b>Feedstuff</b>	<b>Cost per weight unit</b>	<b>Cost per pound as fed</b>	<b>Cost per pound of dry matter</b>	<b>Cost per pound of TDN</b>	<b>Cost per pound of TDN with Waste</b>
<b>Legume-grass hay (High Quality)</b>	\$40/ton	\$.020	\$.022	\$.039	\$.043
11% moisture*	60/ton	.030	.034	.058	.065
54% TDN*	80/ton	.040	.045	.077	.086
10% Waste*	100/ton	.050	.056	.097	.108
<b>Corn stover</b>	\$10/ton	\$.005	\$.006	\$.012	\$.017
15% moisture*	20/ton	.010	.012	.024	.034
50% TDN*	30/ton	.015	.018	.035	.050
30% Waste*					
<b>Corn silage</b>	\$18/ton	\$.099	\$.023	\$.032	\$.032
60% moisture*	25/ton	.013	.031	.045	\$.045
70% TDN*	32/ton	.016	.040	.057	.057
0% Waste*					
<b>Oat silage</b>	\$8/ton	\$.004	\$.011	\$.019	\$.019
65% moisture*	12/ton	.006	.017	.029	.029
60% TDN*	16/ton	.008	.023	.038	.038
0% Waste*					
<b>Shelled corn</b>	\$2.00/bu	\$.036	\$.041	\$.045	\$.045
12% moisture*	2.50/bu.	.045	.051	.056	.056
91% TDN*	3.00/bu.	.054	.061	.067	.067
0% Waste*					
<b>Oats</b>	\$2.00/bu	\$.058	\$.066	\$.087	\$.087
11% moisture*	2.50/bu.	.074	.083	.109	.109
76% TDN*	1.50/bu.	.044	.050	.065	.065
0% Waste*					
<b>Legume-grass hay (Low Quality)</b>	\$40/ton	\$.020	\$.022	\$.043	\$.051
11% Moisture*	\$60/ton	.030	.034	.065	.076
52% TDN*	80/ton	.040	.045	.086	.102
15% Waste*					
<b>Oat Hay (Dough)</b>	\$15/ton	\$.008	\$.009	\$.015	\$.018
15% Moisture*	25ton	.013	.015	.025	.031
60% TDN*	35/ton	.018	.021	.034	.043
20% Waste*					
<b>Wheat</b>	\$3.00/bu	\$.071	\$.081	\$.092	\$.092
12% moisture*	3.50/bu.	.083	.095	.108	.108
88% TDN*	4.00/bu.	.095	.108	.123	.123
0% Waste*					

\*Assumed moisture, TDN and waste for each feedstuff