



Feeding Drought Corn Silage to Beef Cows

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Several beef cow producers may be considering harvesting drought damaged corn for silage or may have already done so. When properly harvested at correct moisture levels and stored in good structures, this silage is a palatable, highly nutritious feedstuff for beef cows. Drought damaged corn is probably wetter than it appears; therefore, it is important to test the plant for moisture before harvesting it for silage.

Additionally, because of the variation in setting ears, drought stressed corn may possibly have high nitrate levels. Therefore, it is advisable to test drought stressed corn silage for the presence and/or the level of nitrates.

Table 1. Feeding value of drought damaged corn silage

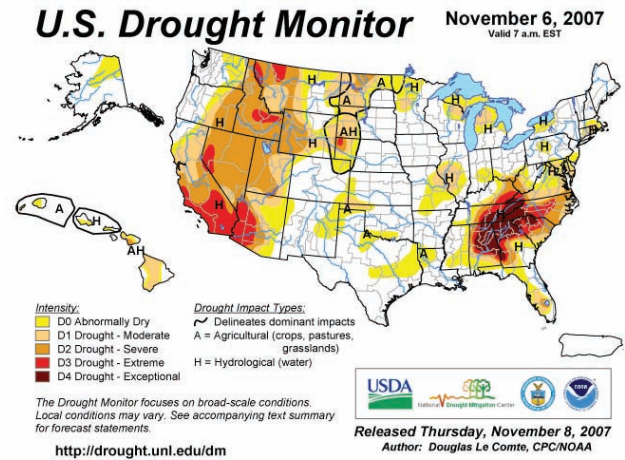
Description	Feeding Value (Estimated % of Normal Silage)
1. Stressed all summer (no ears, stunted)	70-80
2. Severely stressed (5 to 20 bu. grain yield/acre)	80-90
3. Stressed only during pollination (3 1/2 bu. grain yield/acre) or Moderate drought stress (40 to 60 bu. grain yield/acre)	90-100

References: University of Nebraska Beef Report (1971 and 1976), Michigan State University Beef Report (1978), Clemson University Animal Science Report (1983), Purdue University Beef Report (1984)

Table 2. Nutrient composition of drought damaged corn silages. (All values on 100% dry basis and assumes no spoilage in sample.)

Nutrient	Normal Corn Silage	Drought Damaged Corn Silages		
		40 bu. 95% Normal	5-20 bu. 85% Normal	No ears, stunted 75% Normal
% Crude Protein	8.1	8.0	9.0	10.0
Metabolizable Protein (g/lb)	25.1	24.5	27.6	24.7
UFP (g/lb)	2.9	1.5	-.3	-3.3
% TDN	70	66	59	52
NEm (Mcal/lb)	.74	.69	.59	.48
NEg (Mcal/lb)	.47	.42	.33	.23
% Calcium	.23	.23	.23	.23
% Phosphorus	.22	.19	.19	.19
Vitamin A (IU/lb)	8,000	NA	NA	NA

UFP = Urea Fermentation Potential, TDN = Total Daily Nutrients, NEm = Net Energy for Maintenance, NEg = Net Energy for Gain, NA = Not Available



Feeding Value

The feeding value of drought damaged corn silage can vary, but it is usually near the value of normal corn silage. Feeding trials done at various universities across the country show that its feeding value ranges from 70 to 100 percent the value of normal corn silage.

Table 1 shows a summary of four feeding trials. Nutritive value appears to hinge largely on what type of drought damage has been done to the corn plant. It is not unusual for drought damaged corn silage to be 1 to 2 percentage units higher in crude protein than normal silage.



Spoilage Problems

In many instances drought damaged corn silage is stored in make-shift or temporary facilities. As a result of the storage facility a great deal of spoilage can occur due to poor packing, insufficient silage pack depth and poor oxygen exclusion. Because of this problem, producers need to be careful when feeding the material. Make sure spoiled feed is discarded and only good quality material is used as one feeds out of the temporary storage structure.

Table 2 gives the best estimates of nutrient content for various degrees of drought damaged corn silage.

Ration Conditions

As previously stated, drought corn silage has good feeding value. In fact, it can be so good that beef cows will become over conditioned if it is not limit fed or fed in combination with lower quality forages. Certainly for cows that have higher requirements, exotic high milk

level cows for instance, additional feed energy will be needed.

Like normal silage or corn stover, this product is low in calcium content and requires mineral supplementation. Furthermore, vitamin A content is not known but likely to be low, thus the need for supplementation. Rations in table 3 and 4 should give the producer an idea of how drought damaged corn silage will perform in beef cow feeding systems.

Table 3. Rations using drought damaged corn silage for dry beef cows in mid pregnancy.^a

	Mid Pregnancy; Dry Cows				Mid Pregnancy; Dry Cows			
	1,350 lb British		1,350 lb Exotic		1,350 lb British		1,350 lb Exotic	
	Ration	Ration	Ration	Ration	Ration	Ration	Ration	Ration
FEED	1	2	3	4	5	6	7	8
Drought Silage								
85% Normal	50	--	54	--	50	--	55	--
75% Normal	--	60	--	66	--	60	--	65
Corn	--	--	--	--	--	--	--	--
Dried Distillers Grain, 90% dry matter	--	--	--	--	3	3	4	4
Limestone, feed grade	--	--	--	--	.10	.10	.10	.10
44% Supplement	.50	.40	.50	.40	--	--	--	--
Consumption ratio ^b	.68	.86	.71	.91	.71	.89	.77	.95

^a Feed free-choice mineral and vitamin mix. DDG rations need no added Phosphorus supplementation.

^b A consumption ratio of .71 indicates that the ration provides 71% of expected "full-feed" intake.

Table 4. Rations using drought damaged corn silage for dry beef cows in late pregnancy.^a

	Late Pregnancy; Dry Cows				Late Pregnancy; Dry Cows			
	1,350 lb British		1,350 lb Exotic		1,350 lb British		1,350 lb Exotic	
	Ration	Ration	Ration	Ration	Ration	Ration	Ration	Ration
FEED	1	2	3	4	5	6	7	8
Drought Silage								
85% Normal	72	--	75	--	60	--	65	--
75% Normal	--	65	--	66	--	60	--	60
Corn	--	5	--	5	--	--	--	--
Dried Distillers Grain, 90% dry matter	--	--	--	--	5	7.5	6	8.5
Limestone, feed grade	--	--	--	--	.10	.10	.10	.10
44% Supplement	.50	.50	.50	.50	--	--	--	--
Consumption ratio ^b	.94	1.00	.94	.99	.89	1.00	.94	.99

^a Feed free-choice mineral and vitamin mix. DDG rations need no added Phosphorus supplementation.

^b A consumption ratio of .71 indicates that the ration provides 71% of expected "full-feed" intake.