

Drought Management Notes - 2007

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1. Wean calves early, feed them energy supplement on pasture.
2. Sell lower quality/performance cows.
3. Stockpile forage when moisture returns:
 - Tall fescue the best will hold up to freezing weather.
 - Orchardgrass good but does not stand up well under snow.
 - Smooth bromegrass and reed canarygrass go dormant early.
 - Apply N (urea best if rain soon after application, nitrates more expensive).
 - Clover (25-30% stand of legumes use no N since it will not be cost effective).
 - Soil P and K in high range and pH 6.0 or more to get the most out of clovers or N.
 - Strip-graze stockpiled forage to get the most out of it.
4. Inventory hay and pasture:
 - How much hay and pasture are on hand and what is their quality?
 - Forage test hay by field and cut to know the quality of hay!
 - What is the expected date to start feeding hay?
 - What is the expected spring turn out date?
 - How many days will hay need to be fed?
 - How many cows, calves, yearlings, and bulls will be wintered?
 - How many days feed will the hay on hand provide for the animals wintered?
 - How short is the supply of hay, in bales/tons and as a % of total feed required?
 - How many animals need to be sold to equal the feed on hand?
 - How many cull or marketed animals need to be sold to pay for hay purchased?
 - What is the best supplemental feed to purchase for the animals being fed?
5. Do not over graze during drought.
 - Rotational grazing increases the ability to make it through a drought.
 - Do not open all the gates when a drought hits!
 - Feed hay in an abuse area that needs the fertility and wait for rain.
6. Purchase hay based on forage test
 - From within region
 - From outside of the region (use a reliable dealer to ensure quality)

7. Shelled corn is not well suited for feeding with low quality hay due to its high carbohydrate level which can reduce the digestibility of low quality hay. It can be used at low rates with high quality hay for feeding growing cattle.

8. High fiber supplements such as soybean hulls and wheat bran or high protein feeds such as soybean meal and corn gluten feed will be the best supplements for low quality hay.

9. The value of a supplemental feed is based on the quantity of TDN and CP it carries.

10. Cows should be fed to have a body condition score of 5 or greater at calving in order to rebreed in a timely manner. It is least expensive to do this on fall pasture or by early weaning and proper feeding before winter weather sets in. Cold wet weather increases the energy requirement of an animal. A fat animal is better able to make it through cold weather. An old saying is “a fat cow is half wintered”.

Alternative feeds with nutritive values expressed on an as fed basis (90% DM).							
Feed	DM %	TDN %	CP %	DCP %	Ca %	P %	S %
Barley grain	90	76	12	9	0.05	0.34	0.15
Corn gluten feed	90	72	21	17	0.32	0.74	0.21
Dry distiller's grain	90	80	23	13	0.14	0.64	0.30
Fescue, stockpiled	90	54	14	10	0.45	0.33	0.20
Ground shelled corn	90	81	9	4	0.02	0.32	0.13
Orchardgrass hay, late bloom	90	50	8	6	0.24	0.27	0.18
Red clover hay, early bloom	90	50	14	10	1.38	0.23	0.16
Soybean hulls (pellets)	90	70	11	8	0.44	0.19	0.08
Soybean meal	90	76	46	31	0.30	0.64	0.43
Wheat bran	90	63	16	13	0.12	1.24	0.23

DM – dry matter

CP – crude protein

S requirement 0.08-0.15% ration DM

TDN – total digestible nutrients

DCP – rumen degraded crude protein

Cow Body Condition Score

Body Condition Score	Body Fat Content	Appearance of Cow
1	5.0	Cavity at tailhead, no fat felt between pins, pelvic bone very prominent and easily felt; ends of short ribs, ribs, hips and spine very prominent and easily felt, deep depression in loin.
2	9.4	Ribs, spine and hips prominent.
3	13.7	Shallow cavity at tailhead, some fat felt at pin bone, pelvis easily felt; ends of short ribs rounded, upper surface felt with slight pressure, depression visible in loin; individual ribs seen but do not stand out, can see some flesh along the spine.
4	18.1	Individual ribs not obvious, there is some fat cover over the ribs and hip bones, can feel spine but it is not sharp.
5	22.5	No cavity at tailhead, fat on either side tailhead and over rump, skin appears smooth; pelvis is felt with slight pressure, ends of short ribs felt with pressure; thick layer of fat on top; slight depression in loin, backbone barely visible, can feel fat over ribs.
6	26.9	Pressure is required to feel backbone. Can feel considerable fat over ribs.
7	31.2	Folds of fat visible at tailhead, patches of fat around pin bones, pelvis is felt only with firm pressure; short ribs can't be felt with firm pressure, feels spongy over ribs, no depression visible in loin between backbone and hip bone; some fat in brisket.
8	35.6	Very fleshy; brisket full, large fat deposits over ribs, back, tailhead, vulva and crotch; can't feel backbone.
9	40.0	Tailhead buried in fat, skin distended, no part of pelvis can be felt even with firm pressure; folds of fat over short ribs, extremely fleshy and blocky bone structure not visible nor felt.

Adapted from Patton et al. 1988 (MSU mimeo) and Fox et al. 1992 (JAS 709:3478)

Nutrient requirements of beef cattle, NRC 1984.

Body Weight lb	Avg. Daily Gain lb	Dry Matter Intake lb	Crude Protein %	Crude Protein lb	TDN %	TDN lbs	Ca %	P %
Dry pregnant mature cows, middle third of pregnancy.								
900	0.0	16.7	0.07	1.2	49	8.2	0.18	0.18
1000	0.0	18.1	0.07	1.3	49	8.8	0.18	0.18
1100	0.0	19.5	0.07	1.4	49	9.5	0.19	0.19
1200	0.0	20.8	0.07	1.4	49	10.1	0.19	0.19
1300	0.0	22.0	0.07	1.5	49	10.8	0.20	0.20
1400	0.0	23.3	0.07	1.6	49	11.4	0.20	0.20
Dry pregnant mature cows, last third of pregnancy.								
900	0.9	18.2	0.08	1.5	54	9.8	0.27	0.21
1000	0.9	19.6	0.08	1.6	54	10.5	0.26	0.21
1100	0.9	21.0	0.08	1.6	53	11.2	0.26	0.21
1200	0.9	22.3	0.08	1.7	53	11.8	0.26	0.21
1300	0.9	23.6	0.08	1.8	53	12.5	0.26	0.21
1400	0.9	24.9	0.08	1.9	53	13.1	0.26	0.21
Cows nursing calves, average milking ability (10 lb milk/day), first 3-4 months postpartum.								
900	0.0	18.8	0.10	1.9	57	10.8	0.28	0.22
1000	0.0	20.2	0.10	2.0	57	11.5	0.28	0.22
1100	0.0	21.6	0.09	2.0	56	12.1	0.27	0.22
1200	0.0	23.0	0.09	2.1	56	12.8	0.27	0.22
1300	0.0	24.3	0.09	2.2	55	13.4	0.27	0.22
1400	0.0	25.6	0.09	2.3	55	14.0	0.27	0.22
Cows nursing calves, superior milking ability (20 lb milk/day), first 3-4 months postpartum.								
900	0.0	18.7	0.13	2.4	70	13.1	0.41	0.28
1000	0.0	20.6	0.12	2.5	67	13.8	0.39	0.27
1100	0.0	22.3	0.12	2.6	65	14.5	0.38	0.27
1200	0.0	23.8	0.11	2.7	64	15.2	0.36	0.26
1300	0.0	25.3	0.11	2.8	63	15.9	0.36	0.26
1400	0.0	26.7	0.11	2.9	62	16.5	0.35	0.26

Nutrient requirements of growing beef cattle, NRC 1984.

Body Weight lb	Avg. Daily Gain lb	Dry Matter Intake lb	Crude Protein %	Crude Protein lb	TDN %	TDN lbs	Ca %	P %
Growing Steers								
300	0.5	7.8	0.10	0.8	0.54	4.2	0.31	0.20
	1.0	8.4	0.11	1.0	0.59	4.9	0.45	0.24
	1.5	8.7	0.13	1.1	0.63	5.5	0.58	0.28
	2.0	8.9	0.15	1.3	0.68	6.0	0.72	0.32
	2.5	8.9	0.17	1.5	0.74	6.5	0.87	0.37
	3.0	8.0	0.20	1.6	0.85	6.8	1.13	0.47
400	0.5	9.7	0.09	0.9	0.54	5.2	0.27	0.18
	1.0	10.4	0.10	1.1	0.59	6.1	0.38	0.21
	1.5	10.8	0.11	1.2	0.63	6.8	0.47	0.25
	2.0	11.0	0.13	1.4	0.68	7.4	0.56	0.26
	2.5	11.0	0.14	1.6	0.74	8.1	0.68	0.30
	3.0	10.0	0.17	1.7	0.85	8.5	0.86	0.37
500	0.5	11.5	0.09	1.0	0.54	6.2	0.25	0.17
	1.0	12.3	0.09	1.2	0.59	7.2	0.32	0.20
	1.5	12.8	0.10	1.3	0.63	8.1	0.40	0.22
	2.0	13.1	0.11	1.5	0.68	8.8	0.47	0.24
	2.5	13.0	0.13	1.6	0.74	9.6	0.56	0.27
	3.0	11.8	0.14	1.7	0.85	10.0	0.69	0.32
600	0.5	13.2	0.08	1.1	0.54	7.1	0.23	0.18
	1.0	14.1	0.09	1.3	0.59	8.2	0.28	0.19
	1.5	14.7	0.10	1.4	0.63	9.3	0.35	0.21
	2.0	15.0	0.10	1.6	0.68	10.1	0.40	0.22
	2.5	14.9	0.11	1.7	0.74	11.0	0.46	0.24
	3.0	13.5	0.13	1.7	0.85	11.5	0.57	0.29
700	0.5	14.8	0.08	1.2	0.54	8.0	0.22	0.18
	1.0	15.8	0.09	1.4	0.59	9.2	0.27	0.18
	1.5	16.5	0.09	1.5	0.63	10.4	0.31	0.20
	2.0	16.8	0.10	1.7	0.68	11.3	0.34	0.21
	2.5	16.7	0.10	1.8	0.74	12.3	0.40	0.22
	3.0	15.2	0.12	1.8	0.85	12.9	0.49	0.26
800	0.5	16.4	0.08	1.3	0.54	8.9	0.22	0.17
	1.0	17.5	0.08	1.4	0.59	10.2	0.24	0.19
	1.5	18.2	0.09	1.6	0.63	11.5	0.28	0.19
	2.0	18.6	0.09	1.7	0.68	12.6	0.31	0.20
	2.5	18.5	0.10	1.8	0.74	13.6	0.35	0.21
	3.0	16.8	0.11	1.8	0.85	14.3	0.42	0.25