

Nutrient requirements for mature beef cows.								
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	7.0	1.2	49	8.2	0.18	0.18
1000	0.0	18.1	7.0	1.3	49	8.8	0.18	0.18
1100	0.0	19.5	7.0	1.4	49	9.5	0.19	0.19
1200	0.0	20.8	6.9	1.4	49	10.1	0.19	0.19
1300	0.0	22.0	6.9	1.5	49	10.8	0.20	0.20
1400	0.0	23.3	6.9	1.6	49	11.4	0.20	0.20
Dry pregnant mature cows, last third of pregnancy.								
900	0.9	18.2	8.0	1.5	54	9.8	0.27	0.21
1000	0.9	19.6	7.9	1.6	54	10.5	0.26	0.21
1100	0.9	21.0	7.8	1.6	53	11.2	0.26	0.21
1200	0.9	22.3	7.8	1.7	53	11.8	0.26	0.21
1300	0.9	23.6	7.7	1.8	53	12.5	0.26	0.21
1400	0.9	24.9	7.6	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	9.9	1.9	57	10.8	0.28	0.22
1000	0.0	20.2	9.6	2.0	57	11.5	0.28	0.22
1100	0.0	21.6	9.4	2.0	56	12.1	0.27	0.22
1200	0.0	23.0	9.3	2.1	56	12.8	0.27	0.22
1300	0.0	24.3	9.1	2.2	55	13.4	0.27	0.22
1400	0.0	25.6	9.0	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	12.9	2.4	70	13.1	0.41	0.28
1000	0.0	20.6	12.3	2.5	67	13.8	0.39	0.27
1100	0.0	22.3	11.9	2.6	65	14.5	0.38	0.27
1200	0.0	23.8	11.5	2.7	64	15.2	0.36	0.26
1300	0.0	25.3	11.2	2.8	63	15.9	0.36	0.26
1400	0.0	26.7	11.0	2.9	62	16.5	0.35	0.26

Nutrient requirements of bred heifers.								
Body Weight lb	Avg. Daily Gain lb	Dry Matter Intake lb	Crude Protein %	Crude Protein lb	TDN %	TDN lbs	Ca %	P %
For pregnant yearling heifer, middle third of pregnancy see growing heifers.								
Pregnant yearling heifer, last third of pregnancy.								
700	0.9	15.3	8.4	1.3	55.4	8.5	0.27	0.20
	1.4	15.8	9.0	1.4	60.3	9.5	0.33	0.21
	1.9	15.8	9.8	1.5	67.0	10.6	0.33	0.21
800	0.9	16.8	8.2	1.4	54.8	9.2	0.28	0.20
	1.4	17.4	8.8	1.5	59.6	10.4	0.33	0.21
	1.9	17.5	9.3	1.6	66.1	11.6	0.35	0.21
900	0.9	18.3	8.1	1.5	54.3	9.9	0.26	0.20
	1.4	19.0	8.5	1.6	59.1	11.2	0.30	0.21
	1.9	19.2	9.0	1.7	65.4	12.6	0.32	0.21
Two year old heifer calves first 3-4 months postpartum, 10 lb milk/day.								
700	0.5	15.9	11.3	1.8	65.1	10.4	0.36	0.24
800	0.5	17.6	10.8	1.9	63.8	11.2	0.34	0.24
900	0.5	19.2	10.4	1.9	62.7	12.0	0.32	0.23
1000	0.5	20.8	10.0	2.1	61.9	12.9	0.31	0.23

Nutrient requirements for growing medium frame steers.								
Body Weight lb	Avg. Daily Gain lb	Dry Matter Intake lb	Crude Protein %	Crude Protein lb	TDN %	TDN lbs	Ca %	P %
300	0.5	7.8	9.6	0.8	54	4.2	0.31	0.20
	1.0	8.4	11.4	1.0	59	4.9	0.45	0.24
	1.5	8.7	13.2	1.1	63	5.5	0.58	0.28
	2.0	8.9	14.8	1.3	68	6.0	0.72	0.32
	2.5	8.9	16.7	1.5	74	6.5	0.87	0.37
	3.0	8.0	19.9	1.6	85	6.8	1.13	0.47
400	0.5	9.7	8.9	0.9	54	5.2	0.27	0.18
	1.0	10.4	10.3	1.1	59	6.1	0.38	0.21
	1.5	10.8	11.5	1.2	63	6.8	0.47	0.25
	2.0	11.0	12.7	1.4	68	7.4	0.56	0.26
	2.5	11.0	14.2	1.6	74	8.1	0.68	0.30
	3.0	10.0	16.6	1.7	85	8.5	0.86	0.37
500	0.5	11.5	8.5	1.0	54	6.2	0.25	0.17
	1.0	12.3	9.5	1.2	59	7.2	0.32	0.20
	1.5	12.8	10.5	1.3	63	8.1	0.40	0.22
	2.0	13.1	11.4	1.5	68	8.8	0.47	0.24
	2.5	13.0	12.5	1.6	74	9.6	0.56	0.27
	3.0	11.8	14.4	1.7	85	10.0	0.69	0.32
600	0.5	13.2	8.2	1.1	54	7.1	0.23	0.18
	1.0	14.1	9.0	1.3	59	8.2	0.28	0.19
	1.5	14.7	9.8	1.4	63	9.3	0.35	0.21
	2.0	15.0	10.5	1.6	68	10.1	0.40	0.22
	2.5	14.9	11.4	1.7	74	11.0	0.46	0.24
	3.0	13.5	12.9	1.7	85	11.5	0.57	0.29
700	0.5	14.8	7.9	1.2	54	8.0	0.22	0.18
	1.0	15.8	8.6	1.4	59	9.2	0.27	0.18
	1.5	16.5	9.2	1.5	63	10.4	0.31	0.20
	2.0	16.8	9.8	1.7	68	11.3	0.34	0.21
	2.5	16.7	10.5	1.8	74	12.3	0.40	0.22
	3.0	15.2	11.7	1.8	85	12.9	0.49	0.26
800	0.5	16.4	7.7	1.3	54	8.9	0.22	0.17
	1.0	17.5	8.3	1.4	59	10.2	0.24	0.19
	1.5	18.2	8.8	1.6	63	11.5	0.28	0.19
	2.0	18.6	9.2	1.7	68	12.6	0.31	0.20
	2.5	18.5	9.8	1.8	74	13.6	0.35	0.21
	3.0	16.8	10.8	1.8	85	14.3	0.42	0.25

Nutrient requirements of growing medium frame heifers.								
Body Weight lb	Avg. Daily Gain lb	Dry Matter Intake lb	Crude Protein %	Crude Protein lb	TDN %	TDN lbs	Ca %	P %
300	0.5	7.5	9.6	0.8	56	4.2	0.29	0.21
	1.0	8.0	11.4	1.0	62	5.0	0.44	0.22
	1.5	8.2	13.1	1.1	69	5.6	0.59	0.27
	2.0	8.0	15.1	1.3	77	6.2	0.74	0.33
400	0.5	9.3	8.9	0.9	56	5.2	0.26	0.19
	1.0	9.9	10.2	1.1	62	6.1	0.36	0.20
	1.5	10.2	11.4	1.2	69	7.0	0.45	0.24
	2.0	10.0	12.9	1.4	77	7.7	0.57	0.29
500	0.5	11.0	8.5	1.0	56	6.2	0.24	0.18
	1.0	11.8	9.4	1.2	62	7.3	0.30	0.21
	1.5	12.1	10.3	1.3	69	8.3	0.38	0.22
	2.0	11.8	11.4	1.5	77	9.1	0.45	0.24
600	0.5	12.6	8.1	1.1	56	7.1	0.23	0.18
	1.0	13.5	8.8	1.3	62	8.4	0.28	0.20
	1.5	13.8	9.5	1.4	69	9.5	0.32	0.21
	2.0	13.5	10.4	1.6	77	10.4	0.38	0.23
700	0.5	14.1	7.9	1.2	56	7.9	0.22	0.19
	1.0	15.1	8.4	1.4	62	9.4	0.25	0.19
	1.5	15.5	9.0	1.5	69	10.6	0.28	0.20
	2.0	15.2	9.6	1.7	77	11.7	0.32	0.22
800	0.5	15.6	7.7	1.3	56	8.7	0.21	0.18
	1.0	16.7	8.1	1.4	62	10.4	0.22	0.18
	1.5	17.2	8.5	1.6	69	11.8	0.24	0.19
	2.0	16.8	9.0	1.7	77	12.9	0.28	0.20
1000	0.5	18.5	7.4	1.4	56	10.4	0.20	0.19
	1.0	19.8	7.6	1.5	62	12.3	0.20	0.18
	1.5	20.3	7.8	1.6	69	13.9	0.21	0.18
	2.0	19.8	8.1	1.6	77	15.2	0.22	0.19

Suggested mineral requirements of beef cattle with value for Ca and P in parenthesis calculated for a 1000-pound cow making 20 pounds milk. (Adapted from Nutrient Requirements of Beef Cattle, National Research Council, 2000.)

Mineral	Suggested Value	Range	Maximum Tolerable Level
Calcium (Ca), % †		0.16-0.58 (0.32)	2
Cobalt (Co), ppm	0.10	0.07-0.11	5
Copper (Cu), ppm	10	4-10	115
Iodine (I), ppm	0.5	0.2-2.0	50
Iron (Fe), ppm	50	50-100	1000
Magnesium (Mg), %	0.10	0.05-0.25	0.40
Manganese (Mn), ppm	20	20-50	1000
Molybdenum (Mo), ppm			6
Phosphorus (P), % †		0.17-0.39 (0.21)	1
Potassium (K), %	0.60	0.50-0.70	3
Selenium (Se), ppm ††	0.10	0.05-0.30	2
Sodium (Na), %	0.06-0.08	0.06-0.10	10
Chlorine (Cl), %			
Sulfur (S), %	0.15	0.08-0.15	0.40
Zinc (Zn), ppm	30	20-40	500

† Depending on age and production status.

†† It is legal to supplement Se to beef cattle at the level of 0.30 mg/kg of the total diet up to 3 mg/head/day (NRC Beef Update 2000, p.68).