



Metabolizable Energy and Metabolizable Protein Requirements Overview

Metabolizable energy (ME) and metabolizable protein (MP) requirements of a dairy cow are influenced by production level, lactation number, body weight and breed. The following data provides a guideline for the amount of ME, MP lysine and MP methionine required by cows in various situations. These values were generated using AMTS v.4.6.2 (CNCPS v.6.5.5) and are estimates to be used to provide general guidance.

Holstein Cattle, 3.6% Butter Fat, 3.1% Protein

Lactation #	Body Weight (lb)	Milk Production (lb/d)	ME (Mcal/day)	MP Lysine Requirement (g/d)	MP Methionine Requirement (g/d)
1st Lact	1250	70	51	154	58
	1350	70	52	157	59
	1400	70	52	158	60
	1250	80	56	169	64
	1350	80	57	172	65
	1400	80	57	174	65
	1250	90	61	184	69
	1350	90	62	187	70
	1400	90	62	189	71
2nd Lact	1400	90	62	189	71
	1500	90	63	191	72
	1600	90	64	195	73
	1400	100	67	204	77
	1500	100	68	207	78
	1600	100	69	210	79
	1400	110	72	219	82
	1500	110	73	222	83
	1600	110	74	225	84
3rd lact	1600	95	67	202	76
	1700	95	67	205	77
	1800	95	68	208	78
	1600	105	72	217	82
	1700	105	73	220	83
	1800	105	74	223	84
	1600	125	82	247	93
	1700	125	83	250	94
	1800	125	84	253	95

*Values rounded to nearest whole number



Jersey Cattle, 4.9% Butter Fat, 3.9% Protein

Lactation	Body Weight (lb)	Milk Production (lb/d)	ME (Mcal/day)	MP Lysine Requirement (g/d)	MP Methionine Requirement (g/d)
1st Lact	700	50	41	125	47
	750	50	42	127	48
	800	50	43	129	48
	700	60	47	143	54
	750	60	48	145	54
	800	60	48	146	55
	700	70	53	161	61
	750	70	54	163	61
	800	70	54	165	62
2nd Lact	800	70	54	165	62
	850	70	55	167	63
	950	70	56	170	64
	800	80	61	184	69
	850	80	61	185	70
	950	80	62	188	71
	800	85	64	193	73
	850	85	64	195	73
	950	85	65	198	74
3rd lact	900	85	65	196	74
	1000	85	66	199	75
	1100	85	67	202	76
	900	90	68	205	77
	1000	90	69	209	79
	1100	90	70	212	80
	900	95	71	215	81
	1000	95	72	218	82
	1100	95	73	221	83

*Values rounded to nearest whole number