

## DAIRY COW WATER REQUIREMENTS - MURPHY'S EQUATION

WATER INTAKE (WI); DRY MATTER INTAKE (DM); LB MILK (MP)			
WI = 15.99 + 1.58 X DM + 0.9 X MP + 0.05 X SI + 1.2 X MT			
WI = KG/DAY; DM = KG/DAY; MP = KG/DAY; SI = G/DAY;	MT = MIN C	KG x 2.2/8.34	
DESCRIPTION OF COW	KG H2O/DAY	H2O GAL/DAY	
65# DM; 150 LB MILK; 45 G SALT; 25C(77) MIN TEMP	156.1	41.2	
65# DM; 150 LB MILK; 45 G SALT; 15C(59) MIN TEMP	144.1	38.0	
65# DM; 150 LB MILK; 45 G SALT; 5C(41) MIN TEMP	132.1	34.9	
70# DM; 150 LB MILK; 90 G SALT; 25C(77) MIN TEMP	162.0	42.7	
65# DM; 150 LB MILK; 90 G SALT; 25C(77) MIN TEMP	158.4	41.8	
60# DM; 150 LB MILK; 90 G SALT; 25C(77) MIN TEMP	154.8	40.8	
70# DM; 120 LB MILK; 90 G SALT; 25C(77) MIN TEMP	149.8	39.5	
65# DM; 120 LB MILK; 90 G SALT; 25C(77) MIN TEMP	146.2	38.6	
60# DM; 120 LB MILK; 90 G SALT; 25C(77) MIN TEMP	142.7	37.6	
55# DM; 120 LB MILK; 90 G SALT; 25C(77) MIN TEMP	139.0	36.7	
65# DM; 120 LB MILK; 90 G SALT; 15C(59) MIN TEMP	134.2	35.4	
60# DM; 120 LB MILK; 90 G SALT; 15C(59) MIN TEMP	130.7	34.5	
55# DM; 120 LB MILK; 90 G SALT; 15C(59) MIN TEMP	127.0	33.5	
65# DM; 120 LB MILK; 90 G SALT; 5C(41) MIN TEMP	122.2	32.2	
60# DM; 120 LB MILK; 90 G SALT; 5C(41) MIN TEMP	118.7	31.3	
55# DM; 120 LB MILK; 90 G SALT; 5C(41) MIN TEMP	115.0	30.3	
60# DM; 80 LB MILK; 90 G SALT; 25C(77) MIN TEMP	126.3	33.3	
55# DM; 80 LB MILK; 90 G SALT; 25C(77) MIN TEMP	122.7	32.4	
50# DM; 80 LB MILK; 90 G SALT; 25C(77) MIN TEMP	119.0	31.4	
60# DM; 80 LB MILK; 90 G SALT; 15C(59) MIN TEMP	114.4	30.2	
55# DM; 80 LB MILK; 90 G SALT; 15C(59) MIN TEMP	110.8	29.2	
50# DM; 80 LB MILK; 90 G SALT; 15C(59) MIN TEMP	107.1	28.3	
60# DM; 80 LB MILK; 90 G SALT; 5C(41) MIN TEMP	102.4	27.0	
55# DM; 80 LB MILK; 90 G SALT; 5C(41) MIN TEMP	98.8	26.0	
50# DM; 80 LB MILK; 90 G SALT; 5C(41) MIN TEMP	95.1	25.1	
60# DM; 80 LB MILK; 60 G SALT; 15C(59) MIN TEMP	112.9	29.8	
55# DM; 80 LB MILK; 60 G SALT; 15C(59) MIN TEMP	109.3	28.8	
50# DM; 80 LB MILK; 60 G SALT; 15C(59) MIN TEMP	105.6	27.9	
50# DM; 60 LB MILK; 60 G SALT; 15C(59) MIN TEMP	97.3	25.7	
45# DM; 60 LB MILK; 60 G SALT; 15C(59) MIN TEMP	93.9	24.8	
50# DM; 60 LB MILK; 60 G SALT; 5C(41) MIN TEMP	85.3	22.5	
45# DM; 60 LB MILK; 60 G SALT; 5C(41) MIN TEMP	81.9	21.6	
50.5 DM; 52 LB MILK; 60 G SALT; -4.44C(24F) MIN TEMP	71.2	18.8	BRUNNER
45# DM; 52# MILK; 60 G SALT; 15.5 C MIN TEMP	91.1	24.0	
45# DM; 52# MILK; 60 G SALT; 5 C MIN TEMP	78.5	20.7	
27,000 LB/COW/YR; 74 LB/ALL COWS; 56# DM; 76 G NA; 15C	108.3	28.6	
24,000; 66 LB ALL COWS; 53# DM; 72 G NA; 15C	102.7	27.1	
21,000; 58# ALL COWS; 50# DM; 68 G SALT; 15C	97.0	25.6	
31,000 HERD AVG; 102#/MC; 62# DM; 84 G SALT; 25C	136.5	36.0	
31,000 HERD AVG; 102#/MC; 62# DM; 84 G SALT; 15C	124.5	32.8	
27,000 HERD AVG; 89# /MC; 58# DM; 80 G SALT; 15C	116.2	30.6	
24,000 HERD AVG; 79#/MC; 55# DM; 75 G SALT; 15C	109.6	28.9	
21,000 HERD AVG; 69#/MC, 52# DM; 70 G SALT; 15C	103.0	27.2	
27,000 HERD AVG; 89# /MILK COWS; 58# DM; 80 G SALT; 0C	98.2	25.9	

