

Table 3. Recommended Nutrient Content of Ration for Dairy Cattle

Nutrients (Concentration in the Feed Dry Matter)	Lactating Cow Rations				Nonlactating Cattle Rations									Maxi- mum Concen- trations (All Classes)	
	Cow Wt (kg)	Daily Milk Yields (kg)			I	II	III	IV	V	VI	VII	VIII	IX		Max.
		< 8	8-13	13-18											
Crude Protein, %	13.0	14.0	15.0	16.0	11.0	8.5	12.0	16.0	22.0						
Energy	1.42	1.52	1.62	1.72	1.35										
NE _I , Mcal/kg															
NE _m , Mcal/kg						1.20	1.26	1.90	2.40						
NE _g , Mcal/kg							0.60	1.20	1.55						
ME, Mcal/kg	2.36	2.53	2.71	2.89	2.23	2.04	2.23	3.12	3.78						
DE, Mcal/kg	2.78	2.95	3.43	3.31	2.65	2.47	2.65	3.53	4.19						
TDN, %	63	67	71	75	60	56	60	80	95						
Crude Fiber, %	17	17	17	17	17	15	15								
Acid Detergent Fiber, %	21	21	21	21	21	19	19								
Ether Extract, %	2	2	2	2	2	2	2	2	10						

LEAST COST DAIRY RATION

SPECIFICATIONS:

AVERAGE MILK PRODUCTION =	90 LBS	NE(L) FOR ACTIVITY..... =	10%
AVERAGE MILK FAT..... =	3.75 %	1ST LACTATION HEIFERS IN GROUP =	0%
AVERAGE COW WEIGHT..... =	1400 LBS	2ND LACTATION HEIFERS IN GROUP =	16%
MILK BLEND PRICE (\$/CWT) = \$	12.25		

FEEDS USED IN RATION:	LB/DAY AS FED	%ROUGHAGE		PRICE ---RANGE---			---CONSTRAINTS---			
		AS FED	DM	\$/CWT	LOWER	UPPER	AS FED -POUNDS- MIN MAX	100% DM -%ROUGH- MIN MAX		
ALFALFA HAY, 28% MCF	14.56	54.8	54.8	6.00	4.62	6.19	4.0			
WHEAT HAY	9.00	33.9	34.2	3.25-99.99	4.71		8.0	9.0		
COTTONSEED, WHOLE	3.00	11.3	11.5	12.75	11.30	99.99	3.0	5.0		
TOTAL ROUGHAGE....	26.56	(24.17 LBS DM)								

	LB/DAY AS FED	%CONCENTRATE		PRICE ---RANGE---			---CONSTRAINTS---			
		AS FED	DM	\$/CWT	LOWER	UPPER	AS FED -POUNDS- MIN MAX	100% DM -%CONC.- MIN MAX		
CORN GRAIN, GR OR RLD	13.14	40.0	39.3	8.30	7.70	11.38				
HOMINY FEED, LOW FAT	7.12	21.7	21.8	7.90	7.01	7.96	39.3	93.4		
CORN GLUTEN FEED	4.11	12.5	12.4	8.75	6.83	9.43		25.1		
COTTONSEED MEAL, 41 S	3.02	9.2	9.4	11.50	10.48	11.58		12.4		
SOYBEAN HULLS	2.15	6.6	6.6	6.50	6.44	8.25		10.2		
WHEAT MIDDS	1.31	4.0	4.0	7.00	1.01	8.09		7.5		
SODIUM BICARB	.50	1.5	1.7	18.00	-3.17	99.99	.5	4.0		
SOYBEAN MEAL, 44 SOL	.49	1.5	1.5	12.00	11.91	130.43		1.5 50.0		
LIMESTONE, GRAUND	.37	1.1	1.2	4.00	-2.96	6.75				
SALT	.20	.6	.7	4.60	-3.08	209.88				
DYNA-K MINERAL	.16	.5	.6	11.00	-3.03	257.34		.7 .7		
MAGNESIUM OXIDE	.09	.3	.3	17.00	-2.58	999.99	.1			
DYNA-MATE	.08	.2	.3	11.00	-3.10	503.67		.3		
DICALCIUM PHOSPHATE	.07	.2	.2	18.50	16.27	37.66				
GORE HOFF/ROCH PMX	.03	.1	.1	51.00	-1.27	999.99	.0			

TOTAL CONCENTRATE. 32.85* (29.73 LBS DM)

TOTAL RATION..... 59.41* (53.90 LBS DM)

NOTE: PROVIDE SALT FREE CHOICE OR AS 0.5% OF CONCENTRATE MIX.
PROVIDE OTHER ESSENTIAL MINERALS NOT SUPPLIED IN ADEQUATE AMOUNTS
BY FEEDS IN RATION LISTED ABOVE.

ROUGHAGE: CONCENTRATE RATIO = 45:55 (DM)

COST ANALYSIS	PER COW PER DAY	PER CWT OF FEED
ROUGHAGES.....	\$ 1.55	3.46
CONCENTRATES.....	\$ 2.84	5.13
TOTAL RATION.....	\$ 4.38	7.38
MILK INCOME.....	\$ 11.02	18.56
INCOME ABOVE FEED COSTS.	\$ 6.64	11.18

FEEDS NOT USED IN RATION:	PRICE	
	AT FORMULATION	OPPORTUNITY
SUDANGRASS HAY	4.10	1.78
COASTAL HAY	4.50	4.16
MILK, SOUTHWEST	7.30	5.88
GORE BASE BLEND	12.50	.67

Table 3. Recommended Nutrient Content of Ration for Dairy Cattle

Ingredient	Lactating Cow Rations	
	500	700
Crude Protein	11.0	12.0
Energy	16.0	16.0
Ca	0.25	0.25
P	0.15	0.15
Nonprotein Nitrogen	0.00	0.00

CAPILLA ALFONSINA

LEAST COST DAIRY RATION

SPECIFICATIONS:

AVERAGE MILK PRODUCTION = 90 LBS	NE(L) FOR ACTIVITY = 10 %
AVERAGE MILK FAT = 3.75 %	1ST LACTATION HEIFERS IN GROUP = 0 %
AVERAGE COW WEIGHT = 1400 LBS	2ND LACTATION HEIFERS IN GROUP = 16 %
MILK BLEND PRICE (\$/CWT) = \$	

	(100% DM)	CONCENTRATE	ROUGHAGE	TOTAL RATION	-CONSTRAINTS- MIN MAX
DRY MATTER PCT	90.50 %		90.98 %	90.72 %	
NE(L) KCAL/LB	.85 MCAL/LB		.65 MCAL/LB	.76 MCAL/LB	
NE(L) KCAL/LB	25.22 MCAL		15.60 MCAL	40.81 MCAL	40.81 MCAL
ENE KCAL/LB	716.54 KCAL/LB		283.46 KCAL/LB	522.36 KCAL/LB	
TDN %	80.96 %		58.40 %	70.84 %	
CRUDE PROTEIN %	16.35 %		17.80 %	17.00 %	17.00 %
CRUDE PROTEIN #	4.86 #		4.30 #	9.16 #	8.79 #
FAT %	3.69 %		2.44 %	3.13 %	
CRUDE FIBER %	6.08 %		24.86 %	14.50 %	14.50 %
ACID DET FIBER %	10.48 %		34.43 %	21.22 %	
ASH %	8.19 %		7.92 %	8.07 %	
CALCIUM %	.64 %		.78 %	.71 %	
CALCIUM #	.19 #		.19 #	.38 #	.38 #
PHOSPHORUS %	.58 %		.23 %	.43 %	
PHOSPHORUS #	.17 #		.06 #	.23 #	.23 #
CA: PHOS RATIO	1.10		3.36	1.65	1.50
NONPROTEIN NIT %	0.00 %		0.00 %	0.00 %	.50 %
COST/CWT AS FED	\$ 8.63 /CWT		\$ 5.83 /CWT	\$ 7.38 /CWT	
COST DRY MATTER	\$ 9.54 /CWT		\$ 6.41 /CWT	\$ 8.13 /CWT	

U.A.N.L.

LEAST COST DAIRY RATION

SPECIFICATIONS:

AVERAGE MILK PRODUCTION = 90 LBS
AVERAGE MILK FAT = 3.75 %
AVERAGE COW WEIGHT = 1400 LBS
MILK BLEND PRINCE (\$/CWT) = \$

ESTIMATED ANALYSIS:

Table with 5 columns: (AS FED), CONCENTRATE, ROUGHAGE, TOTAL RATION, -CONSTRAIN MIN. Rows include DRY MATTER PCT, NE(L) KCAL/LB, ENE KCAL/LB, TDN %, CRUDE PROTEIN %, FAT %, CRUDE FIBER %, ACID DET FIBER %, ASH %, CALCIUM %, PHOSPHORUS %, CA: PHOS RATIO, NONPROTEIN NIT %, COST/CWT AS FED, COST DRY MATTER.

CAPILLA ALFONSINA

LEAST COST DAIRY RATION

SPECIFICATIONS:

AVERAGE MILK PRODUCTION = 90 LBS
AVERAGE MILK FAT = 3.75%
AVERAGE COW WEIGHT = 1400 LBS
MILK BLEND PRINCE (\$/CWT) = \$
NE(L) FOR ACTIVITY = 10 %
1ST LACTATION HEIFERS IN GROUP = 0 %
2ND LACTATION HEIFERS IN GROUP = 16 %

ESTIMATED MINERAL ANALYSIS

ESTIMATED RATION DRY MATTER CONTENT

Table with 5 columns: MINERAL, CONCENTRATE, ROUGHAGE, TOTAL RATION, NRC MINIMUM. Rows include MAGNESIUM %, POTASSIUM %, SODIUM %, SULFUR %, IRON PPM, COBALT PPM, COPPER PPM, MANGANESE PPM, ZINC PPM.

U.A.N.L.

LEAST COST DAIRY RATION

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 AVERAGE COW WEIGHT = 1400 LBS
 MILK BLEND PRICE (\$/CWT) = \$

NE(L) FOR ACTIVITY
 1ST LACTATION HEIFERS IN GROUP = 10%
 2ND LACTATION HEIFERS IN GROUP = 0%
 = 16%

THE FOLLOWING FEEDS WERE AVAILABLE FOR THIS RATION:

#	FEED NAME	NE(L) ENE	MCAL /LB	KCAL /LB	TDN %	CP %	FAT %	CF %	ADF %	ASH %	CA %	P %	NPN %	DM %
21	CORN GRAIN, GR OR RLD	.92	869	10.0	4.3	2	3	3	1.3	.030	.310	0.000	89	
22	CORN GLUTEN FEED	.86	807	28.1	2.8	0	12	12	8.6	.330	.860	0.000	90	
25	COTTONSEED MEAL, 41 S	.78	734	44.8	2.3	13	20	20	6.9	.170	1.310	0.000	92	
27	COTTONSEED, WHOLE	1.04	973	24.9	21.1	18	29	29	3.9	.150	.730	0.000	93	
29	DICALCIUM PHOSPHATE	0.00	0	0.0	0.0	0	0	0	86.82	3.700	18.840	0.000	96	
34	DYNA-K MINERAL	0.00	0	0.0	0.0	0	0	0	100.0	0.000	0.000	0.000	100	
37	HOMINY FEED, LOW FAT	.95	890	11.3	5.2	5	11	11	2.6	.060	.580	0.000	91	
39	LIMESTONE, GROUND	0.00	0	0.0	0.0	0	0	0	95.83	6.070	.020	0.000	100	
43	MAGNESIUM OXIDE	0.00	0	0.0	0.0	0	0	0	100.0	3.000	0.000	0.000	100	
45	MILK, SOUTHWEST	.79	744	10.6	3.1	3	9	9	2.3	.030	.330	0.000	88	
62	SOYBEAN HULLS	.81	0	12.0	2.1	39	46	46	5.1	.450	.170	0.000	91	
66	SODIUM BICARB	0.00	0	0.0	0.0	0	0	0	100.0	0.000	0.000	0.000	100	
68	SOYBEAN MEAL, 44 SOL	.85	796	49.6	1.4	7	10	10	6.8	.360	.750	0.000	89	
77	WHEAT MIDDS	.84	0	18.7	3.6	8	9	9	2.7	.120	1.010	0.000	90	
78	WHEAT HAY	.60	500	10.9	0.0	28	32	32	7.1	.341	.120	0.000	92	
83	ALFALFA HAY, 28% MCF	.59	0	20.7	0.0	24	37	37	9.3	1.200	.200	0.000	90	
99	SUDANGRASS HAY	.38	310	4.5	1.8	34	47	47	9.0	.456	.080	0.000	91	
100	COASTAL HAY	.54	0	11.0	0.0	31	33	33	0.0	.460	.180	0.000	91	
110	GORE HOFF/ROCH PMX	0.00	0	0.0	0.0	0	0	0	0.0	9.500	0.000	0.000	100	
123	GORE BASE BLEND	0.00	0	0.0	0.0	0	0	0	100.0	7.500	2.500	0.000	100	
124	DYNA-MATE	0.00	0	0.0	0.0	0	0	0	100.0	0.000	0.000	0.000	100	
125	SALT	0.00	0	0.0	0.0	0	0	0	100.0	0.000	0.000	0.000	100	

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Diez de los principales factores que influyen el consumo de materia seca en ganado productor de leche son los siguientes:

- 1.- Disponibilidad de alimento.- Cuaiquier situación que evite que el ganado consuma suficiente o adecuada cantidad de alimento tal como espacio limitado de comedero, tiempo disponible para consumir alimento limitará la materia seca total consumida.
- 2.- Hora de comida.- Las vacas consumen alimento fresco con mas ganas que cuando éste está almacenado por largo tiempo por lo cual el alimento deberá ser ofrecido regularmente o lo mas que se adapte el manejo del rancho para un mayor consumo.
- 3.- Manejo del comedero.- Dejar que el animal limpie el comedero es algo que le gusta a los productores mas exitosos sin embargo poner alimento sobre alimento dejado, permite que se desarrollen hongos cuando se trata de sobre-alimentar al ganado.
- 4.- Cantidad de humedad en la dieta.- Se debe evitar el uso excesivo de alimento húmedo acidificado y fermentado. Dietas con menos de 60-65% de materia seca debe ser evitada. No es el agua en los forrajes succulentos fermentados lo que reduce el consumo sino unos compuestos desconocidos solubilizados en ella.