

Colostrum Composition

Variable	Milk	Colostrum (milking postpartum)		
		1	2	3
Specific Gravity	1.032	1.056	1.04	1.035
Total Solids (%)	12.5%	23.9%	17.9%	14.1%
Fat (%)	3.6%	6.7%	5.4%	3.9%
Solids-not-Fat (%)	8.6%	16.7%	12.2%	9.8%
Total Protein (%)	3.2%	14.0%	8.4%	5.1%
Casein (%)	2.5%	4.8%	4.3%	3.8%
Albumin (%)	0.5%	0.9%	1.1%	0.9%
Immunoglobulins (%)	0.09%	6.0%	4.2%	2.4%
IgG (%)	0.06%	3.2%	2.5%	1.5%
Nonprotein Nitrogen (% of total N)	4.9%	8.0%	7.0%	8.3%
Lactose (%)	4.9%	2.7%	3.9%	4.4%
Calcium (%)	0.13%	0.26%	0.15%	0.15%
Magnesium (%)	1.01%	1.04%	0.01%	0.01%
Potassium (%)	0.15%	0.14%	0.13%	0.14%
Sodium (%)	0.15%	0.14%	0.13%	0.14%
Chlorine (%)	0.07%	0.12%	0.10%	0.10%
Zinc (mg/100mL)	0.30	1.22	-	0.62
Manganese (mg/100mL)	0.004	0.02	-	0.01
Iron (mg/100mL)	0.05	0.20	-	-
Copper (mg/100mL)	0.01	0.06	-	-
Cobalt (mg/100mL)	0.10	0.50	-	-
Vitamin A (micrograms/100mL)	34	295	190	113
Vitamin E (micrograms/g fat)	15	84	76	56
Carotene (micrograms/g fat)	11.3	103.3	-	-
Riboflavin (micrograms/mL)	1.47	4.83	2.71	1.85
Pantothenic acid (micrograms/mL)	3.82	1.73	-	3.20
Vitamin B12 (micrograms/100mL)	0.6	4.9	-	2.5
Folic acid (micrograms/100mL)	0.2	0.8	-	0.2
Choline (mg/mL)	0.13	0.70	0.34	0.23
Ascorbic acid (mg/100mL)	2.2	2.5	-	2.3

COMPARISONS:	
Specific gravity	2.3% greater
Total solids	91.0% greater
Immunoglobulins	6500.0% greater
IgG	5300.0% greater
Most Minerals and Vitamins	200.0% greater

IgG content by milking - shown as a percent of colostrum

1st	2nd	3rd	Milk
100%	70%	40%	2%

Adapted from Davis, C.L. & J.K. Drackley, The Development, Nutrition and Management of the Young Calf. (Iowa State Univ. Press, 1998), 182.