Free-Choice Mineral Guidelines

BC-3001 – Revised: June, 2006
Dr. Larry W. Olson - Extension Animal Scientist

Nutrient	Sources	Restriction	Summer	Winter
Calcium (Ca)	Calcium Carbonate, Monocalcium Phosphate, Dicalcium Phosphate	Minimum	13.00%	13.00%
		Maximum	15.60%	15.60%
Phosphorous (P)	Monocalcium Phosphate, Dicalcium Phosphate	Minimum	8.00%	8.00%
Salt (NaCL)	Sodium Chloride	Minimum	18.00%	21.00%
		Maximum	21.60%	21.60%
Magnesium (Mg)	Magnesium Oxide, Magnesium Sulfate	Minimum	3.50%	8.00%
Potassium (K)	Potassium Sulfate Minimum	Minimum	0.40%	0.40%
Sulfur (S)	Potassium Sulfate, Magnesium Sulfate Minimum	Minimum	1.20%	1.20%
Iron (Fe)	Ferrous Sulfate Minimum	Minimum	0.01%	0.01%
Manganese (Mn)	Manganese Oxide	Minimum	0.30%	0.30%
Iodine (I)	EDDI (Ethylenediamine dihydriodide)	Minimum	0.01%	0.01%
Cobalt (Co)	Cobalt Carbonate Minimum	Minimum	0.0012%	0.0012%
Copper (Cu)	Copper (Cupric) Sulfate	Minimum	0.15%	0.15%
Zinc (Zn)	Zinc Oxide	Minimum	0.40%	0.40%
Selenium (Se)	Selenium Selenite	Minimum	0.00264%	0.00264%
Fluorine (F)	----	Minimum	0.08%	0.08%
Vitamin A	Vitamin A Supplement	Minimum	300,000 IU/lb	300,000 IU/lb
Vitamin D	Vitamin D-3 Supplement	Minimum	30,000 IU/lb	30,000 IU/lb
Vitamin E	Vitamin E Supplement	Minimum	100 IU/lb	100 IU/lb

These are guidelines for selecting a good quality, cost effective complete mineral for cow-calf and stocker operations. They are based on meeting 50% of an animal's daily requirements with an average intake of 3-4 ounces/head/day. Use to compare mineral bags or tags. Consumption of high Mg minerals decreases significantly, if the magnesium level exceeds 8-9%. A trace mineralized salt block is not a complete mineral. No additional salt is needed. Check bag or tag for Copper Oxide and Iron Oxide, which have 0% availability – avoid such minerals.

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