







2017 Range Beef Cow Symposium, Cheyenne, Wyo.



Gu	dmundsen Sa	ndhills Labor	atory, 1999-2	2015			
Mineral	June Harvest	July Harvest	Oct. 1st Regrowth	Mineral Requirement			
	Macro Mineral, %						
Calcium	0.37	0.63	1.09	0.16 - 0.40			
Phosphorus	0.18	0.13	0.17	0.13 - 0.23			
Potassium	2.39	1.84	1.76	0.60 - 0.70			
Sulfur	0.18	0.17	0.25	0.15			
Magnesium	0.20	0.19	0.24	0.12 - 0.20			
Sodium	0.09	0.06	0.08	0.07 - 0.10			
	Trace Mineral, ppm						
Iron	111	85	114	50			
Manganese	33	35	37	40			
Zinc	17	13	16	30			
Copper	6	5	6	10			

## **Variability of minerals**

- Variability of mineral content of forage is great – Therefore take averages with a grain of salt
  - Will vary even within a geographical location
    - 1) plant species, 2) soil characteristics, 3) soil fertility, 4) stage of plant maturity, and 5) climatic conditions
- Testing your own forages to develop supplementation program can be cost effective

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## **Phosphorus (and Calcium)**

- Forage often sufficient in Ca but not always P
- Ca and P supplementation should be considered simultaneously
- Want a Ca:P ratio of no less than 1:1



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	_		Amoun	Amount on tag	
	Cow	Will supply to			
Mineral	requirement	total diet <sup>2</sup>	4 oz intake	2 oz intake	
Selenium, ppm	0.1	0.1 to 0.2	13 to 26	26 to 52	
Copper, ppm	10	10 to 15	1300 to 2500	2600 to 5000	
Zinc, ppm	30	15 to 22	2000 to 3000	4000 to 6000	
Manganese, ppm	40	10 to 20	1300 to 2600	1300 to 5200	
lodine, ppm	0.2	0.2	26	52	
Cobalt, ppm	0.1	0.1	13	26	
Magnesium, %	0.12-0.20	0.03 to 0.10	3 to 13	6 to 26	
Calcium, %	0.16-0.40	0 to 0.10	0 to 13	0 to 26	
Phosphorus, %	0.13-0.23	0 to 0.10	0 to 13	0 to 26	
1 Assumes a relatively av	ailable source of mir	neral is used			
2 Assume 1300 lb cow co	onsuming 2.5% BW				

