

Supplementary Materials

# Mineral Composition of Cereal and Cereal-Free Dry Dog Foods versus Nutritional Guidelines

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**Table 1.** Declarations of mineral additives as presented on the label with results of conversion into actual amounts (mg/kg feed) <sup>1</sup>.

Product	Microelement	Nutritional additives		Amount declared under heading "Analytical constituents"
		-Label declaration under heading "Additives"	Corresponding to actual amount of the element	
1	Cu	15.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	3.82	NDL
	Fe	50.00 FeSO <sub>4</sub> · H <sub>2</sub> O	16.00	NDL
	Mn	35.00 MnSO <sub>4</sub>	12.73	NDL
	Zn	50.00 ZnSO <sub>4</sub> · H <sub>2</sub> O	18.21	NDL
2	Cu	60.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	15.27	NDL
	Fe	160.00 FeSO <sub>4</sub> · H <sub>2</sub> O	52.58	NDL
	Mn	110.00 MnO	85.19	NDL
	Zn	130.00 ZnO	104.44	NDL
3	Cu	60.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	15.27	NDL
	Fe	160.00 FeSO <sub>4</sub> · H <sub>2</sub> O	52.58	NDL
	Mn	110.00 MnO	85.19	NDL
	Zn	130.00 ZnO	104.44	NDL
4	Cu	60.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	15.27	NDL
	Fe	160.00 FeSO <sub>4</sub> · H <sub>2</sub> O	52.58	NDL
	Mn	110.00 MnO	85.19	NDL
	Zn	130.00 ZnO	104.44	NDL
5	Cu	60.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	15.27	NDL
	Fe	160.00 FeSO <sub>4</sub> · H <sub>2</sub> O	52.58	NDL
	Mn	110.00 MnO	85.19	NDL
	Zn	130.00 ZnO	104.44	NDL
6	Cu	NDL	–	22.00
	Fe	NDL	–	237.00
	Mn	NDL	–	29.30
	Zn	NDL	–	162.00
7	Cu	15.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	3.82	NDL
	Fe	70.00 FeSO <sub>4</sub> · H <sub>2</sub> O	23.01	NDL
	Mn	35.00 MnO	27.11	NDL
	Zn	80.00 ZnO	64.27	NDL
8	Cu	10.00 Cu	10.00	NDL
	Fe	NDL	–	NDL

	Mn	NDL	–	NDL
	Zn	100.00 Zn	100.00	NDL
9	Cu	14.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	3.56	NDL
	Fe	48.00 FeSO <sub>4</sub> · H <sub>2</sub> O	15.78	NDL
	Mn	33.00 MnSO <sub>4</sub>	12.01	NDL
	Zn	48.00 ZnSO <sub>4</sub> ·H <sub>2</sub> O	17.49	NDL
10	Cu	NDL	–	16.00
	Fe	NDL	–	144.00
	Mn	NDL	–	32.00
	Zn	NDL	–	144.00
11	Cu	7.50 CuSO <sub>4</sub> · 5H <sub>2</sub> O	1.91	NDL
	Fe	201.00 FeSO <sub>4</sub> · H <sub>2</sub> O	66.06	NDL
	Mn	63.00 MnO	48.79	NDL
	Zn	120.00 ZnO	96.41	NDL
12	Cu	8.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.04	NDL
	Fe	201.00 FeSO <sub>4</sub> · H <sub>2</sub> O	66.06	NDL
	Mn	62.00 MnO	48.02	NDL
	Zn	120.00 ZnO	96.41	NDL
13	Cu	8.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.04	NDL
	Fe	201.00 FeSO <sub>4</sub> · H <sub>2</sub> O	66.06	NDL
	Mn	63.00 MnO	48.79	NDL
	Zn	120.00 ZnSO <sub>4</sub> ·H <sub>2</sub> O	43.71	NDL
14	Cu	8.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.04	NDL
	Fe	201.00 FeSO <sub>4</sub> · H <sub>2</sub> O	66.06	NDL
	Mn	63.00 MnO	48.79	NDL
	Zn	120.00 ZnSO <sub>4</sub> ·H <sub>2</sub> O	43.71	NDL
15	Cu	7.50 CuSO <sub>4</sub> · 5H <sub>2</sub> O	1.91	NDL
	Fe	201.00 FeSO <sub>4</sub> · H <sub>2</sub> O	66.06	NDL
	Mn	62.50 MnO	48.40	NDL
	Zn	120.00 ZnO	96.41	NDL
16	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	110.00 FeSO <sub>4</sub> · H <sub>2</sub> O	36.15	NDL
	Mn	25.00 MnO	19.36	NDL
	Zn	135.00 ZnO	108.46	NDL
17	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	110.00 FeSO <sub>4</sub> · H <sub>2</sub> O	36.15	NDL
	Mn	25.00 MnO	19.36	NDL
	Zn	125.00 ZnO	100.43	NDL
18	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	110.00 FeSO <sub>4</sub> · H <sub>2</sub> O	36.15	NDL
	Mn	25.00 MnO	19.36	NDL
	Zn	135.00 ZnO	108.46	NDL
19	Cu	11.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.80	15.00
	Fe	NDL	–	290.00
	Mn	NDL	–	25.00
	Zn	100.00 ZnO	80.34	210.00
20	Cu	11.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.80	20.00
	Fe	NDL	–	250.00
	Mn	NDL	–	21.00
	Zn	160.00 ZnO	128.55	230.00
21	Cu	11.00 Cu	11.00	NDL

	Fe	NDL	–	NDL
	Mn	NDL	–	NDL
	Zn	100.00 ZnO	80.34	NDL
22	Cu	10.00 Cu	10.00	NDL
	Fe	100.00 Fe	100.00	NDL
	Mn	10.00 Mn	10.00	NDL
	Zn	140.00 Zn	140.00	NDL
23	Cu	10.00 Cu	10.00	NDL
	Fe	100.00 Fe	100.00	NDL
	Mn	10.00 Mn	10.00	NDL
	Zn	140.00 Zn	140.00	NDL
24	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	100.00 FeSO <sub>4</sub> · H <sub>2</sub> O	32.86	NDL
	Mn	10.00 MnO	7.74	NDL
	Zn	140.00 ZnSO <sub>4</sub> · H <sub>2</sub> O	51.00	NDL
25	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	100.00 FeSO <sub>4</sub> · H <sub>2</sub> O	32.86	NDL
	Mn	10.00 MnO	7.74	NDL
	Zn	140.00 ZnSO <sub>4</sub> · H <sub>2</sub> O	51.00	NDL
26	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	100.00 FeSO <sub>4</sub> · H <sub>2</sub> O	32.86	NDL
	Mn	5.00 MnSO <sub>4</sub>	1.82	NDL
	Zn	125.00 ZnSO <sub>4</sub> · H <sub>2</sub> O	45.53	NDL
27	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	100.00 FeSO <sub>4</sub> · H <sub>2</sub> O	32.86	NDL
	Mn	5.00 MnSO <sub>4</sub>	1.82	NDL
	Zn	125.00 ZnSO <sub>4</sub> · H <sub>2</sub> O	45.53	NDL
28	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	NDL	–	NDL
	Mn	NDL	–	NDL
	Zn	115.00 ZnO	92.39	NDL
29	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	24.00
	Fe	NDL	–	150.00
	Mn	NDL	–	17.00
	Zn	100.00 ZnO	80.34	180.00
30	Cu	10.00 CuSO <sub>4</sub> · 5H <sub>2</sub> O	2.55	NDL
	Fe	NDL	–	NDL
	Mn	NDL	–	NDL
	Zn	100.00 ZnO	80.34	NDL

<sup>1</sup>NDL, not declared in the label.

**Table S2.** Declarations of macroelement content under “Analytical constituents” presented on the label (g/kg feed)<sup>1</sup>.

Product	Amount declared under heading “Analytical constituents”				
	Ca	P	K	Na	Mg
1	12.00	9.00	NDL	NDL	NDL
2	11.62	11.30	NDL	NDL	NDL
3	22.30	10.50	NDL	NDL	NDL
4	10.00	5.00	NDL	NDL	NDL
5	24.10	15.00	NDL	NDL	NDL
6	15.00	10.00	4.90	3.90	1.50
7	12.00	10.00	NDL	NDL	NDL
8	14.60	13.40	3.80	3.50	NDL
9	8.00	NDL	NDL	NDL	NDL
10	15.00	10.00	8.50	3.50	1.60
11	13.00	10.00	NDL	NDL	NDL
12	15.00	10.00	NDL	NDL	NDL
13	12.50	9.00	NDL	NDL	NDL
14	16.00	9.00	NDL	NDL	NDL
15	8.00	7.00	NDL	NDL	0.90
16	11.00	8.00	NDL	4.50	NDL
17	14.50	9.50	NDL	4.00	NDL
18	16.00	10.50	NDL	3.50	NDL
19	15.00	11.00	7.00	3.00	1.30
20	15.00	11.00	7.00	3.20	1.10
21	15.00	11.00	NDL	NDL	NDL
22	21.00	12.00	NDL	NDL	NDL
23	21.00	11.00	NDL	NDL	NDL
24	15.00	10.00	NDL	NDL	NDL
25	14.00	9.00	NDL	NDL	NDL
26	20.00	12.00	NDL	NDL	NDL
27	20.00	13.00	NDL	NDL	NDL
28	10.50	8.50	5.00	3.00	1.10
29	15.00	11.00	8.50	4.50	1.00
30	14.60	13.40	3.80	3.50	NDL

<sup>1</sup>NDL, not declared in the label.