

Results of ANOVA

a. Results of ANOVA showing variations of metal concentrations across all samples

ANOVA						Sum of Squares	Df	Mean Square	F	Sig.
Iron mg/kg * Cereal Composition of sample	Between Groups	(Combined)	772.102	4	193.025	2.466	0.058			
	Within Groups		3521.802	45	78.262					
	Total		4293.904	49						
Zinc mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.08	4	0.02	1.086	0.375			
	Within Groups		0.827	45	0.018					
	Total		0.907	49						
Copper mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.093	4	0.023	0.667	0.618			
	Within Groups		1.573	45	0.035					
	Total		1.667	49						
Cadmium mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.774	4	0.193	1.789	0.148			
	Within Groups		4.867	45	0.108					
	Total		5.641	49						
Chromium mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.008	4	0.002	1.116	0.361			
	Within Groups		0.076	45	0.002					
	Total		0.084	49						
Cobalt mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.003	4	0.001	0.494	0.74			
	Within Groups		0.064	45	0.001					
	Total		0.067	49						
Lead mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.096	4	0.024	1.67	0.174			
	Within Groups		0.647	45	0.014					
	Total		0.743	49						
Nickel mg/kg * Cereal Composition of sample	Between Groups	(Combined)	0.006	4	0.001	1.326	0.275			
	Within Groups		0.049	45	0.001					
	Total		0.055	49						

b. Results of ANOVA for metal concentrations in samples composed of Wheat only
ANOVA

		Sum Squares	of df	Mean Square	F	Sig.
Fe	Between Groups	26.904	3	8.968	23.806	0.149
	Within Groups	0.377	1	0.377		
	Total	27.281	4			
Zn	Between Groups	0	3	0	0.065	0.971
	Within Groups	0.002	1	0.002		
	Total	0.002	4			
Cu	Between Groups	0.002	3	0.001	1.135	0.583
	Within Groups	0.001	1	0.001		
	Total	0.003	4			
Cd	Between Groups	0.494	3	0.165	.	.
	Within Groups	0	1	0		
	Total	0.494	4			
Cr	Between Groups	0.001	3	0	0.2	0.889
	Within Groups	0.002	1	0.002		
	Total	0.004	4			
Co	Between Groups	0	3	0	.	.
	Within Groups	0	1	0		
	Total	0	4			
Pb	Between Groups	0.059	3	0.02	.	.
	Within Groups	0	1	0		
	Total	0.059	4			
Ni	Between Groups	0.003	3	0.001	.	.
	Within Groups	0	1	0		
	Total	0.003	4			

c. Results of ANOVA for metal concentrations in samples composed of maize only

ANOVA		Sum	of	df	Mean	F	Sig.
		Squares			Square		
Fe	Between Groups	60.066		3	20.022	1.772	0.325
	Within Groups	33.897		3	11.299		
	Total	93.963		6			
Zn	Between Groups	0.009		3	0.003	0.369	0.783
	Within Groups	0.024		3	0.008		
	Total	0.033		6			
Cu	Between Groups	0.009		3	0.003	1.594	0.356
	Within Groups	0.006		3	0.002		
	Total	0.015		6			
Cd	Between Groups	1.067		3	0.356	2865.25	0.0
	Within Groups	0		3	0		
	Total	1.068		6			
Cr	Between Groups	0.021		3	0.007	0.636	0.64
	Within Groups	0.033		3	0.011		
	Total	0.054		6			
Co	Between Groups	0		3	0	.	.
	Within Groups	0		3	0		
	Total	0		6			
Pb	Between Groups	0.229		3	0.076	5.344	0.101
	Within Groups	0.043		3	0.014		
	Total	0.271		6			
Ni	Between Groups	0.004		3	0.001	4.304	0.131
	Within Groups	0.001		3	0		
	Total	0.005		6			

d. Results of ANOVA for metal concentrations in samples composed of rice only

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Fe	Between Groups	42.147	5	8.429	24.59	0.152
	Within Groups	0.343	1	0.343		
	Total	42.49	6			
Zn	Between Groups	0.312	5	0.062	0.145	0.953
	Within Groups	0.431	1	0.431		
	Total	0.743	6			
Cu	Between Groups	0.008	5	0.002	199.343	0.054
	Within Groups	0	1	0		
	Total	0.008	6			
Cd	Between Groups	0.845	5	0.169	351.816	0.04
	Within Groups	0	1	0		
	Total	0.846	6			
Cr	Between Groups	0.005	5	0.001	0.667	0.725
	Within Groups	0.002	1	0.002		
	Total	0.007	6			
Co	Between Groups	0	5	0	.	.
	Within Groups	0	1	0		
	Total	0	6			
Pb	Between Groups	0.103	5	0.021	.	.
	Within Groups	0	1	0		
	Total	0.103	6			
Ni	Between Groups	0.033	5	0.007	.	.
	Within Groups	0	1	0		
	Total	0.033	6			

e. Results of ANOVA for metal concentrations between samples of mixed-cereal composition

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Fe	Between Groups	1138.262	15	75.884	0.496	0.902
	Within Groups	1987.906	13	152.916		
	Total	3126.168	28			
Zn	Between Groups	0.022	15	0.001	0.913	0.571
	Within Groups	0.021	13	0.002		
	Total	0.044	28			
Cu	Between Groups	0.867	15	0.058	1.109	0.43
	Within Groups	0.678	13	0.052		
	Total	1.545	28			
Cd	Between Groups	1.488	15	0.099	1.95	0.117
	Within Groups	0.661	13	0.051		
	Total	2.149	28			
Cr	Between Groups	0.006	15	0	0.981	0.519
	Within Groups	0.005	13	0		
	Total	0.011	28			
Co	Between Groups	0.021	15	0.001	0.421	0.944
	Within Groups	0.043	13	0.003		
	Total	0.064	28			
Pb	Between Groups	0.108	15	0.007	0.907	0.576
	Within Groups	0.103	13	0.008		
	Total	0.211	28			
Ni	Between Groups	0.004	15	0	1.218	0.364
	Within Groups	0.003	13	0		
	Total	0.007	28			

f. Results of ANOVA for metal concentrations among brands

ANOVA			Sum of Squares	df	Mean Square	F	Sig.
Iron mg/kg *	Between Groups	(Combined)	1708.887	20	85.444	0.959	0.53
	Within Groups		2585.017	29	89.139		
	Total		4293.904	49			
Zinc mg/kg *	Between Groups	(Combined)	0.223	20	0.011	0.473	0.957
	Within Groups		0.684	29	0.024		
	Total		0.907	49			
Copper mg/kg *	Between Groups	(Combined)	0.753	20	0.038	1.195	0.324
	Within Groups		0.914	29	0.032		
	Total		1.667	49			
Cadmium mg/kg *	Between Groups	(Combined)	4.379	20	0.219	5.03	0
	Within Groups		1.262	29	0.044		
	Total		5.641	49			
Chromium mg/kg *	Between Groups	(Combined)	0.025	20	0.001	0.606	0.876
	Within Groups		0.059	29	0.002		
	Total		0.084	49			
Cobalt mg/kg *	Between Groups	(Combined)	0.024	20	0.001	0.799	0.696
	Within Groups		0.043	29	0.001		
	Total		0.067	49			
Lead mg/kg *	Between Groups	(Combined)	0.415	20	0.021	1.834	0.067
	Within Groups		0.328	29	0.011		
	Total		0.743	49			
Nickel mg/kg *	Between Groups	(Combined)	0.033	20	0.002	2.175	0.028
	Within Groups		0.022	29	0.001		
	Total		0.055	49			