

Effects of high manganese dose on sheep rumen enzyme activities

Data 1: Specific katalytic activities, ukat/g protein, all values

Ctrl, control group, 34.3 mg Mn/kg DM feed, no manganese supplement

IMn, inorganic manganese supplement, 182.7 mg Mn/kg DM feed

OMn, organic manganese supplement, 184 mg Mn/kg DM feed

Ctrl-AMYL	IMn-AMYL	OMn-AMYL	Ctrl-CMCaza	IMn-CMCaza	OMn-CMCaza	Ctrl-Xyl	IMn-Xyl	OMn-Xyl
3.85	12.41	19.39	0.66	0.54	2.22	181.29	64.13	52.89
12.29	2.63	2.31	1.59	1.82	1.85	168.24	168.84	242.69
2.56	2.68	2.20	0.32	1.02	1.37	201.18	167.28	250.63
2.85	1.39	2.58	0.35	1.16	1.45	187.85	223.00	143.84
3.59	3.06	31.29	1.35	0.50	7.46	52.92	154.95	128.89
3.74	1.68	6.61	0.86	1.43	2.51	58.12	269.02	604.04

	Ctrl-AMYL	IMn-AMYL	OMn-AMYL	Ctrl-CMCaza	IMn-CMCaza	OMn-CMCaza	Ctrl-Xyl	IMn-Xyl	OMn-Xyl
Number of values	6	6	6	6	6	6	6	6	6
Minimum	2.560	1.390	2.200	0.3200	0.5000	1.370	52.92	64.13	52.89
25% Percentile	2.778	1.608	2.283	0.3425	0.5300	1.430	56.82	132.2	109.9
Median	3.665	2.655	4.595	0.7600	1.090	2.035	174.8	168.1	193.3
75% Percentile	5.960	5.398	22.37	1.410	1.528	3.748	191.2	234.5	339.0
Maximum	12.29	12.41	31.29	1.590	1.820	7.460	201.2	269.0	604.0
Mean	4.813	3.975	10.73	0.8550	1.078	2.810	141.6	174.5	237.2
Std. Deviation	3.699	4.181	12.04	0.5224	0.5115	2.320	67.54	69.19	194.5
Std. Error	1.510	1.707	4.915	0.2133	0.2088	0.9470	27.57	28.25	79.41
Lower 95% CI of mean	0.9316	-0.4131	-1.905	0.3068	0.5416	0.3756	70.72	101.9	33.02
Upper 95% CI of mean	8.695	8.363	23.36	1.403	1.615	5.244	212.5	247.1	441.3
Sum	28.88	23.85	64.38	5.130	6.470	16.86	849.6	1047	1423

Table Analyzed	Data 1 - amylaza,CMC-aza,xylanaza-specificicka				
One-way analysis of variance					
P value	0.2804				
P value summary	ns				
Are means signif. different? (P < 0.05)	No				
Number of groups	3				
F	1.386				
R square	0.1559				
Bartlett's test for equal variances					
Bartlett's statistic (corrected)	8.099				
P value	0.0174				
P value summary	*				
Do the variances differ signif. (P < 0.05)	Yes				
ANOVA Table	SS	df	MS		
Treatment (between columns)	162.7	2	81.34		
Residual (within columns)	880.6	15	58.71		
Total	1043	17			
Tukey's Multiple Comparison Test	Mean Diff.	q	Significant? P < 0.05?	Summary	95% CI of diff
Ctrl-AMYL vs IMn-AMYL	0.8383	0.2680	No	ns	-10.65 to 12.33
Ctrl-AMYL vs OMn-AMYL	-5.917	1.892	No	ns	-17.41 to 5.576
IMn-AMYL vs OMn-AMYL	-6.755	2.160	No	ns	-16.25 to 4.737

Table Analyzed	Data 1 - amylaza,CMC-aza,xylanaza-specificicka				
One-way analysis of variance					
P value	0.0572				
P value summary	ns				
Are means signif. different? (P < 0.05)	No				
Number of groups	3				
F	3.484				
R square	0.3172				
Bartlett's test for equal variances					
Bartlett's statistic (corrected)	13.75				
P value	0.0010				
P value summary	**				
Do the variances differ signif. (P < 0.05)	Yes				
ANOVA Table	SS	df	MS		
Treatment (between columns)	13.74	2	6.871		
Residual (within columns)	29.58	15	1.972		
Total	43.32	17			
Bonferroni's Multiple Comparison Test	Mean Diff.	t	Significant? P < 0.05?	Summary	95% CI of diff
Ctrl-CMCaza vs IMn-CMCaza	-0.2233	0.2755	No	ns	-2.407 to 1.961
Ctrl-CMCaza vs OMn-CMCaza	-1.855	2.411	No	ns	-4.139 to 0.2289
IMn-CMCaza vs OMn-CMCaza	-1.732	2.136	No	ns	-3.916 to 0.4523

Table Analyzed	Data 1 - amylaza,CMC-aza,xylanaza-specificicka				
One-way analysis of variance					
P value	0.4278				
P value summary	ns				
Are means signif. different? (P < 0.05)	No				
Number of groups	3				
F	0.8989				
R square	0.1070				
Bartlett's test for equal variances					
Bartlett's statistic (corrected)	7.116				
P value	0.0285				
P value summary	*				
Do the variances differ signif. (P < 0.05)	Yes				
ANOVA Table	SS	df	MS		
Treatment (between columns)	28279	2	14139		
Residual (within columns)	235940	15	15729		
Total	264219	17			
Bonferroni's Multiple Comparison Test	Mean Diff.	t	Significant? P < 0.05?	Summary	95% CI of diff
Ctrl-Xyl vs IMn-Xyl	-32.94	0.4549	No	ns	-228.0 to 162.1
Ctrl-Xyl vs OMn-Xyl	-95.56	1.320	No	ns	-290.6 to 99.49
IMn-Xyl vs OMn-Xyl	-62.63	0.8649	No	ns	-257.7 to 132.4