



Supplementary Material

Impact of Locally Characterized Protease from *Geobacillus* SBS 4S on the Growth of Poultry Bird

Waheed Ahmad¹, Muhammad Tayyab^{1*}, Bushra Muneer^{2*}, Abu Saeed Hashmi¹, Mansurud Din Ahmad³, Shagufta Saeed¹, Muhammad Nauman Aftab², Sehrish Firyal¹, Muhammad Wasim¹, Muhammad Azam⁴, Muhammad Talha⁵ and Ali Raza Awan¹

¹Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Abdul Qadir Jillani Road, Lahore, Pakistan

²Institute of Industrial Biotechnology, Government College University, Lahore, Pakistan

³Department of Epidemiology and Public Health, University of Veterinary and Animal Sciences, Abdul Qadir Jillani Road, Lahore, Pakistan

⁴Department of Statistics, University of Veterinary and Animal Sciences, Abdul Qadir Jillani Road, Lahore, Pakistan

⁵Department of Animal Nutrition, University of Veterinary and Animal Sciences, Ravi Campus Pattoki, District Kasur, Pakistan

Supplementary Table I. Multiple comparisons analysis by least significant difference.

Dependent variable	(I) Groups	(J) Groups	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval	
						Lower bound	Upper bound
Week_1	A	B	-6.8790*	.52465	.000	-7.9160	-5.8420
		C	-10.8923*	.52465	.000	-11.9293	-9.8554
		D	-19.7530*	.52465	.000	-20.7900	-18.7160
		E	-18.6327*	.52465	.000	-19.6696	-17.5957
	B	A	6.8790*	.52465	.000	5.8420	7.9160
		C	-4.0133*	.52465	.000	-5.0503	-2.9764
		D	-12.8740*	.52465	.000	-13.9110	-11.8370
		E	-11.7537*	.52465	.000	-12.7906	-10.7167
	C	A	10.8923*	.52465	.000	9.8554	11.9293
		B	4.0133*	.52465	.000	2.9764	5.0503
		D	-8.8607*	.52465	.000	-9.8976	-7.8237
		E	-7.7403*	.52465	.000	-8.7773	-6.7034

Table continued on next page.....

* Corresponding author: mohammad.tayyab@uvas.edu.pk
0030-9923/2024/0001-17 \$ 9.00/0



Copyright 2024 by the authors. Licensee Zoological Society of Pakistan.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Dependent variable	(I) Groups	(J) Groups	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval	
						Lower bound	Upper bound
Week_2	D	A	19.7530*	.52465	.000	18.7160	20.7900
		B	12.8740*	.52465	.000	11.8370	13.9110
		C	8.8607*	.52465	.000	7.8237	9.8976
		E	1.1203*	.52465	.034	.0834	2.1573
	E	A	18.6327*	.52465	.000	17.5957	19.6696
		B	11.7537*	.52465	.000	10.7167	12.7906
		C	7.7403*	.52465	.000	6.7034	8.7773
		D	-1.1203*	.52465	.034	-2.1573	-.0834
	A	B	-10.0027	992.16420	.992	-1970.9751	1950.9698
		C	-18.9373	992.16420	.985	-1979.9098	1942.0351
		D	-36.9990	992.16420	.970	-1997.9714	1923.9734
		E	-1593.7843	992.16420	.110	-3554.7568	367.1881
	B	A	10.0027	992.16420	.992	-1950.9698	1970.9751
		C	-8.9347	992.16420	.993	-1969.9071	1952.0378
		D	-26.9963	992.16420	.978	-1987.9688	1933.9761
		E	-1583.7817	992.16420	.113	-3544.7541	377.1908
	C	A	18.9373	992.16420	.985	-1942.0351	1979.9098
		B	8.9347	992.16420	.993	-1952.0378	1969.9071
		D	-18.0617	992.16420	.986	-1979.0341	1942.9108
		E	-1574.8470	992.16420	.115	-3535.8194	386.1254
D	A	36.9990	992.16420	.970	-1923.9734	1997.9714	
	B	26.9963	992.16420	.978	-1933.9761	1987.9688	
	C	18.0617	992.16420	.986	-1942.9108	1979.0341	
	E	-1556.7853	992.16420	.119	-3517.7578	404.1871	
E	A	1593.7843	992.16420	.110	-367.1881	3554.7568	
	B	1583.7817	992.16420	.113	-377.1908	3544.7541	
	C	1574.8470	992.16420	.115	-386.1254	3535.8194	
	D	1556.7853	992.16420	.119	-404.1871	3517.7578	
Week_3	A	B	-15.7647	2582.72859	.995	-5120.4233	5088.8940
		C	-25.7500	2582.72859	.992	-5130.4086	5078.9086
		D	-5933.0237*	2582.72859	.023	-11037.6823	-828.3650
		E	-40.7603	2582.72859	.987	-5145.4190	5063.8983
	B	A	15.7647	2582.72859	.995	-5088.8940	5120.4233
		C	-9.9853	2582.72859	.997	-5114.6440	5094.6733
		D	-5917.2590*	2582.72859	.023	-11021.9176	-812.6004
		E	-24.9957	2582.72859	.992	-5129.6543	5079.6630
	C	A	25.7500	2582.72859	.992	-5078.9086	5130.4086
		B	9.9853	2582.72859	.997	-5094.6733	5114.6440
		D	-5907.2737*	2582.72859	.024	-11011.9323	-802.6150
		E	-15.0103	2582.72859	.995	-5119.6690	5089.6483
D	A	5933.0237*	2582.72859	.023	828.3650	11037.6823	

Table continued in next page.....

Dependent variable	(I) Groups	(J) Groups	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval	
						Lower bound	Upper bound
Week_4	E	C	5907.2737*	2582.72859	.024	802.6150	11011.9323
		E	5892.2633*	2582.72859	.024	787.6047	10996.9220
		A	40.7603	2582.72859	.987	-5063.8983	5145.4190
		B	24.9957	2582.72859	.992	-5079.6630	5129.6543
		C	15.0103	2582.72859	.995	-5089.6483	5119.6690
	A	D	-5892.2633*	2582.72859	.024	-10996.9220	-787.6047
		B	-13.0980*	2.24144	.000	-17.5281	-8.6679
		C	-35.1073*	2.24144	.000	-39.5375	-30.6772
		D	-100.1523*	2.24144	.000	-104.5825	-95.7222
		E	-84.8450*	2.24144	.000	-89.2751	-80.4149
	B	A	13.0980*	2.24144	.000	8.6679	17.5281
		C	-22.0093*	2.24144	.000	-26.4395	-17.5792
		D	-87.0543*	2.24144	.000	-91.4845	-82.6242
		E	-71.7470*	2.24144	.000	-76.1771	-67.3169
		A	35.1073*	2.24144	.000	30.6772	39.5375
	C	B	22.0093*	2.24144	.000	17.5792	26.4395
		D	-65.0450*	2.24144	.000	-69.4751	-60.6149
		E	-49.7377*	2.24144	.000	-54.1678	-45.3075
		A	100.1523*	2.24144	.000	95.7222	104.5825
		B	87.0543*	2.24144	.000	82.6242	91.4845
D	C	65.0450*	2.24144	.000	60.6149	69.4751	
	E	15.3073*	2.24144	.000	10.8772	19.7375	
	A	84.8450*	2.24144	.000	80.4149	89.2751	
	B	71.7470*	2.24144	.000	67.3169	76.1771	
	C	49.7377*	2.24144	.000	45.3075	54.1678	
Week_5	A	D	-15.3073*	2.24144	.000	-19.7375	-10.8772
		B	-12.0850*	.58422	.000	-13.2397	-10.9303
		C	-33.0293*	.58422	.000	-34.1840	-31.8746
		D	-77.0273*	.58422	.000	-78.1820	-75.8726
		E	-59.9757*	.58422	.000	-61.1304	-58.8210
	B	A	12.0850*	.58422	.000	10.9303	13.2397
		C	-20.9443*	.58422	.000	-22.0990	-19.7896
		D	-64.9423*	.58422	.000	-66.0970	-63.7876
		E	-47.8907*	.58422	.000	-49.0454	-46.7360
		A	33.0293*	.58422	.000	31.8746	34.1840
	C	B	20.9443*	.58422	.000	19.7896	22.0990
		D	-43.9980*	.58422	.000	-45.1527	-42.8433
		E	-26.9463*	.58422	.000	-28.1010	-25.7916
		A	77.0273*	.58422	.000	75.8726	78.1820
		B	64.9423*	.58422	.000	63.7876	66.0970
	D	C	43.9980*	.58422	.000	42.8433	45.1527
		E	17.0517*	.58422	.000	15.8970	18.2064
		A	59.9757*	.58422	.000	58.8210	61.1304
		B	47.8907*	.58422	.000	46.7360	49.0454
		C	26.9463*	.58422	.000	25.7916	28.1010
E	D	-17.0517*	.58422	.000	-18.2064	-15.8970	

Based on observed means. The error term is Mean Square (Error) = 5.120. *, The mean difference is significant at the .05 level.