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Enzyme inclusion or fermentation of canola-based diets generate different responses in growth indicators, carcass quality, nutrient digestibility, bone strength, and blood biochemical parameters in broiler chickens

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Table S1 - Interaction effect of dietary enzyme treatment and fermentation on Feed Intake (g) in broilers											
Groups	**UC6**	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-Value**
WK1	140^{a}	120^{b}	118^{b}	142^{a}	136^{a}	118^{b}	142^{a}	137^{a}	118^{b}	2.18	0.00
WK2	290	291	280	287	279	282	291	289	273	2.41	0.63
WK3	510^{ab}	503^{ab}	512^{ab}	544^{a}	486^{b}	502^{ab}	516^{ab}	489^{ab}	494^{ab}	4.64	0.07
Starter	940^{ab}	914^{ab}	910^{ab}	973^{a}	900^{ab}	903^{ab}	949^{ab}	915^{ab}	884^{b}	6.83	0.03
WK4	773^{ab}	778^{ab}	772^{ab}	805^{a}	720^{b}	743^{ab}	794^{ab}	750^{ab}	786^{ab}	6.55	0.02
WK5	859	851	814	865	835	850	854	847	811	6.22	0.42
WK6	931	917	910	958	911	901	950	923	898	5.33	0.05
Finisher	2563	2546	2496	2627	2465	2494	2598	2520	2495	13.9	0.06
Overall	3504^{ab}	3460^{ab}	3406^{ab}	3601^{a}	3365^{b}	3396^{b}	3547^{ab}	3435^{ab}	3379^{b}	18.6	0.01

Means in the same row with different superscripts are significantly different at $\alpha = 0.05$

UC6: Untreated Canola at 6% UC12: Untreated Canola at 12% UC18: Untreated Canola at 18%
EC6: Enzyme Treated Canola at 6% EC12: Enzyme Treated Canola at 12% EC18: Enzyme Treated Canola at 18%
FC6: Fermented Canola at 6% FC12: Fermented Canola at 12% FC18: Fermented Canola at 18%

Table S2 - Interaction effect of dietary enzyme treatment and fermentation on Weight Gain (g) in broilers											
Groups	**UC6**	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-Value**
WK1	126^{a}	105^{b}	106^{b}	123^{a}	122^{a}	101^{b}	121^{a}	127^{a}	101^{b}	2.20	<0.01
WK2	253^{a}	241^{ab}	230^{ab}	246^{ab}	245^{ab}	238^{ab}	249^{ab}	257^{a}	221^{b}	2.64	0.01
WK3	345^{ab}	313^{bc}	314^{bc}	333^{abc}	356^{a}	305^{c}	336^{abc}	358^{a}	316^{bc}	4.18	<0.01
Starter	724^{a}	659^{bcd}	650^{cd}	702^{abc}	723^{a}	644^{d}	706^{ab}	743^{a}	638^{d}	7.91	<0.01
WK4	401^{ab}	379^{bc}	374^{bc}	402^{ab}	418^{a}	369^{c}	401^{ab}	418^{a}	373^{bc}	4.00	<0.01
WK5	357^{abc}	332^{abc}	313^{c}	350^{abc}	373^{a}	323^{bc}	356^{abc}	371^{ab}	317^{c}	5.07	<0.01
WK6	371^{a}	346^{bc}	343^{bc}	371^{a}	361^{abc}	343^{bc}	367^{ab}	374^{a}	341^{c}	2.93	<0.01
Finisher	1129^{a}	1056^{bc}	1030^{c}	1123^{ab}	1152^{a}	1035^{c}	1124^{ab}	1163^{a}	1031^{c}	10.90	<0.01
Overall	1852^{a}	1716^{b}	1680^{b}	1825^{a}	1874^{a}	1679^{b}	1830^{a}	1906^{a}	1669^{b}	18.27	<0.01

Means in the same row with different superscripts are significantly different at $\alpha = 0.05$

UC6: Untreated Canola at 6% UC12: Untreated Canola at 12% UC18: Untreated Canola at 18%
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FC6: Fermented Canola at 6% FC12: Fermented Canola at 12% FC18: Fermented Canola at 18%

Table S3 - Interaction effect of dietary enzyme treatment and fermentation on Feed Conversion Ratio in broilers											
Groups	**UC6**	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-Value**
WK1	1.11	1.15	1.12	1.15	1.12	1.17	1.17	1.07	1.17	.009	0.60
WK2	1.15	1.21	1.22	1.17	1.14	1.19	1.17	1.13	1.23	.013	0.53
WK3	1.49^{ab}	1.61^{ab}	1.63^{ab}	1.64^{a}	1.37^{b}	1.65^{a}	1.54^{ab}	1.37^{b}	1.56^{ab}	.025	0.05
Starter	1.30^{abc}	1.39^{a}	1.40^{a}	1.39^{a}	1.25^{bc}	1.40^{a}	1.35^{abc}	1.23^{c}	1.39^{ab}	.015	0.01
WK4	1.94^{abc}	2.06^{ab}	2.07^{ab}	2.00^{abc}	1.72^{c}	2.01^{ab}	1.98^{abc}	1.79^{bc}	2.11^{a}	.029	0.02
WK5	2.42	2.57	2.61	2.48	2.24	2.63	2.40	2.28	2.57	.038	0.95
WK6	2.51^{ab}	2.65^{a}	2.66^{a}	2.58^{ab}	2.52^{ab}	2.63^{ab}	2.59^{ab}	2.47^{b}	2.63^{a}	.016	0.05
Finisher	2.28^{ab}	2.41^{a}	2.42^{a}	2.34^{ab}	2.14^{b}	2.41^{a}	2.31^{ab}	2.16^{b}	2.42^{a}	.024	0.01
Overall	1.90^{ab}	2.02^{a}	2.03^{a}	1.97^{a}	1.80^{b}	2.02^{a}	1.94^{ab}	1.80^{b}	2.03^{a}	.019	<0.01

Means in the same row with different superscripts are significantly different at $\alpha = 0.05$

Table S4 - Interaction effect of dietary enzyme treatment and fermentation on percent Apparent Total Digestibility (ATD) of nutrients at finisher phase in broilers											
Groups	**UC6**	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-Value**
DM	72.6	72.6	73.4	71.9	74.7	71.0	71.5	74.6	75.5	0.43	0.30
ASH	46.5	47.9	45.3	48.2	48.2	47.3	48.0	48.7	46.8	0.41	0.68
CP	70.3^{ab}	60.0^{c}	59.8^{c}	59.7^{c}	73.9^{a}	61.6^{c}	70.9^{a}	72.6^{a}	65.1^{bc}	0.99	<0.01
CF	78.4^{a}	70.8^{b}	68.5^{b}	70.7^{b}	79.6^{a}	67.5^{b}	78.8^{a}	79.2^{a}	74.4^{ab}	0.90	<0.01
NFE	83.1^{abcd}	79.3^{d}	80.1^{cd}	78.6^{d}	85.5^{ab}	79.8^{d}	85.1^{abc}	86.0^{a}	80.4^{bcd}	0.57	<0.01
Ca	28.1^{ab}	24.7^{b}	24.6^{b}	26.2^{ab}	29.9^{a}	27.1^{ab}	24.9^{b}	29.9^{a}	24.9^{b}	0.43	<0.01
P	29.2^{ab}	24.5^{ab}	23.8^{b}	24.8^{ab}	30.3^{a}	23.2^{b}	24.9^{ab}	29.2^{ab}	24.1^{b}	0.58	0.01

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FC6: Fermented Canola at 6% FC12: Fermented Canola at 12% FC18: Fermented Canola at 18%

Table S5 - Interaction effect of dietary enzyme treatment and fermentation on bone quality in broilers											
Groups	**UC6**	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-Value**
Bone Weight (g)	7.86^{ab}	5.67^{b}	5.68^{b}	6.48^{ab}	8.15^{ab}	5.33^{b}	8.89^{a}	8.98^{a}	6.52^{ab}	0.31	<0.01
Bone Length (cm)	90.5	89.0	93.5	92.6	89.2	88.9	86.4	86.8	87.0	0.76	0.29
BW: BoneWt	246	255	248	251	256	249	255	246	254	1.54	0.71
Robusticity Index	4.56^{abc}	5.00^{ab}	5.24^{a}	4.97^{ab}	4.43^{bc}	5.11^{ab}	4.17^{c}	4.18^{c}	4.73^{abc}	0.08	<0.01
Tibio Tarsal Index	44.0	38.5	37.2	35.9	38.4	35.9	34.1	27.8	32.4	1.26	1.66

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FC6: Fermented Canola at 6% FC12: Fermented Canola at 12% FC18: Fermented Canola at 18%

Table S6 - Interaction effect of dietary enzyme treatment and fermentation on carcass characteristics in broilers											
Groups	**UC6**	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-Value**
Dressing %	68.97^{a}	62.6^{cd}	61.7^{d}	65.7^{abc}	68.43^{ab}	66.3^{ab}	66.9^{ab}	68.97^{a}	65.4^{bc}	0.52	<0.01
Eviscerated Weight (%)	77.21^{abc}	71.7^{c}	71.5^{c}	78.8^{abc}	78.60^{abc}	73.3^{bc}	81.2^{ab}	82.34^{a}	77.1^{abc}	0.85	<0.01
Giblet Weight (g)	76.00	96.7	75.3	74.3	84.33	75.3	79.0	77.67	80.3	1.82	0.06
Abdominal Fat Weight (g)	1.67	1.67	1.91	1.53	1.70	1.84	1.55	1.61	1.73	0.04	0.30
Meat pH	5.97	5.97	5.97	6.00	5.97	5.97	5.97	5.97	5.97	0.01	1.00

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FC6: Fermented Canola at 6% FC12: Fermented Canola at 12% FC18: Fermented Canola at 18%

Table S7- Interaction effect of dietary enzyme treatment and fermentation on blood biochemical parameters at finisher phase in broilers											
	UC6	**UC12**	**UC18**	**EC6**	**EC12**	**EC18**	**FC6**	**FC12**	**FC18**	**SEM**	**P-value**
Triglycerides (mg/dL)	42.1	41.9	40.5	39.8	39.2	41.6	39.2	38.6	36.9	0.45	0.08
LDL (mg/dL)	40.4	37.2	36.2	37.9	42.4	37.1	41.4	38.3	40.0	0.72	0.48
HDL (mg/dL)	55.1	54.8	59.2	61.1	54.0	55.5	56.1	60.3	58.1	0.71	0.13
Total Cholesterol (mg/dL)	103.9	100.4	103.4	107.0	104.3	100.9	105.3	106.2	105.6	0.91	0.76
Blood Glucose (mg/dL)	111.6	111.7	111.8	111.7	111.6	111.9	111.3	112.3	111.8	0.83	0.87
Total Protein (g/dL)	4.50	4.37	3.90	4.37	4.17	4.03	3.97	4.43	4.60	0.12	0.93

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