



Impact of nano-Selenium on biochemical, antioxidant, immunological and histological parameters of broiler chickens during rainy season

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SM1. Ingredient composition and nutritive content of the basal diet

S. No	Particulars	Prestarter (%) (1-14 day)	Starter (%) (15-24 day)	Finisher (%) (25-35 day)
1.	Maize	51.5	53.5	56.5
2.	Soybean meal	43	39	35
3.	Vegetable oil	2	4	5
4.	Dicalcium phosphate	1.83	1.83	1.83
5.	Limestone	0.97	0.97	0.97
6.	DL-Methionine	0.05	0.05	0.05
7.	L-Lysine	0.03	0.03	0.03
8.	Vitamin and mineral premix*	0.15	0.15	0.15
9.	Common salt	0.51	0.51	0.51
Additives				
10.	Biocholine	0.50	0.5	0.5
11.	Bio-bantox	0.50	0.5	0.5
12.	Layvit	0.50	0.5	0.5
13.	Livoline	0.25	0.25	0.25
14.	K-zyme	0.50	0.5	0.5
	Total	100	100	100

* Premix without selenium provided per kg of diet Composition per kg of feed: vitamin A, 8,000 IU; vitamin D3, 2,000 IU; vitamin E, 6030 IU; vitamin K3, 2 mg; thiamine, 2 mg; riboflavin, 6 mg; pyridoxine, 2.5 mg; cyanocobalamin, 0.012 mg; pantothenic acid, 15 mg; niacin, 35 mg; folic acid, 0.4 mg; biotin, 0.08 mg; iron, 40 mg; zinc, 80 mg; manganese, 80 mg; copper, 10 mg; iodine, 0.7 mg.

SM2. Proximate composition of the experimental diet

S. No	Particulars	Prestarter (%)	Starter (%)	Finisher (%)
1.	Crude protein	22.85	20.57	19.32
2.	Ether extract	2.94	4.96	5.51
3.	Crude fibre	4.84	4.7	5.81
4.	Total ash	9.27	8.29	9.03
5.	Nitrogen free extract*	60.6	61.18	60.03
6.	Calcium	1.24	1.18	0.89
7.	Phosphorus	0.57	0.62	0.51
8.	Se (ppm)	0.028	0.02	0.024
9.	Metabolizable energy (kcal/kg) *	2995	3140	3225

*Calculated value

SM 3. Serum biochemical profile of broiler birds (Vencobb) under different dietary treatments (3rd week)

Parameter	Treatment									P value
	T1	T2	T3	T4	T5	T6	T7	T8	T9	
Glucose (mg/dl)	179.83±5.48	187.57±5.73	186.26±5.80	172.66±3.33	182.26±4.94	175.61±3.97	175.99±4.86	179.70±6.75	175.61±4.32	0.448
Total Protein (g/dl)	3.44±0.37	3.15±0.38	3.30±0.37	3.59±0.44	3.23±0.40	4.03±0.45	3.72±0.33	3.61±0.36	3.89±0.35	0.773
Albumin (g/dl)	1.71±0.12	1.70±0.12	1.62±0.16	1.64±0.16	1.65±0.22	1.66±0.10	1.57±0.15	1.69±0.14	1.96±0.19	0.86
Globulin (g/dl)	1.73±0.26	1.45±0.31	1.68±0.14	1.95±0.35	1.58±0.19	2.37±0.29	2.15±0.27	1.92±0.28	1.93±0.29	0.634
A/G	0.99±0.18	1.18±0.16	0.97±0.06	0.96±0.11	1.05±0.18	0.71±0.09	0.74±0.09	0.88±0.10	1.02±0.13	0.471
Urea (mg %)	22.12±2.47	21.24±2.52	20.84±2.20	19.03±1.51	19.41±2.01	20.61±2.27	19.68±1.74	18.74±1.80	23.00±3.06	0.904
Creatinine	0.43±0.05	0.39±0.03	0.37±0.03	0.33±0.02	0.36±0.05	0.41±0.04	0.42±0.03	0.46±0.03	0.46±0.04	0.269
Cholesterol (mg/dl)	139.89±4.06	134.85±4.15	142.03±5.50	136.46±4.39	136.18±3.27	134.56±5.60	139.65±3.87	135.40±3.42	143.02±7.65	0.895
TG (mg/dl)	36.61±3.55	34.31±2.04	38.64±3.84	37.84±3.00	38.47±4.98	38.43±4.10	33.89±3.81	30.04±3.20	39.12±3.56	0.692
SGPT (u/l)	10.97±2.82	15.94±3.79	13.54±4.31	20.87±4.85	13.48±3.65	15.16±3.49	14.56±4.65	14.03±4.24	14.79±3.96	0.893
SGOT (u/l)	176.28±13.33	215.97±39.09	195.82±15.56	161.01±23.06	219.18±34.39	220.29±49.58	191.26±33.34	150.35±26.42	170.92±29.42	0.695
Calcium (mg/dl)	9.69±0.32	9.76±0.72	8.68±0.79	9.17±0.31	9.10±0.59	8.81±0.79	9.22±0.65	8.37±0.83	9.52±1.01	0.891
Phosphorus (mg/dl)	5.54±0.37	5.48±0.39	5.95±0.35	5.59±0.41	5.53±0.35	5.13±0.43	5.94±0.41	5.38±0.45	5.66±0.46	0.917

*A/G stands for Albumin/Globulin; TG (Triglycerides); SGPT: (Serum Glutamate Pyruvate transaminase); SGOT (Serum Glutamate oxaloacetate transaminase)

SM4. Serum biochemical profile of broiler birds (Vencobb) under different dietary treatments (5th week)

Parameter	Treatment									P value
	T1	T2	T3	T4	T5	T6	T7	T8	T9	
Glucose (mg/dl)	182.12±7.88	182.94±9.01	182.57±9.98	171.09±3.36	184.11±9.79	171.00±6.19	174.70±9.33	174.73±10.41	174.41±8.14	0.916
Total Protein (g/dl)	3.60±0.68	2.44±0.32	3.07±0.61	3.16±0.73	2.85±0.56	3.59±0.64	3.29±0.50	3.34±0.57	3.61±0.42	0.869
Albumin (g/dl)	1.55±0.18	1.25±0.19	1.57±0.30	1.38±0.21	1.72±0.31	1.58±0.17	1.49±0.21	1.57±0.26	2.00±0.23	0.808
Globulin (g/dl)	2.05±0.46	1.19±0.27	1.50±0.24	1.78±0.62	1.13±0.31	2.01±0.41	1.80±0.34	1.77±0.43	1.61±0.27	0.863
A/G	0.78±0.18	1.74±0.22	1.04±0.10	0.78±0.19	1.52±0.33	0.78±0.16	0.84±0.11	0.97±0.16	1.26±0.16	0.13
Urea (mg%)	26.06±3.94	23.36±4.73	20.04±3.64	17.92±2.16	20.51±2.55	21.45±2.92	20.50±2.46	19.56±2.93	28.69±4.75	0.466
Creatinine	0.42±0.08	0.35±0.04	0.36±0.06	0.29±0.02	0.34±0.10	0.40±0.09	0.39±0.03	0.44±0.04	0.48±0.07	0.652
Cholesterol (mg/dl)	146.46±6.74	132.28±6.20	143.78±7.83	141.53±8.15	141.64±5.06	135.73±9.46	144.80±4.67	140.70±5.74	156.78±12.63	0.612
TG (mg/dl)	39.30±5.56	35.60±3.47	35.91±6.28	39.93±4.60	41.49±6.64	40.58±7.54	35.88±6.77	42.21±2.35	42.73±5.62	0.978
SGPT (u/l)	10.81±5.78	12.57±6.04	12.24±0.65	12.16±0.99	12.29±0.99	10.07±3.14	11.98±7.21	9.22±5.56	10.29±4.87	0.995
SGOT (u/l)	192.79±20.89	213.67±12.57	233.52±13.82	228.78±6.99	214.77±5.05	215.29±22.26	230.13±41.95	184.86±39.75	221.68±40.09	0.916
Calcium (mg/dl)	9.79±0.62	9.08±1.12	8.83±1.36	9.35±0.45	9.60±0.99	9.45±1.28	9.45±0.86	9.02±1.31	10.67±1.26	0.977
Phosphorus (mg/dl)	5.56±0.38	5.50±0.53	4.87±0.57	5.03±0.61	5.45±0.43	5.55±0.39	5.52±0.31	5.58±0.54	5.52±0.48	0.965