Table (1): Composition and calculated analyses of the experimental diets.

Item	Starter and grower (1-21 days)					Finisher (22-38 days)				
	Control	1.0% MP	1.5% MP	2.0% MP	2.5% MP	Control	1.0% MP	1.5% MP	2.0% MP	2.5% MP
Yellow corn	54.00	54.00	53.50	52.50	52.50	56.08	54.00	53.50	53.00	53.00
Soybean meal (44%CP)	29.25	28.25	28.25	28.25	27.00	26.00	25.00	25.00	25.00	23.58
Corn gluten (60% CP)	8.83	8.83	8.83	8.83	9.58	8.00	9.08	9.08	9.08	10.00
Marjoram powder (MP)	0.00	1.00	1.50	2.00	2.50	0.00	1.00	1.50	2.00	2.50
Calcium carbonate	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Sodium chloride	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Vit. and Min. premix[1]	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Monocalcium phosphate	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Vegetable oil	3.00	3.00	3.00	3.50	3.50	5.00	6.00	6.00	6.00	6.00
DL–Methionine	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
L-Lysine HCl	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Calculated analysis[2]:										
Crude protein	23.39	23.07	23.09	23.06	23.04	21.62	21.80	21.81	21.83	21.84
ME, Kcal./Kg	3085	3091	3089	3115	3130	3231	3298	3296	3294	3311
Ether extract	5.51	5.53	5.52	6.00	6.03	7.54	8.51	8.50	8.50	8.53
Crude fiber	3.35	3.44	3.52	3.58	3.58	3.16	3.22	3.29	3.36	3.36
Calcium	1.22	1.22	1.22	1.23	1.23	1.20	1.21	1.22	1.22	1.22
Available phosphorus	0.49	0.49	0.49	0.49	0.49	0.49	0.48	0.48	0.48	0.48
Methionine	0.75	0.75	0.75	0.75	0.75	0.72	0.73	0.73	0.73	0.74
Methionine+Cystine	1.13	1.12	1.12	1.12	1.12	1.08	1.09	1.09	1.09	1.09

[1]Each 3.0 kg of premix supplies one ton of the diet with: Vit. A, 12000000 I.U; Vit. D_3, 2000000 I.U.; Vit. E, 40g; Vit. K_3, 4g; Vit. B_1, 3g; Vit. B_2, 6g; Vit.B_6, 4g; Vit.B_{12}, 30mg; Niacin, 30gm; Biotin, 80mg; Folic acid, 1.5g; Pantothinic acid, 12g; Zn, 70g; Mn, 70g; Fe, 40g; Cu, 10g; I, 1.5g; Co, 250mg; Se, 200mg; Choline, 350g and complete to 3.0 Kg by calcium carbonate.

[2]According to NRC, 1994.

Table (2). Effect of marjoram powder (MP) supplementation to broiler diets on live body weight (g) and body weight gain,g (Main ± SE)

Item	Body weight		Body weight gain		
	21 days	38 days	0 – 21 days	22 – 38 days	0 – 38 days
			Treatments		
Control (C)	916.806±25.812[b]	2148.472±48.442 [b]	825.406±25.104[b]	1231.667±26.229[b]	2057.073±47.633[b]
C +1.0% MP	945.556±20.709[b]	2182.361±40.487 [b]	854.242±19.753[b]	1236.806±23.250[ab]	2091.048±39.576[b]
C +1.5% MP	1016.389±19.298[a]	2326.806±52.790[a]	924.558±17.685[a]	1310.417±35.307[a]	2234.975±51.296[a]
C +2.0% MP	905.278±24.371[b]	2107.778±42.223 [b]	813.603±23.041[b]	1202.500±20.579[b]	2016.104±41.018[b]
C +2.5% MP	888.889±23.638[b]	2131.250±42.118 [b]	797.441±23.264[b]	1242.361±21.035[ab]	2039.803±41.748[b]
P	< .001	< .007	< .001	< .054	< .005

Means within each column bearing different letter(s) are significantly different (P≤0.05).
SE: standard error.

Table (3). Effect of marjoram powder (MP) supplementation to broiler diets on feed intake (g) and feed conversion ratio (main ± SE)

Item	Feed intake			Feed conversion ratio		
	0–21 days	**22 – 38 days**	**0 – 38 days**	**0–21 days**	**22 – 38 days**	**0 – 38 days**
Treatments						
Control (C)	1137.302±1.642[a]	2881.660±0.419[a]	4018.962±1.641[a]	1.434±0.054[a]	2.376±0.049[a]	1.991±0.047[a]
C +1.0% MP	1134.610±1.671[a]	2851.595±0.562[b]	3986.205±1.743[b]	1.356±0.036[a]	2.334±0.045[ab]	1.930±0.036[a]
C +1.5% MP	1114.495±0.865[d]	2811.024±2.119[c]	3925.520±2.276[d]	1.221±0.024[b]	2.200±0.061[b]	1.788±0.040[b]
C +2.0% MP	1126.990±0.326[b]	2810.296±1.271[c]	3937.286±0.945[c]	1.430±0.046[a]	2.360±0.039[a]	1.982±0.041[a]
C +2.5% MP	1121.180±1.004[c]	2801.523±1.231[d]	3922.703±2.232[d]	1.449±0.043[a]	2.277±0.038[ab]	1.950±0.038[a]
P	< .000	< .000	< .000	< .001	< .061	< .004

Means within each column bearing different letter(s) are significantly different (P≤0.05).
SE: standard error.

Table (4). Effect of marjoram powder (MP) supplementation to broiler diets on blood parameters (main effects ± SE)

Item	Treatment					P
	Control (C)	C +1.0% MP	C +1.5% MP	C +2.0% MP	C +2.5% MP	
Total protein, g/dL	1.898±0.021^{c}	2.180±0.172^{cb}	2.188±0.025^{cb}	2.400±0.^{061ab}	2.678±0.261^{a}	< 0.011
Albumin (A) g/dL	1.445±0.040^{d}	1.597±0.112^{cd}	1.637±0.024^{bc}	1.800±0.044^{ab}	1.850±0.038^{a}	< 0.000
Globulin (G) g/ dL	0.453±0.031	0.583±0.078	0.552±0.023	0.600±0.059	0.828±0.251	< 0.301
A/G ratio	3.298±0.333	2.862±0.259	3.000±0.162	3.130±0.283	2.849±0.429	< 0.818
Alanine aminotransferase (U/L)	19.933±0.390^{a}	16.045±0.374^{b}	9.513±0.358^{c}	8.517±0.422^{cd}	8.177±0.405^{d}	< 0.000
Aspartate aminotransferase (U/L)	282.30±10.93^{a}	222.96±10.92^{b}	161.48±4.87^{c}	144.99±3.48^{c}	201.44±3.88^{b}	< 0.000
Hemoglobin (g/dL)	7.917±0.117^{b}	8.150±0.076^{b}	8.117±0.083^{b}	8.187±0.090^{ab}	8.533±0.193^{a}	< 0.022
Red blood cells	2.040±0.016^{c}	2.140±0.036^{bc}	2.267±0.067^{ab}	2.333±0.049^{a}	2.300±0.086^{ab}	< 0.005
White blood cells	2.148±0.068^{b}	2.433±0.087^{a}	2.572±0.079^{a}	2.665±0.084^{a}	2.583±0.095^{a}	< 0.002

Means within each raw bearing different letter(s) are significantly different (P≤0.05).
SE: standard error.

Table (5). Effect of marjoram powder (MP) supplementation to broiler diets on lipid profile and glutathione peroxidase (GSH-Px), main ± SE.

Item	Treatment					P
	Control (C)	C +1.0% MP	C +1.5% MP	C +2.0% MP	C +2.5% MP	
Triglyceride (mg/dl)	144.667±2.092^{a}	134.001±2.769^{b}	101.800±1.920^{c}	100.283±1.272^{c}	106.200±2.639^{c}	< 0.000
Total cholesterol (mg/dl)	124.888±2.204^{a}	110.602±5.998^{ab}	89.308±8.211^{c}	89.648±10.028^{c}	91.058±4.242^{bc}	< 0.002
High density lipoproteins (mg/dl)	46.555±2.023^{b}	57.047±2.369^{a}	56.955±1.110^{a}	55.292±2.755^{a}	54.852±2.388^{a}	< 0.013
Low density lipoproteins (mg/dl)	65.663±1.031^{a}	43.043±1.462^{b}	41.037±4.948^{b}	37.685±1.806^{b}	37.553±1.419^{b}	< 0.000
Glutathione peroxidase (U/mL)	176.398±1.961^{c}	181.482±1.136^{b}	184.400±1.209^{ab}	185.215±1.495^{ab}	187.625±0.978^{a}	< 0.000

Means within each raw bearing different letter(s) are significantly different (P≤0.05).
SE: standard error.