

Table 2: Effect of Marinating and cooking methods on chemical composition (g/100g on dry Basis), acidity, pH, cooking loss and water holding capacity (WHC), of chicken breast and leg meat

	Non marinated				Marinated cooked samples							
	Control fresh		Control boiling		boiling		microwave		roasting		frying	
	breast	leg	breast	leg	breast	leg	breast	Leg	breast	leg	breast	Leg
Protein	67.42 ±0.30	59.44 ±0.28	67.43 ±0.30	66.54 ±0.22	69.81 ±0.32	59.43 ±0.19	67.43 ±0.26	59.46 ±0.18	68.78 ±0.28	59.87 ±0.19	77.49 ±0.12	62.56 ±0.18
Fat	25.09 ±0.49	34.19 ±1.84	29.24 ±0.40	30.95 ±0.99	26.10 ±0.32	34.08 ±0.38	26.48 ±0.32	36.3 ±0.31	26.04 ±0.27	35.59 ±0.42	20.73 ±0.26	30.65 ±0.30
Ash	9.51 ±0.11	7.16 ±0.06	4.01 ±0.03	4.02 ±0.03	7.69 ±0.11	6.95 ±0.03	9.36 ±0.12	7.26 ±0.13	7.41 ±0.07	8.05 ±0.12	3.43 ±0.07	7.69 ±0.05
Acidity	0.81 ±0.01	0.87 ±0.03	1.01 ±0.03	0.67 ±0.01	0.94 ±0.02	0.67 ±0.01	1.41 ±0.03	0.67 ±0.01	1.41 ±0.02	1.01 ±0.01	2.01 ±0.03	1.14 ±0.02
pH	5.68 ±0.02	5.98 ±0.04	5.68 ±0.01	5.99 ±0.04	5.64 ±0.03	6.09 ±0.02	5.95 ±0.04	6.20 ±0.03	5.80 ±0.01	6.08 ±0.02	5.75 ±0.04	5.99 ±0.02
Cooking loss %	-	-	35.26 ±3.24	28.37 ±2.57	25.77 ±2.67	33.06 ±3.23	30.01 ±2.76	40.65 ±3.47	28.42 ±2.82	31.92 ±2.91	40.51 ±3.70	37.79 ±2.99
WHC %	37.64 ±1.14	35.97 ±1.98	40.89 ±1.33	41.26 ±1.53	38.52 ±1.18	46.98 ±2.35	35.24 ±1.76	30.92 ±1.83	42.05 ±2.11	41.93 ±2.17	21.52 ±1.24	20.19 ±1.32
Moisture	73.30 ±0.17	64.67 ±0.18	70.08 ±0.19	67.69 ±0.16	72.07 ±0.19	68.37 ±0.15	65.67 ±0.17	61.05 ±0.19	70.05 ±0.18	69.10 ±0.15	58.95 ±0.19	60.28 ±0.16

Table 3: Effect of Marinating and cooking methods on the color (L*, a*, and b*) values of chicken meat

Color	Fresh flesh		Marinated Fresh flesh		Fresh flesh boiling		Marinating & Boiling		Marinating & microwave		Marinating & roasting		Marinating & frying	
	breast	leg	breast	leg	breast	leg	breast	leg	breast	leg	breast	leg	breast	leg
Lightness L*	44.24 ±4.35	41.02 ±1.89	43.15 ±1.38	38.26 ±2.20	79.45 ±3.67	70.01 ±0.57	64.49 ±3.75	54.11 ±0.95	66.28 ±0.60	61.86 ±0.45	61.83 ±2.21	53.85 ±1.99	42.37 ±2.16	46.76 ±1.63
Redness a*	7.09 ±0.65	10.22 ±0.75	3.59 ±1.74	12.70 ±2.06	5.20 ±0.97	7.55 ±0.54	10.3 ±1.39	7.78 ±2.32	12.98 ±1.46	8.17 ±2.22	9.01 ±0.93	8.11 ±1.69	13.72 ±0.91	13.02 ±1.21
Yellowness b*	4.57 ±1.31	3.92 ±1.11	2.88 ±1.45	6.81 ±1.07	9.36 ±0.41	9.43 ±0.86	11.76 ±0.73	8.10 ±0.94	11.99 ±1.88	10.17 ±0.64	12.73 ±0.59	12.08 ±2.41	20.11 ±0.31	11.31 ±2.47

± = Standard deviation

Table (4): Effect of marinating and cooking methods on the fatty acids content of chicken leg meat

Fatty acids %	Boiling		Frying		Roasting		Microwave cooking	
	control	Marinated	control	Marinated	control	Marinated	control	Marinated
C 10 : 0	0.135	nd	0.295	0.115	0.592	nd	nd	nod
C 14 : 0	0.639	0.649	0.593	0.573	0.608	0.649	0.609	0.639
C 16 : 0	25.174	23.756	23.983	25.528	30.878	23.139	24.359	22.623
C 16 : 1	6.812	6.852	5.044	4.503	6.311	7.880	7.275	7.338
C 16 : 2	0.102	0.141	nd	0.127	nd	nd	0.117	0.248
C 18 : 0	7.079	6.372	6.410	6.203	8.432	5.390	nd	nd
C 18 : 1N7	nd	nd	nd	35.766	1.727	nd	44.550	50.209
C 18 : 1N9	44.518	43.224	41.629	Nd	35.455	43.998	6.865	nd
C 18 : 2T	0.180	nd	0.492	0.103	nd	nd	0.131	nd
C 18 : 2C	13.278	15.767	18.177	22.781	13.533	14.316	13.841	17.377
C 18 : 3N3	0.589	0.779	1.070	1.444	0.600	0.731	0.754	0.749
C 18 : 3N6	0.153	0.206	0.396	0.254	nd	0.191	0.175	nd
C 18 : 4N3	0.545	0.546	0.462	0.391	0.404	0.550	0.541	0.605
C 20 : 0	nd	nd	0.165	0.464	0.177	nd	nd	0.989
C 20 : 4N6	0.353	0.324	nd	0.638	0.281	0.376	0.151	0.165
C 20 : 5	0.143	0.190	0.136	0.092	0.239	nd	0.348	0.310
C 22 : 0	0.143	0.161	0.269	0.320	nd	0.159	0.151	nd
C 22 : 5	nd	1.034	0.124	0.070	0.415	1.602	0.085	0.073
C 22 : 6	nd	nd	nd	0.071	0.349	0.867	nd	nd
C 24 : 0	0.158	nd	0.396	0.560	nd	nd	0.134	0.172
Total saturated	33.328	30.938	32.111	33.763	40.687	29.307	25.253	24.423
Total monounsaturated	51.330	50.076	46.673	40.269	43.493	51.878	58.19	57.547
Total polyunsaturated	15.343	18.987	20.857	25.971	15.821	18.633	16.143	19.527
Total unsaturated	66.673	69.063	67.53	66.24	59.314	70.511	74.333	77.054
Total unsaturated/ total saturated	2.00	2.232	2.103	1.962	1.458	2.408	2.944	3.154

Table (5): Effect of marinating and cooking methods on the fatty acids content of chicken breast meat.

Fatty acids %	Boiling		Frying		Roasting		Microwave cooking	
	control	Marinated	control	Marinated	control	Marinated	control	Marinated
C 10 : 0	nd	0.428	0.446	Nd	0.362	0.572	0.454	nd
C 14 : 0	0.716	0.610	0.507	0.600	0.735	0.666	0.736	0.597
C 16 : 0	23.089	32.153	21.955	23.527	25.706	27.872	25.251	27.598
C 16 : 1	7.717	6.548	3.084	5.389	6.869	6.175	6.541	6.289
C 16 : 2	0.197	nd	0.143	Nd	nd	nd	nd	nd
C 18 : 0	5.833	7.651	7.124	5.637	6.942	7.267	6.982	nd
C 18 : 1N7	nd	0.173	2.156	Nd	2.361	nd	nd	41.852
C 18 : 1N9	46.614	37.927	32.610	40.790	41.645	38.765	44.027	8.023
C 18 : 2T	nd	0.178	0.735	0.502	0.186	0.230	nd	nd
C 18 : 2C	13.746	12.422	25.155	20.723	13.524	15.648	14.533	13.127
C 18 : 3N3	0.486	0.635	1.433	1.359	0.494	0.746	0.546	0.715
C 18 : 3N6	nd	0.169	nd	0.160	0.150	0.233	nd	0.182
C 18 : 4N3	0.458	0.378	0.416	0.375	0.437	0.410	0.456	0.527
C 20 : 0	0.208	nd	0.574	0.411	nd	nd	0.475	nd
C 20 : 4N6	0.937	0.399	0.186	0.324	0.379	0.689	nd	0.459
C 20 : 5	nd	nd	nd	Nd	nd	0.198	nd	0.099
C 22 : 0	nd	0.174	0.963	0.206	0.212	0.328	nd	0.197
C 22 : 5	nd	nd	nd	Nd	nd	nd	nd	0.228
C 22 : 6	nd	0.155	nd	Nd	nd	nd	nd	nd
C 24 : 0		nd	2.420	Nd	nd	0.202	nd	0.108
Total saturated	29.846	41.016	33.988	30.381	33.958	36.907	33.908	28.50
Total monounsaturated	54.331	44.648	37.85	46.179	50.875	44.941	50.568	56.164
Total polyunsaturated	15.824	14.336	28.058	23.443	15.17	18.144	15.535	15.337
Total unsaturated	70.158	58.984	65.908	69.622	66.045	63.085	66.103	71.501
Total unsaturated/total saturated	2.391	1.438	1.939	2.292	1.945	1.709	1.949	2.508