Table S1. The effects of SP on final live body weight, hot carcass weight (HCWT), cold carcass weight (CCWT) and dressing-out%, carcass linear dimensions and major cut weights (least square means ± standard errors) of Jabbali and Sahrawi Omani goat breeds.

Parameters	Jabbali				Sahrawi			
	CON	T1	T2	*P* value	CON	T1	T2	*P* value
Final Live BW (kg)	25.33±1.27	25.77±0.94	26.57±1.09	0.458	21.03±1.02	23.40±0.56	22.73±1.47	0.160
HCWT (kg)	11.09±0.35	11.60±0.35	12.26±0.87	0.107	9.96±0.78	10.84±0.18	10.41±0.62	0.385
CCWT (kg)	10.88±0.34	11.39±0.34	12.05±0.87	0.137	9.70±0.71	10.65±0.17	10.20±0.61	0.423
Dressing-out (%)[1]	43.87±1.22	45.20±2.75	46.06±1.62	0.785	47.29±2.38	46.34±0.39	45.95±2.25	0.698
Gigwt (cm)[2]	13.07±0.24	12.57±0.58	12.70±0.32	0.550	12.20±0.40	12.17±0.32	12.20±0.72	0.887
Wtsh (cm)[3]	17.33±0.94	16.10±1.29	18.20±0.21	0.480	15.37±0.43	15.40±0.29	16.67±0.58	0.337
Msw (cm)[4]	13.10±0.30	12.77±0.24	12.83±0.03	0.474	11.57±0.34	12.17±0.38	12.13±0.50	0.648
Leg Length (cm)	17.67±0.27	17.63±0.39	17.90±0.35	0.598	17.40^{ab}±0.53	18.45^{a}±1.49	16.60^{b}±0.29	0.025
Body Length (cm)	39.57±0.53	39.73±0.73	39.50±0.55	0.272	39.10^{b}±0.81	43.30^{a}±2.87	38.27^{b}±0.52	0.045
DepSst (cm)[5]	24.13±0.13	24.47±0.74	24.40±0.42	0.565	24.23±0.69	23.80±0.65	23.45±0.70	0.097
Shol Weight (kg)	4.76±0.25	5.01±0.21	5.56±0.38	0.151	4.43±0.43	4.63±0.16	4.62±0.39	0.629
Rack Weight (kg)	1.51±0.03	1.71±0.10	1.58±0.13	0.271	1.22^{b}±0.04	1.54^{a}±0.03	1.42^{ab}±0.12	0.272
Loin Weight (kg)	1.01^{ab}±0.08	1.06^{a}±0.05	0.98^{b}±0.06	0.019	0.83±0.05	1.01±0.06	0.88±0.08	0.421
Leg Weight (kg)	3.59±0.14	3.59±0.09	3.90±0.31	0.924	3.31±0.29	3.43±0.03	3.28±0.14	0.311

[1] Based on empty body weight, [2] Gigwt: gigot width, [3]Wtsh: Width behind shoulder, [4]Msw: Maximum Shoulder width and [5]DepSst: Depth from scapula to sternum. Means with different letters within the same row were significantly different ($P<0.05$).

Table S2. The effect of SP on non-carcass component (least square means ± standard errors) of Jabbali and Sahrawi Omani goat breeds.

Parameters[1]	Jabbali				Sahrawi			
	CON	T1	T2	P value	CON	T1	T2	P value
Head Weight (kg)	1.63±0.02	1.79±0.04	1.78±0.12	0.170	1.48±0.09	1.73±0.03	1.57±0.08	0.338
Feet Weight (g/kg)	0.78±0.04	0.68±0.03	0.70±0.04	0.316	0.56±0.02	0.59±0.03	0.60±0.04	0.599
Rumen full Weight (kg)	4.90±0.56	5.00±0.95	5.37±0.27	0.786	3.67±0.34	4.37±0.18	4.32±0.68	0.926
Rumen empty Weight (kg)	1.98±0.16	2.13±0.15	2.25±0.13	0.248	1.54±0.05	1.69±0.17	1.86±0.17	0.716
Lung Trachea Weight (g/kg)	0.42±0.15	0.26±0.01	0.26±0.01	0.543	0.38±0.09	0.27±0.01	0.35±0.09	0.838
Heart Weight (g/kg)	0.36^{a}±0.27	0.09^{b}±0.01	0.09^{b}±0.01	0.667	0.09±0.00	0.09±0.01	0.25±0.17	0.834
Spleen Weight (g/kg)	0.05±0.01	0.05±0.00	0.05±0.00	0.977	0.05±0.00	0.06±0.01	0.06±0.01	0.216
Liver Weight (g/kg)	0.45±0.04	0.51±0.04	0.49±0.03	0.317	0.35±0.00	0.45±0.05	0.40±0.04	0.815
Omental Fat Weight (g/kg)	0.23^{b}±0.02	0.20^{b}±0.01	0.34^{a}±0.02	0.151	0.15^{b}±0.02	0.25^{a}±0.05	0.20^{ab}±0.04	0.711
Kidney Weight (g/kg)	0.29^{a}±0.21	0.06^{b}±0.01	0.06^{b}±0.01	0.151	0.06±0.01	0.07±0.00	0.06±0.00	0.714
Kidney Fat Weight (g/kg)	0.06^{b}±0.02	0.09^{ab}±0.02	0.15^{a}±0.01	0.094	0.06^{b}±0.01	0.13^{a}±0.03	0.09^{ab}±0.02	0.448
Mesfat Weight (g/kg)	0.17±0.04	0.18±0.02	0.19±0.02	0.409	0.14±0.02	0.15±0.07	0.13±0.04	0.506
Mesenteric fat (g/kg)	0.17±0.01	0.16±0.02	0.23±0.03	0.173	0.10±0.00	0.14±0.04	0.10±0.01	0.526
Skin (kg)	2.37±0.29	2.23±0.10	2.23±0.17	0.352	1.69±0.22	1.84±0.03	1.77±0.19	0.806

[1] all parameters are measured by kilogram. Means with different letters within the same row were significantly different ($P<0.05$).

Table S3. Least square means ± standard errors of the SP effects on meat quality characteristics of Longissimus Dorsi in Jabbali and Sahrawi breeds.

Parameters	Jabbali				Sahrawi			
	CON	T1	T2	P value	CON	T1	T2	P value
Ultimate ph	5.38±0.30	5.42±0.23	5.64±0.12	0.987	5.19^{b}±0.09	5.84^{a}±0.17	5.22^{b}±0.12	0.126
Sarcomere length (lm)	10.00±0.42	9.50±0.69	9.67±0.67	0.707	8.17±0.95	9.67±0.76	8.78±0.46	0.183
EJ (drip loss) (g/cm²)[1]	19.67±6.63	21.63±3.71	22.20±3.27	0.078	29.43±4.11	20.93±1.14	27.10±1.08	0.293
Cook loss (%)	41.20±3.31	37.73±3.43	38.60±4.33	0.976	41.27±3.54	33.63±3.59	41.57±2.23	0.836
WBV (kg)[2]	5.50±1.71	4.13±1.01	5.93±0.83	0.268	4.80±1.30	4.90±1.13	6.17±0.58	0.528
L* (lightness)	44.79±0.97	44.63±0.43	47.54±1.56	0.195	45.00^{ab}±2.21	41.52^{b}±0.62	46.55^{a}±1.49	0.685
a* (redness)	21.31±1.41	22.27±0.88	22.58±1.15	0.787	19.49±2.16	23.26±1.09	21.14±0.99	0.536
b* (yellowness)	5.65±0.20	5.61±1.01	5.89±1.46	0.625	4.95±0.99	4.53±0.45	6.06±0.91	0.567

[1]EJ (Expressed juice) = water area (cm²)/sample weight (g). [2] WBV = Warner–Bratzler values. Means with different letters within the same row were significantly different (P<0.05).

Table S4. Least square means ± standard errors of the SP effects on meat quality characteristics of *semitendinosus* muscles in Jabbali and Sahrawi breeds.

Parameters	Jabbali				Sahrawi			
	CON	T1	T2	P value	CON	T1	T2	P value
Ultimate Ph	5.97±0.33	6.02±0.43	6.37±0.13	0.881	6.08^{ab}±0.24	6.30^{a}±0.06	5.73^{b}±0.08	0.725
Sarcomere length (lm)	6.39±0.20	5.83±0.35	5.83±0.10	0.611	6.72±0.97	7.06±0.82	6.72±1.06	0.889
EJ (drip loss) (g/cm²)[1]	28.97±3.55	24.17±6.21	26.60±2.04	0.850	19.97±3.46	21.47±3.26	27.03±2.44	0.370
Cook loss (%)	48.57±5.66	37.40±8.31	36.87±7.33	0.655	45.33±7.51	34.73±2.86	44.33±3.92	0.301
Tender (kg)	3.57±0.88	3.77±1.05	2.50±0.20	0.546	2.87±0.33	2.7±0.44	4.27±0.35	0.748
L* (lightness)	51.65±2.72	54.68±1.81	51.50±0.84	0.684	46.50^{ab}±0.81	43.41^{b}±0.82	48.69^{a}±0.65	0.088
a* (redness)	19.31±1.20	18.02±0.78	19.86±0.51	0.993	20.97±0.41	20.81±0.80	20.73±0.46	0.720
b* (yellowness)	4.91±0.26	4.93±1.21	5.56±0.09	0.894	4.81±0.24	4.65±0.45	5.49±0.47	0.494

[1]EJ (Expressed juice) =water area (cm²)/sample weight (g). Means with different letters within the same row were significantly different (P<0.05).

Table S5. The effects of SP on fatty acid profile (g/100 g FA), groups (g/100 g fat), ratios, and indexes of Longissimus dorsi of Omani goats.

Fatty acid	Jabbali				Sahrawi			
	CON	T1	T2	*P* value	CON	T1	T2	*P* value
C10:0	0.05±0.01	0.06±0.02	0.08±0.03	0.896	0.15±0.09	0.11±0.08	0.14±0.03	0.055
C12:0	0.06±0.02	0.06±0.03	0.25±0.22	0.980	0.24±0.12	0.41±0.38	0.27±0.07	0.025
C13:0	0.01±0.00	0.01±0.00	0.01±0.01	0.856	0.05±0.01	0.40±0.39	0.03±0.01	0.012
C14:0	0.98±0.27	1.00±0.63	1.47±0.61	0.922	2.32^{ab}±0.63	1.17^{b}±0.85	3.52^{a}±0.87	0.020
C15:0	0.25±0.07	0.26±0.18	0.28±0.06	0.867	0.66^{a}±0.19	0.07^{b}±0.01	0.98^{a}±0.26	0.000
C16:0	6.93±1.01	6.94±3.12	11.08±3.89	0.952	11.23±2.52	10.53±6.74	16.67±3.24	0.121
C17:0	0.90±0.20	1.00±0.65	0.96±0.13	0.966	1.91^{a}±0.54	0.49^{b}±0.23	2.52^{a}±0.59	0.000
C18:0	6.82±0.89	7.64±4.02	8.69±1.15	0.892	11.36^{a}±2.87	6.11^{b}±2.48	16.14^{a}±3.18	0.001
C20:0	0.23±0.14	0.22±0.13	0.27±0.12	0.660	0.28±0.11	2.34±2.23	0.62±0.03	0.241
C24:0	0.06±0.02	0.09±0.02	0.06±0.02	0.003	0.08±0.02	0.11±0.02	0.10±0.01	0.007
Sfa [1]	16.19±2.46	17.10±8.71	23.04±5.76	0.943	28.04^{ab}±6.84	19.95^{b}±11.68	40.57^{a}±8.29	0.040

C13:1	0.02±0.00	0.06±0.04	0.02±0.00	0.980	0.05±0.02	0.89±0.88	0.06±0.02	0.005
C14:1	0.08±0.02	0.07±0.05	0.09±0.02	0.692	0.21^{a}±0.07	0.02^{b}±0.01	0.31^{a}±0.08	0.000
C16:1	0.24^{a}±0.07	0.09^{b}±0.03	0.27^{a}±0.06	0.000	0.33^{b}±0.12	0.17^{b}±0.07	0.70^{a}±0.18	0.005
C17:1	0.74±0.19	0.73±0.43	1.00±0.38	0.876	1.93^{a}±0.56	0.24^{b}±0.02	1.94^{a}±0.44	0.000
C16:1Cis9	1.34±0.32	1.73±1.10	1.31±0.17	0.954	2.30^{b}±0.63	0.75^{c}±0.33	4.54^{a}±1.09	0.001
C18:1Cisn9	14.22±2.16	14.57±6.33	19.90±4.89	0.906	25.81±6.40	19.42±12.13	30.23±5.44	0.027
Mufa [2]	16.63±2.75	17.25±7.90	22.58±4.97	0.914	30.63±7.61	21.47±13.37	37.79±7.18	0.024
C18:2Cisn6	3.60±1.07	2.55±0.81	2.93±0.88	0.348	1.83^{b}±0.56	4.64^{a}±1.62	4.46^{a}±0.76	0.000
C20:3n6	0.15^{a}±0.04	0.06^{b}±0.00	0.05^{b}±0.00	0.586	0.07±0.01	0.07±0.01	0.17±0.09	0.824
C20:4n6	0.81±0.06	0.88±0.10	0.68±0.08	0.174	0.95^{b}±0.14	2.16^{a}±0.77	0.78^{b}±0.10	0.001
C22:4n6	0.11±0.01	0.09±0.02	0.12±0.02	0.757	0.18±0.04	0.13±0.01	0.12±0.02	0.001
Pufa n-6[3]	4.61±1.06	3.58±0.87	3.77±0.86	0.307	3.03^{b}±0.56	6.95^{a}±2.25	5.45^{a}±0.77	0.000
C18:3Cisn3	0.09±0.01	0.11±0.06	0.11±0.02	0.974	0.13^{b}±0.04	0.07^{b}±0.01	0.23^{a}±0.04	0.019
cis-5,8,11-Eicosatrienoic	0.18±0.02	0.15±0.04	0.18±0.02	0.993	0.27±0.07	0.56±0.41	0.28±0.06	0.008
Pufa n-3[4]	0.26±0.02	0.25±0.09	0.23±0.03	0.957	0.40±0.09	0.62±0.40	0.51±0.09	0.018
n-6/n-3 ratio	18.81±5.60	21.52±6.21	22.07±6.44	0.207	14.60^{ab}±3.91	21.98^{a}±4.39	11.77^{b}±1.20	0.001

[1] Sfa, Total saturated fatty acids; [2] Mufa, total monounsaturated fatty acids; [3] Pufa n-6, total omega-6 polyunsaturated fatty acids; [4] Pufa n-3, total omega-3 polyunsaturated fatty acids. Means with different letters within the same row were significantly different (P<0.05).

Table S6: Basal diet components mean fatty acid composition (% total FA).

Type of feed	Spirulina	concentrate	Rohds
C10:0	0.042	0.020	0.061
C12:0	0.025	-	0.097
C13	0.338	0.150	0.083
C14:0	0.268	0.083	-
C15:0	0.046	0.026	0.026
C16:0	28.544	-	1.539
C16:1 *Cis* 9	6.587	0.078	-
C17:0	0.307	0.048	0.035
C17:1	0.387	0.016	-
C18:2 Cis (n6)	0.420	-	-
C18:0	1.319	0.849	0.264
C18:1 *Cis (n9*)	4.163	6.952	0.254
C18:2 Cis (n6)	17.024	10.146	0.661
C20:0	0.104	0.212	0.074
C:18:3 *Cis*(n3)	14.619	0.222	1.211
C21:0	15.000	-	15.000
C20:3 (n6)	0.200	0.285	-
C20:5 (n3)	0.096	-	-
C22:6 (n3)	0.088	-	-