Higher PUFA and omega-3 PUFA, CLA, α-tocopherol and iron, but lower iodine and selenium concentrations in organic milk: A Systematic Literature Review and Meta- and Redundancy Analyses

APPENDIX

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Table A1. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7**.**

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
Major components													
Fat	std,1	31	-0.29	-0.63, 0.05	0.092	Yes (85%)	-1.37	-3.66, 0.91	58	4.60	0.329	-0.45	-2.32, 1.43
	2,3	31	-0.35	-0.66, -0.04	0.028	Yes (85%)	-1.66	-3.87, 0.55	74	4.60	0.127	-0.86	-2.34, 0.62
	4,5	36	-0.21	-0.51, 0.09	0.174	Yes (84%)	-1.13	-3.19, 0.93	71	4.60	0.148	-0.96	-2.68, 0.75
	6,7	36	-0.26	-0.54, 0.02	0.068	Yes (84%)	-1.38	-3.38, 0.62	87	4.59	0.045	-1.22	-2.62, 0.19
Protein	std,1	29	-0.17	-0.55, 0.21	0.368	Yes (88%)	-0.24	-1.80, 1.33	56	4.60	0.146	-0.64	-1.84, 0.56
	2,3	29	-0.21	-0.58, 0.16	0.272	Yes (90%)	-0.34	-1.91, 1.23	72	4.59	0.008	-1.18	-2.16, -0.21
	4,5	33	-0.13	-0.47, 0.20	0.438	Yes (87%)	-0.31	-1.75, 1.12	69	4.60	0.077	-0.75	-1.78, 0.27
	6,7	33	-0.16	-0.49, 0.17	0.335	Yes (89%)	-0.40	-1.84, 1.04	85	4.59	0.003	-1.19	-2.06, -0.33
Solids	std,1	8	0.64	-0.23, 1.52	0.149	Yes (86%)	1.05	-0.45, 2.55	13	4.62	0.022	1.50	0.11, 2.89
	2,3	8	0.64	-0.23, 1.52	0.149	Yes (86%)	1.05	-0.45, 2.55	13	4.62	0.021	1.50	0.11, 2.89
	4,5	9	0.57	-0.18, 1.31	0.135	Yes (90%)	0.97	-0.36, 2.30	14	4.62	0.020	1.41	0.12, 2.71
	6,7	9	0.57	-0.18, 1.31	0.135	Yes (90%)	0.97	-0.36, 2.30	14	4.62	0.020	1.41	0.12, 2.71
Solids (no-fat)	std,1	4	0.24	-0.03, 0.51	0.083	Yes (0%)	1.37	-0.75, 3.49	7	4.62	0.094	1.08	-0.30, 2.47
	2,3	4	0.24	-0.03, 0.51	0.083	Yes (0%)	1.37	-0.75, 3.49	7	4.62	0.092	1.08	-0.30, 2.47
	4,5	5	0.23	0.03, 0.44	0.024	Yes (0%)	1.21	-0.46, 2.88	8	4.62	0.074	1.02	-0.19, 2.22
	6,7	5	0.23	0.03, 0.44	0.024	Yes (0%)	1.21	-0.46, 2.88	8	4.62	0.077	1.02	-0.19, 2.22

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standatd meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
Fatty acids													
Free fatty acids	std,1	-	-	-	-	-	-	-	3	4.55	0.247	-5.91	-13.97, 2.15
	2,3	-	-	-	-	-	-	-	3	4.55	0.242	-5.91	-13.97, 2.15
	4,5	-	-	-	-	-	-	-	9	4.45	0.007	-17.92	-30.10, -5.74
	6,7	-	-	-	-	-	-	-	9	4.45	0.007	-17.92	-30.10, -5.74
SFA	std,1	19	-0.17	-0.66, 0.31	0.477	Yes (72%)	-0.69	-2.24, 0.86	33	4.60	0.096	-0.80	-1.96, 0.37
	2,3	19	-0.17	-0.66, 0.31	0.477	Yes (72%)	-0.69	-2.24, 0.86	32	4.60	0.102	-0.79	-1.99, 0.42
	4,5	21	-0.15	-0.56, 0.26	0.472	Yes (64%)	-0.58	-2.00, 0.84	46	4.60	0.116	-0.58	-1.52, 0.37
	6,7	21	-0.15	-0.56, 0.26	0.472	Yes (64%)	-0.58	-2.00, 0.84	45	4.60	0.129	-0.56	-1.53, 0.40
8:0	std,1	9	-0.03	-0.64, 0.59	0.936	Yes (81%)	-1.44	-7.56, 4.68	16	4.64	0.123	3.64	-2.42, 9.70
(caprylic acid)	2,3	9	-0.03	-0.64, 0.59	0.936	Yes (81%)	-1.44	-7.56, 4.68	15	4.63	0.180	3.24	-3.19, 9.66
	4,5	10	0.14	-0.48, 0.76	0.661	Yes (88%)	-0.15	-6.18, 5.88	21	4.65	0.031	5.20	-0.05, 10.44
	6,7	10	0.14	-0.48, 0.76	0.661	Yes (88%)	-0.15	-6.18, 5.88	20	4.65	0.041	4.97	-0.52, 10.46
12:0	std,1	11	0.18	-1.39, 1.75	0.820	Yes (98%)	-3.59	-10.22, 3.03	17	4.59	0.284	-1.98	-8.12, 4.16
(lauric acid)	2,3	12	0.05	-1.34, 1.44	0.943	Yes (97%)	-3.81	-9.90, 2.28	18	4.59	0.247	-2.21	-8.03, 3.61
	4,5	12	0.29	-1.12, 1.70	0.685	Yes (98%)	-2.09	-8.82, 4.64	25	4.61	0.439	0.25	-4.56, 5.05
	6,7	13	0.17	-1.10, 1.44	0.796	Yes (98%)	-2.40	-8.64, 3.84	26	4.61	0.487	0.00	-4.65, 4.65

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; SFA, saturated fatty acids. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
14:0	std,1	12	0.32	-0.42, 1.05	0.398	Yes (88%)	1.02	-2.60, 4.63	18	4.62	0.172	1.57	-1.60, 4.74
(myristic acid)	2,3	13	0.34	-0.32, 0.99	0.318	Yes (86%)	1.10	-2.24, 4.44	19	4.62	0.159	1.60	-1.41, 4.60
	4,5	14	0.62	-0.14, 1.38	0.110	Yes (92%)	2.42	-1.20, 6.05	27	4.63	0.017	2.83	0.31, 5.35
	6,7	15	0.61	-0.08, 1.30	0.083	Yes (91%)	2.40	-0.98, 5.78	28	4.63	0.018	2.80	0.37, 5.24
15:0	std,1	8	1.61	-0.39, 3.60	0.115	Yes (98%)	7.15	-0.26, 14.56	13	4.70	0.002	10.24	5.09, 15.39
(pentadecanoic	2,3	8	1.61	-0.39, 3.60	0.115	Yes (98%)	7.15	-0.26, 14.56	12	4.70	0.003	10.41	4.83, 15.99
acid)	4,5	9	1.59	-0.01, 3.18	0.052	Yes (98%)	8.91	1.52, 16.30	21	4.70	<0.001	10.34	6.42, 14.26
	6,7	9	1.59	-0.01, 3.18	0.052	Yes (98%)	8.91	1.52, 16.30	20	4.70	<0.001	10.45	6.34, 14.57
16:0	std,1	14	-0.50	-1.17, 0.17	0.142	Yes (86%)	-4.65	-8.45, -0.85	20	4.57	0.013	-3.74	-6.81, -0.67
(palmitic acid)	2,3	15	-0.53	-1.14, 0.08	0.089	Yes (84%)	-4.80	-8.36, -1.25	21	4.57	0.006	-3.89	-6.83, -0.96
	4,5	16	-0.45	-1.11, 0.20	0.177	Yes (90%)	-4.38	-7.99, -0.77	29	4.58	0.033	-2.75	-5.56, 0.06
	6,7	17	-0.48	-1.09, 0.13	0.121	Yes (89%)	-4.53	-7.94, -1.12	30	4.58	0.022	-2.90	-5.62, -0.17
17:0	std,1	9	0.72	-0.45, 1.89	0.226	Yes (95%)	9.71	-2.09, 21.52	11	4.69	0.010	9.87	0.26, 19.48
(heptadecanoic	2,3	9	0.72	-0.45, 1.89	0.226	Yes (95%)	9.71	-2.09, 21.52	11	4.69	0.010	9.87	0.26, 19.48
acid)	4,5	10	0.68	-0.32, 1.67	0.182	Yes (96%)	9.74	-0.82, 20.3	13	4.69	0.003	9.62	1.53, 17.71
	6,7	10	0.68	-0.32, 1.67	0.182	Yes (96%)	9.74	-0.82, 20.3	13	4.69	0.002	9.62	1.53, 17.71

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

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		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
20:0	std,1	4	0.73	-0.76, 2.22	0.336	Yes (96%)	13.64	-2.34, 29.61	9	4.70	0.042	10.72	0.40, 21.05
(arachidic acid)	2,3	4	0.73	-0.76, 2.22	0.336	Yes (96%)	13.64	-2.34, 29.61	8	4.70	0.065	11.10	-0.58, 22.78
	4,5	5	0.41	-0.43, 1.24	0.341	Yes (94%)	13.13	0.72, 25.55	17	4.72	0.001	13.39	6.90, 19.88
	6,7	5	0.41	-0.43, 1.24	0.341	Yes (94%)	13.13	0.72, 25.55	16	4.73	0.001	13.75	6.88, 20.62
Phytanic acid	std,1	3	-3.27	-6.81, 0.28	0.071	Yes (93%)	-269.5	-552.5, 13.5	4	3.63	0.064	-216.6	-442.0, 8.8
diastereomers	2,3	3	-3.27	-6.81, 0.28	0.071	Yes (93%)	-269.5	-552.5, 13.5	4	3.63	0.058	-216.6	-442.0, 8.8
ratio (SRR/RRR)	4,5	6	-2.21	-3.66, -0.75	0.003	Yes (83%)	-202.6	-353.4, -51.7	10	3.87	0.005	-155.3	-267.7, -42.8
	6,7	6	-2.21	-3.66, -0.75	0.003	Yes (83%)	-202.6	-353.4, -51.7	10	3.87	0.006	-155.3	-267.7, -42.8
22:0	std,1	3	1.27	-0.85, 3.39	0.239	Yes (94%)	30.88	-7.82, 69.59	7	4.75	0.158	17.70	-12.19, 47.59
(behenic acid)	2,3	3	1.27	-0.85, 3.39	0.239	Yes (94%)	30.88	-7.82, 69.59	6	4.74	0.193	17.52	-17.84, 52.89
	4,5	3	1.27	-0.85, 3.39	0.239	Yes (94%)	30.88	-7.82, 69.59	11	4.81	0.033	25.66	2.25, 49.06
	6,7	3	1.27	-0.85, 3.39	0.239	Yes (94%)	30.88	-7.82, 69.59	10	4.81	0.044	26.35	0.52, 52.18
24:0	std,1	-	-	-	-	-	-	-	5	4.78	0.065	20.84	2.57, 39.11
(lignoceric acid)	2,3	-	-	-	-	-	-	-	4	4.79	0.123	21.88	-1.56, 45.33
	4,5	-	-	-	-	-	-	-	9	4.78	0.017	20.47	7.12, 33.82
	6,7	-	-	-	-	-	-	-	8	4.78	0.030	20.94	5.84, 36.04

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

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Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
MUFA	std,1	19	0.18	-0.40, 0.76	0.547	Yes (81%)	1.20	-3.13, 5.53	31	4.60	0.446	-0.15	-3.34, 3.04
	2,3	19	0.18	-0.40, 0.76	0.547	Yes (81%)	1.20	-3.13, 5.53	30	4.60	0.440	-0.14	-3.44, 3.16
	4,5	21	0.16	-0.34, 0.67	0.526	Yes (77%)	0.93	-3.03, 4.89	44	4.60	0.322	-0.53	-3.00, 1.93
	6,7	21	0.16	-0.34, 0.67	0.526	Yes (77%)	0.93	-3.03, 4.89	43	4.60	0.318	-0.54	-3.06, 1.98
OA (cis-9-18:1)	std,1	10	0.28	-0.64, 1.20	0.547	Yes (91%)	2.78	-3.32, 8.88	16	4.62	0.290	1.41	-3.29, 6.10
	2,3	10	0.28	-0.64, 1.20	0.547	Yes (91%)	2.78	-3.32, 8.88	15	4.62	0.281	1.56	-3.45, 6.57
	4,5	12	-0.01	-0.97, 0.95	0.981	Yes (95%)	1.25	-4.46, 6.96	24	4.60	0.328	-0.89	-4.78, 3.00
	6,7	12	-0.01	-0.97, 0.95	0.981	Yes (95%)	1.25	-4.46, 6.96	23	4.60	0.335	-0.89	-4.95, 3.17
trans-18:1	std,1	4	0.39	-0.40, 1.18	0.337	Yes (63%)	50.43	-24.9, 125.8	6	4.94	0.047	49.36	-0.64, 99.37
	2,3	4	0.39	-0.40, 1.18	0.337	Yes (63%)	50.43	-24.9, 125.8	6	4.94	0.050	49.36	-0.64, 99.37
	4,5	4	0.39	-0.40, 1.18	0.337	Yes (63%)	50.43	-24.9, 125.8	12	4.97	0.001	51.33	22.37, 80.29
	6,7	4	0.39	-0.40, 1.18	0.337	Yes (63%)	50.43	-24.9, 125.8	12	4.97	0.001	51.33	22.37, 80.29
VA	std,1	12	2.48	1.08, 3.87	0.001	Yes (95%)	65.91	19.7, 112.1	18	5.01	<0.001	58.07	27.01, 89.12
(trans-11-18:1)	2,3	12	2.48	1.08, 3.87	0.001	Yes (95%)	65.91	19.7, 112.1	17	5.01	<0.001	59.08	26.21, 91.95
	4,5	15	1.82	0.83, 2.80	<0.001	Yes (95%)	55.92	17.3, 94.6	22	4.99	<0.001	55.17	28.10, 82.24
	6,7	15	1.82	0.83, 2.80	<0.001	Yes (95%)	55.92	17.3, 94.6	21	4.99	<0.001	55.85	27.49, 84.21

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; MUFA, monounsaturated fatty acids; OA, oleic acid; VA, vaccenic acid. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

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cis-9-20:1	std,1	-	-	-	-	-	-	-	3	4.84	0.247	29.26	-7.76, 66.27
	2,3	-	-	-	-	-	-	-	3	4.84	0.253	29.26	-7.76, 66.27
	4,5	-	-	-	-	-	-	-	9	4.86	0.004	30.29	18.55, 42.03
	6,7	-	-	-	-	-	-	-	9	4.86	0.004	30.29	18.55, 42.03
PUFA	std,1	19	0.88	0.19, 1.56	0.012	Yes (87%)	7.30	-0.73, 15.34	30	4.73	<0.001	14.78	7.05, 22.51
	2,3	19	0.88	0.19, 1.56	0.012	Yes (87%)	7.30	-0.73, 15.34	29	4.73	<0.001	14.47	6.49, 22.44
	4,5	21	0.77	0.14, 1.39	0.016	Yes (85%)	6.69	-0.63, 14.01	43	4.72	<0.001	13.80	7.67, 19.93
	6,7	21	0.77	0.14, 1.39	0.016	Yes (85%)	6.69	-0.63, 14.01	42	4.72	<0.001	13.56	7.30, 19.82
CLA (total)	std,1	11	1.40	0.37, 2.42	0.008	Yes (85%)	41.13	14.19, 68.08	19	4.94	<0.001	47.47	20.78, 74.16
	2,3	11	1.40	0.37, 2.42	0.008	Yes (85%)	41.13	14.19, 68.08	19	4.94	<0.001	47.47	20.78, 74.16
	4,5	11	1.40	0.37, 2.42	0.008	Yes (85%)	41.13	14.19, 68.08	23	4.90	<0.001	42.39	17.82, 66.96
	6,7	11	1.40	0.37, 2.42	0.008	Yes (85%)	41.13	14.19, 68.08	23	4.90	<0.001	42.39	17.82, 66.96
CLA9	std,1	14	1.22	0.50, 1.95	0.001	Yes (92%)	23.89	8.39, 39.39	20	4.87	<0.001	34.36	17.93, 50.80
(cis-9-trans-11-	2,3	15	1.25	0.58, 1.92	<0.001	Yes (91%)	24.59	10.04, 39.14	21	4.87	<0.001	34.36	18.71, 50.02
18:2)	4,5	17	1.06	0.40, 1.71	0.002	Yes (93%)	21.63	7.71, 35.55	30	4.86	<0.001	34.10	19.31, 48.89
	6,7	18	1.09	0.48, 1.71	0.001	Yes (92%)	22.34	9.10, 35.58	31	4.86	<0.001	34.11	19.79, 48.43

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; PUFA, polyunsaturated fatty acids; CLA, conjugated linoleic acid. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
CLA10	std,1	3	1.20	-1.03, 3.43	0.293	Yes (95%)	28.24	-20.92, 77.40	7	4.86	0.061	34.96	2.94, 66.98
(trans-10-cis-12-	2,3	3	1.20	-1.03, 3.43	0.293	Yes (95%)	28.24	-20.92, 77.40	6	4.91	0.065	40.79	5.39, 76.18
18:2)	4,5	4	0.79	-0.94, 2.52	0.371	Yes (94%)	17.39	-23.36, 58.14	14	4.96	0.004	52.11	22.34, 81.88
	6,7	4	0.79	-0.94, 2.52	0.371	Yes (94%)	17.39	-23.36, 58.14	13	4.99	0.003	56.12	25.11, 87.13
18:4	std,1	-	-	-	-	-	-	-	3	4.99	0.251	68.89	-59.65, 197.43
	2,3	-	-	-	-	-	-	-	3	4.99	0.255	68.89	-59.65, 197.43
	4,5	-	-	-	-	-	-	-	9	5.04	0.008	67.41	16.20, 118.62
	6,7	-	-	-	-	-	-	-	9	5.04	0.009	67.41	16.20, 118.62
n-3 FA	std,1	12	2.18	1.11, 3.25	<0.001	Yes (91%)	55.67	37.68, 73.66	20	5.05	<0.001	60.14	45.07, 75.20
	2,3	13	2.16	1.21, 3.11	<0.001	Yes (90%)	55.72	39.10, 72.34	21	5.05	<0.001	59.95	45.59, 74.32
	4,5	13	2.39	1.29, 3.48	<0.001	Yes (92%)	59.08	41.23, 76.93	29	5.05	<0.001	60.71	45.85, 75.58
	6,7	14	2.35	1.37, 3.34	<0.001	Yes (91%)	58.88	42.29, 75.47	30	5.05	<0.001	60.57	46.19, 74.95
ALA	std,1	21	3.05	2.08, 4.02	<0.001	Yes (95%)	68.62	53.04, 84.20	34	5.16	<0.001	78.66	66.04, 91.29
(cis-9,12,15-	2,3	22	3.03	2.12, 3.95	<0.001	Yes (94%)	68.33	53.47, 83.19	35	5.16	<0.001	78.19	65.90, 90.48
18:3)	4,5	24	3.00	2.14, 3.86	<0.001	Yes (95%)	67.57	52.90, 82.24	44	5.12	<0.001	72.89	59.04, 86.75
	6,7	25	2.99	2.18, 3.81	<0.001	Yes (94%)	67.35	53.28, 81.43	45	5.12	<0.001	72.66	59.11, 86.21

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; CLA, conjugated linoleic acid; FA, fatty acids; ALA, α-linolenic acid. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ‖Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
DPA	std,1	5	1.24	0.37, 2.12	0.005	Yes (89%)	44.83	18.23, 71.44	8	4.91	0.003	38.23	20.57, 55.89
(cis-7,10,13,16,	2,3	5	1.24	0.37, 2.12	0.005	Yes (89%)	44.83	18.23, 71.44	7	4.94	0.009	41.31	22.15, 60.47
19-22:5)	4,5	6	1.06	0.37, 1.75	0.002	Yes (90%)	51.25	26.15, 76.35	13	4.92	<0.001	39.34	23.99, 54.68
	6,7	6	1.06	0.37, 1.75	0.002	Yes (90%)	51.25	26.15, 76.35	12	4.93	<0.001	41.23	25.04, 57.42
EPA	std,1	8	1.31	0.56, 2.06	0.001	Yes (90%)	67.14	32.4, 101.9	14	5.07	<0.001	66.34	39.86, 92.82
(cis-5,8,11,14,	2,3	8	1.31	0.56, 2.06	0.001	Yes (90%)	67.14	32.4, 101.9	13	5.07	<0.001	66.83	38.25, 95.41
17-20:5)	4,5	9	1.17	0.48, 1.86	0.001	Yes (93%)	70.80	39.3, 102.3	20	5.06	<0.001	62.63	43.17, 82.09
	6,7	9	1.17	0.48, 1.86	0.001	Yes (93%)	70.80	39.3, 102.3	19	5.06	<0.001	62.77	42.26, 83.28
DHA	std,1	3	0.21	-0.26, 0.68	0.379	Yes (29%)	21.48	-3.71, 46.67	6	5.26	0.060	194.07	-89.1, 477.3
(cis-4,7,10,13,	2,3	3	0.21	-0.26, 0.68	0.379	Yes (29%)	21.48	-3.71, 46.67	5	5.18	0.132	192.89	-154.0, 539.7
16,19-22:6)	4,5	3	0.21	-0.26, 0.68	0.379	Yes (29%)	21.48	-3.71, 46.67	10	5.48	0.007	241.44	50.8, 432.1
	6,7	3	0.21	-0.26, 0.68	0.379	Yes (29%)	21.48	-3.71, 46.67	9	5.46	0.015	246.05	33.1, 459.0
VLC n-3 PUFA¶	std,1	-	-	-	-	-	-	-	5	5.04	0.030	57.16	27.25, 87.07
	2,3	-	-	-	-	-	-	-	4	5.04	0.065	58.95	20.60, 97.30
	4,5	-	-	-	-	-	-	-	9	5.07	0.002	61.45	43.70, 79.21
	6,7	-	-	-	-	-	-	-	8	5.08	0.004	62.89	43.01, 82.76

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; EPA, eicosapentaenoic acid; DPA, docosapentaenoic acid; DHA, docosahexaenoic acid; VLC n-3 PUFA, very long chain n-3 PUFA (EPA+DPA+DHA). *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%); ¶Calculated based on published fatty acids composition data.

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
n-6 FA	std,1	12	-0.06	-0.97, 0.86	0.904	Yes (91%)	-4.03	-13.83, 5.76	20	4.59	0.354	-1.50	-10.62, 7.61
	2,3	13	0.03	-0.82, 0.89	0.940	Yes (91%)	-2.73	-12.10, 6.64	21	4.60	0.428	-0.82	-9.59, 7.96
	4,5	14	-0.11	-1.03, 0.81	0.814	Yes (92%)	-3.44	-15.66, 8.78	27	4.57	0.216	-3.34	-11.80, 5.13
	6,7	15	-0.03	-0.89, 0.84	0.950	Yes (91%)	-2.35	-13.93, 9.23	28	4.58	0.239	-2.76	-10.99, 5.48
LA	std,1	12	-0.92	-1.96, 0.11	0.080	Yes (94%)	-14.40	-29.51, 0.71	22	4.56	0.189	-4.82	-15.27, 5.64
(cis-9,12-18:2)	2,3	12	-0.92	-1.96, 0.11	0.080	Yes (94%)	-14.40	-29.51, 0.71	21	4.56	0.154	-5.75	-16.55, 5.04
	4,5	14	-1.10	-2.00, -0.19	0.017	Yes (95%)	-17.97	-31.73, -4.22	31	4.57	0.155	-4.50	-13.08, 4.09
	6,7	14	-1.10	-2.00, -0.19	0.017	Yes (95%)	-17.97	-31.73, -4.22	30	4.56	0.137	-5.14	-13.92, 3.64
GLA	std,1	4	0.20	-0.19, 0.59	0.311	No (9%)	741.67	-605, 2088	7	5.29	0.032	430.60	-344, 1205
(cis-6,9,12-18:3)	2,3	4	0.20	-0.19, 0.59	0.311	No (9%)	741.67	-605, 2088	7	5.29	0.028	430.60	-344, 1205
	4,5	5	0.27	-0.12, 0.66	0.170	No (15%)	610.48	-464, 1685	15	5.07	0.001	220.91	-141, 582
	6,7	5	0.27	-0.12, 0.66	0.170	No (15%)	610.48	-464, 1685	15	5.07	<0.001	220.91	-141, 582
DGLA	std,1	-	-	-	-	-	-	-	4	4.40	0.122	-23.89	-40.50, -7.28
(cis-8-11-14-	2,3	-	-	-	-	-	-	-	4	4.40	0.124	-23.89	-40.50, -7.28
C20:3)	4,5	-	-	-	-	-	-	-	8	4.43	0.015	-20.10	-29.92, -10.28
	6,7	-	-	-	-	-	-	-	8	4.43	0.015	-20.10	-29.92, -10.28

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; FA, fatty acids; LA, linoleic acid; DGLA, dihomo-γ-linolenic acid; GLA, γ-linolenic acid. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ‖Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
AA	std,1	5	-0.98	-1.95, 0	0.050	Yes (92%)	-24.15	-41.0, -7.3	9	4.43	0.008	-20.58	-30.8, -10.3
(cis-5,8,11,14-	2,3	5	-0.98	-1.95, 0	0.050	Yes (92%)	-24.15	-41.0, -7.3	8	4.40	0.008	-23.15	-33.3, -13.0
20:4)	4,5	6	-0.81	-1.57, -0.04	0.038	Yes (93%)	-24.67	-38.5, -10.9	14	4.42	<0.001	-21.76	-29.8, -13.7
	6,7	6	-0.81	-1.57, -0.04	0.038	Yes (93%)	-24.67	-38.5, -10.9	13	4.40	<0.001	-23.44	-31.4, -15.5
LA/ALA ratio¶	std,1	-	-	-	-	-	-	-	19	3.98	<0.001	-93.34	-116.4, -70.3
	2,3	-	-	-	-	-	-	-	18	3.97	<0.001	-96.50	-120.0, -73.0
	4,5	-	-	-	-	-	-	-	28	4.05	<0.001	-86.46	-112.0, -60.9
	6,7	-	-	-	-	-	-	-	27	4.04	<0.001	-88.31	-114.6, -62.0
n-3/n-6 ratio	std,1	5	1.50	0.81, 2.19	<0.001	Yes (65%)	72.21	36.1, 108.4	24	5.06	<0.001	64.95	44.22, 85.67
	2,3	6	1.43	0.88, 1.98	0.000	Yes (56%)	66.55	34.9, 98.2	25	5.05	<0.001	63.88	43.88, 83.88
	4,5	7	1.58	0.59, 2.58	0.002	Yes (85%)	74.95	27.8, 122.1	34	5.03	<0.001	63.46	42.96, 83.97
	6,7	8	1.50	0.69, 2.32	<0.001	Yes (82%)	70.36	28.5, 112.2	35	5.03	<0.001	62.74	42.78, 82.71
n-6/n-3 ratio	std,1	7	-2.26	-4.34, -0.18	0.033	Yes (95%)	-71.16	-122.0, -20.3	23	4.11	<0.001	-72.07	-92.9, -51.3
	2,3	7	-2.26	-4.34, -0.18	0.033	Yes (95%)	-71.16	-122.0, -20.3	24	4.12	<0.001	-70.03	-90.3, -49.8
	4,5	7	-2.26	-4.34, -0.18	0.033	Yes (95%)	-71.16	-122.0, -20.3	33	4.15	<0.001	-68.39	-89.2, -47.6
	6,7	7	-2.26	-4.34, -0.18	0.033	Yes (95%)	-71.16	-122.0, -20.3	34	4.15	<0.001	-67.05	-87.4, -46.7

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; AA, arachidonic acid; ALA, α-linolenic acid. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%); ¶Calculated based on published fatty acids composition data.

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
N compounds													
Urea	std,1	7	-0.42	-1.04, 0.19	0.176	Yes (70%)	-9.67	-24.7, 5.36	11	4.53	0.085	-8.75	-19.64, 2.14
	2,3	7	-0.42	-1.04, 0.19	0.176	Yes (70%)	-9.67	-24.7, 5.36	11	4.53	0.079	-8.75	-19.64, 2.14
	4,5	9	-0.72	-1.39, -0.05	0.035	Yes (76%)	-13.34	-26.36, -0.32	19	4.47	0.002	-16.08	-25.22, -6.94
	6,7	9	-0.72	-1.39, -0.05	0.035	Yes (76%)	-13.34	-26.36, -0.32	19	4.47	0.003	-16.08	-25.22, -6.94
Vitamins and antioxidants													
α-tocopherol	std,1	9	0.74	0.01, 1.47	0.047	Yes (81%)	12.98	0.51, 25.45	17	4.70	0.013	11.68	2.52, 20.84
	2,3	9	0.74	0.01, 1.47	0.047	Yes (81%)	12.98	0.51, 25.45	17	4.70	0.013	11.68	2.52, 20.84
	4,5	11	0.61	-0.08, 1.29	0.085	Yes (81%)	10.67	-0.37, 21.72	25	4.71	0.003	12.20	4.46, 19.95
	6,7	11	0.61	-0.08, 1.29	0.085	Yes (81%)	10.67	-0.37, 21.72	25	4.71	0.002	12.20	4.46, 19.95
2R (synthetic)	std,1	-	-	-	-	-	-	-	5	4.27	0.062	-46.38	-86.65, -6.11
isomers of	2,3	-	-	-	-	-	-	-	5	4.27	0.066	-46.38	-86.65, -6.11
α-tocopherol	4,5	-	-	-	-	-	-	-	6	4.38	0.095	-32.17	-75.26, 10.93
	6,7	-	-	-	-	-	-	-	6	4.38	0.098	-32.17	-75.26, 10.93
3R (natural)	std,1	-	-	-	-	-	-	-	6	4.81	0.032	24.75	1.59, 47.9
isomers of	2,3	-	-	-	-	-	-	-	6	4.81	0.031	24.75	1.59, 47.9
α-tocopherol	4,5	3	0.87	-1.48, 3.21	0.469	Yes (93%)	12.32	-18.59, 43.23	7	4.76	0.068	18.90	-3.77, 41.58
	6,7	3	0.87	-1.48, 3.21	0.469	Yes (93%)	12.32	-18.59, 43.23	7	4.76	0.071	18.90	-3.77, 41.58

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

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Carotenoids	std,1	5	0.69	-0.73, 2.1	0.342	Yes (89%)	31.83	-37.0, 100.7	5	4.79	0.385	31.83	-37.0, 100.7
	2,3	5	0.69	-0.73, 2.1	0.342	Yes (89%)	31.83	-37.0, 100.7	5	4.79	0.372	31.83	-37.0, 100.7
	4,5	7	0.64	-0.96, 2.24	0.434	Yes (92%)	24.23	-27.2, 75.7	7	4.75	0.254	24.23	-27.2, 75.7
	6,7	7	0.64	-0.96, 2.24	0.434	Yes (92%)	24.23	-27.2, 75.7	7	4.75	0.250	24.23	-27.2, 75.7
β-carotene	std,1	7	0.08	-0.51, 0.67	0.791	Yes (71%)	0.64	-14.55, 15.82	14	4.79	0.047	27.79	-2.4, 57.97
	2,3	7	0.08	-0.51, 0.67	0.791	Yes (71%)	0.64	-14.55, 15.82	14	4.79	0.050	27.79	-2.4, 57.97
	4,5	9	0.14	-0.81, 1.08	0.778	Yes (89%)	1.74	-15.61, 19.09	22	4.75	0.025	22.01	1.3, 42.72
	6,7	9	0.14	-0.81, 1.08	0.778	Yes (89%)	1.74	-15.61, 19.09	22	4.75	0.021	22.01	1.3, 42.72
Lutein	std,1	3	0.85	-0.98, 2.68	0.361	Yes (88%)	12.71	-46.12, 71.54	6	5.10	0.078	104.08	-33.66, 241.82
	2,3	3	0.85	-0.98, 2.68	0.361	Yes (88%)	12.71	-46.12, 71.54	6	5.10	0.078	104.08	-33.66, 241.82
	4,5	5	0.59	-1.54, 2.72	0.587	Yes (93%)	14.17	-37.16, 65.5	8	5.00	0.070	82.15	-25.21, 189.5
	6,7	5	0.59	-1.54, 2.72	0.587	Yes (93%)	14.17	-37.16, 65.5	8	5.00	0.068	82.15	-25.21, 189.5
Zeaxanthin	std,1	-	-	-	-	-	-	-	6	4.90	0.046	38.99	1.43, 76.55
	2,3	-	-	-	-	-	-	-	6	4.90	0.042	38.99	1.43, 76.55
	4,5	3	-0.49	-2.5, 1.51	0.630	Yes (91%)	-2.42	-49.36, 44.52	8	4.88	0.043	38.62	2.68, 74.56
	6,7	3	-0.49	-2.5, 1.51	0.630	Yes (91%)	-2.42	-49.36, 44.52	8	4.88	0.042	38.62	2.68, 74.56

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

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Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
Vitamin A	std,1	4	-2.59	-7.81, 2.63	0.331	Yes (99%)	-56.18	-155.9, 43.5	10	4.43	0.019	-27.31	-67.2, 12.6
	2,3	4	-2.59	-7.81, 2.63	0.331	Yes (99%)	-56.18	-155.9, 43.5	10	4.43	0.021	-27.31	-67.2, 12.6
	4,5	4	-2.59	-7.81, 2.63	0.331	Yes (99%)	-56.18	-155.9, 43.5	16	4.48	0.007	-18.71	-43.9, 6.5
	6,7	4	-2.59	-7.81, 2.63	0.331	Yes (99%)	-56.18	-155.9, 43.5	16	4.48	0.007	-18.71	-43.9, 6.5
Minerals and undesirable metals													
Copper (Cu)	std,1	8	-0.57	-1.16, 0.02	0.060	Yes (60%)	-17.26	-28.43, -6.10	10	4.50	0.049	-12.37	-25.04, 0.3
	2,3	8	-0.57	-1.16, 0.02	0.060	Yes (60%)	-17.26	-28.43, -6.10	10	4.50	0.053	-12.37	-25.04, 0.3
	4,5	9	-0.54	-1.04, -0.04	0.034	Yes (55%)	-26.87	-48.11, -5.62	11	4.44	0.025	-20.67	-40.58, -0.77
	6,7	9	-0.54	-1.04, -0.04	0.034	Yes (55%)	-26.87	-48.11, -5.62	11	4.44	0.025	-20.67	-40.58, -0.77
Iodine (I)	std,1	6	-1.20	-1.8, -0.59	<0.001	Yes (65%)	-73.85	-115.2, -32.5	7	4.08	0.008	-73.08	-108.05, -38.1
	2,3	10	-1.37	-1.78, -0.96	<0.001	Yes (55%)	-66.42	-91.3, -41.6	11	4.11	0.001	-66.61	-89.08, -44.14
	4,5	7	-1.00	-1.62, -0.38	0.002	Yes (73%)	-63.04	-103.9, -22.2	8	4.15	0.007	-63.72	-99.13, -28.31
	6,7	11	-1.23	-1.68, -0.77	<0.001	Yes (67%)	-60.22	-85.8, -34.7	12	4.16	<0.001	-60.91	-84.27, -37.55
Iron (Fe)	std,1	8	0.37	0.03, 0.71	0.034	No (0%)	20.18	-0.1, 40.46	9	4.74	0.057	16.59	-2.63, 35.81
	2,3	8	0.37	0.03, 0.71	0.034	No (0%)	20.18	-0.1, 40.46	9	4.74	0.057	16.59	-2.63, 35.81
	4,5	9	0.39	0.07, 0.7	0.016	No (0%)	32.05	2.71, 61.38	10	4.81	0.030	27.63	0, 55.26
	6,7	9	0.39	0.07, 0.7	0.016	No (0%)	32.05	2.71, 61.38	10	4.81	0.028	27.63	0, 55.26

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
Potassium (K)	std,1	4	0.30	-0.02, 0.62	0.063	No (0%)	4.49	1.35, 7.62	7	4.63	0.091	2.30	-0.34, 4.94
	2,3	4	0.30	-0.02, 0.62	0.063	No (0%)	4.49	1.35, 7.62	7	4.63	0.093	2.30	-0.34, 4.94
	4,5	5	0.30	0.01, 0.59	0.045	No (0%)	5.10	2.39, 7.8	8	4.63	0.047	2.96	0.34, 5.58
	6,7	5	0.30	0.01, 0.59	0.045	No (0%)	5.10	2.39, 7.8	8	4.63	0.046	2.96	0.34, 5.58
Selenium (Se)	std,1	4	-0.49	-0.89, -0.1	0.015	No (0%)	-21.42	-48.93, 6.09	8	4.42	0.126	-28.06	-69.25, 13.13
	2,3	4	-0.49	-0.89, -0.1	0.015	No (0%)	-21.42	-48.93, 6.09	8	4.42	0.127	-28.06	-69.25, 13.13
	4,5	5	-0.50	-0.85, -0.14	0.006	No (0%)	-18.06	-40.36, 4.25	12	4.52	0.229	-14.94	-44.23, 14.36
	6,7	5	-0.50	-0.85, -0.14	0.006	No (0%)	-18.06	-40.36, 4.25	12	4.52	0.233	-14.94	-44.23, 14.36
Other													
Milk yield	std,1	32	-1.23	-1.64, -0.81	<0.001	Yes (96%)	-22.49	-30.5, -14.5	81	4.44	<0.001	-19.57	-23.62, -15.52
	2,3	30	-1.28	-1.72, -0.84	<0.001	Yes (95%)	-23.51	-31.9, -15.2	126	4.46	<0.001	-16.06	-19.07, -13.06
	4,5	36	-1.20	-1.58, -0.81	<0.001	Yes (95%)	-21.49	-28.8, -14.2	96	4.44	<0.001	-18.94	-22.73, -15.15
	6,7	34	-1.24	-1.65, -0.84	<0.001	Yes (95%)	-22.33	-29.9, -14.8	141	4.47	<0.001	-16.01	-18.91, -13.11
SCC	std,1	20	0.20	-0.43, 0.82	0.537	Yes (96%)	8.19	-12.98, 29.36	47	4.66	0.170	1.15	-22.52, 24.82
	2,3	19	0.16	-0.49, 0.82	0.625	Yes (96%)	6.42	-15.66, 28.5	71	4.68	0.025	5.44	-10.61, 21.5
	4,5	22	0.22	-0.35, 0.8	0.446	Yes (95%)	8.11	-11.13, 27.35	53	4.67	0.109	2.41	-18.59, 23.41
	6,7	21	0.20	-0.41, 0.8	0.525	Yes (95%)	6.50	-13.46, 26.47	77	4.68	0.013	5.98	-8.83, 20.79

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model; SCC, somatic cell count. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
N compounds													
Urea	std,1	7	-0.42	-1.04, 0.19	0.176	Yes (70%)	-9.67	-24.7, 5.36	11	4.53	0.085	-8.75	-19.64, 2.14
	2,3	7	-0.42	-1.04, 0.19	0.176	Yes (70%)	-9.67	-24.7, 5.36	11	4.53	0.079	-8.75	-19.64, 2.14
	4,5	9	-0.72	-1.39, -0.05	0.035	Yes (76%)	-13.34	-26.36, -0.32	19	4.47	0.002	-16.08	-25.22, -6.94
	6,7	9	-0.72	-1.39, -0.05	0.035	Yes (76%)	-13.34	-26.36, -0.32	19	4.47	0.003	-16.08	-25.22, -6.94
Vitamins and antioxidants													
α-tocopherol	std,1	9	0.74	0.01, 1.47	0.047	Yes (81%)	12.98	0.51, 25.45	17	4.70	0.013	11.68	2.52, 20.84
	2,3	9	0.74	0.01, 1.47	0.047	Yes (81%)	12.98	0.51, 25.45	17	4.70	0.013	11.68	2.52, 20.84
	4,5	11	0.61	-0.08, 1.29	0.085	Yes (81%)	10.67	-0.37, 21.72	25	4.71	0.003	12.20	4.46, 19.95
	6,7	11	0.61	-0.08, 1.29	0.085	Yes (81%)	10.67	-0.37, 21.72	25	4.71	0.002	12.20	4.46, 19.95
2R (synthetic)	std,1								5	4.27	0.062	-46.38	-86.65, -6.11
isomers of	2,3								5	4.27	0.066	-46.38	-86.65, -6.11
α-tocopherol	4,5								6	4.38	0.095	-32.17	-75.26, 10.93
	6,7								6	4.38	0.098	-32.17	-75.26, 10.93
3R (natural)	std,1								6	4.81	0.032	24.75	1.59, 47.9
isomers of	2,3								6	4.81	0.031	24.75	1.59, 47.9
α-tocopherol	4,5	3	0.87	-1.48, 3.21	0.469	Yes (93%)	12.32	-18.59, 43.23	7	4.76	0.068	18.90	-3.77, 41.58
	6,7	3	0.87	-1.48, 3.21	0.469	Yes (93%)	12.32	-18.59, 43.23	7	4.76	0.071	18.90	-3.77, 41.58

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A1 cont. Results of meta-analysis comparing composition of organic (ORG) vs conventional (CONV) bovine milk using standard meta-analysis and sensitivity analyses protocols 1-7.

		Weighted meta-analysis							Unweighted meta-analysis				
Parameter	**an***	***n***	**SMD**	**95% CI**	***P*†**	**Heterogen.‡**	**MPD§**	**95% CI**	***n***	**Ln ratio‖**	***P*†**	**MPD§**	**95% CI**
N compounds													
Urea	std,1	7	-0.42	-1.04, 0.19	0.176	Yes (70%)	-9.67	-24.7, 5.36	11	4.53	0.085	-8.75	-19.64, 2.14
	2,3	7	-0.42	-1.04, 0.19	0.176	Yes (70%)	-9.67	-24.7, 5.36	11	4.53	0.079	-8.75	-19.64, 2.14
	4,5	9	-0.72	-1.39, -0.05	0.035	Yes (76%)	-13.34	-26.36, -0.32	19	4.47	0.002	-16.08	-25.22, -6.94
	6,7	9	-0.72	-1.39, -0.05	0.035	Yes (76%)	-13.34	-26.36, -0.32	19	4.47	0.003	-16.08	-25.22, -6.94
Vitamins and antioxidants													
α-tocopherol	std,1	9	0.74	0.01, 1.47	0.047	Yes (81%)	12.98	0.51, 25.45	17	4.70	0.013	11.68	2.52, 20.84
	2,3	9	0.74	0.01, 1.47	0.047	Yes (81%)	12.98	0.51, 25.45	17	4.70	0.013	11.68	2.52, 20.84
	4,5	11	0.61	-0.08, 1.29	0.085	Yes (81%)	10.67	-0.37, 21.72	25	4.71	0.003	12.20	4.46, 19.95
	6,7	11	0.61	-0.08, 1.29	0.085	Yes (81%)	10.67	-0.37, 21.72	25	4.71	0.002	12.20	4.46, 19.95
2R (synthetic)	std,1								5	4.27	0.062	-46.38	-86.65, -6.11
isomers of	2,3								5	4.27	0.066	-46.38	-86.65, -6.11
α-tocopherol	4,5								6	4.38	0.095	-32.17	-75.26, 10.93
	6,7								6	4.38	0.098	-32.17	-75.26, 10.93
3R (natural)	std,1								6	4.81	0.032	24.75	1.59, 47.9
isomers of	2,3								6	4.81	0.031	24.75	1.59, 47.9
α-tocopherol	4,5	3	0.87	-1.48, 3.21	0.469	Yes (93%)	12.32	-18.59, 43.23	7	4.76	0.068	18.90	-3.77, 41.58
	6,7	3	0.87	-1.48, 3.21	0.469	Yes (93%)	12.32	-18.59, 43.23	7	4.76	0.071	18.90	-3.77, 41.58

n, number of data points included in the comparison; MPD, mean percent difference; SMD, standardised mean difference of random-effect model. *Sensitivity analysis number: std – standard meta-analysis; 1-6 – sensitivity analysis 1 to 6 (see main article and online supplementary Table S5 for details); †*P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; ‡Heterogeneity and the I^2 Statistic; §Magnitude of difference between organic and conventional samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); ||Ln ratio = Ln(ORG/CONV × 100%).

Table A2. Standard meta-analysis results after exclusion of 20% of studies with the least precise treatment effects (sensitivity anlaysis 8, see main article and online supplementary Table S5 for details) for parameters shown in Fig. 3 and 4 of the main paper.

Parameter	*n*	SMD	95% CI	*P**	Heterogeneity†	MPD‡	95% CI
Milk yield	26	-1.24	-1.62, -0.87	<0.001	Yes (95%)	-24.68	-32.43, -16.92
SFA	15	-0.18	-0.67, 0.31	0.475	Yes (74%)	-0.32	-1.89, 1.25
12:0 (lauric acid)	9	-0.44	-1.26, 0.38	0.294	Yes (91%)	-4.75	-12.68, 3.17
14:0 (myristic acid)	10	0.21	-0.52, 0.94	0.572	Yes (88%)	0.52	-3.51, 4.55
16:0 (palmitic acid)	11	-0.47	-1.14, 0.20	0.171	Yes (88%)	-4.93	-9.29, -0.56
MUFA	15	0.21	-0.39, 0.81	0.493	Yes (83%)	0.48	-4.10, 5.06
OA (cis-9-18:1)	8	0.21	-0.88, 1.31	0.704	Yes (94%)	0.31	-4.63, 5.25
VA (trans-11-18:1)	10	1.64	0.89, 2.39	<0.001	Yes (84%)	62.04	6.43, 117.66
PUFA	15	0.65	-0.06, 1.36	0.072	Yes (87%)	6.37	-3.57, 16.31
CLA (total)	9	1.16	0.14, 2.19	0.027	Yes (87%)	30.10	4.60, 55.61
CLA9 (cis-9-trans-11-18:2)	11	0.75	0.38, 1.12	<0.001	Yes (64%)	16.21	3.34, 29.07
CLA10 (trans-10-cis-12-18:2)	-	-	-	-	-	-	-
n-3 FA	10	1.55	0.89, 2.21	<0.001	Yes (76%)	49.65	30.20, 69.10
ALA (cis-9,12,15-18:3)	17	2.44	1.64, 3.24	<0.001	Yes (93%)	65.29	49.13, 81.44
EPA (cis-5,8,11,14,17-20:5)	6	1.18	0.32, 2.04	0.007	Yes (93%)	65.30	19.29, 111.32
DPA (cis-7,10,13,16,19-22:5)	4	1.18	0.14, 2.21	0.026	Yes (93%)	40.56	7.96, 73.17
DHA (cis-4,7,10,13,16,19-22:6)	-	-	-	-	-	-	-
VLC n-3 PUFA§	-	-	-	-	-	-	-

n, number of data points included in the comparison; SMD, standardised mean difference of fixed-effect model; MPD, mean percentage difference; SFA, saturated fatty acids; MUFA, monounsaturated fatty acids; OA, oleic acid; VA, vaccenic acid; PUFA, polyunsaturated fatty acids; FA, fatty acids; CLA, conjugated linoleic acid; ALA, α-linolenic acid; EPA, eicosapentaenoic acid; DPA, docosapentaenoic acid; DHA, docosahexaenoic acid; VLC n-3 PUFA, very long chain n-3 PUFA (EPA+DPA+DHA). **P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; †Heterogeneity and the I^2 Statistic; ‡Magnitude of difference between organic (ORG) and conventional (CONV) samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); §Calculated based on published fatty acids composition data.

Table A2 cont. Standard meta-analysis results after exclusion of 20% of studies with the least precise treatment effects (sensitivity anlaysis 8, see main article and online supplementary Table S5 for details) for parameters shown in Fig. 3 and 4 of the main paper.

Parameter	*n*	SMD	95% CI	*P**	Heterogeneity†	MPD‡	95% CI
n-6 FA	10	-0.50	-1.10, 0.10	0.103	Yes (78%)	-7.88	-17.78, 2.02
LA (cis-9,12-18:2)	10	-0.95	-1.98, 0.08	0.071	Yes (94%)	-13.75	-24.02, -3.48
AA (cis-5,8,11,14-20:4)	4	-0.77	-1.78, 0.24	0.137	Yes (93%)	-16.86	-28.38, -5.34
LA/ALA ratio§	-	-	-	-	-	-	-
n-6/n-3 ratio	6	-1.36	-2.43, -0.28	0.013	Yes (80%)	-61.65	-117.62, -5.67
n-3/n-6 ratio	4	1.31	0.67, 1.94	<0.001	Yes (60%)	70.91	24.37, 117.44
Atherogenicity index§	-	-	-	-	-	-	-
Thrombogenicity index§	-	-	-	-	-	-	-
α-tocopherol	7	0.62	-0.13, 1.36	0.103	Yes (82%)	14.66	-1.25, 30.58
Carotenoids	4	0.91	-0.82, 2.64	0.304	Yes (91%)	40.25	-46.02, 126.52
β-carotene	6	0.13	-0.55, 0.80	0.716	Yes (77%)	1.15	-16.78, 19.08
Lutein	-	-	-	-	-	-	-
Zeaxanthin	-	-	-	-	-	-	-
Iodine (I)	5	-1.16	-1.80, -0.53	<0.001	Yes (71%)	-55.51	-80.54, -30.48
Iron (Fe)	6	0.42	0.06, 0.77	0.021	No (0%)	16.31	5.07, 27.56
Selenium (Se)	3	-0.52	-0.93, -0.10	0.014	No (0%)	-26.94	-62.71, 8.83
Urea	6	-0.37	-1.04, 0.30	0.284	Yes (75%)	-3.64	-14.65, 7.36

n, number of data points included in the comparison; SMD, standardised mean difference of fixed-effect model; MPD, mean percentage difference; FA, fatty acids; LA, linoleic acid; AA, arachidonic acid; ALA, α-linolenic acid; SCC, somatic cell count. **P* value <0.05 indicates significance of the difference in composition between organic and conventional milk; †Heterogeneity and the I^2 Statistic; ‡Magnitude of difference between organic (ORG) and conventional (CONV) samples (value <0 indicate higher concentration in CONV, value >0 indicate higher concentration in ORG); §Calculated based on published fatty acids composition data.