

Supplementary file

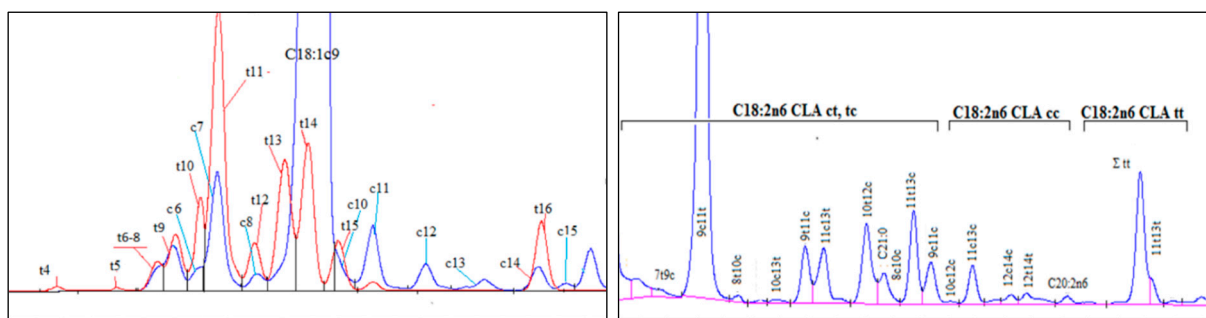


Figure S1. GC-chromatograms a) of C18:1 isomers extracted with SPE Ag⁺ cartridge (Red peaks were *trans* isomer whilst blue peaks were *cis* isomers), b) of C18:2 isomers and CLA extracted with SPE Ag⁺ cartridge.

Table S1. Proximate composition and main classes of fatty acids (% of total FAME) in cheese 60 days ripened from the two farms before the change of diet.

	Farm 1	Farm 2	RMSE	p-value
DM (%)	67.48	67.29	1.49	ns
Ash (%)	4.18	4.27	0.27	ns
Fat (%)	32.84	32.45	1.12	ns
Protein (%)	29.95	30.2	1.24	ns
ΣSFA low chain	12.53	11.87	1.14	ns
ΣSFA Odd	2.11	2.05	0.17	ns
ΣSFA Branch	2.38	2.31	0.16	ns
ΣSFA	66.78	67.15	2.12	ns
ΣMUFA trans	4.85	4.71	0.39	ns
ΣMUFA	27.38	27.16	1.72	ns
ΣPUFA n-6	2.43	2.37	0.19	ns
ΣPUFA n-3	1.61	1.54	0.08	ns
ΣCLA	1.72	1.69	0.12	ns
ΣPUFA trans	0.08	0.09	0.01	ns
ΣPUFA	5.84	5.69	0.31	ns

FAME = Fatty acids methyl ester; RMSE = root means square error. *, **, ***; ns = not significant. Σ SFA low chain = sum of saturated fatty acids from C4:0 to C10:0; Σ SFA Odd = sum of odd saturated fatty acids; Σ SFA Branch = sum of branch saturated fatty acids; Σ SFA = total saturated fatty acids; Σ MUFA trans = sum of trans monounsaturated fatty acids; Σ MUFA = total monounsaturated fatty acids; Σ PUFA n-6 = sum of C18:2 n-6, C18:3 n-6, C20:2 n-6, C20:4 n-6, and other long-chain PUFA n-6 in trace; Σ PUFA n-3 = sum of C18:3 n-3, C20:3 n-3, and other long-chain PUFA n-3 in trace; Σ CLA = sum of total conjugated linoleic acids; Σ PUFA trans = trans isomers of C18:2 n-6 and C18:3 n-3; Σ PUFA = total polyunsaturated fatty acids

Table S2. Branch fatty acids expressed as mg/g of cheese obtained from ewes fed in two different ways.

mg/g of cheese	NOL	OLI	<i>p</i> value feeding	15 days	30 days	60 days	<i>p</i> value time	RMSE
C12:0 <i>iso</i>	0.07	0.05	<0.001	0.05 ^b	0.06 ^{ab}	0.07 ^a	0.005	0.01
C13:0 <i>iso</i>	0.09	0.11	0.034	0.09	0.10	0.11	0.451	0.03
C13:0 <i>ante</i>	0.10	0.11	0.163	0.10	0.11	0.11	0.877	0.03
C14:0 <i>iso</i>	0.25	0.30	0.003	0.23 ^b	0.28 ^a	0.31 ^a	<0.001	0.04
C15:0 <i>iso</i>	0.75	0.89	<0.001	0.71 ^b	0.86 ^a	0.89 ^a	<0.001	0.09
C15:00 <i>ante</i>	1.35	1.39	0.403	1.25 ^b	1.40 ^a	1.47 ^a	0.002	0.14
C16:0 <i>iso</i>	0.30	0.22	<0.001	0.24 ^b	0.25 ^{ab}	0.27 ^a	0.102	0.03
C17:0 <i>iso</i>	1.65	1.82	0.002	1.59 ^b	1.77 ^a	1.86 ^a	<0.001	0.16
C17:00 <i>ante</i>	0.96	1.05	0.091	0.90 ^b	1.05 ^a	1.07 ^a	0.020	0.15
C18:0 <i>iso</i>	0.15	0.19	<0.001	0.17	0.18	0.16	0.690	0.03
C20:0 <i>iso</i>	0.17	0.13	<0.001	0.14 ^b	0.14 ^b	0.16 ^a	0.025	0.02
Phytanic acid	0.30	0.45	<0.001	0.33 ^b	0.34 ^b	0.43 ^a	<0.001	0.06

NOL = cheese from ewes fed without olive leaves; OLI = cheese from ewes fed with olive leaves.

Time = ripening of cheese at different times; RMSE = root means square error.

Different letters between different ripening times mean significant differences for $p < 0.05$.

Table S3. cis/trans isomers of C16:1 and C18:1 monounsaturated fatty acids expressed as mg/g of cheese obtained from ewes fed in two different ways.

mg/g of cheese	NOL	OLI	<i>p</i> value feeding	15 days	30 days	60 days	<i>p</i> value time	RMSE
C16:1 <i>t</i> 4	0.019	0.020	0.007	0.018 ^c	0.019 ^b	0.021 ^a	<0.001	0.002
C16:1 <i>t</i> 5	0.08	0.07	0.186	0.06 ^c	0.07 ^b	0.09 ^a	<0.001	0.007
C16:1 <i>t</i> 6+7	0.13	0.15	0.008	0.13 ^c	0.14 ^b	0.15 ^a	<0.001	0.013
C16:1 <i>t</i> 8	0.01	0.02	<0.001	0.01 ^b	0.01 ^b	0.02 ^a	<0.001	0.001
C16:1 <i>t</i> 9	0.25	0.26	0.133	0.12 ^c	0.24 ^b	0.31 ^a	<0.001	0.023
C16:1 <i>t</i> 10	0.12	0.12	0.977	0.10 ^c	0.12 ^b	0.14 ^a	<0.001	0.011
C16:1 <i>t</i> 12	0.025	0.028	0.002	0.024 ^c	0.027 ^b	0.029 ^a	<0.001	0.003
C16:1 <i>t</i> 14	0.12	0.15	0.004	0.10 ^c	0.13 ^b	0.17 ^a	<0.001	0.012
C16:1 <i>t</i> 13	0.05	0.06	0.029	0.05 ^b	0.05 ^b	0.06 ^a	0.003	0.005
C16:1 <i>c</i> 4	0.14	0.16	0.002	0.13 ^c	0.14 ^b	0.17 ^a	<0.001	0.014
C16:1 <i>c</i> 5	0.18	0.19	0.003	0.17 ^b	0.19 ^a	0.20 ^a	<0.001	0.018
C16:1 <i>c</i> 6	0.028	0.034	<0.001	0.025 ^c	0.032 ^b	0.036 ^a	<0.001	0.003
C16:1 <i>c</i> 7	0.36	0.33	0.247	0.31 ^c	0.34 ^b	0.40 ^a	<0.001	0.033
C16:1 <i>c</i> 8	0.030	0.034	<0.001	0.028 ^c	0.032 ^b	0.036 ^a	<0.001	0.003
C16:1 <i>c</i> 9	2.45	2.58	0.124	2.34 ^b	2.51 ^{ab}	2.70 ^a	0.003	0.233
C18:1 <i>t</i> 5	0.013	0.016	0.072	0.012 ^b	0.016 ^a	0.016 ^a	0.072	0.005
C18:1 <i>t</i> 6+8	0.10	0.65	<.0001	0.12	0.13	0.14	0.303	0.029
C18:1 <i>t</i> 9	1.42	1.52	0.067	1.39	1.49	1.54	0.088	0.165
C18:1 <i>t</i> 10	1.66	1.53	0.070	1.62	1.63	1.55	0.587	0.198
C18:1 <i>t</i> 11	6.55	5.72	0.003	5.42 ^b	6.04 ^b	6.94 ^a	<0.001	0.872
C18:1 <i>t</i> 12	0.13	0.20	<.0001	0.16	0.16	0.18	0.599	0.048
C18:1 <i>t</i> 13	0.26	0.40	<.0001	0.31	0.33	0.35	0.511	0.086
C18:1 <i>t</i> 14	0.41	0.67	<.0001	0.50	0.55	0.55	0.619	0.127
C18:1 <i>t</i> 15	0.16	0.20	0.009	0.21 ^a	0.17 ^{ab}	0.16 ^b	0.065	0.049
C18:1 <i>t</i> 16	0.27	0.45	<.0001	0.32	0.37	0.39	0.286	0.095
C18:1 <i>c</i> 6	0.17	0.17	0.879	0.17	0.17	0.17	0.982	0.042
C18:1 <i>c</i> 7	0.57	0.70	<0.001	0.60	0.62	0.69	0.134	0.110
C18:1 <i>c</i> 8	0.016	0.018	0.256	0.017	0.018	0.017	0.926	0.006
C18:1 <i>c</i> 9	49.14	53.17	0.006	45.88 ^c	51.94 ^b	55.64 ^a	<0.001	3.645
C18:1 <i>c</i> 10	0.065	0.059	0.013	0.066 ^a	0.063 ^{ab}	0.058 ^b	0.018	0.007
C18:1 <i>c</i> 11	1.28	1.26	0.721	1.19 ^b	1.29 ^{ab}	1.33 ^a	0.057	0.123
C18:1 <i>c</i> 12	0.141	0.147	0.546	0.140	0.144	0.147	0.837	0.029
C18:1 <i>c</i> 13	0.027	0.023	0.001	0.025	0.025	0.025	0.859	0.004
C18:1 <i>c</i> 14	0.25	0.19	<.0001	0.22	0.23	0.21	0.410	0.035
C18:1 <i>c</i> 15	0.13	0.12	0.013	0.13 ^a	0.12 ^{ab}	0.15 ^b	0.018	0.014
C18:1 <i>c</i> 16	0.20	0.18	0.013	0.209 ^a	0.19 ^a	0.17 ^b	0.018	0.021

NOL = cheese from ewes fed without olive leaves; OLI = cheese from ewes fed with olive leaves.

Time = ripening of cheese at different times; RMSE = root means square error.

Different letters between different ripening times mean significant differences for $p < 0.05$.

Table S4. Isomers of C18:2 n-6 and C18:3 n-3 expressed as mg/g of cheese. obtained from ewes fed in two different ways.

mg/g of cheese	NOL	OLI	<i>p</i> value feeding	15 days	30 days	60 days	<i>p</i> value time	RMSE
C18:2 <i>t11. t15</i>	0.53	0.57	0.023	0.47 ^b	0.58 ^a	0.61 ^a	0.001	0.051
C18:2 <i>t9. t12</i>	0.37	0.41	0.003	0.38 ^b	0.38 ^b	0.42 ^a	0.008	0.035
Others <i>tt</i>	1.59	1.69	0.057	1.50 ^c	1.62 ^b	1.80 ^a	<0.001	0.148
C18:2 <i>c8. t12</i>	0.04	0.05	<0.001	0.07 ^a	0.05 ^b	0.02 ^c	<0.001	0.004
C18:2 <i>c8. t13</i>	0.04	0.05	<0.001	0.05 ^a	0.03 ^c	0.04 ^b	<0.001	0.004
C18:2 <i>c9. t12</i>	0.45	0.47	0.195	0.42 ^b	0.44 ^b	0.52 ^a	<0.001	0.042
C18:2 <i>c11. t15</i>	0.09	0.09	0.678	0.09 ^a	0.08 ^b	0.10 ^a	<0.001	0.008
C18:2 <i>t8. c12</i>	0.98	1.07	0.004	0.91 ^c	1.03 ^b	1.15 ^a	<0.001	0.094
C18:2 <i>t8. c13</i>	0.56	0.59	0.080	0.54 ^b	0.59 ^a	0.61 ^a	0.014	0.052
C18:2 <i>t9. c12</i>	0.18	0.20	<0.001	0.16 ^c	0.19 ^b	0.21 ^a	<0.001	0.017
C18:2 <i>t11. c15</i>	1.19	1.23	0.251	1.13 ^b	1.13 ^b	1.38 ^a	<0.001	0.111
C18:2 <i>c9. c12</i>	1.48	1.88	<0.001	1.68	1.69	1.67	0.963	0.119
C18:3 n-6	0.12	0.12	0.835	0.13	0.12	0.12	0.595	0.014
C18:3 n-3 <i>ttt</i>	0.04	0.06	<0.001	0.04 ^b	0.08 ^a	0.03 ^c	<0.001	0.009
C18:3 n-3 <i>ctt</i>	0.02	0.02	0.424	0.01 ^b	0.01 ^b	0.02 ^a	<0.001	0.002
C18:3 n-3 <i>tct</i>	0.36	0.35	0.457	0.32 ^b	0.31 ^b	0.43 ^a	<0.001	0.045
C18:3 n-3 <i>ttc</i>	0.02	0.01	<0.001	0.01 ^b	0.02 ^a	0.02 ^a	<0.001	0.003
C18:3 n-3 <i>cct</i>	0.04	0.04	0.209	0.03 ^c	0.05 ^a	0.04 ^b	<0.001	0.006
C18:3 n-3 <i>tcc</i>	0.04	0.02	<0.001	0.04 ^a	0.03 ^a	0.01 ^b	<0.001	0.005
C18:3 n-3 <i>ccc</i>	2.50	3.04	<0.001	2.72	2.76	2.83	0.691	0.295

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Table S5. Conjugated linoleic acid (CLA) isomers. expressed as mg/g of cheese obtained from ewes fed in two different ways.

mg/g of cheese	NOL	OLI	<i>p</i> value feeding	15 days	30 days	60 days	<i>p</i> value time	RMSE
CLA <i>c</i> 9. <i>t</i> 11	2.21	2.509	0.004	2.28	2.36	2.44	0.441	0.280
CLA <i>t</i> 8. <i>c</i> 10	0.011	0.013	0.002	0.010 ^b	0.011 ^b	0.015 ^a	<0.001	<0.001
CLA <i>t</i> 9. <i>c</i> 11	0.18	0.22	<0.001	0.18 ^b	0.19 ^{ab}	0.21 ^a	0.023	0.023
CLA <i>t</i> 10. <i>c</i> 12	0.19	0.20	0.060	0.19	0.19	0.20	0.570	0.023
CLA <i>t</i> 11. <i>c</i> 13	0.41	0.49	<0.001	0.41 ^b	0.45 ^b	0.47 ^a	0.015	0.053
CLA <i>c</i> 10. <i>t</i> 12	0.024	0.037	<0.001	0.033 ^a	0.030 ^{ab}	0.029 ^b	0.046	0.004
CLA <i>c</i> 11. <i>t</i> 13	0.25	0.31	<0.001	0.31 ^a	0.25 ^{ab}	0.27 ^b	<0.001	0.034
CLA <i>c</i> 9. <i>c</i> 11	0.085	0.106	<0.001	0.072 ^c	0.101 ^b	0.114 ^a	<0.001	0.011
CLA <i>c</i> 10. <i>c</i> 12	0.027	0.033	<0.001	0.029	0.030	0.032	0.190	0.004
CLA <i>c</i> 11. <i>c</i> 13	0.17	0.20	<0.001	0.163 ^b	0.189 ^a	0.203 ^a	<0.001	0.022
CLA <i>c</i> 12. <i>c</i> 14	0.028	0.030	0.140	0.027 ^b	0.029 ^{ab}	0.032 ^a	0.013	0.003
CLA <i>t</i> 12. <i>t</i> 14	0.027	0.035	<0.001	0.026 ^b	0.032 ^a	0.035 ^a	<0.001	0.004
CLA <i>t</i> 11. <i>t</i> 13	0.21	0.22	0.086	0.208	0.216	0.219	0.528	0.025
CLA <i>tt</i>	0.59	0.72	<0.001	0.60 ^b	0.67 ^a	0.69 ^a	0.020	0.078

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