

**DATASET: Rumen biohydrogenation and milk fatty acid profile in dairy
ewes divergent for feed efficiency**

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SUPPLEMENTAL MATERIAL

Supplemental Table S1. Other ruminal fatty acids (FA) in dairy ewes phenotypically divergent for feed efficiency

FA, g/100 g total FA	Group ¹			P-value
	L-FE	H-FE	SED ²	
13:0 <i>anteiso</i>	0.012	0.011	0.0017	0.60
<i>cis</i> -14 16:1	0.048	0.048	0.0067	0.98
<i>trans</i> -6+7+8 16:1	0.078	0.073	0.0166	0.77
13-oxo-18:0	0.045	0.045	0.0102	0.98
<i>cis</i> -13 18:1	0.113	0.099	0.0158	0.41
<i>cis</i> -15 18:1	0.206	0.171	0.0198	0.10
<i>cis</i> -16 18:1	0.164	0.153	0.0165	0.50
<i>trans</i> -4 18:1	0.101	0.102	0.0055	0.79
<i>trans</i> -5 18:1	0.062	0.059	0.0060	0.65
<i>trans</i> -13+14 18:1	1.537	1.353	0.2148	0.40
<i>trans</i> -15 18:1 ³	0.905	0.805	0.0776	0.22
<i>trans</i> -16 + <i>cis</i> -14 18:1	0.949	0.915	0.0651	0.61
<i>cis</i> -7 <i>cis</i> -12 18:2	0.055	0.041	0.0214	0.51
<i>cis</i> -9 <i>trans</i> -12 18:2	0.066	0.047	0.0162	0.26
<i>trans</i> -9 <i>trans</i> -12 18:2 + 19:0	0.112	0.108	0.0138	0.78
<i>trans</i> -11 <i>cis</i> -15 + <i>trans</i> -10 <i>cis</i> -15 18:2	0.632	0.550	0.0940	0.40
<i>trans</i> -11 <i>trans</i> -15 18:2	0.104	0.100	0.0284	0.90
<i>trans</i> -9 <i>cis</i> -11 CLA	0.023	0.018	0.0034	0.16
<i>trans</i> -11 <i>cis</i> -13 CLA	0.028	0.031	0.0038	0.48
<i>trans</i> -11 <i>trans</i> -13 CLA ⁴	0.079	0.078	0.0052	0.78
<i>trans</i> -9 <i>trans</i> -12 <i>cis</i> -15 + <i>cis</i> -9 <i>cis</i> -12 <i>trans</i> -15 18:3	0.040	0.034	0.0048	0.22
<i>cis</i> -9 <i>trans</i> -12 <i>cis</i> -15 + <i>trans</i> -9 <i>cis</i> -12 <i>cis</i> -15 18:3 ⁵	0.115	0.101	0.0091	0.16
S3,R7,R11,15 + R3,R7,R11,15-tetramethyl 16:0	0.212	0.171	0.0320	0.22
21:0	0.061	0.059	0.0086	0.76
23:0	0.224	0.216	0.0126	0.56
24:0	0.581	0.562	0.0277	0.50
<i>cis</i> -15 24:1	0.043	0.043	0.0052	0.93
25:0	0.051	0.048	0.0057	0.61

¹L-FE: low feed efficiency group (high FEI; n = 8); H-FE: high feed efficiency group (low FEI; n = 8).

²SED = standard error of the difference.

³Coelutes with *cis*-10 18:1 as a minor component.

⁴Coelutes with an unidentified component.

⁵Coelutes with *cis*-5 + *trans*-11 20:1 as minor components.

Supplemental Table S2. Other milk fatty acids (FA) in dairy ewes phenotypically divergent for feed efficiency

FA, g/100 g total FA	Group ¹		SED ²	P-value
	L-FE	H-FE		
5:0	0.021	0.020	0.0014	0.65
7:0	0.047	0.047	0.0023	0.92
9:0	0.083	0.082	0.0047	0.84
<i>cis</i> -9 10:1	0.271	0.274	0.0205	0.91
11:0	0.130	0.129	0.0094	0.95
<i>cis</i> -9 12:1	0.107	0.107	0.0140	0.98
<i>trans</i> -9 12:1	0.044	0.044	0.0043	0.95
13:0 <i>anteiso</i>	0.007	0.007	0.0008	0.75
<i>cis</i> -7 14:1	0.013	0.014	0.0012	0.41
<i>trans</i> -4+5 14:1	0.017	0.016	0.0024	0.78
<i>cis</i> -9 15:1	0.007	0.007	0.0006	0.86
<i>trans</i> -6+7 15:1	0.029	0.029	0.0047	0.94
4,8,12 trimethyl 13:0	0.027	0.028	0.0021	0.84
<i>cis</i> -11 16:1	0.014	0.013	0.0015	0.35
<i>cis</i> -13 16:1	0.013	0.013	0.0012	0.78
<i>trans</i> -5 16:1	0.020	0.016	0.0034	0.31
<i>trans</i> -6+7+8 16:1	0.407	0.332	0.1048	0.49
<i>cis</i> -9 17:1	0.185	0.156	0.0178	0.12
13-oxo-18:0	0.004	0.003	0.0005	0.63
<i>cis</i> -13 18:1	0.058	0.060	0.0053	0.67
<i>cis</i> -15 18:1	0.081	0.089	0.0060	0.22
<i>cis</i> -16 18:1	0.038	0.040	0.0025	0.37
<i>trans</i> -4 18:1	0.011	0.011	0.0010	0.76
<i>trans</i> -5 18:1	0.009	0.008	0.0007	0.10
<i>trans</i> -15 18:1	0.186	0.199	0.0152	0.40
<i>trans</i> -16 + <i>cis</i> -14 18:1 ³	0.420	0.395	0.0430	0.57
<i>cis</i> -7 <i>cis</i> -12 18:2	0.013	0.011	0.0013	0.14
<i>cis</i> -11 <i>cis</i> -14 18:2	0.008	0.008	0.0020	0.93
<i>cis</i> -9 <i>trans</i> -12 18:2	0.032	0.031	0.0024	0.46
<i>cis</i> -9 <i>trans</i> -13 18:2 ⁴	0.182	0.196	0.0178	0.46
<i>cis</i> -9 <i>trans</i> -14 18:2	0.102	0.102	0.0059	0.96
<i>trans</i> -11 <i>cis</i> -15 + <i>trans</i> -10 <i>cis</i> -15 18:2	0.054	0.056	0.0071	0.80
<i>trans</i> -12 <i>cis</i> -15 18:2	0.010	0.008	0.0012	0.29
<i>trans</i> -9 <i>trans</i> -12 18:2 + 19:0	0.088	0.086	0.0045	0.74
<i>trans</i> -11 <i>trans</i> -15 18:2	0.008	0.007	0.0016	0.78
<i>trans</i> -9 <i>cis</i> -11 CLA	0.012	0.013	0.0011	0.62
<i>trans</i> -11 <i>cis</i> -13-CLA ⁵	0.011	0.011	0.0018	0.98
<i>trans</i> -11 <i>trans</i> -13 CLA	0.051	0.060	0.0078	0.25
<i>trans</i> -12 <i>trans</i> -14 CLA	0.003	0.003	0.0007	0.61
<i>cis</i> -9 <i>trans</i> -11 <i>trans</i> -15 18:3	0.005	0.004	0.0008	0.30
<i>cis</i> -9 <i>trans</i> -12 <i>cis</i> -15 18:3	0.009	0.008	0.0009	0.35

<i>trans</i> -9 <i>cis</i> -12 <i>cis</i> -15 18:3 ⁶	0.005	0.006	0.0006	0.16
<i>trans</i> -9 <i>trans</i> -12 <i>cis</i> -15 + <i>cis</i> -9 <i>cis</i> -12 <i>trans</i> -15 18:3	0.012	0.012	0.0008	0.75
<i>trans</i> -9 <i>trans</i> -12 <i>trans</i> -15 18:3	0.001	0.001	0.0003	0.88
<i>cis</i> -9 20:1	0.012	0.011	0.0012	0.40
<i>trans</i> -11 20:1	0.002	0.003	0.0009	0.33
21:0	0.073	0.071	0.0048	0.69
<i>cis</i> -13 22:1	0.011	0.008	0.0041	0.40
23:0	0.063	0.059	0.0057	0.49
24:0	0.034	0.034	0.0030	0.96
<i>cis</i> -15 24:1	0.007	0.007	0.0006	0.30
25:0	0.011	0.009	0.0026	0.36

¹L-FE: low feed efficiency group (high FEI; n = 8); H-FE: high feed efficiency group (low FEI; n = 8).

²SED = standard error of the difference.

³Coelute with *trans*-10 *trans*-14 18:2 as a minor component.

⁴Coelutes with an 18:2 isomer of indeterminate double bond position.

⁵Coelutes with an unidentified component.

⁶Coelutes with *cis*-5 20:1 as a minor component.

Supplemental Table S3. Animal performance in dairy ewes phenotypically divergent for residual feed intake

	Group ¹		SED ²	P-value
	H-RFI	L-RFI		
Feed efficiency index (FEI)	0.85	-0.30	0.122	<0.01
Residual feed intake (RFI)	0.26	-0.26	0.098	<0.01
Parity	3.0	3.2	0.91	0.86
DIM	64.7	62.8	1.59	0.28
BW, kg	70.9	74.9	2.55	0.15
BW change ³ , kg	0.70	3.07	0.949	0.03
DMI, kg/d	3.14	3.08	0.193	0.74
Yield, kg/d				
Milk	2.11	2.80	0.307	0.05
ECM	1.72	2.27	0.233	0.04
Fat	0.114	0.152	0.017	0.05
Protein	0.104	0.134	0.013	0.06
Lactose	0.108	0.146	0.016	0.04
Fatty acid yield, mmol/d				
Total fatty acids	534	710	78.0	0.05
< C16	306	397	43.6	0.07
C16	110	161	18.1	0.02
> C16	104	136	17.8	0.11
Milk composition, g/kg raw milk				
Fat	54.2	54.6	3.38	0.90
Protein	47.7	45.9	1.06	0.13
Lactose	51.2	52.2	0.51	0.09

¹H-RFI: high residual feed intake group (low feed efficiency group; n = 6); L-RFI: low residual feed intake group (high feed efficiency group; n = 6). These ewes were also within the highest and the lowest feed efficiency-animals selected using the feed efficiency index (FEI).

²SED = standard error of the difference.

Supplemental Table S4. Ruminal fermentation parameters in dairy ewes phenotypically divergent for residual feed intake

	Group ¹		SED ²	P-value
	H-RFI	L-RFI		
Ammonia, mg/L	169	138	17.3	0.10
Total VFA, mmol/L	137	139	8.4	0.86
VFA molar proportions, %				
Acetate	64.8	64.2	0.76	0.41
Propionate	17.0	18.5	0.93	0.14
Butyrate	15.7	15.0	0.82	0.42
<i>iso</i> -Butyrate	0.85	0.87	0.066	0.81
Valerate	1.28	1.20	0.097	0.45
<i>iso</i> -Valerate	0.88	0.87	0.080	0.96
Caproate	0.26	0.21	0.026	0.09
Acetate:propionate ratio	3.77	3.46	0.186	0.14

¹H-RFI: high residual feed intake group (low feed efficiency group; n = 6); L-RFI: low residual feed intake group (high feed efficiency group; n = 6). These ewes were also within the highest and the lowest feed efficiency-animals selected using the feed efficiency index (FEI).

²SED = standard error of the difference.

Supplemental Table S5. Ruminal fatty acid (FA) composition in dairy ewes phenotypically divergent for residual feed intake

FA, g/100 g total FA	Group ¹			P-value
	H-RFI	L-RFI	SED ²	
12:0	0.188	0.094	0.0499	0.09
13:0	0.139	0.101	0.0193	0.09
13:0 <i>anteiso</i>	0.012	0.011	0.0021	0.46
13:0 <i>iso</i>	0.030	0.044	0.0113	0.25
14:0	0.818	0.559	0.1955	0.22
14:0 <i>iso</i>	0.116	0.137	0.0173	0.25
<i>cis</i> -12 14:1	0.025	0.049	0.0098	0.03
<i>cis</i> -14 16:1	0.049	0.047	0.0060	0.85
15:0	0.717	0.824	0.0743	0.19
15:0 <i>anteiso</i>	0.774	0.830	0.0688	0.44
15:0 <i>iso</i>	0.367	0.366	0.0336	0.99
16:0	18.685	18.592	0.9394	0.92
16:0 <i>iso</i>	0.288	0.422	0.1013	0.22
<i>cis</i> -9 16:1	0.146	0.127	0.0197	0.36
<i>cis</i> -14 16:1	0.048	0.053	0.0081	0.57
<i>trans</i> -6+7+8 16:1	0.061	0.061	0.0190	0.97
<i>trans</i> -9 16:1	0.015	0.012	0.0019	0.10
17:0	0.535	0.625	0.0478	0.09
17:0 <i>iso</i> ³	0.602	0.586	0.0789	0.84
17:0 <i>anteiso</i>	0.483	0.541	0.0557	0.32
18:0	40.258	44.720	2.9005	0.16
18:0 <i>iso</i>	0.052	0.075	0.0125	0.10
10-oxo-18:0	0.004	0.005	0.0031	0.76
13-oxo-18:0	0.044	0.040	0.0105	0.72
<i>cis</i> -9 18:1	5.911	4.842	0.6498	0.13
<i>cis</i> -11 18:1	0.504	0.493	0.0286	0.72
<i>cis</i> -12 18:1	0.533	0.378	0.0844	0.10
<i>cis</i> -13 18:1	0.084	0.076	0.0126	0.53
<i>cis</i> -15 18:1	0.196	0.162	0.0198	0.11
<i>cis</i> -16 18:1	0.170	0.157	0.0184	0.52
\sum <i>cis</i> 18:1	7.325	6.032	0.6779	0.09
<i>trans</i> -4 18:1	0.100	0.100	0.0064	0.98
<i>trans</i> -5 18:1	0.053	0.052	0.0054	0.93
<i>trans</i> -6+7+8 18:1	0.486	0.411	0.0466	0.14
<i>trans</i> -9 18:1	0.297	0.249	0.0305	0.16
<i>trans</i> -10 18:1	0.616	0.467	0.0790	0.09
<i>trans</i> -11 18:1	5.645	5.034	0.7155	0.42
<i>trans</i> -12 18:1	0.794	0.657	0.0841	0.14
<i>trans</i> -13+14 18:1	1.454	1.272	0.1658	0.30
<i>trans</i> -15 18:1 ⁴	0.878	0.780	0.0790	0.24
<i>trans</i> -16 + <i>cis</i> -14 18:1	0.935	0.883	0.0637	0.44

\sum <i>trans</i> 18:1	9.902	8.584	0.8472	0.15
<i>cis</i> -7 <i>cis</i> -12 18:2	0.086	0.067	0.0252	0.48
<i>cis</i> -9 <i>cis</i> -12 18:2	7.885	6.480	0.7476	0.09
<i>cis</i> -9 <i>trans</i> -12 18:2	0.098	0.077	0.0184	0.27
<i>trans</i> -9 <i>cis</i> -12 18:2	0.039	0.028	0.0060	0.09
<i>trans</i> -9 <i>trans</i> -12 18:2 + 19:0	0.122	0.120	0.0142	0.88
<i>trans</i> -11 <i>cis</i> -15 + <i>trans</i> -10 <i>cis</i> -15 18:2	0.663	0.608	0.1155	0.65
<i>trans</i> -11 <i>trans</i> -15 18:2	0.100	0.103	0.0307	0.92
\sum nonconjugated 18:2	9.300	7.719	0.8090	0.08
<i>cis</i> -9 <i>trans</i> -11 CLA	1.569	1.541	0.2375	0.91
<i>trans</i> -9 <i>cis</i> -11 CLA	0.021	0.016	0.0036	0.22
<i>trans</i> -10 <i>cis</i> -12 CLA	0.051	0.053	0.0067	0.74
<i>trans</i> -11 <i>cis</i> -13 CLA	0.027	0.031	0.0038	0.24
<i>trans</i> -11 <i>trans</i> -13 CLA ⁵	0.078	0.081	0.0052	0.65
Other <i>trans,trans</i> CLA ⁶	0.064	0.068	0.0065	0.57
\sum CLA	1.815	1.797	0.2501	0.94
18:3n-3	1.770	1.622	0.2073	0.49
<i>trans</i> -9 <i>trans</i> -12 <i>cis</i> -15 + <i>cis</i> -9 <i>cis</i> -12 <i>trans</i> -15 18:3	0.036	0.034	0.0040	0.55
<i>cis</i> -9 <i>trans</i> -12 <i>cis</i> -15 + <i>trans</i> -9 <i>cis</i> -12 <i>cis</i> -15 18:3 ⁷	0.100	0.093	0.0087	0.42
20:0	0.654	0.681	0.0340	0.44
S3,R7,R11,15 + R3,R7,R11,15-tetramethyl 16:0	0.227	0.185	0.0382	0.30
<i>cis</i> -11 20:1	0.110	0.091	0.0101	0.10
20:2n-6	0.027	0.024	0.0038	0.45
21:0	0.043	0.038	0.0088	0.60
22:0	0.484	0.484	0.0264	0.99
23:0	0.218	0.213	0.0140	0.70
24:0	0.565	0.556	0.0318	0.79
<i>cis</i> -15 24:1	0.043	0.045	0.0066	0.76
25:0	0.047	0.048	0.0052	0.82

¹H-RFI: high residual feed intake group (low feed efficiency group; n = 6); L-RFI: low residual feed intake group (high feed efficiency group; n = 6). These ewes were also within the highest and the lowest feed efficiency-animals selected using the feed efficiency index (FEI).

²SED = standard error of the difference.

³Coelutes with *cis*-7 16:1 as a minor component.

⁴Coelutes with *cis*-10 18:1 as a minor component.

⁵Coelutes with an unidentified component.

⁶Sum of *trans*-7 *trans*-9 + *trans*-8 *trans*-10 + *trans*-9 *trans*-11 CLA.

⁷Coelutes with *cis*-5 + *trans*-11 20:1 as minor components.

Supplemental Table S6. Milk fatty acid (FA) composition and estimated milk fat melting point in dairy ewes phenotypically divergent for feed efficiency

FA, g/100 g total FA (unless otherwise noted)	Group ¹			P-value
	H-RFI	L-RFI	SED ²	
4:0	3.181	3.424	0.0959	0.03
5:0	0.020	0.020	0.0013	0.65
6:0	2.757	2.981	0.0924	0.04
7:0	0.048	0.048	0.0024	0.94
8:0	2.893	3.169	0.1568	0.11
9:0	0.082	0.081	0.0060	0.92
10:0	10.345	11.263	0.5279	0.12
<i>cis</i> -9 10:1	0.273	0.278	0.0267	0.85
11:0	0.128	0.128	0.0115	0.97
12:0	6.523	7.106	0.3961	0.18
<i>cis</i> -9 12:1	0.108	0.112	0.0162	0.77
<i>trans</i> -9 12:1	0.044	0.045	0.0045	0.75
13:0 <i>anteiso</i>	0.007	0.007	0.0010	0.70
13:0 <i>iso</i>	0.014	0.008	0.0040	0.18
14:0	12.053	12.687	0.5877	0.31
14:0 <i>iso</i>	0.103	0.088	0.0104	0.18
<i>cis</i> -7 14:1	0.014	0.015	0.0016	0.56
<i>cis</i> -9 14:1	0.154	0.153	0.0147	0.97
<i>cis</i> -12 14:1	0.092	0.093	0.0151	0.93
<i>trans</i> -4+5 14:1	0.021	0.019	0.0025	0.49
15:0	0.970	0.944	0.0308	0.42
15:0 <i>anteiso</i>	0.428	0.436	0.0344	0.84
15:0 <i>iso</i> ³	0.222	0.226	0.0276	0.89
<i>cis</i> -9 15:1	0.007	0.007	0.0007	0.58
<i>trans</i> -6+7 15:1	0.030	0.033	0.0031	0.40
4,8,12 trimethyl 13:0	0.026	0.028	0.0026	0.58
16:0	27.765	27.335	1.2343	0.74
16:0 <i>iso</i>	0.243	0.245	0.0243	0.95
<i>cis</i> -9 16:1	0.678	0.663	0.0431	0.73
<i>cis</i> -11 16:1	0.015	0.014	0.0013	0.41
<i>cis</i> -13 16:1	0.011	0.012	0.0009	0.51
<i>trans</i> -5 16:1	0.021	0.017	0.0043	0.41
<i>trans</i> -6+7+8 16:1	0.388	0.425	0.0473	0.45
<i>trans</i> -9 16:1	0.077	0.086	0.0089	0.32
17:0	0.597	0.537	0.0449	0.21
17:0 <i>anteiso</i>	0.466	0.486	0.0260	0.47
17:0 <i>iso</i> ⁴	0.588	0.580	0.0451	0.87
<i>cis</i> -9 17:1	0.191	0.162	0.0232	0.24
18:0	6.296	5.636	0.5878	0.29
18:0 <i>iso</i>	0.054	0.040	0.0093	0.19
10-oxo-18:0	0.004	0.002	0.0009	0.04

13-oxo-18:0	0.004	0.004	0.0005	0.47
<i>cis</i> -9 18:1 ⁵	12.020	10.281	1.0015	0.12
<i>cis</i> -11 18:1	0.375	0.346	0.0462	0.55
<i>cis</i> -12 18:1	0.254	0.291	0.0390	0.37
<i>cis</i> -13 18:1	0.070	0.073	0.0054	0.49
<i>cis</i> -15 18:1	0.086	0.092	0.0075	0.49
<i>cis</i> -16 18:1	0.039	0.040	0.0032	0.70
∑ <i>cis</i> 18:1	10.545	10.920	1.0146	0.72
<i>trans</i> -4 18:1	0.011	0.011	0.0012	0.96
<i>trans</i> -5 18:1	0.010	0.008	0.0008	0.11
<i>trans</i> -6+7+8 18:1	0.206	0.217	0.0110	0.33
<i>trans</i> -9 18:1	0.194	0.195	0.0152	0.94
<i>trans</i> -10 18:1	0.406	0.448	0.0557	0.47
<i>trans</i> -11 18:1	1.050	1.211	0.0940	0.12
<i>trans</i> -12 18:1	0.312	0.331	0.0275	0.49
<i>trans</i> -15 18:1	0.196	0.203	0.0179	0.72
<i>trans</i> -16 + <i>cis</i> -14 18:1 ⁶	0.422	0.434	0.0371	0.75
∑ <i>trans</i> 18:1	2.955	2.636	0.2136	0.17
<i>cis</i> -7 <i>cis</i> -12 18:2	0.013	0.010	0.0017	0.11
<i>cis</i> -9 <i>cis</i> -12 18:2 ⁷	2.537	2.403	0.1280	0.32
<i>cis</i> -11 <i>cis</i> -14 18:2	0.007	0.007	0.0015	0.79
<i>cis</i> -11 <i>cis</i> -15 18:2	0.012	0.008	0.0022	0.08
<i>cis</i> -9 <i>trans</i> -12 18:2	0.035	0.031	0.0024	0.17
<i>cis</i> -9 <i>trans</i> -13 18:2 ⁸	0.201	0.206	0.0213	0.84
<i>cis</i> -9 <i>trans</i> -14 18:2	0.104	0.101	0.0079	0.76
<i>trans</i> -9 <i>cis</i> -12 18:2	0.026	0.024	0.0012	0.09
<i>trans</i> -11 <i>cis</i> -15 + <i>trans</i> -10 <i>cis</i> -15 18:2	0.059	0.056	0.0085	0.71
<i>trans</i> -12 <i>cis</i> -15 18:2	0.010	0.009	0.0016	0.25
<i>trans</i> -9 <i>trans</i> -12 18:2 + 19:0	0.089	0.087	0.0055	0.68
<i>trans</i> -11 <i>trans</i> -15 18:2	0.009	0.008	0.0018	0.47
∑ nonconjugated 18:2	2.889	2.903	0.1802	0.94
<i>cis</i> -9 <i>trans</i> -11 CLA ⁹	0.514	0.562	0.0573	0.42
<i>trans</i> -9 <i>cis</i> -11 CLA	0.013	0.013	0.0011	0.73
<i>trans</i> -10 <i>cis</i> -12 CLA ¹⁰	0.004	0.005	0.0004	<0.01
<i>trans</i> -11 <i>cis</i> -13-CLA ¹¹	0.014	0.016	0.0014	0.27
<i>trans</i> -11 <i>trans</i> -13 CLA	0.049	0.054	0.0079	0.52
<i>trans</i> -12 <i>trans</i> -14 CLA	0.003	0.003	0.0008	0.76
Other <i>trans,trans</i> CLA ¹²	0.015	0.013	0.0010	0.05
∑ CLA	0.587	0.598	0.0725	0.88
18:3n-3	0.730	0.717	0.0526	0.82
<i>cis</i> -9 <i>trans</i> -11 <i>trans</i> -15 18:3	0.006	0.004	0.0010	0.25
<i>cis</i> -9 <i>trans</i> -12 <i>cis</i> -15 18:3	0.009	0.008	0.0011	0.75
<i>trans</i> -9 <i>cis</i> -12 <i>cis</i> -15 18:3 ¹³	0.005	0.006	0.0006	0.06
<i>trans</i> -9 <i>trans</i> -12 <i>cis</i> -15 + <i>cis</i> -9 <i>cis</i> -12 <i>trans</i> -15 18:3	0.012	0.012	0.0010	0.87
<i>trans</i> -9 <i>trans</i> -12 <i>trans</i> -15 18:3	0.001	0.001	0.0003	0.85
20:0 ¹⁴	0.259	0.253	0.0141	0.69

<i>cis</i> -9 20:1	0.013	0.011	0.0014	0.24
<i>cis</i> -11 20:1	0.042	0.038	0.0037	0.31
<i>trans</i> -11 20:1	0.002	0.003	0.0011	0.30
20:2n-6	0.017	0.013	0.0012	0.02
20:3n-6	0.026	0.019	0.0020	0.01
20:3n-3	0.008	0.007	0.0006	0.32
20:4n-6	0.185	0.127	0.0155	<0.01
20:4n-3	0.002	0.002	0.0004	0.59
20:5n-3	0.058	0.047	0.0057	0.09
21:0	0.073	0.071	0.0065	0.75
22:0	0.094	0.093	0.0084	0.93
<i>cis</i> -13 22:1	0.007	0.007	0.0013	0.74
22:4n-6	0.023	0.013	0.0030	0.01
22:5n-6	0.010	0.006	0.0013	0.03
22:5n-3	0.122	0.091	0.0138	0.05
22:6n-3	0.041	0.032	0.0071	0.25
23:0	0.063	0.060	0.0077	0.70
24:0	0.034	0.034	0.0041	0.88
<i>cis</i> -15 24:1	0.007	0.007	0.0007	0.48
25:0	0.010	0.009	0.0026	0.84
∑ C20-22 n-6 PUFA	0.262	0.180	0.0210	<0.01
∑ C20-22 n-3 PUFA	0.233	0.182	0.0253	0.07
∑ de novo SFA	37.74	40.62	1.419	0.07
de novo SFA/ <i>cis</i> -9 18:1 ratio	3.35	4.10	0.354	0.07
Δ^9 - desaturation ratios				
<i>cis</i> -9 10:1/10:0	0.026	0.025	0.0020	0.46
<i>cis</i> -9 12:1/12:0	0.016	0.016	0.0018	0.78
<i>cis</i> -9 14:1/14:0	0.013	0.012	0.0009	0.52
<i>cis</i> -9 16:1/16:0	0.025	0.024	0.0019	0.88
<i>cis</i> -9 17:1/17:0	0.318	0.301	0.0240	0.50
<i>cis</i> -9 18:1/18:0	1.828	1.722	0.1508	0.50
Estimated milk fat melting point, °C	31.7	32.2	0.50	0.38

¹H-RFI: high residual feed intake group (low feed efficiency group; n = 6); L-RFI: low residual feed intake group (high feed efficiency group; n = 6). These ewes were also within the highest and the lowest feed efficiency-animals selected using the feed efficiency index (FEI).

²SED = standard error of the difference.

³Coelutes with *trans*-9 14:1 as a minor component.

⁴Coelutes with *cis*-7 16:1 as a minor component.

⁵Coelutes with *trans*-13+14 18:1 as minor components.

⁶Coelute with *trans*-10 *trans*-14 18:2 as a minor component.

⁷Coelutes with *cis*-9 *cis*-15 18:2 as a minor component.

⁸Coelutes with an 18:2 isomer of indeterminate double bond position.

⁹Contains *trans*-7 *cis*-9 and *trans*-8 *cis*-10 CLA as minor components.

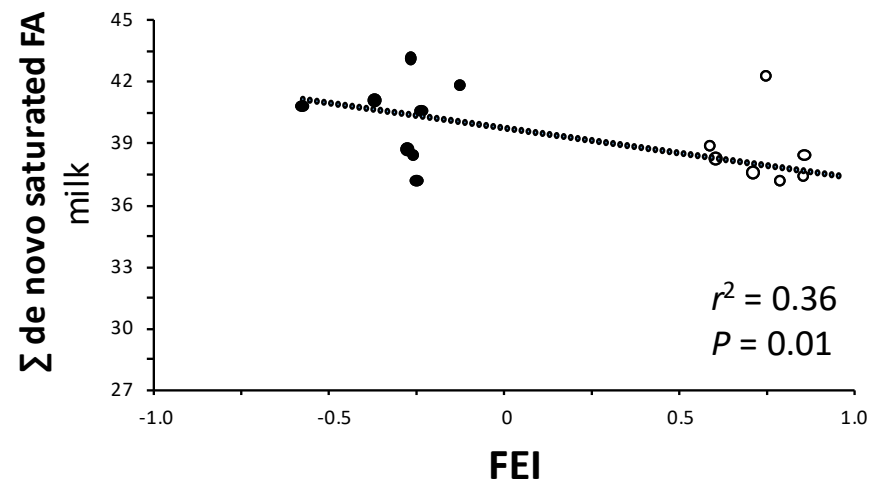
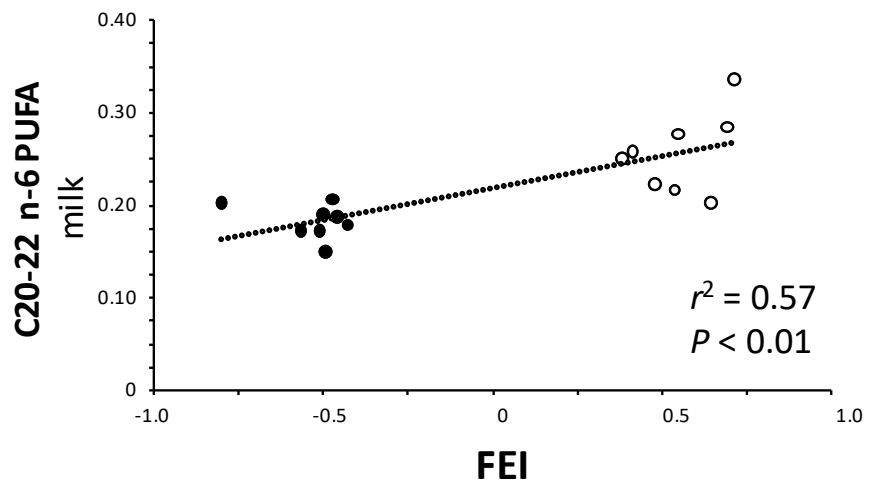
¹⁰Coelutes with an unidentified component.

¹¹Coelutes with an unidentified component.

¹²Sum of *trans*-8 *trans*-10, *trans*-9 *trans*-11, and *trans*-10 *trans*-12 CLA.

¹³Coelutes with *cis*-5 20:1 as a minor component.

¹⁴Coelutes with 18:3n-6 as a minor component.



● H-FE (high feed efficiency animals)

○ L-FE (low feed efficiency animals)

Supplementary Figure S1. Relationship between feed efficiency index (FEI) and potential biomarkers of this metric in dairy ewes divergent for feed efficiency