

Fatty acid composition of milk and fat from American Milking Devon cattle, round 2

Milk

Procedure- The samples were prepared according to the method of Chouinard (1999). Samples were analyzed according to the method of Snow (2010).

Results- The fatty acid composition of the 11 individual milk samples is present in Table 1.

Table 1: Fatty acid composition of individual samples

	one	two	three	four	five	six	seven	eight	nine	ten	eleven
C4:0	4.14	4.52	3.92	2.45	3.71	3.41	2.57	5.01	4.21	4.11	3.69
C6:0	2.25	2.52	1.94	1.22	2.25	1.96	1.47	2.80	2.61	2.21	2.20
C8:0	0.84	0.95	0.62	0.39	0.79	0.73	0.45	0.84	0.92	0.72	0.70
C10:0	1.85	2.10	1.29	0.93	1.52	1.72	0.95	1.73	2.10	1.25	1.20
C12:0	2.07	2.32	1.61	1.05	2.02	2.10	1.35	1.94	2.39	1.59	1.67
C14:0	8.35	8.72	7.16	5.19	7.82	9.08	6.94	7.67	8.46	7.23	7.90
C14:1 n5	0.54	0.53	0.77	0.54	0.43	0.56	0.66	0.48	0.30	0.62	0.61
C15:0	1.49	1.65	2.31	2.47	1.66	1.96	2.68	1.94	1.54	1.09	1.67
C16:0	25.99	26.54	25.89	24.01	27.99	24.32	24.89	26.95	27.50	26.08	27.09
C16:1 n7	2.60	2.82	3.06	2.98	2.55	2.62	3.61	2.30	1.91	2.62	3.08
C18:0	9.50	8.09	8.16	11.28	8.85	8.67	9.14	9.84	10.86	8.07	8.19
C18:1 t7	0.94	0.44	0.88	1.17	0.78	0.65	1.12	0.55	1.32	0.88	0.59
C18:1 n9	25.36	25.88	27.04	26.52	26.19	28.05	27.27	25.56	23.02	32.74	28.63
C18:2 n6	2.33	1.66	1.78	4.12	1.98	2.42	2.92	2.08	2.49	2.23	2.50
C18:3 n3	0.90	0.82	0.97	1.32	0.97	0.95	1.05	0.90	0.86	0.75	0.46
CLA 9-11	0.73	0.62	1.15	1.06	0.97	0.62	0.96	0.52	0.54	0.88	0.88

The average fatty acid composition of Devon milk from the eleven samples in this analysis is compared to the average American milk in Table 2.

Table 2: Fatty acid composition of Reference vs Devon milks in percent

Fatty acids	reference	Devon average
C4:0	4.15	3.79
C6:0	2.13	2.13
C8:0	1.19	0.72
C10:0	2.59	1.51
C12:0	2.87	1.83
C14:0	9.53	7.68
C14:1 n5	0.82	0.55
C15:0	0.89	1.86
C16:0	28.08	26.11
C16:1 n7	1.48	2.74
C18:0	11.68	9.15
C18:1 t7	1.58	0.85
C18:1 n9	23.58	26.93
C18:2 n6	3.19	2.41
C18:3 n3	0.38	0.90
CLA 9-11	0.55	0.81
Saturates	63.11	54.80
Monounsaturates	27.46	31.07
Polyunsaturates	4.12	4.13
N6:n3 ratio	8.39	2.67

Compared to the previous samples sent, this milk is a little higher in omega-6 fatty acids and also a little lower in CLA and omega-3 fatty acids. However, compared to typical supermarket milk, it still compares favorably.

Fat sample

Procedure- The fatty acids were prepared according to the method of O'Fallon (2007) and analyzed by the method of Snow (2010).

Results- The devon fat sample (from the muscle tissue) is compared to a reference sample in Table 3 and Figure 2. The same features are interesting here. I think the TVA (C18:1t7) level in the reference is way too high, but this was the only report on beef fat I could find. There is more CLA in the Devon fat, and a lower n6:n3 ratio, which is thought to be good.

Table 3: Fatty acid composition of Devon fat vs. reference

	Devon fat	Reference
C14:0	2.76	3.46
C14:1 n5	0.35	0.83
C15:0	0.85	0.66
C16:0	27.62	26.07
C16:1 n7	4.16	3.36
C17:0	1.51	1.61
C18:0	18.82	12.56
C18:1 n7t	1.53	7.97
C18:1n9	39.48	36.15
C18:1n7	0.35	
C18:2 n6	2.54	4.44
C20:0	0.02	0.25
C18:3 n3	0.74	0.23
C20:1 n9	0.14	0.08
CLA 9-11	0.67	0.29
C20:4 n6	0.98	0.85
C20:5 n3	0.22	0.17

References

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