



UFS study of Wagyu Fatty Acids

A study by the University of the Free State compared the fatty acid composition of a Fullblood Wagyu steak to other beef products including grass and grain fed commodity beef.

The Fullblood Wagyu steak had 38.35 grams of fat per 100g of meat compared to the commodity beef steaks which had 2.34 to 4.43 grams of fat per 100g.

Of interest to the health conscious, 43% of the total fatty acids in the Wagyu steak were Oleic acid compared to 33-36% in commodity beef. Oleic acid is a monounsaturated fatty acid associated with olive oil and a Mediterranean diet.

Because of the higher volumes of fatty acids in Wagyu, the Omega-3 fatty acids found are also potentially significant. The body can't make Omega-3 from scratch hence we must get them from food.

In conclusion, not only did the Wagyu steak have multiples more fatty acids per serving, the composition of the fatty acids are those associated with healthy diets and the health benefits associated with them.

Brand	Fullblood Wagyu	Wagyu Breeders Akaushi (Akaushi Wagyu)	Typical Grainfed
Marbling (g fat/100g meat)	38,35	15,76	4,43
Fatty acid composition (mg/100g meat):			
Common name:	Abbreviation:		
Lauric	C12:0	6,45	4,21
Myristic	C14:0	952,80	779,09
Myristoleic	C14:1c9	198,95	165,14
Pentadecylic	C15:0	73,13	67,67
Palmitic	C16:0	9182,52	6056,64
Palmitoleic	C16:1c9	1070,82	743,74
Phytanic	3,7,11,15 tetramethylhexadecanoic acid	0,00	0,00
Margaric	C17:0	211,58	160,43
Heptadecenoic	C17:1c10	159,70	110,26
Stearic acid	C18:0	4587,36	2444,34
Elaidic	C18:1t9	370,74	326,25
Oleic	C18:1c9	12850,42	6983,03
Vaccenic	C18:1t11	0,00	326,92
Nonoadecanoic	C19:0	27,96	21,88
Linolelaidic	C18:2t9,12 (n-6)	21,51	22,22
Linoleic	C18:2c9,12 (n-6)	767,83	232,99
Arachidic	C20:0	23,12	12,29
α-Linolenic	C18:3c9,12,15 (n-3)	90,87	42,42
Conjugated linoleic acid (CLA)	C18:2c9,11,11 (n-6) (CLA)	54,31	52,69
Erucic	C22:1c13	0,00	36,03
Arachidonic	C20:4c5,8,11,14 (n-6)	30,65	34,34
Eicosapentaenoic (EPA)	C20:5c5,8,11,14,17 (n-3)	0,00	0,00
Docosapentaenoic (DPA)	C22:5c7,10,13,16,19 (n-3)	0,00	0,00
(DHA) Docosahexanoic	C22:6c4,7,10,13,16,19 (n-3)	0,00	0,00
Fatty acid ratios:			
Total Saturated Fatty Acids (SFA) (mg/100g meat)	15064,93	9546,56	1986,66
Total Mono Unsaturated Fatty Acids (MUFA) (mg/100g meat)	14650,63	8691,38	1884,36
Total Poly Unsaturated Fatty Acids (PUFA) (mg/100g meat)	965,17	384,66	227,46
Total Omega- 6 Fatty Acids (n-6) (mg/100g meat)	874,30	342,24	199,72
Total Omega- 3 Fatty Acids (n-3) (mg/100g meat)	90,87	42,42	27,74



WAGYU
SOUTH AFRICA

Brand		Fullblood Wagyu	F1 Akaushi	Typical Grainfed	Typical Grassfed
Marbling (g fat/100g meat)		38,35	15,76	4,43	2,34
FAME (% of total fatty acids):					
Lauric	C12:0	0,02	0,03	0,03	0,04
Myristic	C14:0	2,88	4,30	3,41	2,97
Myristoleic	C14:1c9	0,62	0,91	0,68	0,55
Pentadecylic	C15:0	0,22	0,38	0,34	0,44
Palmitic	C16:0	27,98	34,34	29,23	27,33
Palmitoleic	C16:1c9	3,37	4,17	3,38	2,95
Phytanic	C20:0 3,7,11,15tetramethyl hexadecanoic acid	0,00	0,00	0,00	0,63
Margaric	C17:0	0,64	0,92	0,85	1,10
Heptadecenoic	C17:1c10	0,47	0,62	0,50	0,62
Stearic acid	C18:0	13,91	14,00	15,77	16,61
Elaidic	C18:1t9	1,16	1,70	2,53	2,87
Oleic	C18:1c9	43,38	36,25	36,40	33,73
Vaccenic	C18:1t11	2,24	0,00	2,11	1,51
Nonoadecanoic	C19:0	0,08	0,13	0,06	0,10
Linolelaidic	C18:2t9,12 (n-6)	0,00	0,12	0,14	0,20
Linoleic	C18:2c9,12 (n-6)	2,39	1,32	3,25	5,08
Arachidic	C20:0	0,05	0,06	0,08	0,12
α-Linolenic	C18:3c9,12,15 (n-3)	0,28	0,22	0,33	0,65
Conjugated linoleic acid (CLA)	C18:2c9,t11 (CLA)	0,17	0,30	0,22	0,30
Erucic	C22:1c13	0,05	0,08	0,11	0,25
Arachidonic	C20:4c5,8,11,14 (n-6)	0,10	0,14	0,44	1,23
k	C20:5c5,8,11,14,17 (n-3)	0,00	0,00	0,05	0,26
Docosapentaenoic	C22:5c7,10,13,16,19 (n-3)	0,00	0,00	0,10	0,44
Docosahehexanoic	C22:6c4,7,10,13,16,19 (n-3)	0,00	0,00	0,00	0,03
Fatty acid Ratios					
Total Saturated Fatty Acids (SFA)	SFA	45,78	54,15	49,76	49,35
Total Mono Unsaturated Fatty Acids	MUFA	51,28	43,74	45,70	42,47
Total Poly Unsaturated Fatty Acids (PUFA		2,94	2,12	4,54	8,19
Total Omega- 6 Fatty Acids (n-6)	n-6	2,65	1,89	4,05	6,81
Total Omega- 3 Fatty Acids (n-3)	n-3	0,28	0,22	0,48	1,38
PUFA/SFA	PUFA/SFA	0,06	0,04	0,09	0,17
Omega-6/Omega-3	n-6/n-3	9,35	8,42	10,81	7,58