Food Analyses of the Department of Human Nutrition
(Voedingsmiddelenanalyses van de Vakgroep Humane Voeding)

Volume III

NUTRIENT COMPOSITION OF 167 FOOD ITEMS FROM GHANA, THE PHILIPPINES, ITALY AND FINLAND

VAKGROEP HUMANE VOEDING

FOOD ANALYSES OF THE DEPARTMENT OF HUMAN NUTRITION
(Voedingsmiddelenanalyses van de Vakgroep Humane Voeding)

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Nutrient Composition of 167 Food Items from Ghana, The Philippines, Italy and Finland

S. Westenbrink, J. T. Knuiman, C. E. West, L. van der Heijden, P. van de Bovenkamp, E. A. M. Koot-Gronsveld, J. G. Kosmeijer-Schuil and M. B. Katan*

* to whom correspondence should be addressed.

Participants in the study

Ghana:	P. Lokko; Food Research Institute, P.O. Box M20, Accra. J. O. M. Pobee; Department of Medicine and Therapeutics, University of Ghana, Medical School, P.O. Box 4236, Accra.
The Philippines:	G. M. Villavieja, J. Bulatao-Jayme; Food and Nutrition Research Institute, Pedro Gil Street, Ermita, Manila-2801.
Italy:	A. Ferro-Luzzi, A. M. Ferrini, S. Sette, C. Scaccini; Istituto Nazionale della Nutrizione, Via Ardeatina 546, 00161 Roma.
Finland:	L. Virkkunen; Department of Nutrition, University of Helsinki, SF-00710 Helsinki 71.
	L. Räsänen; Department of Public Health, University of Tampere, P.O. Box 607, SF-33101 Tampere 10.
	J. Viikari; Department of Medicine, University Central Hospital, SF-20520 Turku 52.

May, 1983
Department of Human Nutrition, Agricultural University, De Dreijen 12, 6703 BC Wageningen, The Netherlands

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PREFACE

This report forms Volume III of a series entitled "Food analyses of the Department of Human Nutrition" (Voedingsmiddelenanalyses van de Vakgroep Humane Voeding). The series is published by the Department of Human Nutrition, Agricultural University, Wageningen, The Netherlands, for the benefit of scientists and medical workers. The present volume is published in English; other volumes, which describe analyses of Dutch foods only, have been or will be published in Dutch. We are grafeful to the Netherlands Heart Foundation for the financial support which made these analyses possible, and to all those who have contributed in other ways to the research described here.

INTRODUCTION

In 1981, an international study on food consumption and serum lipids in boys was carried out in Ghana, The Philippines, Italy, Finland and The Netherlands. This study was carried out by workers from the Department of Human Nutrition of the Agricultural University in Wageningen, The Netherlands, in cooperation with scientists in institutes in the participating countries. The results of this study have been published (1).

As a part of the study, food samples were collected and analysed to obtain information on the nutrient composition of those food items consumed by the boys for which data were unavailable. Particular attention was paid to food items rich in energy, rich in fat and rich in cholesterol, especially those which contributed in a major way to the intake of macronutrients and cholesterol for a relatively large proportion of the boys. The analytical results obtained were also needed to check the corresponding data in the local food composition tables.

Samples were analysed for the content of water, protein, fat and cholesterol and the fatty acid composition of the fat was also determined. The total carbohydrate content was calculated by difference and thus includes dietary fibre and ash. All analyses were carried out in the Food Analysis Laboratory of the Department of Human Nutrition in Wageningen.

MATERIALS AND METHODS

Collection of food samples

The procedures followed in this study have been described in a working plan (2). Samples were collected in the regions where the study was carried out. The foods were bought from local markets or in local shops or, in the case of home-prepared dishes, collected in the homes. The minimum amount of the product collected was 250 grams. The number of samples collected was one for samples of a brand of canned food or a food item in a standard package, such as margarine, tinned sardines in oil etc., and three to seven for samples of foods with a larger variation in composition.

After collection, the products were stored at −20°C, except for products that could be stored without freezing, such as canned foods, oils, cookies etc. Solid foods were packed in properly sealed plastic bags; liquid foods in properly closed polyethylene flasks. Samples were transported frozen to the Netherlands by air express using styrofoam boxes with dry ice (Italy, Finland, The Philippines) or cooling elements (Ghana), and were stored at −20°C. The analyses were carried out within four months after arrival.

Analytical methods

The amount of proteins was estimated according to the method of Kjeldahl as described (3, 4) with the modification that 7 g Na_2SO_4 and 7 mg selenium were used as catalysts. Factors for the conversion of nitrogen values to protein used were according to the guidelines given by Southgate (5). If no specific factor was given the factor 6.25 was used.

The amount of fat was estimated using the method described by Folch et al. (6). For the analysis of the fatty acid composition of the lipids, fatty acid methyl esters were prepared according to Metcalfe et al. (7). After esterification, the fatty acid metyl esters were separated using a gas chromatograph (Model 2100, Varian Associates, Palo Alto, CA 94303, U.S.A.) with flame ionisation detector. The chromatograph was fitted with a glass column (180 cm × 2 mm) packed with Chromosorb WHP (80/100 mesh) coated with Silar 5CP (10% w/w) obtained from Chrompack (Middelburg, The Netherlands). The operating conditions were: column temperature, 210°C; injector and detector temperature, 240°C; and helium flow rate 30 ml/min. For milk products, the operation conditions were: initial temperature 80°C, final temperature 210°C, rise 8°C/min immediately after sample injection. The fatty acid composition of fish lipids was analysed using a glass column (180 cm × 2 mm) packed with SP 2330 (10% w/w) on 100/120 Chromosorb W-AW operating at 200°C with helium (30 ml/min) as carrier gas.

The proportions of the individual fatty acids were calculated as proportions by weight of the sum of the saturated fatty acid methyl esters with chain length of 4, 6, 8, 10, 12, 14, 15, 16, 17, 18, 20, 22 or 24 carbon atoms, the mono-unsaturated fatty acids with chain length of 14, 16, 18, 20, 22 or 24 carbon atoms and the polyunsaturated fatty acids $C_{18:2}$, $C_{18:3}$, $C_{20:2}$, $C_{20:3}$, $C_{20:4}$, $C_{22:4}$ and $C_{22:6}$. These fatty acids accounted for at least 95% of the total fatty acids.

Cholesterol and other sterols were isolated from the foods according to Van de Bovenkamp and Katan (8) using toluene as solvent instead of benzene. The sterols were separated according to Nordby and Nagy (9) using a gas chromatograph Model 427 (Packard, Delft, The Netherlands) with a flame ionisation detector. The chromatograph was fitted with a glass column (180 cm × 2 mm) packed with Supelcoport (100/120 mesh) coated with SP 2250 (3% w/w) obtained from Supelco (Bellefonte, PA 16823, U.S.A.). The operating conditions were: column temperature, 265°C, injector and detector temperature, 285°C and 300°C; and helium flow rate 30 ml/min.

Moisture was determined as the weight loss after overnight drying of a duplicate sample in a vacuum oven at 70°C as described by Ballschmieter (10). Carbohydrates including dietary fibre and ash were estimated as total weight minus water, protein, fat and ash.

RESULTS AND DISCUSSION

Data on the samples of the foods taken for analysis are given in Appendices 1 to 4. The data in the appendices and the food analyses themselves (Tables 1 to 8) are arranged first, by the country in which the foods were collected (Ghana, The Philippines, Italy and Finland); secondly, by class of food; and thirdly by the number used in the local food composition table. For reference purposes, the laboratory code for the analyses are also included in the tables. Data on the proximal analysis, cholesterol and, where measured, phytosterol content and the proportion of the various fatty acid classes of the fat (saturated, mono-unsaturated and polyunsaturated fatty acids) are given in Tables 1, 2, 3 and 4 while data on the fatty acid composition of the fat present in the foods are given in Tables 5, 6, 7 and 8.

The main aim of the work presented here was to collect information on the nutrient composition of unknown products for our research project thus enabling a more precise estimate of the daily nutrient intake of the children participating in the study. By publishing the report in this way, it is hoped that much of these data will be incorporated into the local food composition tables so that the data can become more generally available.

The second aim of the work was to collect information to enable us to compare the data in the different local food composition tables. For this purpose, a limited number of products were analysed as shown in Table 9, the number of those products analysed for comparative purposes in which the analyses differed by more than 5 g/100 g edible portion from the data in the food composition tables are given. The greatest number of products with such differences are found for the analysis of water, which usually consists of more than 50% of the product or for carbohydrate which often makes up a high proportion of the food and for which the data is more prone to error as it has been calculated by difference.

In Table 10, products are listed, in which the present data and that in the local food composition tables differ by more than 5 g/100 g edible portion. These differences are due not only to analytical error but also to differences in the products analysed. Such differences could be attributable to the natural variation in the product, species or strain of the original material itself, time of year, ripeness, feeding of the plant or animal and the method of food preparation (for example, cleaning and cutting of meat or fish), different methods of food preparation, etc.

In conclusion, it can be said that the data from the present analyses do not differ markedly from the data in the local food composition tables for most products. Most of the variation is due to differences in the content of water and cabohydrate. It was also seen that meat, dairy products and vegetable oils collected in the various countries had a similar fatty acid composition. Thus it would appear that such data obtained in one country would be applicable to other countries.

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Table 1. Proximate composition, content of cholesterol and phytosterols and the proportion of fatty acids as saturated, mono-unsaturated and polyunsaturated fatty acids of food samples from Ghana

Food table no.	Food	Lab code	Proximate composition, weight/100 g edible portion						Proportion of classes of fatty acids g/100 g total fatty acids[1]			
			Water g	Protein g	Fat g	Total carbohydrate g	Cholesterol mg	Phytosterols mg	SFA	MUFA	PUFA	Not identified
Cereal products												
10	akassa, koko	554	93.8	0.5	0.4	5.3	—[2]	—	—	—	—	—
11	akpler	586	66.6	1.4	0.8	31.2	—	—	—	—	—	—
13	banku	555	70.6	2.7	1.3	25.4	—	—	—	—	—	—
19	kenkey, Ga	556	64.2	3.6	1.7	30.5	—	—	—	—	—	—
20	kenkey, Fante	557	70.5	3.0	1.4	25.1	—	—	—	—	—	—
29	rice, raw	558	8.4	8.1	1.0	82.5	—	—	—	—	—	—
31	rice, cooked	559	64.7	2.9	0.4	32.0	—	—	—	—	—	—
35	wheat bread	560	24.3	11.7	3.7	60.3	—	—	25.8	16.6	57.6	—
37	togbei[3]	573	28.0	9.5	6.9	55.6	—	—	86.8	8.3	4.3	0.6
350	biscuits	582	35.4	8.8	6.7	49.1	—	—	36.6	43.7	12.6	7.2
429	ricewater	609	90.6	1.0	0.3	8.1	—	—	—	—	—	—
434	wheat	610	62.4	4.6	1.8	31.2	—	—	—	—	—	—
Starchy roots and fruits												
39	cassava, raw	561	57.2	0.7	0.5	41.6	—	—	—	—	—	—
40	cassava, boiled	587	59.6	0.7	0.5	39.2	—	—	—	—	—	—
44	cassava balls, fried	588	19.5	0.7	6.8	73.0	—	—	88.6	8.8	2.4	0.1
46	gari	562	7.7	0.9	1.1	90.3	—	—	—	—	—	—
47	kokonte	563	71.1	0.5	0.5	27.9	—	—	—	—	—	—
49	yake yake	589	53.2	0.4	0.5	45.9	—	—	—	—	—	—
53	cocoyam, boiled	564	59.2	3.0	0.6	37.2	—	—	—	—	—	—
57	plantain, unripe boiled	565	62.9	1.2	0.8	35.1	—	—	—	—	—	—
58	plantain, ripe boiled	566	61.8	1.1	0.7	36.4	—	—	—	—	—	—
59	plantain, roasted	567	48.2	1.7	0.7	49.4	—	—	—	—	—	—
61	plantain, fufu	568	63.1	0.7	0.4	35.8	—	—	—	—	—	—
67	yam, raw	569	63.0	2.1	0.2	34.7	—	—	—	—	—	—
68	yam, boiled	570	61.5	1.8	0.3	36.4	—	—	—	—	—	—
71	yam[3]	577	45.9	3.3	5.5	45.3	—	—	66.3	20.3	13.1	0.2
151	banana	571	68.1	1.3	0.3	30.2	—	—	—	—	—	—
330	plantain, ripe[4]	574	50.2	1.4	2.7	45.7	—	—	76.4	16.7	5.7	1.2
331	plantain, ripe[3]	576	46.5	1.5	7.1	44.9	—	—	90.8	6.6	2.6	—
335	cocoyam, porridge	579	76.0	1.3	4.5	18.2	—	—	54.7	35.5	9.9	—
454	cocoyam[4]	574	30.8	3.4	3.6	62.2	—	—	77.4	17.3	3.6	1.7
559	plantain balls, ripe[3]	611	37.5	2.6	13.5	46.5	—	—	75.5	19.1	5.4	—
Legumes												
336	beans[5]	580	72.2	5.5	5.2	17.1	—	—	48.4	37.5	13.9	0.2
Nuts and seeds												
88	groundnuts, roasted	578	10.1	25.6	52.2	12.1	—	—	24.1	49.2	26.5	0.1
102	coconut flesh	590	86.4	0.7	4.0	8.9	—	—	81.3	13.4	5.2	0.1
104	coconut milk	591	91.9	0.2	0.2	7.7	—	—	—	—	—	—
Soups												
167	groundnut soup	594	70.2	6.4	10.3	13.1	5	24	27.0	47.1	24.6	1.3
168	light soup	595	93.0	0.8	0.2	6.0	—	—	—	—	—	—
170	okro soup	597	88.9	1.4	1.9	7.8	5	5	58.5	34.0	4.4	3.1
173	palm soup	550	82.0	1.2	13.9	2.9	3	6	50.9	39.0	9.7	0.4
570	okro soup[5]	615	85.5	1.7	9.7	3.1	—	—	49.4	40.2	10.4	—

Table 1, continued

Food table no.	Food	Lab code	Proximate composition, weight/100 g edible portion						Proportion of classes of fatty acids, g/100 g total fatty acids[1]			
			Water g	Protein g	Fat g	Total carbo-hydrate g	Choles-terol mg	Phytos-terols mg	SFA	MUFA	PUFA	Not ident-ified
Stews												
164	agushie stew	592	59.4	5.4	25.8	9.4	5	78	43.6	31.5	24.8	0.1
165	bean stew	593	62.6	6.6	11.6	19.2	6	30	47.8	39.2	13.1	—
169	nkontomire stew	596	63.0	1.6	24.9	10.5	2	71	49.7	37.2	13.0	0.1
171	okro and garden egg stew	598	64.8	2.0	21.3	11.9	25	39	47.7	38.4	13.4	0.5
335	pie	608	19.9	11.1	16.3	52.7	5	52	39.2	30.4	30.5	—
339	rice and stew	549	66.9	2.4	2.1	28.6	1	6	81.1	11.7	6.4	0.8
340	rice and beans	581	62.7	2.8	6.9	27.6	—	—	74.9	19.2	5.8	0.1
572	garden egg stew	616	69.7	2.9	19.7	7.7	16	33	48.7	37.7	13.4	0.2
Sauces												
172	palaver sauce	599	58.7	3.4	30.2	7.7	5	86	47.2	35.2	17.4	0.2
566	gravy[3]	612	46.1	0.9	44.7	8.3	1	42	91.8	6.6	1.7	—
567	gravy[4]	613	43.4	0.8	46.2	9.6	3	64	85.1	12.4	2.4	—
568	gravy[5]	614	58.4	1.0	31.5	9.1	5	50	48.2	38.6	13.1	0.1
Meat												
197	cowhide	554	75.9	25.5	0.5	—	21	—	47.1	42.0	2.7	8.3
199	snails	542	75.5	16.3	1.5	—	140	—	27.8	40.6	26.1	5.5
Fish and shell-fish												
217	anchovy, smoked	544	10.9	65.9	8.9	—	317	—	37.0	17.7	38.4	6.8
218	anchovy, sun-dried	545	9.1	65.4	7.6	—	364	—	39.2	18.2	36.8	5.8
226	kako	600	31.1	40.7	2.4	—	142	—	44.9	28.1	18.8	8.2
228	crab	601	59.5	13.0	1.1	—	52	—	28.4	28.2	33.4	10.0
233	mackerel, smoked	551	61.5	25.4	11.1	—	93	—	30.2	44.3	24.6	1.3
239	mackerel, tomatoes	552	59.9	12.4	23.6	—	56	—	22.3	46.4	29.3	2.0
249	sardines, smoked	543	10.0	70.0	8.5	—	370	—	39.5	17.7	37.4	5.4
250	sardines, fried[3]	603	3.3	39.4	36.6	—	189	59	81.2	13.8	3.6	3.9
260	sardines, canned	553	52.1	20.6	22.4	—	78	89	16.8	39.3	43.7	0.3
262	seabream, smoked	546	58.9	37.8	2.9	—	124	—	38.5	14.7	41.0	5.8
270	triggerfish	604	44.7	34.8	2.0	—	124	—	45.5	20.6	20.7	13.1
272	tuna, smoked	547	62.3	31.8	1.9	—	63	—	51.2	29.4	14.7	4.7
282	tilapia, salted	605	37.8	37.9	4.8	—	160	—	51.7	31.1	12.7	4.5
341	herring, smoked	541	54.5	43.5	3.2	—	103	—	45.7	25.8	26.9	1.6
679	tilapia[4]	617	10.9	36.4	35.6	—	239	62	77.4	17.4	5.2	—
683	tilapia[3]	548	10.8	36.5	40.5	—	169	39	72.2	21.7	6.1	—
684	fishmix, smoked	618	43.9	47.6	4.4	—	256	—	38.4	25.3	35.9	0.4
6175	fishmix	620	15.8	35.5	38.6	—	254	—	78.4	15.5	5.1	1.0
Dairy products												
240	milk, 'Nestlé'	602	67.9	7.7	8.4	16.0	26	—	60.8	32.1	3.5	3.6
Oils and fats												
308	coconut oil	583	—	—	—	—	—	—	79.9	12.6	7.5	—
311	palm oil	584	—	—	—	—	—	—	49.4	40.3	10.1	0.2
711	palm kernel oil	585	—	—	—	—	—	—	83.7	15.0	3.6	—
712	margarine	619	15.3	—	84.7	—	143	56	40.9	44.5	8.0	6.6
Miscellaneous												
332	toffee	606	52.7	0.3	0.4	46.6	—	—	—	—	—	—
334	milk candy	607	2.6	17.1	0.5	79.8	12	—	—	—	—	—
351	sugar cane	572	79.8	0.3	0.2	19.7	—	—	—	—	—	—

[1] Proportion of fatty acids calculated as proportion of fatty acid methyl esters by weight SFA, saturated fatty acids; MUFA, mono-unsaturated fatty acids; PUFA, polyunsaturated fatty acids
[2] —, not measured or calculated
[3] Prepared using coconut oil
[4] Prepared using palm kernel oil
[5] Prepared using palm oil

Table 2. Proximate composition, content of cholesterol and the proportion of fatty acids as saturated, mono-unsaturated and poly-unsaturated fatty acids of food samples from The Philippines

Food table no.	Food	Lab code	Proximate composition, weight/100 g edible portion					Proportion of classes of fatty acids, g/100 g total fatty acids[1]			
			Water g	Protein g	Fat g	Total carbo-hydrate g	Choles-terol mg	SFA	MUFA	PUFA	Not ident-ified
Cereal products											
31	mike, luto	755	51.9	7.2	1.3	39.6	—[2]	68.7	10.1	20.7	0.5
967	mamon	742	15.2	5.9	15.2	63.7	—	85.7	8.4	4.7	1.2
972	american loaf	743	25.6	10.7	5.4	58.3	—	69.9	11.6	14.7	4.8
978	pan de sal (bread)	744	26.3	8.4	4.7	60.6	—	70.3	10.6	16.1	3.0
1351	biscuits marie	781	4.2	9.1	9.1	77.6	10	75.6	11.9	11.0	1.5
1703	biscuits favorita										
1704	rice krupek	782	3.3	6.7	17.4	72.6	—	89.4	7.1	3.5	—
1710	fried corn grits	784	3.4	8.4	19.5	68.7	—	75.9	12.5	8.9	2.7
Nuts and seeds											
333	coconut milk	763	71.2	2.2	17.4	9.2	—	91.3	7.4	1.3	—
1015	peanut butter	780	0.5	21.3	43.4	34.8	—	32.5	37.2	29.9	0.4
1712	fried peanuts[3]	785	1.7	23.9	47.0	27.4	—	31.4	36.1	31.5	1.0
Soups, stews and sauces											
1068	dinuguan	751	80.9	7.6	9.8	1.7	48	55.8	37.9	4.9	1.4
1587	bopiz	779	80.3	8.8	7.7	3.2	150	67.4	22.9	8.5	1.2
1701	beef mami	753	86.4	2.8	2.1	8.7	12	55.4	36.8	6.1	1.7
1705	mungbean sotanghon	752	83.6	3.5	1.2	11.7	—	81.3	8.6	9.9	0.2
Meat and eggs											
595	beef, lean prepared[3]	761	51.6	34.1	9.5	—	99	63.7	28.2	6.9	1.2
664	chicken, lean meat prepared[3]	774	58.4	27.3	10.9	—	115	61.3	27.2	11.3	0.2
1089	cured pork meat, raw	749	65.4	16.8	8.6	—	30	46.1	42.3	9.4	2.2
1102	hot dogs, unprepared	746	57.9	11.5	27.2	—	55	39.7	47.4	10.9	2.0
1165	balut	762	69.1	13.9	15.5	—	770	37.9	53.0	7.3	1.8
1816	chicken wings, prepared[3]	773	42.5	32.3	26.3	—	213	58.6	29.5	11.5	0.4
1817	hot dogs, prepared[3]	745	53.7	13.8	26.5	—	60	45.4	43.7	9.2	1.7
1818	longanisa, prepared[3]	770	23.6	10.9	64.0	—	90	49.4	40.1	10.3	0.4
1819	cured pork meat, prepared[3]	760	44.2	29.5	14.5	—	94	54.1	34.1	11.1	0.7
1820	pork, lean meat prepared[3]	771	43.6	18.7	28.9	—	99	57.1	35.2	7.4	0.3
1821	pork, medium fat prepared[3]	772	28.8	17.8	51.9	—	80	52.0	38.9	8.5	0.6
Fish and shell-fish											
749	fish, fat raw (Bangus)	747	72.3	19.5	7.1	—	63	52.1	38.8	12.6	—
1226	ayungin, dried	759	25.4	38.2	7.1	—	528	50.0	31.2	13.9	4.9
1810	fish fat, prepared (Bangus)[3]	748	58.6	22.6	13.9	—	91	63.2	25.8	8.0	3.0
1811	tunsoy dried, prepared[3]	768	26.6	41.8	15.0	—	137	84.6	12.9	5.1	—
1812	tamban dried, prepared[3]	769	29.6	40.8	12.3	—	126	78.7	14.7	6.4	0.2
1814	tamban smoked, prepared[3]	767	41.5	34.0	19.0	—	110	73.4	15.8	12.0	—
1830	fish, lean raw	775	78.7	18.2	1.1	—	68	50.2	25.9	21.7	2.3
1831	fish, lean prepared[3]	776	60.4	23.8	9.7	—	98	83.7	11.4	5.7	—
1832	fish, medium fat raw	777	75.4	20.9	3.1	—	110	55.0	31.1	10.8	3.2
1833	fish, medium fat prepared[3]	778	52.7	30.1	15.9	—	106	84.5	10.4	4.5	0.6
Dairy products											
1153	evaporated filled milk	786	73.4	7.7	7.3	11.6	5	84.9	9.6	5.1	0.4
1155	condensed sweetened filled milk	783	25.2	8.6	7.9	58.3	5	83.9	10.2	5.9	—
Oils and fats											
1302	margarine	757	10.0	—	89.5	—	—	86.8	9.9	2.8	0.5
1711	margarine-dairy cream	756	17.6	—	83.0	—	—	76.5	19.5	3.7	0.3
Drinks											
1310	ceylon moss beverage	754	91.8	—	—	8.2	—	—	—	—	—
Miscellaneous											
1029	turon	741	43.4	2.0	11.7	42.9	—	86.8	8.1	4.2	0.9
1708	halo-halo	750	77.7	1.6	0.9	19.8	—	73.3	15.7	8.9	2.1

[1] Proportion of fatty acids calculated as proportion of fatty acid estes esta by weight. SFA, saturated fatty acids; MUFA mono-unsaturated fatty acids; PUFA, polyunsaturated fatty acids.
[2] —, not measured or calculated
[3] Prepared using coconut oil

Table 3. Proximate composition, content of cholesterol and the proportion of fatty acids as saturated, mono-unsaturated and poly-unsaturated fatty acids of food samples from Italy

Food table no.	Food	Lab code	Proximate composition, weight/100 g edible portion					Proportion of classes of fatty acids, g/100 g total fatty acids[1]			
			Water g	Protein g	Fat g	Total carbo-hydrate g	Choles-terol mg	SFA	MUFA	PUFA	Not ident-ified
Cereal products											
010098	biscotti farciti A	697	0.4	4.9	25.3	69.4	—[2]	86.3	5.5	5.0	3.2
010098	biscotti farciti B	698	1.2	7.1	23.2	68.5	20	57.7	28.6	16.5	—
010098	biscotti farciti C	699	0.8	4.7	24.3	70.2	—	71.8	20.5	7.2	0.5
010098	biscotti farciti D	700	1.6	5.3	26.9	66.2	—	49.7	36.6	9.2	4.5
010099	pane biscotti	696	7.7	10.5	2.4	79.4	—	26.3	14.1	54.8	4.8
012980	tea pastry, short pastry, chocolate coated	719	4.5	6.1	30.0	59.4	46	61.3	28.5	9.3	0.9
012981	tea pastry, short pastry	716	4.9	6.4	25.2	63.5	54	45.8	36.1	13.6	4.5
012982	tea pastry, amaretti	717	3.6	8.9	22.6	68.5	18	17.8	66.8	14.3	1.1
012991	colomba-panettone	718	15.9	6.5	16.7	60.9	76	48.2	39.4	10.5	1.9
012993	sfogliatella	694	30.5	7.9	8.8	52.8	12	38.4	39.8	14.9	6.9
012994	tartufi	703	10.1	6.2	27.3	56.4	42	57.4	33.7	7.8	1.1
012995	diplomatici	693	30.7	5.2	20.4	43.7	89	46.9	43.0	10.6	—
012996	deliziosa	695	12.8	6.6	21.8	58.8	26	43.0	42.1	11.3	3.6
012997	pesca	715	46.4	4.5	12.2	36.9	72	47.5	40.9	11.0	0.7
Sauces											
013998	gran ragu	692	72.0	5.9	13.3	8.6	16	19.3	42.2	37.6	0.9
Meat											
011149	salsiccia fresca	689	41.2	19.1	35.5	—	94	43.2	46.4	10.3	0.1
011150	salsiccia secca	688	16.1	33.8	55.5	—	150	40.2	49.0	9.4	1.4
011155	mortadella suino	686	45.8	13.3	38.9	—	91	39.5	49.9	9.5	1.1
011198	salame napoletano	723	17.2	23.6	47.1	—	122	37.3	50.9	10.9	0.9
011199	soppressata	687	29.6	28.8	31.3	—	116	38.3	51.8	8.8	1.1
012992	sanguinaccio	691	52.7	8.8	8.6	29.9	43	57.2	36.1	6.1	0.6
Dairy products											
011600	latte di capra	709	87.2	3.3	4.5	5.0	20	67.5	26.6	2.6	3.3
011793	ricotta fresh cheese, cow's milk	725	72.6	7.8	13.9	5.7	57	64.0	28.6	3.3	4.1
011794	mozzarella	722	61.5	22.4	13.3	2.8	46	65.0	27.7	3.3	4.0
011795	ricotta fresh cheese, goat's milk	724	53.7	13.3	29.8	3.2	107	68.0	24.6	4.3	3.1
011796	mozzarella bufala	685	62.7	15.7	18.3	3.3	56	66.3	26.9	3.4	3.4
011797	formaggio di capra fresco	684	32.1	23.4	30.7	13.8	122	70.5	23.0	3.2	3.3
011798	formaggio di capra stagionato	704	17.5	32.2	31.0	19.3	163	67.2	25.7	4.1	3.0
012986	zuppa inglesa	721	25.7	4.8	11.6	57.9	49	40.7	41.8	10.9	6.6
012990	ice cream mix, cream base	727	46.8	3.5	18.1	31.6	8	58.7	32.1	9.0	0.2
012998	gelati confezionati con biscotti	683	39.8	5.1	9.5	45.6	18	63.0	26.2	8.2	2.6
012999	gelati confezionati cornetti	682	47.2	3.8	14.5	34.5	7	82.8	13.6	2.9	0.7
015099	sofficini, fried	720	48.4	7.2	15.8	28.6	31	20.8	26.2	50.2	2.8
Oils and fats											
010901	olive oil	708	—	—	100	—	—	13.9	76.3	10.1	—
Miscellaneous											
010382	patatine	702	2.2	5.3	35.7	56.8	—	16.8	24.7	58.2	0.3
012987	ice cream, locally prepared	726	63.0	1.7	0.7	34.6	—	—	—	—	—

[1] Proportion of fatty acids calculated proportion of fatty acids methyl estes by weight. SFA, saturated fatty acids, MUFA, mono-saturated fatty acids; PUFA, poly-saturated fatty acids

[2] —, not measured or calculated

Table 4. Proximate composition, content of cholesterol and the proportion of fatty acids as saturated, mono-unsaturated and poly-unsaturated fatty acids of food samples from Finland

Food table no.	Food	Lab code	Proximate composition, weight/100 g edible portion					Proportion of classes of fatty acids, g/100 g total fatty acids[1]			
			Water g	Protein g	Fat g	Total carbo-hydrate g	Choles-terol mg	SFA	MUFA	PUFA	Not ident-ified
Meat											
663	laurantai	733	61.1	9.0	20.0	9.9	37	40.6	51.1	7.8	1.0
664	hot dog	740	53.9	10.2	20.1	15.8	48	42.8	48.6	8.6	0.8
665	lenkki	731	59.6	9.2	19.5	11.7	43	43.7	49.8	6.5	0.6
668	dry sausage	739	25.8	14.5	44.4	15.3	80	44.2	49.3	6.5	1.0
669	maksamakkara	736	54.6	13.4	24.8	7.2	88	41.2	50.2	8.5	0.8
672	cooked meat sausage	730	65.1	10.9	13.7	10.3	40	41.2	51.6	7.2	1.2
675	balkamin	738	53.8	13.9	25.4	6.9	53	43.6	49.0	7.4	0.6
Dairy products											
524	cheese, emmental	734	35.9	29.7	28.6	5.8	84	64.2	29.7	3.4	2.8
525	cheese, edam	735	40.0	29.7	21.9	8.4	66	64.3	30.0	3.6	2.1
540	ice cream	737	63.5	4.7	14.7	17.1	44	65.0	25.1	4.3	5.6
Oils and fats											
404	margarine	732	16.1	0.4	83.5	—[2]	10	22.5	36.4	41.4	—

[1] Proportion of fatty acids calculated in proportion of fatty acids methyl estes by weight. SFA, saturated fatty acids; MUFA, mono-unsaturated fatty acids; PUFA, polyunsaturated fatty accids

[2] —, not measured or calculated

Table 5. Fatty acid composition of food samples from Ghana

Food table no.	Food	Lab code	Fatty acid composition, g/100 g total fatty acids[1]										
			4:0	6:0	8:0	10:0	12:0	14:0	14:1	15:0	16:0	16:1	17:0
Cereal products													
35	wheatbread	560	—[2]	—	—	—	—	0.4	—	0.1	20.6	—	0.1
37	togbei[4]	573	—	—	5.8	4.9	42.3	19.2	—	—	11.3	—	—
350	biscuits	582	—	—	—	0.9	tr.[3]	5.0	—	0.3	17.3	4.2	0.7
Starchy roots and fruits													
44	cassava balls, fried	588	—	—	5.5	4.9	44.4	20.2	—	—	10.4	—	—
71	yam[4]	577	—	—	3.0	3.0	28.5	13.3	—	—	13.8	2.3	—
330	plantain, ripe[5]	574	—	—	—	2.8	43.7	15.5	—	—	11.1	—	—
331	plantain, ripe[4]	576	—	—	7.6	5.8	46.0	18.6	—	—	9.7	—	—
335	cocoyam, porridge	579	—	—	—	0.3	3.7	2.6	—	—	42.0	0.1	—
454	cocoyam[5]	574	—	—	—	5.9	45.3	16.0	—	—	10.2	—	—
559	plantain balls, ripe[4]	611	—	—	5.1	3.9	31.1	12.4	—	—	19.5	—	—
Legumes													
336	beans[6]	580	—	—	—	—	0.8	1.0	—	—	39.6	0.1	—
Nuts and seeds													
88	groundnuts, roasted	578	—	—	—	—	0.1	—	—	—	12.2	—	—
102	coconut flesh	590	—	—	4.5	3.5	37.3	21.0	—	—	13.1	—	—
Soups													
167	groundnut soup	594	—	—	—	—	0.5	0.6	—	—	13.9	0.3	—
170	okro soup	597	—	—	—	—	0.1	2.8	0.8	0.3	26.2	3.5	2.1
173	palm soup	550	—	—	—	—	tr.	1.2	—	—	43.6	1.0	—
570	okro soup[6]	615	—	—	—	—	0.2	1.3	—	0.1	41.5	—	0.4
Stews													
164	agushie stew	592	—	—	—	—	tr.	0.7	—	—	34.8	0.1	—
165	bean stew	593	—	—	—	—	tr.	0.9	—	—	40.5	0.1	—
169	nkontomire stew	596	—	—	—	—	0.2	1.1	—	—	42.4	—	—
171	okro and garden egg stew	598	—	—	—	—	0.1	1.2	—	—	39.2	—	—
335	pie	608	—	—	0.4	0.4	3.4	2.1	—	—	27.8	—	—
339	rice and stew	549	—	—	5.0	4.6	40.7	16.9	—	—	10.9	0.4	—
340	rice and beans	581	—	—	2.4	2.7	41.0	15.3	—	—	10.3	0.1	—
572	garden egg stew	616	—	—	—	—	0.2	1.4	—	—	40.2	0.7	—
Sauces													
172	palaver sauce	599	—	—	—	—	—	1.0	—	—	39.0	—	—
566	gravy[4]	612	—	—	7.8	5.9	49.8	18.0	—	—	8.0	—	—
567	gravy[5]	613	—	—	4.8	4.3	49.0	15.9	—	—	8.6	—	—
568	gravy[6]	614	—	—	—	—	0.2	1.0	—	—	41.4	—	—
Meat and eggs													
197	cowhide	554	—	—	—	—	3.2	4.3	0.6	0.3	22.9	4.7	1.2
199	snails	542	—	—	—	—	1.0	1.9	0.8	—	15.9	2.7	—
Fish and shell-fish													
217	anchovy, smoked	544	—	—	—	—	—	4.8	1.4	—	24.5	2.9	—
218	anchovy, sun-dried	545	—	—	—	—	—	4.7	1.0	—	24.2	3.4	—
226	kako	600	—	—	0.2	0.2	2.6	4.5	0.2	0.7	25.1	5.4	1.6
228	crab	601	—	—	0.1	0.1	1.3	2.1	0.2	—	16.1	3.7	—
233	mackerel, smoked	551	—	—	—	—	0.4	4.8	0.5	—	19.3	6.8	—
239	mackerel, tomatoes	552	—	—	—	—	tr.	4.5	0.5	—	13.7	4.9	—
249	sardines, smoked	543	—	—	—	—	—	4.6	1.2	—	24.8	2.8	—
250	sardines, fried[4]	603	—	—	4.0	3.4	46.5	15.3	0.1	—	9.5	0.2	—
260	sardines, canned	553	—	—	—	—	tr.	1.0	tr.	—	11.2	1.6	—
262	seabream, smoked	546	—	—	—	—	7.1	4.4	0.8	—	18.2	2.1	—
270	triggerfish	604	—	—	0.5	0.5	5.2	2.6	tr.	—	20.3	3.6	2.8
272	tuna, smoked	547	—	—	—	—	4.3	3.7	1.1	—	28.4	3.3	—
282	tilapia, salted	605	—	—	—	—	1.0	6.5	1.6	1.6	30.1	14.2	3.9
341	herring, smoked	541	—	—	—	—	0.3	4.3	0.9	—	30.4	3.4	—
679	tilapia[5]	617	—	—	3.3	3.0	41.8	15.2	0.2	—	10.5	1.3	—
683	tilapia[4]	548	—	—	3.0	3.0	33.4	16.1	0.7	—	12.4	2.7	—
684	fishmix, smoked	618	—	—	—	0.1	0.6	2.0	0.5	0.6	22.0	3.7	1.9
6175	fishmix, fried	620	—	—	4.4	3.6	41.1	15.5	0.1	—	10.0	0.3	—
Dairy products													
240	milk, 'Nestlé'	602	3.5	1.4	1.0	2.8	3.9	10.5	2.1	—	27.6	3.8	—
Oils and fats													
308	coconut oil	583	—	—	5.6	4.7	40.8	17.1	—	—	8.9	—	—
311	palm oil	584	—	—	—	—	0.2	0.8	—	—	41.1	—	—
711	palm kernel oil	585	—	—	3.7	3.6	46.2	16.7	—	—	10.2	—	—
712	margarine	619	—	—	tr.	tr.	0.2	3.7	0.3	0.3	26.2	4.4	0.7

[1] Proportion of fatty acids calculated as proportion of fatty acid methyl esters by weight
[2] —, < 0.1
[3] tr., trace
[4] Prepared using coconut oil
[5] Prepared using palm kernel oil
[6] Prepared using palm oil

Table 5, continued

Food table no.	Fatty acid composition, g/100 g total fatty acids[1]																		
	18:0	18:1	18:2	18:3	18:4	20:0	20:1	20:2	20:3	20:4	20:5	22:0	22:1	22:4	22:5	22:6	24:0	24:1	other
35	2.4	15.9	53.5	4.1	—	—	0.3	—	—	—	—	0.2	—	—	—	—	1.3	0.6	0.4
37	3.2	8.2	4.3	—	—	0.1	0.1	—	—	—	—	—	—	—	—	—	—	—	0.5
350	5.0	14.1	11.1	0.7	—	3.5	11.3	0.6	0.2	—	—	3.5	13.2	—	—	—	0.3	0.9	7.2
44	3.1	8.7	2.3	0.2	—	tr.	tr.	—	—	—	—	tr.	—	—	—	—	—	—	0.1
71	4.2	17.8	12.6	0.6	—	0.2	0.2	—	—	—	—	0.1	—	—	—	—	—	—	0.4
330	2.9	16.5	4.3	1.4	—	0.3	0.2	—	—	—	—	0.1	—	—	—	—	—	—	1.3
331	3.0	6.5	2.0	0.5	—	0.1	tr.	—	—	—	—	tr.	—	—	—	—	—	—	0.1
335	5.1	35.2	9.4	0.5	—	0.6	tr.	—	—	—	—	0.2	—	—	—	—	—	—	0.3
454	2.8	17.0	3.6	—	—	0.2	0.3	—	—	—	—	—	—	—	—	—	—	—	1.7
559	3.3	19.1	5.2	0.3	—	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
336	6.0	37.2	11.9	2.0	—	0.6	0.1	—	—	—	—	—	—	—	—	—	—	—	0.6
88	4.7	48.0	26.5	—	—	1.9	0.9	—	—	—	—	3.6	—	—	—	—	1.6	—	0.4
102	1.7	13.4	5.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1
167	6.0	45.5	24.2	0.4	—	1.7	1.0	—	—	—	—	3.0	0.3	—	—	—	1.2	—	1.4
170	25.1	27.0	4.2	0.3	—	0.7	0.4	—	—	—	—	1.0	—	—	—	—	0.1	2.4	3.2
173	5.3	37.8	9.4	0.4	—	0.4	0.2	—	—	—	—	—	—	—	—	—	—	—	0.7
570	5.4	40.1	10.1	0.3	—	0.4	0.1	—	—	—	—	0.1	—	—	—	—	—	0.1	—
164	7.4	31.2	24.4	0.4	—	0.5	0.1	—	—	—	—	0.1	—	—	—	—	—	—	0.2
165	5.5	38.7	12.2	0.9	—	0.6	0.3	—	—	—	—	0.2	—	—	—	—	—	—	—
169	5.5	37.2	12.2	0.8	—	0.5	0.1	—	—	—	—	0.1	—	—	—	—	—	—	—
171	6.0	36.7	12.6	0.8	—	0.8	0.5	—	—	—	—	0.3	0.4	—	—	—	0.1	0.8	0.5
335	4.4	29.3	27.6	2.9	—	0.3	0.4	—	—	—	—	0.5	0.5	—	—	—	—	—	—
339	2.9	10.7	6.1	0.3	—	0.1	0.6	—	—	—	—	—	—	—	—	—	—	—	0.8
340	2.8	18.9	5.5	0.4	—	0.2	0.2	—	—	—	—	0.1	—	—	—	—	—	—	0.1
572	6.0	35.6	11.4	0.5	—	0.7	0.4	—	—	—	—	0.2	0.2	—	—	—	—	—	2.5
172	6.6	35.0	16.8	0.6	—	0.6	0.2	—	—	—	—	—	—	—	—	—	—	—	0.2
566	2.3	6.6	1.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
567	2.6	12.4	2.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
568	5.2	38.6	12.8	0.3	—	0.4	—	—	—	—	—	—	—	—	—	—	—	—	0.2
197	15.2	36.7	2.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2
199	8.8	33.9	14.1	1.6	0.3	0.2	1.9	1.5	0.3	3.0	0.7	—	—	—	—	—	—	—	11.3
217	7.6	13.0	3.4	1.0	0.9	0.2	0.4	0.2	0.3	2.5	6.3	—	—	0.7	0.6	22.5	—	—	6.8
218	10.0	13.3	11.0	0.6	0.7	0.3	0.5	0.2	0.5	1.4	4.6	—	—	0.8	0.5	16.6	—	—	5.8
226	12.1	16.4	2.2	0.4	—	0.6	1.9	0.3	3.2	—	—	0.4	4.1	—	2.0	10.7	—	—	8.1
228	8.4	24.0	11.3	1.9	0.5	—	0.3	0.5	—	9.5	7.1	—	—	0.3	—	2.1	—	—	10.2
233	5.2	22.9	2.3	1.2	1.8	0.5	5.7	0.5	0.2	1.1	5.5	—	8.4	2.1	1.4	8.3	—	—	1.3
239	3.5	18.2	2.3	1.0	3.1	0.5	11.0	0.3	0.1	0.6	8.2	—	11.9	1.8	1.5	10.5	—	—	2.1
249	9.8	13.1	4.7	1.1	0.8	0.3	0.5	0.3	0.5	1.9	5.3	—	—	1.1	0.7	20.9	—	—	5.4
250	2.4	13.5	2.2	—	—	—	—	—	—	0.2	0.3	—	—	0.1	tr.	1.3	—	—	0.9
260	4.0	32.0	32.7	5.9	0.3	0.5	1.6	0.1	0.5	0.1	2.3	—	4.0	0.4	0.2	1.3	—	—	0.3
262	8.5	10.9	1.6	0.5	0.2	0.3	0.9	0.4	0.5	4.5	4.5	—	—	1.3	1.8	25.2	—	—	5.8
270	13.1	16.0	1.6	—	0.4	0.4	1.0	0.3	—	3.8	2.4	0.1	—	0.7	0.8	10.7	—	—	13.5
272	14.4	22.5	3.6	0.2	0.2	0.5	1.4	0.6	0.6	1.6	1.4	—	1.1	0.8	—	5.8	—	—	—
282	7.0	14.4	4.8	2.7	—	0.4	0.6	0.4	2.5	—	—	—	1.2	0.3	0.8	1.5	—	—	4.5
341	9.8	17.9	3.0	1.3	0.9	1.0	2.5	0.4	0.8	1.1	4.0	—	1.1	—	—	15.4	—	—	1.6
679	3.3	16.0	2.6	0.3	—	0.2	0.1	—	0.8	0.4	0.2	—	—	—	0.3	0.5	—	—	—
683	4.1	18.1	3.0	0.3	0.1	0.1	0.2	—	tr.	0.5	0.5	—	—	0.1	0.7	0.7	—	—	—
684	9.5	17.9	3.0	1.0	—	1.1	—	0.4	2.9	4.0	3.7	0.6	3.2	—	1.0	19.9	—	—	0.4
6175	3.6	14.4	2.6	tr.	—	0.2	0.2	—	0.2	0.2	0.3	—	0.4	—	—	1.3	—	—	1.1
240	9.3	26.0	3.0	0.5	—	0.8	0.2	—	—	—	—	—	—	—	—	—	—	—	2.9
308	2.7	12.4	7.3	0.2	—	0.1	0.1	—	—	—	—	—	—	—	—	—	—	—	0.1
311	6.8	40.1	9.7	0.3	—	0.4	0.2	—	—	—	—	—	—	—	—	—	—	—	0.3
711	3.0	14.8	3.6	tr.	—	0.1	0.2	—	—	—	—	—	—	—	—	—	—	—	—
712	6.3	26.2	6.1	0.4	—	1.9	6.9	—	—	—	—	1.7	6.9	—	—	—	—	—	7.8

Table 6. Fatty acid composition of food samples from The Philippines

Food table no.	Food	Lab code	Fatty acid composition, g/100 g total fatty acids[1]										
			4:0	6:0	8:0	10:0	12:0	14:0	14:1	15:0	16:0	16:1	17:0
Cereal products													
31	mike, luto	755	—[2]	0.8	6.9	4.2	30.2	11.7	—	—	12.0	0.3	0.2
967	mamon	742	—	0.6	6.8	5.0	36.0	14.9	—	—	13.3	0.2	—
972	american loaf	743	—	0.6	5.1	3.6	26.2	10.6	—	—	15.9	0.4	—
978	pan de sal (bread)	744	—	0.8	5.8	3.9	27.8	11.3	—	—	15.3	—	—
1351	biscuit marie	781	—	0.5	4.6	3.4	30.4	14.6	0.1	—	14.9	0.3	0.2
1703	biscuit favorita												
1704	rice krupek	782	—	1.1	8.0	5.6	42.9	18.4	—	—	10.5	—	—
1710	fried corn grits	784	—	0.5	4.6	3.8	33.8	15.9	—	—	13.1	—	—
Nuts and seeds													
333	coconut milk	763	—	0.8	6.6	5.0	44.5	20.1	—	—	10.9	—	—
1015	peanut butter	780	—	—	0.6	0.4	3.4	1.5	—	—	14.5	—	0.1
1712	fried peanuts[4]	785	—	0.2	0.3	0.8	5.8	2.2	—	—	12.5	—	0.1
Soups, stews and sauces													
1068	dinunguan	751	—	0.1	0.5	0.5	6.6	10.6	0.9	0.4	24.8	5.1	0.8
1587	bopiz	779	—	2.6	6.0	3.5	25.1	10.6	0.2	0.2	12.9	1.2	0.3
1701	beef mami	753	—	—	1.3	0.9	6.9	5.4	0.9	0.7	18.8	4.0	1.7
1705	mungbean sotanghon	752	—	0.6	6.9	5.0	36.0	14.8	—	—	13.3	0.4	0.1
Meat and eggs													
595	beef, lean prepared[4]	761	—	—	2.6	1.8	17.3	10.9	0.4	0.3	19.9	3.5	1.0
664	chicken, lean meat prepared[4]	774	—	0.6	3.8	2.8	21.2	9.3	0.3	0.1	17.4	3.7	0.2
1089	cured pork meat, raw	749	—	—	tr.	0.2	2.9	7.1	0.3	0.2	24.5	4.1	0.4
1102	hot dogs, unprepared	746	—	—	—	tr.	0.6	1.9	0.2	0.1	20.7	3.0	0.7
1165	balut	762	—	—	—	—	0.5	0.9	0.1	0.1	27.0	4.1	0.3
1816	chicken wings, prepared[4]	773	—	—	3.8	2.7	20.7	8.7	0.4	0.1	17.4	4.6	0.2
1817	hot dogs, prepared[4]	745	—	—	0.4	0.3	2.9	3.6	0.3	0.2	22.7	3.3	1.0
1818	longanisa, prepared[4]	770	—	—	0.3	0.3	4.9	9.5	0.3	0.1	24.9	4.1	0.4
1819	cured pork meat, prepared[4]	960	—	—	1.9	1.4	12.0	10.2	0.3	0.1	20.7	3.1	0.3
1820	pork, lean meat prepared[4]	771	—	—	0.4	0.5	8.2	13.8	0.4	0.1	25.7	4.2	0.2
1821	pork, medium fat prepared[4]	772	—	—	0.3	0.4	7.0	12.3	0.7	0.1	24.1	5.2	0.3
Fish													
749	fish, fat raw (Bangus)	747	—	—	tr.	0.4	0.5	1.7	0.4	0.9	37.5	9.7	1.8
1226	ayungin, dried	759	—	—	0.2	0.1	2.1	7.5	1.0	0.3	26.0	15.0	2.0
1810	fish, fat prepared (Bangus)[4]	748	—	0.3	3.1	2.1	16.8	9.9	0.5	0.4	24.3	7.4	1.3
1811	tunsoy, dried prepared[4]	768	—	1.4	7.4	4.7	34.1	15.6	0.1	0.2	15.9	2.4	0.7
1812	tamban, dried prepared[4]	769	—	0.6	5.6	4.0	29.5	13.9	0.2	0.4	18.0	3.4	1.1
1814	tamban, smoked prepared[4]	767	—	0.5	3.9	2.8	24.0	13.1	0.3	0.6	20.3	4.0	1.6
1830	fish, lean raw	775	—	—	0.3	0.3	0.9	4.6	0.2	0.3	27.8	7.4	2.4
1831	fish, lean prepared[4]	776	—	—	5.7	4.6	38.9	17.0	tr.[3]	tr.	12.0	1.2	1.0
1832	fish, medium fat raw	777	—	—	—	0.2	1.4	7.0	0.8	0.2	31.0	11.8	1.5
1833	fish, medium fat prepared[4]	778	—	—	5.9	4.8	39.1	17.0	0.1	tr.	13.1	1.7	0.5
Dairy products													
1153	evaporated filled milk	786	0.3	1.3	8.5	5.6	39.8	15.6	0.1	—	10.0	0.2	tr.
1155	condensed sweetened filled milk	783	—	0.9	8.0	5.6	39.8	16.1	—	—	10.2	0.2	tr.
Oils and fats													
1302	margarine	757	—	0.8	6.8	4.2	33.4	14.8	—	—	15.2	—	0.3
1711	margarine-dairy cream	756	—	0.4	4.4	3.8	30.3	11.0	—	—	22.4	0.4	0.1
Miscellaneous													
1029	turon	741	—	0.8	6.5	4.7	40.4	18.9	—	—	11.7	—	—
1708	halo-halo	750	—	1.0	7.0	4.1	29.8	12.6	—	—	13.0	1.2	0.4

[1] Proportion of fatty acids calculated as proportion of fatty acid methyl esters by weight
[2] —, < 0.1
[3] tr., trace
[4] prepared using coconut oil

Table 6, continued

Food table no.	Fatty acids composition, g/100 g total fatty acids[1]																		
	18:0	18:1	18:2	18:3	18:4	20:0	20:1	20:2	20:3	20:4	20:5	22:0	22:1	22:4	22:5	22:6	24:0	24:1	other
31	2.3	9.5	19.6	1.1	—	0.1	0.4	—	—	—	—	0.2	—	—	—	—	—	—	0.5
967	7.8	6.5	4.5	0.2	—	0.1	tr.[3]	—	—	—	—	tr.	—	—	—	—	1.0	1.7	1.2
972	6.4	9.1	14.1	0.6	—	—	0.2	—	—	—	—	0.2	—	—	—	—	0.2	1.8	4.9
978	5.1	8.4	15.4	0.6	—	—	—	—	—	—	—	0.2	—	—	—	—	0.3	2.1	3.0
1351 1703	4.8	9.7	10.4	0.6	—	0.2	0.2	—	—	—	—	0.1	—	—	—	—	1.7	1.6	1.8
1704	2.9	7.0	3.4	0.1	—	tr.	tr.	—	—	—	—	tr.	—	—	—	—	—	—	—
1710	3.8	12.4	8.7	0.2	—	0.4	0.2	—	—	—	—	tr.	—	—	—	—	—	—	2.7
333	3.4	7.4	1.2	—	—	tr.	tr.	—	—	—	—	—	—	—	—	—	—	—	0.1
1015	5.8	36.4	29.8	0.1	—	1.8	0.8	—	—	—	—	3.4	—	—	—	—	1.3	—	0.4
1712	3.6	35.4	31.4	—	—	1.4	0.8	—	—	—	—	3.2	—	—	—	—	1.2	—	1.0
1068	11.2	31.1	4.0	0.3	—	0.3	0.6	0.6	—	—	—	0.2	0.2	—	—	—	—	—	1.3
1587	5.8	20.8	7.8	0.3	—	0.2	0.5	0.2	0.2	—	—	0.1	0.2	—	—	—	—	—	1.2
1701	18.4	31.1	4.8	0.9	—	1.0	0.5	0.2	0.2	—	—	0.1	0.2	—	—	—	0.1	0.1	0.6
1705	3.7	7.9	7.2	2.4	—	0.2	0.1	0.3	0.1	—	—	0.3	tr.	—	—	—	0.2	—	0.4
595	9.8	24.0	6.5	0.5	—	0.2	0.3	—	—	—	—	—	—	—	—	—	—	—	1.2
664	5.3	23.0	10.6	0.6	—	0.1	0.2	tr.	0.1	—	—	0.3	—	—	—	—	—	—	0.3
1089	9.7	37.2	8.6	0.4	—	0.2	0.8	0.2	0.2	—	—	0.8	—	—	—	—	—	—	2.1
1102	14.6	42.4	9.2	0.9	—	0.6	1.4	0.5	0.4	—	—	0.5	0.4	—	—	—	—	—	2.0
1165	6.3	47.8	6.2	0.7	—	0.2	0.6	0.3	0.1	—	—	—	—	—	—	—	—	—	2.7
1816	4.6	24.2	10.6	0.5	—	—	0.3	tr.	0.3	—	—	—	—	—	—	—	—	—	—
1817	13.5	38.7	8.0	0.8	—	0.6	1.1	0.3	0.2	—	—	0.2	0.3	—	—	—	—	—	1.7
1818	8.7	34.8	9.5	0.4	—	0.2	0.8	0.3	0.2	—	—	—	—	—	—	—	—	—	0.4
1819	7.3	30.2	10.0	0.5	—	0.2	0.5	0.2	0.4	—	—	—	—	—	—	—	—	—	0.8
1820	8.0	30.0	6.8	0.3	—	0.1	0.5	0.1	0.1	—	—	—	—	—	—	—	—	—	0.3
1821	7.3	32.4	7.9	0.4	—	0.2	0.6	0.2	—	—	—	—	—	—	—	—	—	—	0.7
749	9.0	26.2	2.7	2.6	2.9	—	2.4	0.6	0.6	0.9	0.7	—	—	0.3	0.4	0.8	—	—	—
1226	12.0	14.6	3.1	0.1	0.8	—	0.5	0.1	0.6	2.9	1.7	—	—	1.0	1.2	1.0	—	—	4.9
1810	5.5	16.5	1.9	1.2	0.4	—	1.3	0.4	0.3	1.0	1.0	—	—	0.3	0.7	1.0	—	—	3.0
1811	4.5	10.2	1.8	0.1	0.2	—	0.3	—	—	0.4	0.9	—	—	—	—	1.8	—	—	—
1812	5.7	10.8	1.7	0.2	0.3	—	0.4	0.2	0.1	0.6	1.1	—	—	0.3	0.2	1.7	—	—	0.2
1814	6.1	11.0	1.7	0.6	0.5	0.5	0.4	0.1	—	0.8	3.2	—	—	0.6	0.2	4.4	—	—	—
1830	13.6	17.9	4.3	0.3	1.0	—	0.4	0.2	0.2	2.6	1.2	—	—	1.2	1.3	9.5	—	—	2.3
1831	4.5	10.0	1.8	0.2	0.4	—	0.1	tr.	0.5	0.2	0.5	—	—	0.4	0.2	1.4	—	—	—
1832	13.7	17.9	1.9	0.4	1.2	—	0.7	0.3	0.4	1.6	1.6	—	—	0.6	0.6	2.1	—	—	3.2
1833	4.2	8.5	1.4	0.2	0.1	—	—	—	—	0.5	0.8	—	—	0.1	0.2	1.1	—	—	0.6
1153	3.5	9.2	5.0	0.1	—	0.2	—	—	—	—	—	—	—	—	—	—	—	—	0.4
1155	3.1	9.7	5.8	0.1	—	0.2	—	—	—	—	—	—	—	—	—	—	—	—	0.1
1302	10.9	9.8	2.8	—	—	0.5	—	—	—	—	—	—	—	—	—	—	—	—	0.5
1711	4.1	19.1	3.7	—	—	0.1	—	—	—	—	—	—	—	—	—	—	—	—	0.3
1029	3.6	8.1	3.8	0.5	—	—	—	—	—	—	—	0.1	—	—	—	—	—	—	0.9
1708	4.8	14.4	7.6	1.3	—	—	—	—	—	—	—	0.6	—	—	—	—	0.5	—	2.2

Table 7. Fatty acid composition of food samples from Italy

Food table no.	Food	Lab code	Fatty acid composition, g/100 g total fatty acids[1]										
			4:0	6:0	8:0	10:0	12:0	14:0	14:1	15:0	16:0	16:1	17:0
Cereal products													
010098	biscotti farciti A	697	—[2]	—	4.7	4.2	35.7	15.5	—	—	11.5	tr.[3]	—
010098	biscotti farciti B	698	—	—	1.9	1.4	11.5	6.1	0.2	—	25.2	1.1	—
010098	biscotti farciti C	699	—	—	1.2	1.2	21.5	9.6	—	—	26.3	tr.	—
010098	biscotti farciti D	700	—	—	0.4	0.3	3.2	2.2	—	—	35.5	0.3	—
010099	pane biscotti	696	—	—	0.1	tr.	0.4	0.9	—	—	23.2	0.6	—
012980	tea pastry, short pastry, chocolate coated	719	0.1	1.3	1.2	0.3	12.9	6.7	—	tr.	21.9	1.0	0.2
012981	tea pastry, short pastry	716	—	—	0.9	0.7	6.4	4.1	tr.	tr.	25.1	1.1	0.2
012982	tea pastry, amaretti	717	—	—	0.2	0.2	1.3	0.9	—	—	10.0	0.5	0.1
012991	colomba-panettone	718	—	—	0.3	0.7	1.3	4.5	0.6	0.4	26.7	2.3	0.5
012993	sfogliatella	694	—	—	0.2	0.3	0.6	2.1	0.2	0.1	23.1	2.3	—
012994	tartufi	703	—	—	1.2	1.1	15.5	7.1	—	—	15.5	0.8	—
012995	diplomatici	693	—	—	0.1	0.1	1.0	2.3	0.5	0.3	23.6	3.2	1.0
012996	deliziosa	695	—	—	0.6	0.5	4.7	3.2	0.2	0.2	20.1	1.7	—
012997	pesca	715	—	0.5	0.4	0.5	4.0	2.9	0.2	0.1	23.2	2.5	0.5
Sauces													
013998	gran ragu	692	—	—	—	—	—	0.7	0.2	—	12.0	1.3	0.3
Meat													
011149	salsiccia fresca	689	—	—	tr.	tr.	tr.	1.3	0.1	0.1	24.2	2.6	0.5
011150	salsiccia secca	688	—	—	tr.	tr.	tr.	1.2	0.1	0.1	22.6	2.5	0.4
011155	mortadella suino	686	—	—	tr.	tr.	1.3	—	—	—	22.8	2.6	0.3
011198	salame napoletano	723	—	—	tr.	tr.	1.3	—	—	tr.	22.8	3.3	0.4
011199	soppresata	687	—	—	tr.	tr.	1.8	—	—	—	21.9	2.4	0.4
012992	sanguinaccio	691	—	—	0.3	0.8	0.5	1.6	—	—	24.7	1.0	—
Dairy products													
011600	latte di capra	709	2.2	4.2	2.6	7.8	4.0	8.8	0.5	1.0	23.2	1.8	0.9
011793	riccota fresh cheese, cow's milk	725	2.4	1.2	0.7	1.7	2.4	9.9	2.2	1.8	31.8	2.7	1.4
011794	mozzarella	722	4.8	2.4	0.9	1.8	2.3	9.3	1.3	1.5	27.8	2.4	1.3
011795	ricotta fresh cheese, goat's milk	724	3.4	2.8	2.5	8.6	3.9	8.8	0.4	1.0	24.2	1.8	1.0
011796	mozzarella bufala	685	3.4	2.1	0.9	2.1	2.7	10.1	1.1	1.4	29.6	2.3	1.1
011797	formaggio di capra fresca	684	2.1	3.4	2.6	8.3	3.8	9.0	0.3	1.0	25.6	1.8	0.9
011798	formaggio di capra stagionato	704	2.2	4.8	3.0	8.4	4.0	9.0	0.3	0.8	21.6	1.8	1.3
012986	zuppa inglesa	721	—	—	tr.	0.5	4.2	2.4	—	—	25.4	0.8	—
012990	ice cream mix, cream base	727	0.2	0.4	3.1	2.7	21.5	10.6	0.1	tr.	12.2	0.3	0.2
012998	gelati confezionati con biscotti	683	0.1	0.5	1.6	1.7	11.0	8.0	0.6	0.3	23.4	1.6	0.6
012999	gelato confezionati cornetti	682	0.2	0.7	5.6	4.7	34.8	15.6	0.1	0.1	12.5	0.4	0.2
015099	sofficini, fried	720	0.2	0.1	0.2	0.1	0.4	1.2	0.2	0.1	13.8	0.6	0.2
Oils and fats													
010901	olive oil	708	—	—	—	—	—	—	—	—	11.2	0.8	—
Miscellaneous													
010382	patatine	702	—	—	—	—	—	0.1	tr.	—	11.0	0.1	0.1

[1] Proportion of fatty acids calculated as proportion of fatty acid methyl esters by weight
[2] —, < 0.1
[3] tr., trace

Table 7, continued

Food table no.	Fatty acids composition, g/100 g total fatty acids[1]												
	18:0	18:1	18:2	18:3	20:0	20:1	20:2	20:3	22:0	22:1	24:0	24:1	other
010098	14.5	5.4	4.5	0.5	0.2	tr.	—	—	tr.	—	—	—	3.2
010098	18.7	25.8	16.0	0.4	0.3	0.3	—	—	—	—	0.6	1.3	0.1
010098	11.4	19.9	7.0	0.2	0.3	tr.	—	—	—	—	0.3	0.4	0.5
010098	7.6	36.1	9.0	0.2	0.4	0.2	—	—	0.1	—	—	—	4.5
010099	1.5	13.0	51.5	3.2	—	0.5	0.1	—	0.2	—	—	—	4.8
012980	9.9	25.0	8.5	0.5	0.8	1.2	0.3	—	0.6	1.0	0.4	0.4	0.8
012981	6.1	31.8	12.6	0.8	0.8	1.4	0.1	—	0.6	1.2	0.8	0.6	4.6
012982	3.8	64.8	14.1	0.3	0.3	0.4	—	—	0.2	0.2	1.0	1.0	1.1
012991	12.5	35.1	9.4	0.7	0.5	0.5	0.2	0.2	tr.	0.1	0.8	0.8	1.9
012993	11.6	35.8	13.7	0.7	0.3	0.8	—	—	—	—	—	0.5	7.3
012994	16.2	32.0	7.5	0.2	0.5	0.6	—	—	0.3	0.4	—	—	1.2
012995	18.2	38.7	10.2	0.4	0.3	0.6	—	—	—	—	—	—	—
012996	13.2	38.8	10.8	0.4	0.4	0.5	—	—	—	—	—	0.8	3.9
012997	13.3	35.5	9.8	0.6	0.3	0.6	0.2	0.4	tr.	0.2	1.7	1.9	0.7
013998	5.3	37.5	31.8	5.8	0.6	1.5	—	—	0.4	1.7	—	—	0.9
011149	16.3	41.9	9.4	0.4	0.5	1.1	0.4	0.1	0.3	0.7	—	—	0.1
011150	15.3	44.6	8.6	0.2	0.4	1.2	0.5	0.1	0.2	0.6	—	—	1.4
011155	14.2	46.0	8.3	0.4	0.4	1.3	0.6	0.2	0.2	—	0.3	—	1.1
011198	12.6	46.2	10.0	0.3	0.2	1.1	0.4	0.2	—	0.3	—	—	0.9
011199	14.5	47.6	7.7	0.5	0.3	1.3	0.4	0.2	0.2	0.5	—	—	1.1
012992	27.8	34.4	5.5	0.3	0.9	0.3	0.2	0.1	0.2	0.4	0.4	—	0.6
011600	12.0	23.8	2.0	0.6	0.8	0.5	—	—	—	—	—	—	3.3
011793	10.7	23.2	2.4	0.9	1.1	0.5	—	—	—	—	—	—	4.0
011794	11.5	23.5	2.2	1.1	1.2	0.4	—	—	0.2	0.1	—	—	4.0
011795	10.8	22.1	3.3	1.0	0.7	0.3	—	—	0.2	—	—	—	3.1
011796	11.6	23.0	2.4	0.9	1.1	0.4	—	—	0.2	0.2	—	—	3.4
011797	13.2	20.9	2.6	0.6	0.6	—	—	—	—	—	—	—	3.3
011798	11.0	23.3	2.7	1.4	1.0	0.3	—	—	0.1	—	—	—	3.0
012986	6.7	39.5	10.5	0.4	0.4	0.4	—	—	0.2	0.2	0.9	0.9	6.6
012990	6.6	31.0	8.9	0.1	0.6	0.3	—	—	0.8	—	—	—	0.2
012998	14.2	23.1	7.5	0.7	1.0	0.5	—	—	0.6	0.4	—	—	2.6
012999	7.6	13.0	2.7	0.2	0.5	0.1	—	—	0.3	—	—	—	0.7
015099	3.9	25.0	47.4	2.6	0.4	0.3	—	—	0.3	0.1	—	—	2.8
010901	1.9	75.2	9.4	0.7	0.4	0.3	—	—	0.1	—	0.3	—	—
010382	4.6	24.4	51.3	6.8	0.5	0.3	—	—	0.5	tr.	—	—	0.3

Table 8. Fatty acid composition of food samples from Finland

Food table no.	Food	Lab code	Fatty acid composition, g/100 g total fatty acids[1]																	
			4:0	6:0	8:0	10:0	12:0	14:0	14:1	15:0	16:0	16:1	17:0	18:0	18:1	18:2	18:3	20:0	20:1	22:0	other
Meat																					
663	laurantai	733	—[2]	—	—	—	0.1	1.3	—	—	24.2	3.4	0.4	14.4	46.1	7.4	0.2	0.2	1.3	—	1.0
664	hot dog	740	—	—	—	—	0.1	1.6	0.1	—	26.0	3.5	0.4	14.5	43.5	8.0	0.4	0.1	1.1	—	0.8
665	lenkki	731	—	—	—	—	0.1	1.7	0.1	—	26.3	3.5	0.3	14.9	44.7	6.4	0.1	0.2	1.0	—	0.6
668	dry sausage	739	—	—	—	—	0.1	1.8	0.4	—	25.7	3.5	0.6	15.8	43.5	6.2	0.2	0.2	1.0	—	1.0
669	maksa-makkara	736	—	—	—	—	0.1	1.2	—	—	24.2	3.0	0.4	15.0	45.5	7.9	0.4	0.3	1.3	—	0.8
672	cooked meat sausage	730	—	—	—	—	0.1	1.5	0.2	—	24.5	3.5	0.4	14.3	45.9	6.8	0.2	0.3	1.3	—	1.2
675	balkamin	738	—	—	—	—	0.1	1.4	—	—	25.9	2.9	0.2	15.8	44.7	7.0	0.2	0.2	1.1	—	0.6
Dairy products																					
524	cheese, emmental	734	2.5	1.8	0.8	1.9	2.6	10.0	1.8	1.2	30.3	3.4	1.1	16.0	24.0	2.5	0.9	0.8	0.4	—	2.8
525	cheese, edam	735	2.4	1.5	0.6	1.6	2.2	9.3	1.5	1.1	30.6	2.9	1.0	12.6	25.0	2.5	1.0	1.0	0.6	—	2.6
540	ice cream	737	2.1	1.6	0.8	2.1	2.7	8.2	1.7	0.9	31.5	2.9	1.2	12.8	20.1	2.4	1.9	1.2	0.4	—	5.6
Oils and fats																					
404	margarine	732	—	—	0.1	0.1	0.7	0.5	—	—	13.5	0.1	—	6.9	36.2	38.7	2.7	0.2	0.2	0.4	—

[1] Proportion of fatty acids calculated as proportion of fatty acid methyl esters by weight
[2] < 0.1

Table 9. Number of products in each country for which the nutrient data obtained by analysis differed by more than 5 g per 100 g edible portion for the data given in the local food composition tables[1]

Nutrient	Number of products		
	Ghana	The Philippines	Finland
Water	16	8	—
Protein	5	3	—
Fat	6	4	1
Carbohydrate	18	5	5
Saturated fatty acids	—	—	1
Mono-unsaturated fatty acids	—	—	1
Poly-unsaturated fatty acids	—	—	—
Number of products analysed	52	18	11

[1] Data for Italy is not included because comparisons were made for only 2 products

Table 10. Differences between the proximate composition presented in this report and the values published in the local food composition tables

Food table no.	Food	Difference in proximate composition, g/100 g edible portion[1]			
		Water	Protein	Fat	Total carbohydrate
Ghana					
Cereal products					
11	akpler	+ 9.6	—[2]	—	+ 9.9
37	togbei	−11.8	—	—	+ 7.5
Starchy roots and fruits					
44	cassava balls, fried	− 9.1	—	—	+14.7
47	kokonte	+58.9	—	—	−56.4
59	plantain, roasted	+ 6.8	—	—	+ 6.8
68	yam, boiled	− 8.2	—	—	+ 9.3
Nuts and seeds					
88	groundnuts, roasted	+ 1.8	—	—	−10.0
Soups					
167	groudnut soup	− 7.4	—	− 4.8	+12.9
Stews					
164	agushie stew	—	—	− 5.5	+ 6.4
169	nkontomire stew	− 8.3	—	—	+ 7.7
Sauces					
172	palaver sauce	−12.0	—	+13.5	—
Fish and shell-fish					
217	anchovy, smoked	—	—	+ 5.4	−14.4
218	anchovy, sun-dried	− 7.1	+ 7.0	—	—
226	kako	−12.6	+ 5.8	—	—
239	mackerel, tomatoes	− 5.7	−16.4	+13.1	—
250	sardines, fried	− 6.1	—	—	+27.3
The Philippines					
Cereal products					
31	mike, luto	−24.1	—	—	+24.5
Nuts and seeds					
333	coconut milk	+14.3	—	−17.4	+ 7.3
Meat and eggs					
595	beef, lean prepared	−17.2	+10.6	—	—
664	chicken, lean meat prepared	+ 6.9	−13.0	—	—
1089	cured pork meat, raw	+14.0	—	−10.6	—
1102	hot dogs, unprepared	− 7.9	—	+ 8.2	—
Miscellaneous					
1029	turon	—	—	+ 5.3	− 5.1
Finland					
668	day sausage	—	—	11.0	13.5

[1] Difference between values presented in this report minus values published in the local food composition tables
[2] Difference < 5 g/100 g

Appendix 1. Detailed information on the food samples collected from Ghana for chemical analysis

Food table no.	Food	Lab code	Place of sampling	Number of food items used in one mixed sample	Total weight of original sample, g	Weight after removal of non-edible parts, g	Remarks
Cereal products							
10	akassa, koko	554	Accra	7	1000	250	thin fermented pap, made of corn dough
11	akpler	586	Accra	7	1200	1200	mixture of corn dough and cassava dough
13	banku	555	Accra	7	2500	2500	thick porridge made of corn dough fermented for a short time
19	kenkey, Ga	556	Accra	4	700	620	thick porridge made of fermented corn dough, made into balls and wrapped in corn husks or leaves and steamed
20	kenkey, Fante	557	Accra	3	1200	100	as Ga; shorter fermentation; the balls are wrapped in plantain leaves
29	rice, raw	558	Accra	3	500	500	—
31	rice, cooked	559	Accra	4	550	550	—
35	wheat bread	560	Accra	4	500	500	—
37	togbei	573	Accra	7	350	350	dough made of flour, sugar, palm wine, yeast, egg; fried in coconut oil
350	biscuits	582	Accra	4	50	50	dry biscuits
429	rice water	609	Accra	5	750	750	rice cooked in water; sugar added
434	wheat	610	Accra	4	400	400	cooked
Starchy roots and fruits							
39	cassava, raw	561	Accra	3	2500	1400	—
40	cassava, boiled	587	Accra	6	600	600	—
44	cassava balls, fried	588	Accra	6	150	150	balls made of cassava dough, fried in coconut oil
46	gari	562	Accra	3	500	500	fresh cassava grated and squeezed out, then partly fermented and roasted
47	kokonte	563	Accra	7	1000	1000	porridge cooked of dried fermented cassava
49	yake yake	589	Accra	4	650	650	dry spongy cake made of steamed, fermented cassava dough
53	cocoyam, boiled	564	Accra	7	600	600	—
57	plantain, unripe boiled	565	Accra	7	1200	1200	—
58	plantain, ripe boiled	566	Accra	7	500	500	—
59	plantain, roasted	567	Accra	7	200	200	—
61	plantain, fufu	568	Accra	7	1200	1200	mixture of plantain and cassavc boiled and pounded with water
67	yam, raw	569	Accra	3	1100	900	—
68	yam, boiled	570	Accra	7	600	600	—
71	yam	577	Accra	6	200	200	fried in coconut oil
151	banana	571	Accra	3	750	500	ripe raw
330	plantain, ripe	574	Accra	7	400	400	fried in palm kernel oil
331	plantain, ripe	576	Accra	7	400	400	fried in coconut oil
335	cocoyam, porridge	579	Accra	3	600	600	contains cocoyam, fish, vegetables and salad oil
454	cocoyam	574	Accra	5	150	150	fried in palm kernel oil
559	plantain balls, ripe	611	Accra	7	900	900	fried in coconut oil
Legumes							
336	beans	580	Accra	7	600	600	beans cooked with palm oil
Nuts and seeds							
88	groundnuts, roasted	578	Accra	4	300	300	—
102	coconut flesh	590	Accra	5	724	724	—
104	coconut milk	591	Accra	5	725	725	—
Soups							
167	groundnut soup	594	Accra	4	800	800	soup made of roasted and grounded peanuts, vegetables, meat or fish; no oil added
168	light soup	595	Accra	5	500	500	soup made with meat and vegetables, especially garden eggs
170	okro soup	597	Accra	4	400	400	soup made with chicken, okro and other vegetables
173	palm soup	550	Accra	7	500	500	soup made with pounded palm nuts and vegetables
570	okro soup	615	Accra	4	600	600	as okrosoup (170); palm oil added

Appendix 1, continued

Food table no.	Food	Lab code	Place of sampling	Number of food items used in one mixed sample	Total weight of original sample, g	Weight after removal of non-edible parts, g	Remarks
Stews							
164	agushie stew	592	Accra	5	300	300	basic vegetable stew thickened with ground melonseeds; prepared with palm oil
165	bean stew	593	Accra	5	500	500	contains cowpea, fish, vegetables and palm oil
169	nkontomire stew	596	Accra	7	850	850	contains cocoyamleaves, other vegetables, fish and palm oil
171	okro and garden egg stew	598	Accra	7	600	600	okro, garden egg, other vegetables, fish and palm oil
335	pie	608	Accra	5	200	200	meat pie
339	rice and stew	549	Accra	7	400	400	contains vegetables, rice and coconut oil
340	rice and beans	581	Accra	7	1250	1250	cooked
572	garden egg stew	616	Accra	7	800	800	contains boiled mashed garden egg, vegetables, fish and palm oil
Sauces							
172	palaver sauce	599	Accra	7	800	800	contains leaves, vegetables, ground melon seeds, fish and palm oil
566	gravy	612	Accra	3	300	300	pepper, onions, tomatoes fried in coconutoil
567	gravy	613	Accra	4	300	300	pepper, onions, tomatoes fried in palm kernel oil
568	gravy	614	Accra	4	400	400	pepper, onions, tomatoes fried in palm oil
Meat							
197	cowhide	554	Accra	7	250	250	boiled
199	snails	542	Accra	7	1200	250	boiled
Fish and shell-fish							
217	anchovy, smoked	544	Accra	6	600	600	—
218	anchovy, sun-dried	545	Accra	7	500	500	—
226	kako	600	Accra	4	250	250	salted dried fish
228	crab	601	Accra	7	800	200	raw
233	mackerel, smoked	551	Accra	7	800	600	—
239	mackerel, tomatoes	552	Accra	1	200	200	in tomato-sauce canned
249	sardines, smoked	543	Accra	6	600	600	dry smoked
250	sardines, fried	603	Accra	7	200	200	fried in coconut oil
260	sardines, canned	553	Accra	1	275	275	canned in oil
262	seabream, smoked	546	Accra	4	600	400	—
270	triggerfish	604	Accra	10	1500	250	salted dried fish
272	tuna, smoked	547	Accra	7	260	250	—
282	tilapia, salted	605	Accra	10	1400	250	salted dried
341	herring, smoked	541	Accra	7	700	450	—
679	tilapia	617	Accra	8	200	200	fried in palm kernel oil
683	tilapia	548	Accra	5	200	200	fried in coconut oil
684	fishmix, smoked	618	Accra	7	800	200	—
6175	fishmix, fried	620	Accra	3	100	100	oil unknown
Dairy products							
240	milk, 'Nestlé'	602	Accra	1			full-cream evaporated milk, canned
Oils and fats							
308	coconut oil	583	Accra	3	300	300	—
311	palm oil	584	Accra	3	300	300	—
711	palm kernel oil	585	Accra	3	300	300	—
712	margarine	619	Accra	2	450	450	'Blueband'
Miscellaneous							
332	toffee	606	Accra		150	150	—
334	milk candy	607	Accra		60	60	—
351	sugar cane	572	Accra	3	1500	1500	—

Appendix 2. Detailed information on the food samples collected from The Philippines for chemical analysis

Food table no.	Food	Lab code	Place of sampling	Number of food items used in one mixed sample	Total weight of original sample, g	Weight after removal of non-edible parts, g	Remarks
Cereal products							
31	mike, luto	31	San Pablo	2	400	400	wheat noodles boiled
967	mamon	742	San Pablo	2	500	500	plain spongy cake
972	american loaf	743	San Pablo	2	300	300	white bread
978	pan de sal (bread)	744	San Pablo	3	510	510	white bread
1351	biscuits marie	781	San Pablo	2	455	455	mixture of biscuits favorita and marie
1703	biscuits favorita						
1704	rice-krupek	782	San Pablo	1	340	340	—
1710	fried corn grits	784	San Pablo	1	275	275	fried in coconut oil
Nuts and seeds							
333	coconut milk	763	San Pablo	2	675	675	—
1015	peanut butter	780	San Pablo	3	450	450	mixture of 3 types; one with butter; two with hardened vegetable oil, contains sugar
1712	fried peanuts	1712	San Pablo	1	270	270	fried in coconut oil
Soups, stews and sauces							
1068	dinuguan	751	San Pablo	2	650	650	dish with pork blood and intestines
1587	bopiz	779	San Pablo	2	300	300	boiled pork lungs in sauce
1701	beef mami	753	San Pablo	2	510	510	wheat noodle soup
1705	mungbean sotanghon	752	San Pablo	3	775	775	contains sotanghon, mungbean, vegetables and coconut oil
Meat and eggs							
595	beef, lean prepared	761	San Pablo	2	170	170	fried in coconut oil
664	chicken, lean meat prepared	774	San Pablo	1	120	120	fried in coconut oil
1089	cured pork meat, raw	749	San Pablo	3	450	450	—
1102	hot dogs, unprepared	746	San Pablo	6	315	315	pork meat, raw
1165	balut	762	San Pablo	1			fertilized duck egg
1816	chicken wings, prepared	773	San Pablo	1	130	130	prepared with coconut oil
1817	hot dogs, prepared	745	San Pablo		300	300	pork meat fried in coconut oil
1818	longanisa, prepared	770	San Pablo	3	210	210	native sausage fried in coconut oil
1819	cured pork meat, prepared	760	San Pablo	3	240	240	fried in coconut oil
1820	pork, lean meat prepared	771	San Pablo	2	180	180	fried in coconut oil
1821	pork, medium fat prepared	772	San Pablo	2	223	223	fried in coconut oil
Fish and shell-fish							
749	fish, fat raw, (Bangus)	747	San Pablo	1		290	milk fish (Bangus)
1226	ayungin, dried	759	San Pablo	1		137	dried grunt silver fried in coconut oil
1810	fish, fat prepared (Bangus)	748	San Pablo	1		257	milk fish (Bangus) fried in coconut oil
1811	tunsoy, dried prepared	768	San Pablo	1		62	dried fimbriated herring, fried in coconut oil
1812	tamban, dried prepared	769	San Pablo	1		115	dried indian sardine fried in coconut oil
1814	tamban, smoked prepared	767	San Pablo	1		70	sun dried indian sardine fried in coconut oil
1830	fish, lean, raw	775	San Pablo	2		450	mixture of golden caesio and mud fish
1831	fish, lean prepared	776	San Pablo	2		507	fried in coconut oil; mixture of golden caesio and mud fish
1832	fish, medium fat raw	777	San Pablo	6		717	mixture of tuna bonita, banded cavalla, tilapia, round scad, ribbon-finned nemipterid, short boiled mackerel, common slip mouth
1833	fish, medium fat prepared	778	San Pablo	7		767	fried in coconut oil; mixture as raw medium fat fish (1832)

Appendix 2, continued

Food table no.	Food	Lab code	Place of sampling	Number of food items used in one mixed sample	Total weight of original sample, g	Weight after removal of non-edible parts, g	Remarks
Dairy products							
1153	evaporated filled milk	786	San Pablo	3	686	686	canned evaporated filled milk; butterfat is replaced by maize oil and coconut oil mixture of 'Alaska', 'Carnation', 'Liberty'
1155	condensed sweetened filled milk	783	San Pablo	3	900	900	canned condensed sweetened filled milk; butterfat is replaced by maize oil and coconut oil mixture of 'Alaska', 'Carnation', 'Liberty'
Oils and fats							
1302	margarine	757	San Pablo	2	250	250	mixture of 'Royal' and 'Star'
1711	margarine-dairy cream	756	San Pablo	1	225	225	—
Drinks							
1310	ceylon moss beverage	754	San Pablo	3	722	722	beverage with agar-agar and sugar
Miscellaneous							
1029	turon	741	San Pablo	1	240	240	fried sweetened banana in wrapper
1708	halo-halo	750	San Pablo	3	680	680	mixed sweetened tubers with evaporated milk and ice

Appendix 3. Detailed information on the food samples collected from Italy for chemical analysis

Food table number	Food	Lab code	Place of sampling	Number of food items used in one mixed sample	Total weight of original sample, g	Weight after removal of non-edible parts, g	Remarks
Cereal products							
010098	biscotti farciti A	697	Casavalino	1	120	120	bambi balocco } biscuits
010098	biscotti farciti B	698	Casavalino	1	140	140	buoni saiwa } containing
010098	biscotti farciti C	699	Casavalino	1	90	90	togo pavesi } cream and
010098	biscotti farciti D	700	Casavalino	1	140	140	pirgo pavesi } chocolate
010099	pane biscotti	696	St. Mauro Casalsottano Casalgrano	10	303	303	dried bread
012980	tea pastry, short pastry chocolate-coated	719	Rome	3	280	280	
012981	tea pastry, short-pastry	716	Rome	3	280	280	
012982	tea pastry, amaretti	717	Rome	4	280	280	
012991	colomba-panettone	718	Casavalino Pioppi	2	1500	335	panettone-type cake
012993	sfogliatella	694	Agropoli	3	270	270	puff pastry
012994	tartufi	703	Agropoli	16	291	291	pastry with chocolate
012995	diplomatici	693	Casavalino-Marina	3	306	306	pastry with cake and cream
012996	deliziosa	695	Casavalino-Marina	3	280	280	cake with eggs, flour, butter, sugar, chocolate
012997	pesca	715	Casavalino-Marina	4	300	300	pastry with cream and alcohol (rum)
Sauces							
013998	gran ragu	692	Casavalino	1	370	370	canned sauce with meat, 'Star'
Meat							
011149	salsiccia fresca	689	Vallo	1	386	382	fresh pork sausage, raw
011150	salsiccia secca	688	Vallo	1	409	396	dried pork sausage, raw
011155	mortadella suino	686	Casavalino Vallo	2	298	298	pork sausage, prepared
011198	salame napoletano	723	Casavalino	1	270	270	sausage, prepared
011199	soppressata	687	Casavalino Aguavella	3	272	273	lean pork sausage, raw
012992	sanguinaccio	691	St. Mauro	1	332	332	soft mixure prepared with beef blood and chocolate
Dairy products							
011600	latte di capra	709	St. Mauro Pioppi	6	321	321	goat's milk
011793	ricotta fresh cheese, cow's milk	725	Aquavella	1	350	273	—
011794	mozzarella	722	Aquavella	2	500	280	fresh soft cheese, made of cow's milk
011795	ricotta fresh cheese, goat's milk	724	Amalafede	2	450	285	—
011796	mozzarella bufala	685	Casavalino Pioppi	2	326	326	fresh soft cheese, made of bufalo milk
011797	formaggio di capra fresco	684	St. Mauro	6	294	294	soft goat's cheese
011798	formaggio di capra stagionato	704	St. Mauro	8	297	297	dry goat's cheese
012986	zuppa inglesa	721	Aquavella	1	400	270	industrial trifle
012990	icecream mix, cream base	727	Casavalino Pioppi	16	872	872	mixture of 3 types of icecream with chocolate. Industrially and locally prepared
012998	gelati confezionati con biscotti	683	Pollica Stella	3	335	335	pre-packed icecream with biscuits
012999	gelati confezionati cornetti	682	Pollica	4	306	306	pre-packed icecream
015099	sofficini, fried	720	Pioppi	6	297	297	pasta stuffed with cheese, fried in corn oil, 'Findus'
Oils and fats							
010901	olive oil	708	St. Mauro	8	310	310	—
Miscellaneous							
010382	patatine	702	Casavalino	6	200	200	potato chips, natural, 'San Carlo'
012987	ice cream, locally prepared	726	Casalino-Marina	4	275	275	based on fruit

Appendix 4. Detailed information on the foods collected from Finland for chemical analysis

Food table no.	Food	Lab code	Place of sampling	Number of food items used in one mixed sample	Total weight of original sample, g	Weight after removal of non-edible parts, g	Remarks
Meat							
663	laurantai	733	Helsinki	3	300	275	cooked meat sausage
664	hot dog	740	Helsinki	3	260	260	—
665	lenkki	731	Helsinki	3	1600	300	smoked sausage
668	dry sausage	739	Helsinki	3	400	245	salami type
669	maksamakkara	736	Helsinki	9	750	310	liver sausage
672	cooked meat sausage	730	Helsinki	3	210	210	—
675	balkamin	738	Helsinki	2	240	240	dry sausage, salami type
Dairy products							
524	cheese, emmental	734	Helsinki	2	460	285	—
525	cheese, edam	735	Helsinki	2	510	240	—
540	ice cream	737	Helsinki	3	830	265	mixture of valio 40%, pauhig 40%, kotisaari 20%
Oils and fats							
404	margarine	732	Helsinki	1	400	400	'Flora'