

Section 2.1

Cereals and cereal products

Much of the data and foods in this section of the Tables have been taken from the *Cereals and Cereal Products* (1988) supplement. However, new analytical values have been incorporated for bread, fresh pasta, some biscuits, cakes, buns, pastries and puddings, and pizzas. In addition, some new values for breakfast cereals have been provided by manufacturers. Foods for which new data are incorporated have been allocated a new food code and can thus easily be identified in the food index.

Values from the literature for wheat flours and their products were restricted to those from the UK because flours are required to be fortified by law (The Bread and Flour Regulations, 1998). UK flour should contain at least 1.65mg iron, 0.24mg thiamin and 1.60mg niacin per 100g and so these nutrients are added to all white flours and most brown flours in this country. Calcium carbonate must also be added to all flours except wholemeal and certain self-raising flours at a rate equivalent to 94–156mg calcium per 100g flour.

Sources of variation pertinent to cereals and cereal products include soil type and fertiliser use (which particularly affects inorganics) and the practice of allowing for losses of nutrients added during handling and storage ('overages'). In addition, the range and levels of added nutrients do change with time (e.g. calcium is now added to some breakfast cereals). Users requiring details of possible recent changes in fortification practices may wish to contact manufacturers directly.

Losses of labile vitamins assigned on recipe calculation were estimated using figures in Section 4.3. Changes in weight on toasting bread and boiling rice and pastas are shown in Section 4.3. Taxonomic names for foods included in this part of the Tables can be found in Section 4.5

Composition of food per 100g edible portion

No.	Food	Description and main data sources	Edible conversion factor	Water g	Total nitrogen g	Protein g	Fat g	Carbo- hydrate g	Energy value		
									kcal	kJ	
Flours, grains and starches											
1	Bran , wheat	Analytical and literature sources	1.00	8.3	2.24	14.1	5.5	26.8	206	872	
2	Chapati flour , brown	1 sample, single supplier	1.00	12.2	2.02	11.5	1.2	73.7	333	1419	
3	white	2 samples, different suppliers, same weights	1.00	12.0	1.72	9.8	0.5	77.6	335	1426	
4	Cornflour	3 samples from different shops	1.00	12.5	0.09	0.6	0.7	92.0	354	1508	
5	Custard powder	Taken as cornflour except Na, Cl and Cu	1.00	12.5	0.09	0.6	0.7	92.0	354	1508	
6	Oatmeal , quick cook, <i>raw</i>	10 samples, 8 brands	1.00	8.2	1.92	11.2	9.2	66.0	375	1587	
7	Rye flour , whole	Analytical and literature sources	1.00	15.0	1.40	8.2	2.0	75.9	335	1428	
8	Soya flour , full fat	Analytical and literature sources	1.00	7.0	6.45	36.8	23.5	23.5	447	1871	
9	low fat	Analytical and literature sources	1.00	7.0	7.94	45.3	7.2	28.2	352	1488	
10	Wheat flour , brown	VFSS, 1977–81, and literature sources	1.00	14.0	2.20	12.6	2.0	68.5	324	1384	
11	white, breadmaking	Data from Voluntary Flour Sampling Scheme (VFSS), 1977–81 plus literature sources.	1.00	14.0	2.02	11.5	1.4	75.3	341	1451	
12	white, plain		1.00	14.0	1.64	9.4	1.3	77.7	341	1450	
13	white, self-raising		Biscuit and cake flours are similar in composition to plain flour	1.00	14.0	1.56	8.9	1.2	75.6	330	1407
14	wholemeal			1.00	14.0	2.18	12.7	2.2	63.9	310	1318
15	Wheatgerm	Literature sources	1.00	11.7	4.54	26.7	9.2	(44.7)	357	1509	
Rice											
16	Brown rice , <i>raw</i>	5 assorted samples	1.00	13.9	1.10	6.7	2.8	81.3	357	1518	
17	<i>boiled</i>	Water content weighed, other nutrients calculated from <i>raw</i>	1.00	66.0	0.43	2.6	1.1	32.1	141	597	
18	Egg fried rice , <i>takeaway</i>	10 samples from different outlets	1.00	57.5	0.68	4.3	4.9	33.3	186	787	

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Composition of food per 100g edible portion

No.	Food	Starch g	Total sugars g	Individual sugars					Dietary fibre NSP g	Fatty acids				Cholest- erol mg
				Gluc g	Fruct g	Sucr g	Malt g	Lact g		Satd g	Mono- unsatd g	Poly- unsatd g	Trans g	
Flours, grains and starches														
1	Bran, wheat	23.0	3.8	0.2	0.1	3.5	0.1	0	36.4	0.9	0.7	2.9	0	0
2	Chapati flour, brown	70.5	3.2 ^a	N	N	N	N	0	(10.3)	0.2	0.1	0.5	0	0
3	white	75.5	2.1 ^a	N	N	N	N	0	(4.1)	0.1	Tr	0.2	0	0
4	Cornflour	92.0	Tr	Tr	(0)	Tr	(0)	0	0.1	0.1	0.1	0.3	0	0
5	Custard powder	92.0	Tr	Tr	(0)	Tr	(0)	0	(0.1)	0.1	0.1	0.3	0	0
6	Oatmeal, quick cook, raw	64.9	1.1	Tr	Tr	0.8	0.3	0	7.1	1.6	3.3	3.7	0	0
7	Rye flour, whole	75.9	Tr	Tr	Tr	Tr	Tr	0	11.7	0.3	0.2	0.9	0	0
8	Soya flour, full fat	12.3	11.2	N	N	N	N	0	11.2	2.9	4.5	11.4	0	0
9	low fat	14.8	13.4	N	N	N	N	N	(13.5)	0.9	1.4	3.5	0	0
10	Wheat flour, brown	66.8	1.7 ^a	Tr	Tr	0.7	0	0	6.4	0.3	0.2	0.9	0	0
11	white, breadmaking	73.9	1.4 ^a	Tr	Tr	0.3	Tr	0	(3.1)	0.2	0.1	0.6	0	0
12	white, plain	76.2	1.5 ^a	Tr	Tr	0.3	0.2	0	3.1	0.2	0.1	0.6	0	0
13	white, self-raising	74.3	1.3 ^a	0.1	Tr	0.2	0	0	(3.1)	0.2	0.1	0.5	0	0
14	wholemeal	61.8	2.1 ^a	0.1	Tr	1.0	0	0	9.0	0.3	0.3	1.0	0	0
15	Wheatgerm	(28.7)	(16.0)	(0.7)	(0.5)	(14.8)	0	0	15.6	1.3	1.1	4.2	0	0
Rice														
16	Brown rice, raw	80.0	1.3	0.5	Tr	0.8	0	0	1.9	0.7	0.7	1.0	0	0
17	boiled	31.6	0.5	0.2	Tr	0.3	0	0	0.8	0.3	0.3	0.4	0	0
18	Egg fried rice, takeaway	33.1	Tr	Tr	Tr	Tr	Tr	Tr	0.8	0.6	2.3	1.3	0	19

^a Includes the glucofructan levosin

Inorganic constituents per 100g edible portion

No.	Food	mg										µg	
		Na	K	Ca	Mg	P	Fe	Cu	Zn	Cl	Mn	Se	I
Flours, grains and starches													
1	Bran, wheat	28	1160	110	520	1200	12.9	1.34	16.2	150	9.0	(2)	N
2	Chapati flour , brown	39	280	86	69	250	3.4	0.33	2.1	67	2.0	4	N
3	white	15	200	84	29	140	2.5	0.25	1.3	68	1.0	3	N
4	Cornflour	52	61	15	7	39	1.4	0.13	0.3	71	N	Tr	N
5	Custard powder	320	61	15	7	39	1.4	0.05	0.3	480	N	N	N
6	Oatmeal , quick cook, <i>raw</i>	9	350	52	110	380	3.8	0.49	3.3	25	3.9	3	N
7	Rye flour , whole	(1)	410	32	92	360	2.7	0.42	3.0	N	0.7	N	N
8	Soya flour , full fat	9	1660	210	240	600	6.9	2.92	3.9	110	2.3	9	N
9	low fat	14	2030	240	290	640	9.1	3.12	3.2	N	2.9	(11)	N
10	Wheat flour , brown	4	250	130 ^a	80	230	3.2 ^a	0.32	1.9	45	1.9	4	N
11	white, breadmaking	3	130	140 ^b	31	120	2.1 ^b	0.18	0.9	62	0.7	3	N
12	white, plain	3	150	140 ^b	20	110	2.0 ^b	0.15	0.6	81	0.6	2	10
13	white, self-raising	360 ^c	150	350 ^c	20	450 ^c	2.0 ^b	0.17	0.6	88	0.6	2	10
14	wholemeal	3	340	38	120	320	3.9	0.45	2.9	38	3.1	6	N
15	Wheatgerm	5	950	55	270	1050	8.5	0.90	17.0	80	12.3	(3)	N
Rice													
16	Brown rice , <i>raw</i>	3	250	10	110	310	1.4	0.85	1.8	230	2.3	10	N
17	<i>boiled</i>	1	99	4	43	120	0.5	0.33	0.7	91	0.9	4	N
18	Egg fried rice , <i>takeaway</i>	417	37	12	6	47	0.5	0.07	0.8	N	0.5	N	N

^a These are levels for fortified flour. Unfortified brown flour would contain about 20mg Ca and 2.5mg Fe per 100g

^b These are levels for fortified flour. Unfortified white flours would contain about 15mg Ca and 1.5mg Fe per 100g

^c The amount present will depend on the nature and level of the raising agent used

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Vitamins per 100g edible portion

No.	Food	Retinol µg	Carotene µg	Vitamin D µg	Vitamin E mg	Thiamin mg	Ribo- flavin mg	Niacin mg	Trypt 60 mg	Vitamin B ₆ mg	Vitamin B ₁₂ µg	Folate µg	Panto- thenate mg	Biotin µg	Vitamin C mg
Flours, grains and starches															
1	Bran, wheat	0	0	0	2.60	0.89	0.36	29.6	3.0	1.38	0	260	2.4	45	0
2	Chapati flour, brown	0	0	0	(0.60)	0.26	0.05	3.8	2.4	0.29	0	29	(0.4)	(3)	0
3	white	0	0	0	(0.30)	0.36	0.06	1.9	2.0	0.17	0	20	(0.3)	(1)	0
4	Cornflour	0	0	0	Tr	Tr	Tr	Tr	0.1	Tr	0	Tr	Tr	Tr	0
5	Custard powder	0	0	0	Tr	Tr	Tr	Tr	0.1	Tr	0	Tr	Tr	Tr	0
6	Oatmeal, quick cook, raw	0	0	0	1.50	0.90	0.09	0.8	2.6	0.33	0	60	1.2	21	0
7	Rye flour, whole	0	0	0	1.60	0.40	0.22	1.0	1.6	0.35	0	78	1.0	6	0
8	Soya flour, full fat	0	N	0	1.50	0.75	0.28	2.0	8.6	0.46	0	345	1.6	N	0
9	low fat	0	N	0	N	0.90	0.29	2.4	10.6	0.52	0	410	1.8	N	0
10	Wheat flour, brown	0	0	0	0.60	0.39 ^a	0.07	4.0 ^a	2.6	(0.30)	0	51	(0.4)	(3)	0
11	white, breadmaking	0	0	0	(0.30)	0.32 ^b	0.03	2.0 ^b	2.3	0.15	0	31	0.3	1	0
12	white, plain	0	0	0	0.30	0.31 ^b	0.03	1.7 ^b	1.9	0.15	0	22	0.3	1	0
13	white, self-raising	0	0	0	(0.30)	0.30 ^b	0.03	1.5 ^b	1.8	0.15	0	19	0.3	1	0
14	wholemeal	0	0	0	1.40	0.47 ^b	0.09	5.7 ^b	2.5	0.50	0	57	0.8	7	0
15	Wheatgerm	0	0	0	22.00	2.01	0.72	4.5	5.3	3.30	0	N	1.9	25	0
Rice															
16	Brown rice, raw	0	0	0	0.80	0.59	0.07	5.3	1.5	N	0	49	N	N	0
17	boiled	0	0	0	0.30	0.14	0.02	1.3	0.6	N	0	10	N	N	0
18	Egg fried rice, takeaway	6	Tr	0.3	0.88	0.03	0.08	0.3	1.1	0.06	0.4	8	0.4	5	Tr

^a These are levels for fortified flour. Unfortified brown flour would contain 0.30mg thiamin and 1.7mg niacin per 100g

^b These are levels for fortified flour. Unfortified white flours would contain 0.10mg thiamin and 0.7mg niacin per 100g