Nutrient analysis of fruit and vegetables

Analytical report

Prepared by the Institute of Food Research

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Executive summary

The Department of Health undertakes a rolling programme of nutrient analysis surveys to ensure that reliable, up-to-date information on the nutritional value of foods is available for use in conjunction with food consumption data collected in dietary surveys to monitor the nutritional value of the nation's diet. Therefore, these nutrient surveys need to provide a single, robust set of nutrient values that is indicative of the potentially broad choice available to the consumer when selecting any particular type of food. As a result, composite samples made up of a number of different sub-samples, including different cultivars and fruits and vegetables grown in different seasons, have been analysed for this survey rather than samples made up of single types of fruit and vegetables and fruit/vegetable products, and a generic name is given to each composite.

The aim of this particular survey was to provide up-to-date nutrient composition data for a range of fruit and vegetables and fruit/vegetable products, reflecting the increasing range of commonly consumed fruit and vegetables such as pak choi, rocket and baby spinach.

The results from this analytical survey will update and extend the information currently held by providing composition data on fruit and vegetables and fruit/vegetable products. The results will be incorporated into the Department of Health's[1] nutrient databank that supports dietary surveys and will also be disseminated via the authoritative UK food composition tables, *McCance and Widdowson's The Composition of Foods.*

This project reports analysis of 59 composite samples that were made up of between 9 and 22 sub-samples representative of fruit and vegetables consumed in the UK and were purchased from retail outlets and prepared for analysis between August 2011 and February 2012. These composite samples were analysed for proximates and individual fatty acids between March and June 2012. Analyses for vitamins and minerals were carried out between March and October 2012. Results for individual fatty acids in selected samples are reported separately in electronic format. Details of sampling procedures are contained in a separate report.

Methods

A list of composite samples to be analysed was determined by reviewing consumption and market share data. Consumption was determined based on data from years 1 and 2 of the National Diet and Nutrition Survey Rolling Programme and market share information provided by industry trade associations. Types of fruit and vegetables for which the market is growing were also considered. The samples selected were those fruit and vegetables that are most commonly consumed or fruit and vegetables where there were gaps in the data available and consumption was increasing. Some commonly consumed fruit and vegetable based products were also included.

The composite list was finalised following consultation with expert users of the data (including representatives from the food industry, academia, catering suppliers, nutritionists and dietitians). Market share information was then used (where available), and industry consulted, to determine which sub-samples were included within each composite sample.

Food samples were purchased from retail outlets in the Norwich area and prepared for analysis between August 2011 and February 2012. The retail outlets included supermarkets, independent retailers and catering suppliers. Food samples were combined into 59 composite samples for analysis. Each composite was made up of between 9 and 22 sub-samples, combined on an equal weight basis. Sub-samples included were based on the need to take into account factors including cultivar, region and country of origin and season. Fresh fruits and vegetables were sampled in two seasons (summer/autumn and autumn/winter) where the cultivars and geographic origin were known to change between seasons. This process allows a single, robust set of nutrient values to be derived for each product type, covering an appropriate cross-section of products available.

Where sub-samples were purchased over two seasons, sub-samples from each season were prepared and stored frozen at -40 ºC until all sub-samples were available. Once all sub-samples had been collected from both sampling points, they were thawed and mixed in equal proportions to produce the final composite sample for analysis of all nutrients except vitamin C and folate. Analysis for these labile nutrients was undertaken at the time of seasonal sampling and sub-samples were chopped into chunks and frozen immediately. Samples were delivered to the laboratory for analysis of folate and vitamin C as soon as possible and were homogenised at the laboratory prior to analysis. Analytical results for folate and vitamin C for composites purchased over two seasons are presented as an average of these two data points.

Composites were analysed for proximates and individual fatty acids between March and June 2012 and for vitamins and minerals between March and October 2012.

Samples requiring preparation/cooking were prepared using normal domestic practices and in accordance with packaging instructions. A full list of the composite food samples analysed is given on page 9.

Composite sample list

Full details of sub samples are in the project sampling report, available as a separate document. This table lists the 59 composite samples prepared and analysed.

Sample Number	Sample Name	Description
1	Potatoes, old, raw, flesh only	22 samples, autumn and winter, including white and red varieties, pre-packed and loose.
2	Potatoes, old, boiled, flesh only	22 samples, autumn and winter, including white and red varieties, pre-packed and loose.
3	Potatoes, old, baked, flesh and skin	22 samples, autumn and winter, including white and red varieties, pre-packed and loose.
4	Potatoes, old, roasted, flesh only	11 samples, including white and red varieties, pre-packed and loose.
5	Potatoes, old, potato wedges, with skin, dipped in sunflower oil, baked	11 samples, including white and red varieties, pre-packed and loose.
6	Potatoes, old, microwaved, flesh and skin	11 samples, including white and red varieties, pre-packed and loose.
7	Potatoes, new, boiled, flesh and skin	22 samples, including UK grown and imported, pre-packed and loose.
8	Carrots, old, raw	22 samples, autumn and winter, UK grown, pre-packed and loose.
9	Carrots, old, boiled	22 samples, autumn and winter, UK grown, pre-packed and loose.
10	Carrots, old, microwaved	22 samples, autumn and winter, UK grown, pre-packed and loose.
11	Onions, raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
12	Onions, boiled	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.

Sample Number	Sample Name	Description
13	Onions, fried	11 samples, UK grown and imported, pre-packed and loose.
14	Broccoli (Calabrese), raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
15	Broccoli (Calabrese), boiled	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
16	Broccoli (Calabrese), steamed	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
17	Mushrooms, raw	11 samples, closed cap and button, UK grown and imported, pre-packed and loose.
18	Mushrooms, stewed	11 samples, closed cap and button, UK grown and imported, pre-packed and loose.
19	Mushrooms, cooked in sunflower oil	11 samples, closed cap and button, UK grown and imported, pre-packed and loose.
20	Sweetcorn, kernels, boiled ‘on the cob’	16 samples, autumn and winter, UK grown and imported.
21	Cabbage, white, raw	19 samples, autumn and winter, UK grown and imported, pre-packed and loose.
22	Cabbage, green, raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
23	Cabbage, green, boiled	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
24	Cauliflower, raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
25	Cauliflower, boiled	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
26	Beans, green, raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
27	Beans, green, boiled	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
28	Pak choi, steamed	16 samples, autumn and winter, UK grown and imported.

Sample Number	Sample Name	Description
29	Tomatoes (standard),raw	22 samples, autumn and winter, UK grown and imported, ‘on the vine’ and loose.
30	Tomatoes (standard), grilled, flesh and seeds only	22 samples, autumn and winter, UK grown and imported, ‘on the vine’ and loose.
31	Tomatoes, cherry, raw	21 samples, autumn and winter, UK grown and imported, ‘on the vine’ and loose.
32	Lettuce, average, raw	22 samples, autumn and winter, UK grown and imported, including shredded, Iceberg, Romaine and Little Gem.
33	Spinach, baby, raw	16 samples, autumn and winter, UK grown and imported.
34	Rocket, raw	19 samples, autumn and winter, UK grown and imported.
35	Cucumber, flesh and skin, raw	22 samples, autumn and winter, UK grown and imported.
36	Pepper, red, raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
37	Pepper, red, boiled	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
38	Pepper, yellow, raw	22 samples, autumn and winter, UK grown and imported, pre-packed and loose.
39	Bananas, raw, flesh only	11 samples, including Fairtrade and organic, pre-packed and loose.
40	Apples, eating, raw, flesh and skin	22 samples, autumn and winter, UK grown and imported, pre-packed and loose, including Gala, Braeburn, Golden Delicious, Pink Lady, Cox, Granny Smith.
41	Apples, cooking, stewed, flesh only	22 samples, autumn and winter, UK grown pre-packed and loose, including Bramley and unspecified varieties.

Sample Number	Sample Name	Description
42	Pears, raw, flesh and skin	22 samples, autumn and winter, UK grown and imported, pre-packed and loose, including Conference, Comice, Concorde, Rocha, Green Williams.
43	Grapes, green, raw	21 samples, seedless, autumn and winter, including Thompson and unspecified varieties.
44	Grapes, red, raw	21 samples, seedless, autumn and winter, including Crimson, Flame.
45	Strawberries, raw	19 samples, summer and autumn, UK grown and imported, including Elsanta, Sonata, Ava, Portola and unspecified varieties.
46	Blueberries, raw	21 samples, summer and winter, UK grown and imported.
47	Citrus fruit, soft/easy peelers, flesh only	22 samples, early and late winter, including clementines, mandarins, satsumas and tangerines.
48	Oranges, flesh only	22 samples, early and late winter, including Navel and Valencia.
49	Melon, yellow flesh, flesh only	22 samples, Honeydew, autumn and winter, whole and pre-prepared slices.
50	Peas, frozen, raw	12 samples, 8 brands, garden peas and petit pois.
51	Peas, frozen, microwaved	12 samples, 8 brands, garden peas and petit pois.
52	Sweetcorn, canned in water, drained	12 samples, 8 brands.
53	Tomatoes, canned, whole contents	12 samples, 9 brands, whole and chopped.
54	Tomato puree	9 samples, 8 brands.
55	Baked beans in tomato sauce	16 samples, 9 brands.

Sample Number	Sample Name	Description
56	Potato products, shaped, frozen, baked	10 samples, 5 brands, including waffles, smiley faces, letters.
57	Orange juice, chilled (premium and from concentrate)	10 samples, 8 brands, including ‘smooth’ and ‘with bits’.
58	Orange juice, from concentrate, ambient	11 samples, 9 brands, including ‘smooth’ and ‘with bits’.
59	Apple juice, clear, from concentrate, ambient and chilled	10 samples, 9 brands.

Analysis and Results

Notes Relating to Analysis

- Available carbohydrate, starch, total sugars and individual sugars are reported as monosaccharide equivalents. The following factors were used to convert from carbohydrate weights to monosaccharide equivalents.

Monosaccharides:	no conversion
Disaccharides:	x 1.05
Oligosaccharides	
Trisaccharides	x 1.07
Tetrasaccharides	x 1.08
Pentasaccharides	x 1.09
Starch:	x 1.10

- Total carbohydrate was reported as ‘available carbohydrate’ calculated from the sum of free sugars (glucose, fructose, sucrose, maltose, lactose, galactose and oligosaccharides) and complex carbohydrates (dextrins, starch).
- Protein is calculated from total nitrogen using the nitrogen conversion factors shown.
- The values given for fat refer to total fat and not just triglycerides
- Metabolisable energy is given in kilocalories (kcal) and kilojoules (kJ). These values have been calculated from protein, fat and carbohydrate using the following energy conversion factors

	kcal/g	kJ/g
Protein	4	17
Fat	9	37
Available carbohydrate	3.75	16

- Saturated, cis-monounsaturated, cis-polyunsaturated, and trans fatty acids have been calculated from summations of individual fatty acids and are shown as g/100g food. A conversion factor has been used to allow for the non-triglyceride fraction of the lipid and calculate fatty acids g/100g food from g/100g fatty acid methyl esters. The conversion factors used depend on the main fat source of the food and are taken from the tables given in the 6th Summary edition of McCance and Widdowson’s The Composition of Foods.

- Results for individual fatty acids are available separately in electronic format.

- Total vitamin A is calculated as retinol equivalents and is equal to all-trans retinol + (beta-carotene equivalents/6).
- Total carotene is expressed as beta-carotene equivalents and is calculated as beta-carotene + (alpha-carotene + beta-cryptoxanthin)/2.
- Beta-carotene is expressed as the sum of trans and cis-beta carotene.
- Total vitamin E is expressed as a-tocopherol equivalents and is calculated using the following conversion factors for vitamin E activity:

α-tocopherol	x	1.00
β-tocopherol	x	0.40
δ-tocopherol	x	0.01
γ-tocopherol	x	0.10
α-tocotrienol	x	0.30
β-tocotrienol	X	0.05
γ-tocotrienol	x	0.01

- Some values are reported as '<' meaning that the result was below the analytical limit of quantification (LOQ) or limit of detection (LOD). There is no distinction between '<' and 'not detected'.
- Proximate analysis and analysis of individual fatty acids was performed by Eurofins laboratories between March and June 2012. Analysis of inorganics and vitamins was performed by LGC between March and October 2012.

Evaluation of Data

Values provided by analytical laboratories were compiled in Excel spreadsheets for data evaluation. Where possible, analytical values were compared to other sources of comparable data. Sources used included UK Food Composition tables, other food composition tables and information from manufacturers and retailers. Where applicable, ingredients lists were also evaluated to check that the values reported corresponded to the ingredients included in the samples. Where analytical values appeared incorrect or questionable, data was checked against original laboratory reports and re-analysed if necessary.

Results for all composite samples are given below:

Fruit and vegetables survey: Analytical Results

Sample 1: Potatoes, old, raw, flesh only

PROXIMATES

Water	78.1	g/100g
Total Nitrogen	0.31	g/100g
Nitrogen conversion factor	6.25	
Protein	1.9	g/100g
Fat	0.1	g/100g
Ash	0.9	g/100g
Energy (kcal)	82	
Energy (kJ)	349	

CARBOHYDRATES

Glucose	0.5	g/100g
Fructose	0.4	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	18.7	g/100g
Total sugars	0.9	g/100g
Available carbohydrate	19.6	g/100g
Fibre (Englyst)	0.8	g/100g
Fibre (AOAC)	2.0	g/100g

FATTY ACIDS

Saturated	0.03	g/100g
cis-monounsaturated	0.01	g/100g
cis n-3 polyunsaturated	<0.01	g/100g
cis n-6 polyunsaturated	0.01	g/100g
cis polyunsaturated	0.01	g/100g
Trans	<0.01	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	443	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	21	mg/100g
Phosphorus (P)	34	mg/100g
Iron (Fe)	0.32	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.28	mg/100g
Chloride (Cl)	83	mg/100g
Manganese (Mn)	0.14	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.20	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.14	mg/100g
Folate	13	µg/100g
Pantothenic acid	0.44	mg/100g
Biotin	0.3	µg/100g
Vitamin C	14	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.01	mg/100g

Sample 2: Potatoes, old, boiled, flesh only

PROXIMATES

Water	78.9	g/100g
Total Nitrogen	0.28	g/100g
Nitrogen conversion factor	6.25	
Protein	1.8	g/100g
Fat	0.1	g/100g
Ash	0.8	g/100g
Energy (kcal)	74	
Energy (kJ)	315	

CARBOHYDRATES

Glucose	0.3	g/100g
Fructose	0.3	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	16.7	g/100g
Total sugars	0.8	g/100g
Available carbohydrate	17.5	g/100g
Fibre (Englyst)	1.0	g/100g
Fibre (AOAC)	1.6	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	365	mg/100g
Calcium (Ca)	6	mg/100g
Magnesium (Mg)	18	mg/100g
Phosphorus (P)	31	mg/100g
Iron (Fe)	0.34	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.24	mg/100g
Chloride (Cl)	74	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.21	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	18	µg/100g
Pantothenic acid	0.43	mg/100g
Biotin	0.3	µg/100g
Vitamin C	9	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.01	mg/100g

Sample 3: Potatoes, old, baked, flesh and skin

PROXIMATES

Water	71.0	g/100g
Total Nitrogen	0.40	g/100g
Nitrogen conversion factor	6.25	
Protein	2.5	g/100g
Fat	0.2	g/100g
Ash	1.3	g/100g
Energy (kcal)	97	
Energy (kJ)	413	

CARBOHYDRATES

Glucose	0.6	g/100g
Fructose	0.5	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	21.2	g/100g
Total sugars	1.4	g/100g
Available carbohydrate	22.6	g/100g
Fibre (Englyst)	1.4	g/100g
Fibre (AOAC)	2.6	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	600	mg/100g
Calcium (Ca)	11	mg/100g
Magnesium (Mg)	27	mg/100g
Phosphorus (P)	45	mg/100g
Iron (Fe)	0.63	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.38	mg/100g
Chloride (Cl)	114	mg/100g
Manganese (Mn)	0.18	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.20	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.9	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.11	mg/100g
Folate	18	µg/100g
Pantothenic acid	0.46	mg/100g
Biotin	0.3	µg/100g
Vitamin C	6	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.05	mg/100g

Sample 4: Potatoes, old, roasted, flesh only

PROXIMATES

Water	64.9	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	5.7	g/100g
Ash		g/100g
Energy (kcal)		
Energy (kJ)		

CARBOHYDRATES

Glucose	g/100g
Fructose	g/100g
Sucrose	g/100g
Maltose	g/100g
Lactose	g/100g
Starch	g/100g
Total sugars	g/100g
Available carbohydrate	g/100g
Fibre (Englyst)	g/100g
Fibre (AOAC)	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	mg/100g
Potassium (K)	mg/100g
Calcium (Ca)	mg/100g
Magnesium (Mg)	mg/100g
Phosphorus (P)	mg/100g
Iron (Fe)	mg/100g
Copper (Cu)	mg/100g
Zinc (Zn)	mg/100g
Chloride (Cl)	mg/100g
Manganese (Mn)	mg/100g
Iodine (I)	µg/100g
Selenium (Se)	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	mg/100g
Riboflavin	mg/100g
Niacin	mg/100g
Tryptophan/60	mg/100g
Vitamin B_6	mg/100g
Folate	µg/100g
Pantothenic acid	mg/100g
Biotin	µg/100g
Vitamin C	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

Sample 5: Potatoes, old, potato wedges, with skin, dipped in sunflower oil, baked

PROXIMATES

Water	62.6	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	3.8	g/100g
Ash		g/100g
Energy (kcal)		
Energy (kJ)		

CARBOHYDRATES

Glucose	g/100g
Fructose	g/100g
Sucrose	g/100g
Maltose	g/100g
Lactose	g/100g
Starch	g/100g
Total sugars	g/100g
Available carbohydrate	g/100g
Fibre (Englyst)	g/100g
Fibre (AOAC)	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	mg/100g
Potassium (K)	mg/100g
Calcium (Ca)	mg/100g
Magnesium (Mg)	mg/100g
Phosphorus (P)	mg/100g
Iron (Fe)	mg/100g
Copper (Cu)	mg/100g
Zinc (Zn)	mg/100g
Chloride (Cl)	mg/100g
Manganese (Mn)	mg/100g
Iodine (I)	µg/100g
Selenium (Se)	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	mg/100g
Riboflavin	mg/100g
Niacin	mg/100g
Tryptophan/60	mg/100g
Vitamin B_6	mg/100g
Folate	µg/100g
Pantothenic acid	mg/100g
Biotin	µg/100g
Vitamin C	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

Sample 6: Potatoes, old, microwaved, flesh and skin

PROXIMATES

Water	73.2	g/100g
Total Nitrogen	0.41	g/100g
Nitrogen conversion factor	6.25	
Protein	2.6	g/100g
Fat	0.1	g/100g
Ash	1.4	g/100g
Energy (kcal)	92	
Energy (kJ)	392	

CARBOHYDRATES

Glucose	0.9	g/100g
Fructose	0.8	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	19.4	g/100g
Total sugars	2.1	g/100g
Available carbohydrate	21.5	g/100g
Fibre (Englyst)	1.4	g/100g
Fibre (AOAC)	2.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	585	mg/100g
Calcium (Ca)	13	mg/100g
Magnesium (Mg)	27	mg/100g
Phosphorus (P)	43	mg/100g
Iron (Fe)	0.75	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.36	mg/100g
Chloride (Cl)	121	mg/100g
Manganese (Mn)	0.18	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.23	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.8	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.14	mg/100g
Folate	33	µg/100g
Pantothenic acid	0.48	mg/100g
Biotin	0.3	µg/100g
Vitamin C	5	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.13	mg/100g

Sample 7: Potatoes, new, boiled, flesh and skin

PROXIMATES

Water	81.5	g/100g
Total Nitrogen	0.29	g/100g
Nitrogen conversion factor	6.25	
Protein	1.8	g/100g
Fat	0.6	g/100g
Ash	1.1	g/100g
Energy (kcal)	68	
Energy (kJ)	291	

CARBOHYDRATES

Glucose	0.5	g/100g
Fructose	0.4	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	13.8	g/100g
Total sugars	1.1	g/100g
Available carbohydrate	14.9	g/100g
Fibre (Englyst)	0.9	g/100g
Fibre (AOAC)	1.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	3	mg/100g
Potassium (K)	377	mg/100g
Calcium (Ca)	11	mg/100g
Magnesium (Mg)	18	mg/100g
Phosphorus (P)	44	mg/100g
Iron (Fe)	0.61	mg/100g
Copper (Cu)	0.08	mg/100g
Zinc (Zn)	0.23	mg/100g
Chloride (Cl)	88	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)	<0.7	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.13	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.13	mg/100g
Folate	21	µg/100g
Pantothenic acid	0.51	mg/100g
Biotin	0.3	µg/100g
Vitamin C	7	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.11	mg/100g

Sample 8: Carrots, old, raw

PROXIMATES

Water	89.0	g/100g
Total Nitrogen	0.07	g/100g
Nitrogen conversion factor	6.25	
Protein	0.5	g/100g
Fat	0.4	g/100g
Ash	0.6	g/100g
Energy (kcal)	34	
Energy (kJ)	146	

CARBOHYDRATES

Glucose	1.1	g/100g
Fructose	1.1	g/100g
Sucrose	5.0	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.1	g/100g
Total sugars	7.2	g/100g
Oligosaccharides	0.3	g/100g
Available carbohydrate	7.7	g/100g
Fibre (Englyst)	2.1	g/100g
Fibre (AOAC)	3.9	g/100g

FATTY ACIDS

Saturated	0.10	g/100g
cis-monounsaturated	0.11	g/100g
cis n-3 polyunsaturated	0.01	g/100g
cis n-6 polyunsaturated	0.07	g/100g
cis polyunsaturated	0.08	g/100g
Trans	<0.01	g/100g

INORGANICS

Sodium (Na)	27	mg/100g
Potassium (K)	178	mg/100g
Calcium (Ca)	26	mg/100g
Magnesium (Mg)	7	mg/100g
Phosphorus (P)	16	mg/100g
Iron (Fe)	0.23	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.11	mg/100g
Chloride (Cl)	122	mg/100g
Manganese (Mn)	0.07	mg/100g
Iodine (I)	<0.7	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.13	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	8	µg/100g
Pantothenic acid	0.27	mg/100g
Biotin	0.3	µg/100g
Vitamin C	2	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	5230	µg/100g
Beta-carotene	9149	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	11764	µg/100g
Lutein	1229	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	1961	Ret Equiv
Vitamin E	0.09	mg/100g

Sample 9: Carrots, old, boiled

PROXIMATES

Water	90.0	g/100g
Total Nitrogen	0.08	g/100g
Nitrogen conversion factor	6.25	
Protein	0.5	g/100g
Fat	0.5	g/100g
Ash	0.5	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	0.9	g/100g
Fructose	0.7	g/100g
Sucrose	3.9	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.3	g/100g
Total sugars	5.5	g/100g
Oligosaccharides		g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	2.1	g/100g
Fibre (AOAC)	2.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	29	mg/100g
Potassium (K)	166	mg/100g
Calcium (Ca)	31	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	17	mg/100g
Iron (Fe)	0.34	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.13	mg/100g
Chloride (Cl)	84	mg/100g
Manganese (Mn)	0.09	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.09	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B_6	0.04	mg/100g
Folate	8	µg/100g
Pantothenic acid	0.23	mg/100g
Biotin	0.3	µg/100g
Vitamin C	3	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	2962	µg/100g
Beta-carotene	9616	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	11097	µg/100g
Lutein	905	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	1850	Ret Equiv
Vitamin E		mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 10: Carrots, old, microwaved

PROXIMATES

Water	87.5	g/100g
Total Nitrogen	0.09	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	0.2	g/100g
Ash	0.7	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	1.1	g/100g
Fructose	1.1	g/100g
Sucrose	5.0	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	7.2	g/100g
Oligosaccharides		g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	2.2	g/100g
Fibre (AOAC)	2.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	44	mg/100g
Potassium (K)	267	mg/100g
Calcium (Ca)	36	mg/100g
Magnesium (Mg)	11	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.25	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.15	mg/100g
Chloride (Cl)	130	mg/100g
Manganese (Mn)	0.11	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.14	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	17	µg/100g
Pantothenic acid	0.37	mg/100g
Biotin	0.3	µg/100g
Vitamin C	3	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	2870	µg/100g
Beta-carotene	9886	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	11321	µg/100g
Lutein	922	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	1887	Ret Equiv
Vitamin E		mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 11: Onions, raw

PROXIMATES

Water	89.1	g/100g
Total Nitrogen	0.16	g/100g
Nitrogen conversion factor	6.25	
Protein	1.0	g/100g
Fat	0.1	g/100g
Ash	0.4	g/100g
Energy (kcal)	35	
Energy (kJ)	150	

CARBOHYDRATES

Glucose	2.3	g/100g
Fructose	1.8	g/100g
Sucrose	2.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	6.2	g/100g
Oligosaccharides	1.8	g/100g
[1]Available carbohydrate	8.0	g/100g
Fibre (Englyst)	1.1	g/100g
Fibre (AOAC)	2.2	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	3	mg/100g
Potassium (K)	138	mg/100g
Calcium (Ca)	30	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.30	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.14	mg/100g
Chloride (Cl)	54	mg/100g
Manganese (Mn)	0.10	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.11	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B_6	0.10	mg/100g
Folate	11	µg/100g
Pantothenic acid	0.04	mg/100g
Biotin	1.0	µg/100g
Vitamin C	3	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.29	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 12: Onions, boiled

PROXIMATES

Water	92.5	g/100g
Total Nitrogen	0.11	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.3	g/100g
Ash	<0.1	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	1.6	g/100g
Fructose	1.2	g/100g
Sucrose	1.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	4.2	g/100g
Oligosaccharides		g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	1.3	g/100g
Fibre (AOAC)	2.3	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	105	mg/100g
Calcium (Ca)	25	mg/100g
Magnesium (Mg)	7	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.29	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.16	mg/100g
Chloride (Cl)	49	mg/100g
Manganese (Mn)	0.11	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.03	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B_6	0.07	mg/100g
Folate	8	µg/100g
Pantothenic acid	0.06	mg/100g
Biotin	0.7	µg/100g
Vitamin C	4	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 13: Onions, fried

PROXIMATES

Water	79.9	g/100g
Total Nitrogen	0.19	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	5.3	g/100g
Ash		g/100g
Energy (kcal)		
Energy (kJ)		

CARBOHYDRATES

Glucose	g/100g
Fructose	g/100g
Sucrose	g/100g
Maltose	g/100g
Lactose	g/100g
Starch	g/100g
Total sugars	g/100g
Available carbohydrate	g/100g
Fibre (Englyst)	g/100g
Fibre (AOAC)	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	mg/100g
Potassium (K)	mg/100g
Calcium (Ca)	mg/100g
Magnesium (Mg)	mg/100g
Phosphorus (P)	mg/100g
Iron (Fe)	mg/100g
Copper (Cu)	mg/100g
Zinc (Zn)	mg/100g
Chloride (Cl)	mg/100g
Manganese (Mn)	mg/100g
Iodine (I)	µg/100g
Selenium (Se)	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	mg/100g
Riboflavin	mg/100g
Niacin	mg/100g
Tryptophan/60	mg/100g
Vitamin B_6	mg/100g
Folate	µg/100g
Pantothenic acid	mg/100g
Biotin	µg/100g
Vitamin C	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

Sample 14: Broccoli (Calabrese), raw

PROXIMATES

Water	88.2	g/100g
Total Nitrogen	0.69	g/100g
Nitrogen conversion factor	6.25	
Protein	4.3	g/100g
Fat	0.6	g/100g
Ash	0.6	g/100g
Energy (kcal)	34	
Energy (kJ)	146	

CARBOHYDRATES

Glucose	0.7	g/100g
Fructose	1.2	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.6	g/100g
Total sugars	1.9	g/100g
Oligosaccharides	0.7	g/100g
Available carbohydrate	3.2	g/100g
Fibre (Englyst)	2.5	g/100g
Fibre (AOAC)	4.0	g/100g

FATTY ACIDS

Saturated	0.15	g/100g
cis-monounsaturated	0.06	g/100g
cis n-3 polyunsaturated	0.17	g/100g
cis n-6 polyunsaturated	0.08	g/100g
cis polyunsaturated	0.25	g/100g
Trans	<0.01	g/100g

INORGANICS

Sodium (Na)	9	mg/100g
Potassium (K)	397	mg/100g
Calcium (Ca)	48	mg/100g
Magnesium (Mg)	22	mg/100g
Phosphorus (P)	81	mg/100g
Iron (Fe)	1.06	mg/100g
Copper (Cu)	0.08	mg/100g
Zinc (Zn)	0.70	mg/100g
Chloride (Cl)	73	mg/100g
Manganese (Mn)	0.28	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.15	mg/100g
Riboflavin	0.12	mg/100g
Niacin	0.8	mg/100g
Tryptophan/60	0.9	mg/100g
Vitamin B_6	0.13	mg/100g
Folate	95	µg/100g
Pantothenic acid	0.61	mg/100g
Biotin	4.1	µg/100g
Vitamin C	79	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	578	µg/100g
Beta-cryptoxanthin	6	µg/100g
Total carotene	581	µg/100g
[1]Lutein		µg/100g
Lycopene	<10	µg/100g
Total vitamin A	97	Ret Equiv
Vitamin E	1.72	mg/100g

[1]Lutein was analysed but was not consistent with results for cooked broccoli (samples 15 and 16), possibly because of extraction differences between raw and cooked food, so is not included in this report.

Sample 15: Broccoli (Calabrese), boiled

PROXIMATES

Water	90.8	g/100g
Total Nitrogen	0.52	g/100g
Nitrogen conversion factor	6.25	
Protein	3.3	g/100g
Fat	0.5	g/100g
Ash	0.5	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	0.8	g/100g
Fructose	0.8	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.7	g/100g
Total sugars	1.6	g/100g
Oligosaccharides		g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	2.3	g/100g
Fibre (AOAC)	2.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	6	mg/100g
Potassium (K)	212	mg/100g
Calcium (Ca)	35	mg/100g
Magnesium (Mg)	14	mg/100g
Phosphorus (P)	59	mg/100g
Iron (Fe)	0.60	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.40	mg/100g
Chloride (Cl)	50	mg/100g
Manganese (Mn)	0.20	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.04	mg/100g
Riboflavin	0.06	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.9	mg/100g
Vitamin B_6	0.11	mg/100g
Folate	34	µg/100g
Pantothenic acid	0.28	mg/100g
Biotin	3.5	µg/100g
Vitamin C	44	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	598	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	598	µg/100g
[2]Lutein		µg/100g
Lycopene	<10	µg/100g
Total vitamin A	100	Ret Equiv
Vitamin E	1.67	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

[2]Lutein was analysed but was not consistent with results for raw broccoli (sample 14), possibly because of extraction differences between raw and cooked food, so is not included in this report.

Sample 16: Broccoli (calabrese), steamed

PROXIMATES

Water	88.4	g/100g
Total Nitrogen	0.66	g/100g
Nitrogen conversion factor	6.25	
Protein	4.1	g/100g
Fat	0.5	g/100g
Ash	1.0	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	0.8	g/100g
Fructose	0.9	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.8	g/100g
Total sugars	2.0	g/100g
Oligosaccharides		g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	2.6	g/100g
Fibre (AOAC)	3.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	7	mg/100g
Potassium (K)	373	mg/100g
Calcium (Ca)	44	mg/100g
Magnesium (Mg)	21	mg/100g
Phosphorus (P)	74	mg/100g
Iron (Fe)	0.75	mg/100g
Copper (Cu)	0.08	mg/100g
Zinc (Zn)	0.61	mg/100g
Chloride (Cl)	70	mg/100g
Manganese (Mn)	0.25	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.29	mg/100g
Riboflavin	0.15	mg/100g
Niacin	0.8	mg/100g
Tryptophan/60	0.8	mg/100g
Vitamin B_6	0.13	mg/100g
Folate	72	µg/100g
Pantothenic acid	0.58	mg/100g
Biotin	3.8	µg/100g
Vitamin C	60	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	364	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	364	µg/100g
[2]Lutein		µg/100g
Lycopene	<10	µg/100g
Total vitamin A	61	Ret Equiv
Vitamin E	1.84	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

[2]Lutein was analysed but was not consistent with results for raw broccoli (sample 14), possibly because of extraction differences between raw and cooked food, so is not included in this report.

Sample 17: Mushrooms, raw

PROXIMATES

Water	92.9	g/100g
[1]Total Nitrogen	0.40	g/100g
Nitrogen conversion factor	6.25	
[2]Protein	1.0	g/100g
Fat	0.2	g/100g
Ash	0.7	g/100g
Energy (kcal)	7	
Energy (kJ)	29	

CARBOHYDRATES

Glucose	<0.1	g/100g
Fructose	0.3	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	0.3	g/100g
Available carbohydrate	0.3	g/100g
Fibre (Englyst)	1.2	g/100g
Fibre (AOAC)	0.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	4	mg/100g
Potassium (K)	378	mg/100g
Calcium (Ca)	3	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	94	mg/100g
Iron (Fe)	0.21	mg/100g
Copper (Cu)	0.28	mg/100g
Zinc (Zn)	0.56	mg/100g
Chloride (Cl)	125	mg/100g
Manganese (Mn)	0.05	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	17	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.13	mg/100g
Riboflavin	0.27	mg/100g
Niacin	2.5	mg/100g
Tryptophan/60	0.50	mg/100g
Vitamin B_6	0.10	mg/100g
Folate	40	µg/100g
Pantothenic acid	2.38	mg/100g
Biotin	11.7	µg/100g
Vitamin C	1	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.01	mg/100g

[1]60% of nitrogen in mushrooms is non-protein nitrogen

[2]Calculated as (Total nitrogen – non-protein nitrogen) x 6.25

Sample 18: Mushrooms, stewed

PROXIMATES

Water	93.1	g/100g
[1]Total Nitrogen	0.58	g/100g
Nitrogen conversion factor	6.25	
[2]Protein	1.4	g/100g
Fat	0.3	g/100g
Ash	0.6	g/100g
Energy (kcal)	9	
Energy (kJ)	37	

CARBOHYDRATES

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.1	g/100g
Total sugars	<0.1	g/100g
Available carbohydrate	0.1	g/100g
Fibre (Englyst)	2.0	g/100g
Fibre (AOAC)	2.6	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	3	mg/100g
Potassium (K)	216	mg/100g
Calcium (Ca)	3	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	75	mg/100g
Iron (Fe)	0.32	mg/100g
Copper (Cu)	0.35	mg/100g
Zinc (Zn)	0.92	mg/100g
Chloride (Cl)	93	mg/100g
Manganese (Mn)	0.05	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	16	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.09	mg/100g
Riboflavin	0.26	mg/100g
Niacin	1.8	mg/100g
Tryptophan/60	0.8	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	15	µg/100g
Pantothenic acid	1.29	mg/100g
Biotin	10.9	µg/100g
Vitamin C	<0.5	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

[1]60% of nitrogen in mushrooms is non-protein nitrogen

[2]Calculated as (Total nitrogen – non-protein nitrogen) x 6.25

Sample 19: Mushrooms, cooked in sunflower oil

PROXIMATES

Water	79.1	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	11.0	g/100g
Ash		g/100g
Energy (kcal)		
Energy (kJ)		

CARBOHYDRATES

Glucose	g/100g
Fructose	g/100g
Sucrose	g/100g
Maltose	g/100g
Lactose	g/100g
Starch	g/100g
Total sugars	g/100g
Available carbohydrate	g/100g
Fibre (Englyst)	g/100g
Fibre (AOAC)	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	mg/100g
Potassium (K)	mg/100g
Calcium (Ca)	mg/100g
Magnesium (Mg)	mg/100g
Phosphorus (P)	mg/100g
Iron (Fe)	mg/100g
Copper (Cu)	mg/100g
Zinc (Zn)	mg/100g
Chloride (Cl)	mg/100g
Manganese (Mn)	mg/100g
Iodine (I)	µg/100g
Selenium (Se)	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	mg/100g
Riboflavin	mg/100g
Niacin	mg/100g
Tryptophan/60	mg/100g
Vitamin B_6	mg/100g
Folate	µg/100g
Pantothenic acid	mg/100g
Biotin	µg/100g
Vitamin C	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

Sample 20: Sweetcorn, kernels, boiled 'on the cob'

PROXIMATES

Water	76.0	g/100g
Total Nitrogen	0.58	g/100g
Nitrogen conversion factor	6.25	
Protein	3.6	g/100g
Fat	1.9	g/100g
Ash	0.8	g/100g
Energy (kcal)	67	
Energy (kJ)	284	

CARBOHYDRATES

Glucose	2.4	g/100g
Fructose	0.1	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	6.8	g/100g
Total sugars	2.5	g/100g
Available carbohydrate	9.5	g/100g
Oligosaccharides	0.2	g/100g
Fibre (Englyst)	2.6	g/100g
Fibre (AOAC)	5.1	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	<0.5	mg/100g
Potassium (K)	333	mg/100g
Calcium (Ca)	4	mg/100g
Magnesium (Mg)	42	mg/100g
Phosphorus (P)	107	mg/100g
Iron (Fe)	0.65	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.86	mg/100g
Chloride (Cl)	63	mg/100g
Manganese (Mn)	0.32	mg/100g
Iodine (I)	<0.7	µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.25	mg/100g
Riboflavin	0.08	mg/100g
Niacin	2.2	mg/100g
Tryptophan/60	0.7	mg/100g
Vitamin B_6	0.02	mg/100g
Folate	24	µg/100g
Pantothenic acid	0.40	mg/100g
Biotin	1.0	µg/100g
Vitamin C	4	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	18	µg/100g
Beta-cryptoxanthin	20	µg/100g
Total carotene	28	µg/100g
[1]Lutein		µg/100g
Lycopene	9	µg/100g
Total vitamin A	5	Ret Equiv
Vitamin E	0.42	mg/100g

[1]Lutein was analysed but was not consistent with results for sweetcorn, canned in water (sample 52), possibly because of extraction differences between raw and cooked food, so is not included in this report.

Sample 21: Cabbage, white, raw

PROXIMATES

Water	90.1	g/100g
Total Nitrogen	0.19	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	0.1	g/100g
Ash	0.7	g/100g
Energy (kcal)	24	
Energy (kJ)	101	

CARBOHYDRATES

Glucose	2.4	g/100g
Fructose	2.1	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	4.8	g/100g
Available carbohydrate	4.8	g/100g
Fibre (Englyst)	2.0	g/100g
Fibre (AOAC)	3.0	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	7	mg/100g
Potassium (K)	227	mg/100g
Calcium (Ca)	56	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	26	mg/100g
Iron (Fe)	0.39	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.16	mg/100g
Chloride (Cl)	94	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.23	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.12	mg/100g
Folate	84	µg/100g
Pantothenic acid	0.21	mg/100g
Biotin	0.1	µg/100g
Vitamin C	47	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.05	mg/100g

Sample 22: Cabbage, green, raw

PROXIMATES

Water	88.4	g/100g
Total Nitrogen	0.38	g/100g
Nitrogen conversion factor	6.25	
Protein	2.4	g/100g
Fat	0.2	g/100g
Ash	0.8	g/100g
Energy (kcal)	27	
Energy (kJ)	114	

CARBOHYDRATES

Glucose	2.0	g/100g
Fructose	1.8	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	4.1	g/100g
Available carbohydrate	4.1	g/100g
Fibre (Englyst)	2.7	g/100g
Fibre (AOAC)	4.1	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	7	mg/100g
Potassium (K)	288	mg/100g
Calcium (Ca)	56	mg/100g
Magnesium (Mg)	14	mg/100g
Phosphorus (P)	37	mg/100g
Iron (Fe)	0.52	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.26	mg/100g
Chloride (Cl)	75	mg/100g
Manganese (Mn)	0.18	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.33	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B_6	0.14	mg/100g
Folate	45	µg/100g
Pantothenic acid	0.36	mg/100g
Biotin	0.1	µg/100g
Vitamin C	48	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.08	mg/100g

Sample 23: Cabbage, green, boiled

PROXIMATES

Water	91.9	g/100g
Total Nitrogen	0.24	g/100g
Nitrogen conversion factor	6.25	
Protein	1.5	g/100g
Fat	0.2	g/100g
Ash	0.5	g/100g
Energy (kcal)	17	
Energy (kJ)	70	

CARBOHYDRATES

Glucose	1.0	g/100g
Fructose	0.9	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	2.3	g/100g
Available carbohydrate	2.3	g/100g
Fibre (Englyst)	2.6	g/100g
Fibre (AOAC)	2.2	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	5	mg/100g
Potassium (K)	187	mg/100g
Calcium (Ca)	54	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorous (P)	29	mg/100g
Iron (Fe)	0.40	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.16	mg/100g
Chloride (Cl)	79	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.15	mg/100g
Riboflavin	0.05	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B_6	0.07	mg/100g
Folate	40	µg/100g
Pantothenic acid	0.21	mg/100g
Biotin	<0.1	µg/100g
Vitamin C	45	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	317	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	317	µg/100g
Lutein	414	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	53	Ret Equiv
Vitamin E	0.27	mg/100g

Sample 24: Cauliflower, raw

PROXIMATES

Water	91.1	g/100g
Total Nitrogen	0.40	g/100g
Nitrogen conversion factor	6.25	
Protein	2.5	g/100g
Fat	0.4	g/100g
Ash	0.7	g/100g
Energy (kcal)	30	
Energy (kJ)	128	

CARBOHYDRATES

Glucose	1.2	g/100g
Fructose	1.3	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.2	g/100g
Total sugars	2.9	g/100g
Oligosaccharides	1.3	g/100g
Available carbohydrate	4.4	g/100g
Fibre (Englyst)	1.8	g/100g
Fibre (AOAC)	1.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	7	mg/100g
Potassium (K)	252	mg/100g
Calcium (Ca)	17	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	37	mg/100g
Iron (Fe)	0.42	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.29	mg/100g
Chloride (Cl)	73	mg/100g
Manganese (Mn)	0.13	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.06	mg/100g
Riboflavin	0.09	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.14	mg/100g
Folate	55	µg/100g
Pantothenic acid	1.04	mg/100g
Biotin	1.7	µg/100g
Vitamin C	56	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.09	mg/100g

Sample 25: Cauliflower, boiled

PROXIMATES

Water	92.3	g/100g
Total Nitrogen	0.31	g/100g
Nitrogen conversion factor	6.25	
Protein	1.9	g/100g
Fat	0.9	g/100g
Ash	0.6	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	0.9	g/100g
Fructose	1.0	g/100g
Sucrose	0.5	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	2.4	g/100g
Oligosaccharides		g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	1.6	g/100g
Fibre (AOAC)	1.9	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	7	mg/100g
Potassium (K)	215	mg/100g
Calcium (Ca)	19	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	45	mg/100g
Iron (Fe)	0.45	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.24	mg/100g
Chloride (Cl)	54	mg/100g
Manganese (Mn)	0.14	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.09	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.5	mg/100g
Vitamin B_6	0.15	mg/100g
Folate	48	µg/100g
Pantothenic acid	0.47	mg/100g
Biotin	1.2	µg/100g
Vitamin C	30	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	11	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.11	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 26: Beans, green, raw

PROXIMATES

Water	91.3	g/100g
Total Nitrogen	0.33	g/100g
Nitrogen conversion factor	6.25	
Protein	2.1	g/100g
Fat	0.4	g/100g
Ash	0.7	g/100g
Energy (kcal)	24	
Energy (kJ)	102	

CARBOHYDRATES

Glucose	0.8	g/100g
Fructose	1.4	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	1.0	g/100g
Total sugars	2.2	g/100g
Available carbohydrate	3.1	g/100g
Fibre (Englyst)	2.5	g/100g
Fibre (AOAC)	3.4	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	<0.5	mg/100g
Potassium (K)	286	mg/100g
Calcium (Ca)	52	mg/100g
Magnesium (Mg)	25	mg/100g
Phosphorus (P)	38	mg/100g
Iron (Fe)	1.04	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.38	mg/100g
Chloride (Cl)	69	mg/100g
Manganese (Mn)	0.31	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.12	mg/100g
Riboflavin	0.09	mg/100g
Niacin	0.8	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	58	µg/100g
Pantothenic acid	0.11	mg/100g
Biotin	1.0	µg/100g
Vitamin C	8	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	179	µg/100g
Beta-cryptoxanthin	147	µg/100g
Total carotene	253	µg/100g
[1]Lutein		µg/100g
Lycopene	<10	µg/100g
Total vitamin A	42	Ret Equiv
Vitamin E	0.44	mg/100g

[1]Lutein was analysed but was not consistent with results for boiled green beans (sample 27), possibly because of extraction differences between raw and cooked food, so is not included in this report.

Sample 27: Beans, green, boiled

PROXIMATES

Water	89.6	g/100g
Total Nitrogen	0.33	g/100g
Nitrogen conversion factor	6.25	
Protein	2.1	g/100g
Fat	0.3	g/100g
Ash	0.8	g/100g
Energy (kcal)	26	
Energy (kJ)	108	

CARBOHYDRATES

Glucose	1.3	g/100g
Fructose	1.2	g/100g
Sucrose	0.5	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.9	g/100g
Total sugars	3.0	g/100g
Available carbohydrate	4.0	g/100g
Fibre (Englyst)	2.5	g/100g
Fibre (AOAC)	4.1	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	<0.5	mg/100g
Potassium (K)	304	mg/100g
Calcium (Ca)	61	mg/100g
Magnesium (Mg)	28	mg/100g
Phosphorus (P)	44	mg/100g
Iron (Fe)	1.06	mg/100g
Copper (Cu)	0.12	mg/100g
Zinc (Zn)	0.38	mg/100g
Chloride (Cl)	54	mg/100g
Manganese (Mn)	0.37	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.08	mg/100g
Riboflavin	0.08	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.02	mg/100g
Folate	58	µg/100g
Pantothenic acid	0.12	mg/100g
Biotin	0.7	µg/100g
Vitamin C	6	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	28	µg/100g
Beta-carotene	129	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	143	µg/100g
[1]Lutein		µg/100g
Lycopene	<10	µg/100g
Total vitamin A	24	Ret Equiv
Vitamin E		mg/100g

[1]Lutein was analysed but was not consistent with results for raw green beans (sample 26), possibly because of extraction differences between raw and cooked food, so is not included in this report.

Sample 28: Pak choi, steamed

PROXIMATES

Water	94.8	g/100g
Total Nitrogen	0.24	g/100g
Nitrogen conversion factor	6.25	
Protein	1.5	g/100g
Fat	0.1	g/100g
Ash	0.7	g/100g
Energy (kcal)	14	
Energy (kJ)	58	

CARBOHYDRATES

Glucose	0.8	g/100g
Fructose	0.6	g/100g
Sucrose	0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.4	g/100g
Total sugars	1.5	g/100g
Available carbohydrate	1.9	g/100g
Fibre (Englyst)		g/100g
Fibre (AOAC)	2.0	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	39	mg/100g
Potassium (K)	287	mg/100g
Calcium (Ca)	73	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	47	mg/100g
Iron (Fe)	0.96	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.40	mg/100g
Chloride (Cl)	129	mg/100g
Manganese (Mn)	0.27	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	0.4	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.07	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B_6	0.04	mg/100g
Folate	80	µg/100g
Pantothenic acid	0.14	mg/100g
Biotin	1.0	µg/100g
Vitamin C	15	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	221	µg/100g
Beta-carotene	217	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	328	µg/100g
Lutein	228	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	55	Ret Equiv
Vitamin E	0.40	mg/100g

Sample 29: Tomatoes (standard), raw

PROXIMATES

Water	94.6	g/100g
Total Nitrogen	0.08	g/100g
Nitrogen conversion factor	6.25	
Protein	0.5	g/100g
Fat	0.1	g/100g
Ash	0.4	g/100g
Energy (kcal)	14	
Energy (kJ)	61	

CARBOHYDRATES

Glucose	1.4	g/100g
Fructose	1.6	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	3.0	g/100g
Available carbohydrate	3.0	g/100g
Fibre (Englyst)	1.0	g/100g
Fibre (AOAC)	1.0	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	223	mg/100g
Calcium (Ca)	8	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	22	mg/100g
Iron (Fe)	0.24	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.10	mg/100g
Chloride (Cl)	84	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.04	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	23	µg/100g
Pantothenic acid	0.29	mg/100g
Biotin	1.4	µg/100g
Vitamin C	22	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	333	µg/100g
Beta-cryptoxanthin	31	µg/100g
Total carotene	349	µg/100g
Lutein	108	µg/100g
Lycopene	507	µg/100g
Total vitamin A	58	Ret Equiv
Vitamin E	0.52	mg/100g

Sample 30: Tomatoes (standard), grilled, flesh and seeds only

PROXIMATES

Water	93.3	g/100g
Total Nitrogen	0.09	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	0.2	g/100g
Ash	0.6	g/100g
Energy (kcal)	17	
Energy (kJ)	72	

CARBOHYDRATES

Glucose	1.6	g/100g
Fructose	1.8	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	3.4	g/100g
[1]Available carbohydrate	3.4	g/100g
Fibre (Englyst)	1.0	g/100g
Fibre (AOAC)	<0.5	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	209	mg/100g
Calcium (Ca)	10	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	21	mg/100g
Iron (Fe)	0.26	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.10	mg/100g
Chloride (Cl)	93	mg/100g
Manganese (Mn)	0.14	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.05	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.15	mg/100g
Folate	14	µg/100g
Pantothenic acid	0.19	mg/100g
Biotin	1.3	µg/100g
Vitamin C	30	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	343	µg/100g
Beta-cryptoxanthin	23	µg/100g
Total carotene	355	µg/100g
Lutein	120	µg/100g
Lycopene	353	µg/100g
Total vitamin A	59	Ret Equiv
Vitamin E	0.89	mg/100g

[1]Available carbohydrate calculated on the assumption (based on analysis of starch in raw tomatoes - sample 29) that starch is not present.

Sample 31: Tomatoes, cherry, raw

PROXIMATES

Water	91.4	g/100g
Total Nitrogen	0.17	g/100g
Nitrogen conversion factor	6.25	
Protein	1.1	g/100g
Fat	0.5	g/100g
Ash	0.9	g/100g
Energy (kcal)	22	
Energy (kJ)	94	

CARBOHYDRATES

Glucose	1.6	g/100g
Fructose	2.0	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	3.6	g/100g
[1]Available carbohydrate	3.6	g/100g
Fibre (Englyst)	1.2	g/100g
Fibre (AOAC)	1.3	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	4	mg/100g
Potassium (K)	274	mg/100g
Calcium (Ca)	10	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	31	mg/100g
Iron (Fe)	0.34	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.16	mg/100g
Chloride (Cl)	95	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.05	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	24	µg/100g
Pantothenic acid	0.19	mg/100g
Biotin	1.8	µg/100g
Vitamin C	15	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	463	µg/100g
Beta-cryptoxanthin	32	µg/100g
Total carotene	479	µg/100g
Lutein	117	µg/100g
[2]Lycopene		µg/100g
Total vitamin A	80	Ret Equiv
Vitamin E	0.89	mg/100g

[1]Available carbohydrate calculated on the assumption (based on analysis of starch in raw standard tomatoes - sample 29) that starch is not present.

[2]Lycopene was analysed but was not consistent with results for raw and cooked standard tomatoes (samples 29 and 30) or other data sources, so is not included in this report.

Sample 32: Lettuce, average, raw

PROXIMATES

Water	96.1	g/100g
Total Nitrogen	0.19	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	0.1	g/100g
Ash	0.4	g/100g
Energy (kcal)	11	
Energy (kJ)	48	

CARBOHYDRATES

Glucose	0.6	g/100g
Fructose	0.8	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	1.4	g/100g
[1]Available carbohydrate	1.4	g/100g
Fibre (Englyst)	1.3	g/100g
Fibre (AOAC)	1.5	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	9	mg/100g
Potassium (K)	222	mg/100g
Calcium (Ca)	24	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	22	mg/100g
Iron (Fe)	0.13	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.22	mg/100g
Chloride (Cl)	78	mg/100g
Manganese (Mn)	0.14	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.14	mg/100g
Riboflavin	0.05	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.02	mg/100g
Folate	60	µg/100g
Pantothenic acid	0.19	mg/100g
Biotin	0.7	µg/100g
Vitamin C	1	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	60	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	60	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	10	Ret Equiv
Vitamin E	0.64	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 33: Spinach, baby, raw

PROXIMATES

Water	93.5	g/100g
Total Nitrogen	0.42	g/100g
Nitrogen conversion factor	6.25	
Protein	2.6	g/100g
Fat	0.6	g/100g
Ash	2.0	g/100g
Energy (kcal)	16	
Energy (kJ)	69	

CARBOHYDRATES

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	0.2	g/100g
Total sugars	<0.1	g/100g
Available carbohydrate	0.2	g/100g
Fibre (Englyst)	1.2	g/100g
Fibre (AOAC)	1.0	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	30	mg/100g
Potassium (K)	682	mg/100g
Calcium (Ca)	119	mg/100g
Magnesium (Mg)	80	mg/100g
Phosphorus (P)	44	mg/100g
Iron (Fe)	1.89	mg/100g
Copper (Cu)	0.16	mg/100g
Zinc (Zn)	0.90	mg/100g
Chloride (Cl)	112	mg/100g
Manganese (Mn)	0.86	mg/100g
Iodine (I)	4	µg/100g
Selenium (Se)	5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.09	mg/100g
Riboflavin	0.18	mg/100g
Niacin	1.0	mg/100g
Tryptophan/60	0.7	mg/100g
Vitamin B_6	0.12	mg/100g
Folate	161	µg/100g
Pantothenic acid	0.28	mg/100g
Biotin	0.1	µg/100g
Vitamin C	29	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	1559	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	1559	µg/100g
Lutein	5782	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	260	Ret Equiv
Vitamin E	0.48	mg/100g

Sample 34: Rocket, raw

PROXIMATES

Water	93.1	g/100g
Total Nitrogen	0.57	g/100g
Nitrogen conversion factor	6.25	
Protein	3.6	g/100g
Fat	0.4	g/100g
Ash	1.5	g/100g
Energy (kcal)	18	
Energy (kJ)	74	

CARBOHYDRATES

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	<0.1	g/100g
[1]Available carbohydrate	<0.1	g/100g
Fibre (Englyst)	1.3	g/100g
Fibre (AOAC)	1.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	30	mg/100g
Potassium (K)	326	mg/100g
Calcium (Ca)	216	mg/100g
Magnesium (Mg)	28	mg/100g
Phosphorus (P)	44	mg/100g
Iron (Fe)	1.26	mg/100g
Copper (Cu)	0.19	mg/100g
Zinc (Zn)	0.40	mg/100g
Chloride (Cl)	93	mg/100g
Manganese (Mn)	0.41	mg/100g
Iodine (I)	5	µg/100g
Selenium (Se)	2	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.19	mg/100g
Riboflavin	0.18	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.9	mg/100g
Vitamin B_6	0.08	mg/100g
Folate	88	µg/100g
Pantothenic acid	0.29	mg/100g
Biotin	1.3	µg/100g
Vitamin C	20	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	1132	µg/100g
Beta-cryptoxanthin	17	µg/100g
Total carotene	1141	µg/100g
Lutein	2117	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	190	Ret Equiv
Vitamin E	0.22	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 35: Cucumber, flesh and skin, raw

PROXIMATES

Water	96.5	g/100g
Total Nitrogen	0.16	g/100g
Nitrogen conversion factor	6.25	
Protein	1.0	g/100g
Fat	0.6	g/100g
Ash	0.4	g/100g
Energy (kcal)	14	
Energy (kJ)	60	

CARBOHYDRATES

Glucose	0.5	g/100g
Fructose	0.7	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	1.2	g/100g
Available carbohydrate	1.2	g/100g
Fibre (Englyst)	0.7	g/100g
Fibre (AOAC)	0.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	4	mg/100g
Potassium (K)	156	mg/100g
Calcium (Ca)	21	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.30	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.10	mg/100g
Chloride (Cl)	67	mg/100g
Manganese (Mn)	0.09	mg/100g
Iodine (I)	3	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.03	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.01	mg/100g
Folate	14	µg/100g
Pantothenic acid	0.32	mg/100g
Biotin	0.8	µg/100g
Vitamin C	2	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	74	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	74	µg/100g
Lutein	380	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	12	Ret Equiv
Vitamin E	0.04	mg/100g

Sample 36: Peppers, red, raw

PROXIMATES

Water	92.9	g/100g
Total Nitrogen	0.13	g/100g
Nitrogen conversion factor	6.25	
Protein	0.8	g/100g
Fat	0.2	g/100g
Ash	0.8	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	2.0	g/100g
Fructose	2.2	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	4.2	g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	1.0	g/100g
Fibre (AOAC)	2.2	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	216	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	11	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.39	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.19	mg/100g
Chloride (Cl)	48	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)	3	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.07	mg/100g
Riboflavin	0.06	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.23	mg/100g
Folate	75	µg/100g
Pantothenic acid	0.27	mg/100g
Biotin	3.3	µg/100g
Vitamin C	126	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	544	µg/100g
Beta-cryptoxanthin	72	µg/100g
Total carotene	580	µg/100g
Lutein	<10	µg/100g
Lycopene	506	µg/100g
Total vitamin A	97	Ret Equiv
Vitamin E	0.95	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 37: Peppers, red, boiled

PROXIMATES

Water	93.3	g/100g
Total Nitrogen	0.13	g/100g
Nitrogen conversion factor	6.25	
Protein	0.8	g/100g
Fat	0.1	g/100g
Ash	0.5	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	1.2	g/100g
Fructose	1.9	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	3.3	g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	0.8	g/100g
Fibre (AOAC)	2.4	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	<0.5	mg/100g
Potassium (K)	159	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	20	mg/100g
Iron (Fe)	0.35	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.19	mg/100g
Chloride (Cl)	29	mg/100g
Manganese (Mn)	0.12	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.05	mg/100g
Riboflavin	0.05	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.20	mg/100g
Folate	26	µg/100g
Pantothenic acid	0.16	mg/100g
Biotin	1.5	µg/100g
Vitamin C	89	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	586	µg/100g
Beta-cryptoxanthin	62	µg/100g
Total carotene	617	µg/100g
Lutein	<10	µg/100g
Lycopene	646	µg/100g
Total vitamin A	103	Ret Equiv
Vitamin E	1.03	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 38: Pepper, yellow, raw

PROXIMATES

Water	92.8	g/100g
Total Nitrogen	0.13	g/100g
Nitrogen conversion factor	6.25	
Protein	0.8	g/100g
Fat	0.2	g/100g
Ash	0.6	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	1.8	g/100g
Fructose	2.6	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	4.4	g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)		g/100g
Fibre (AOAC)		g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	189	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	21	mg/100g
Iron (Fe)	0.48	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.18	mg/100g
Chloride (Cl)	64	mg/100g
Manganese (Mn)	0.11	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.11	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.16	mg/100g
Folate	30	µg/100g
Pantothenic acid	0.35	mg/100g
Biotin	3.9	µg/100g
Vitamin C	121	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	115	µg/100g
Beta-cryptoxanthin	37	µg/100g
Total carotene	134	µg/100g
Lutein	379	µg/100g
Lycopene	68	µg/100g
Total vitamin A	22	Ret Equiv
Vitamin E	0.64	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

Sample 39: Bananas, raw, flesh only

PROXIMATES

Water	75.0	g/100g
Total Nitrogen	0.18	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	0.1	g/100g
Ash	1.1	g/100g
Energy (kcal)	81	
Energy (kJ)	348	

CARBOHYDRATES

Glucose	7.9	g/100g
Fructose	7.5	g/100g
Sucrose	2.7	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	2.2	g/100g
Total sugars	18.1	g/100g
Available carbohydrate	20.3	g/100g
Fibre (Englyst)	0.8	g/100g
Fibre (AOAC)	1.4	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	<0.5	mg/100g
Potassium (K)	330	mg/100g
Calcium (Ca)	6	mg/100g
Magnesium (Mg)	27	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.27	mg/100g
Copper (Cu)	0.10	mg/100g
Zinc (Zn)	0.18	mg/100g
Chloride (Cl)	109	mg/100g
Manganese (Mn)	0.36	mg/100g
Iodine (I)	3	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.15	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B_6	0.31	mg/100g
Folate	14	µg/100g
Pantothenic acid	0.35	mg/100g
Biotin	2.5	µg/100g
Vitamin C	9	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	12	µg/100g
Beta-carotene	20	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	26	µg/100g
Lutein	13	µg/100g
Lycopene	4	µg/100g
Total vitamin A	4	Ret Equiv
Vitamin E	0.16	mg/100g

Sample 40: Apples, eating, raw, flesh and skin

PROXIMATES

Water	86.2	g/100g
Total Nitrogen	0.10	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	0.5	g/100g
Ash	0.2	g/100g
Energy (kcal)	51	
Energy (kJ)	215	

CARBOHYDRATES

Glucose	2.1	g/100g
Fructose	6.7	g/100g
Sucrose	2.8	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	11.6	g/100g
[1]Available carbohydrate	11.6	g/100g
Fibre (Englyst)	1.3	g/100g
Fibre (AOAC)	1.2	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	100	mg/100g
Calcium (Ca)	5	mg/100g
Magnesium (Mg)	4	mg/100g
Phosphorus (P)	8	mg/100g
Iron (Fe)	0.09	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	44	mg/100g
Manganese (Mn)	0.04	mg/100g
Iodine (I)	4	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.04	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.1	mg/100g
Tryptophan/60	<0.1	mg/100g
Vitamin B_6	0.07	mg/100g
Folate	<5	µg/100g
Pantothenic acid	0.10	mg/100g
Biotin	1.1	µg/100g
Vitamin C	6	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	14	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	14	µg/100g
Lutein	30	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	2	Ret Equiv
Vitamin E	0.09	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 41: Apples, cooking, stewed, flesh only

PROXIMATES

Water	87.3	g/100g
Total Nitrogen	0.02	g/100g
Nitrogen conversion factor	6.25	
Protein	0.2	g/100g
Fat	0.3	g/100g
Ash	0.2	g/100g
Energy (kcal)	40	
Energy (kJ)	169	

CARBOHYDRATES

Glucose	2.1	g/100g
Fructose	5.9	g/100g
Sucrose	1.7	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	9.7	g/100g
[1]Available carbohydrate	9.7	g/100g
Fibre (Englyst)	1.3	g/100g
Fibre (AOAC)	1.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	87	mg/100g
Calcium (Ca)	3	mg/100g
Magnesium (Mg)	3	mg/100g
Phosphorus (P)	7	mg/100g
Iron (Fe)	0.10	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	73	mg/100g
Manganese (Mn)	0.02	mg/100g
Iodine (I)	4	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.02	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.05	mg/100g
Folate	<5	µg/100g
Pantothenic acid	0.11	mg/100g
Biotin	1.0	µg/100g
Vitamin C	12	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.11	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 42: Pears, raw, flesh and skin

PROXIMATES

Water	85.2	g/100g
Total Nitrogen	0.05	g/100g
Nitrogen conversion factor	6.25	
Protein	0.3	g/100g
Fat	0.1	g/100g
Ash	0.2	g/100g
Energy (kcal)	43	
Energy (kJ)	182	

CARBOHYDRATES

Glucose	3.1	g/100g
Fructose	6.6	g/100g
Sucrose	1.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	10.9	g/100g
[1]Available carbohydrate	10.9	g/100g
Fibre (Englyst)	1.6	g/100g
Fibre (AOAC)	2.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	105	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	5	mg/100g
Phosphorus (P)	9	mg/100g
Iron (Fe)	0.14	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.09	mg/100g
Chloride (Cl)	64	mg/100g
Manganese (Mn)	0.05	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.03	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.04	mg/100g
Folate	6	µg/100g
Pantothenic acid	0.08	mg/100g
Biotin	0.3	µg/100g
Vitamin C	3	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	14	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	14	µg/100g
Lutein	19	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	2	Ret Equiv
Vitamin E	0.12	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 43: Grapes, green, raw

PROXIMATES

Water	82.7	g/100g
Total Nitrogen	0.11	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.2	g/100g
Ash	0.5	g/100g
Energy (kcal)	62	
Energy (kJ)	263	

CARBOHYDRATES

Glucose	7.3	g/100g
Fructose	7.9	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	15.2	g/100g
[1]Available carbohydrate	15.2	g/100g
Fibre (Englyst)	0.7	g/100g
Fibre (AOAC)	1.2	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	217	mg/100g
Calcium (Ca)	8.4	mg/100g
Magnesium (Mg)	6.3	mg/100g
Phosphorus (P)	19	mg/100g
Iron (Fe)	0.21	mg/100g
Copper (Cu)	0.07	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	44	mg/100g
Manganese (Mn)	0.06	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.04	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.04	mg/100g
Folate	6	µg/100g
Pantothenic acid	0.14	mg/100g
Biotin	0.2	µg/100g
Vitamin C	2	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.18	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 44: Grapes, red, raw

PROXIMATES

Water	81.1	g/100g
Total Nitrogen	0.09	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	0.1	g/100g
Ash	0.5	g/100g
Energy (kcal)	67	
Energy (kJ)	286	

CARBOHYDRATES

Glucose	7.7	g/100g
Fructose	9.3	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	17.0	g/100g
[1]Available carbohydrate	17.0	g/100g
Fibre (Englyst)	0.6	g/100g
Fibre (AOAC)	1.3	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	213	mg/100g
Calcium (Ca)	11	mg/100g
Magnesium (Mg)	7	mg/100g
Phosphorus (P)	18	mg/100g
Iron (Fe)	0.24	mg/100g
Copper (Cu)	0.10	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	63	mg/100g
Manganese (Mn)	0.06	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.09	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.04	mg/100g
Folate	6	µg/100g
Pantothenic acid	0.12	mg/100g
Biotin	0.2	µg/100g
Vitamin C	3	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	14	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	14	µg/100g
Lutein	27	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	2	Ret Equiv
Vitamin E	0.20	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 45: Strawberries, raw

PROXIMATES

Water	91.6	g/100g
Total Nitrogen	0.09	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	0.5	g/100g
Ash	0.4	g/100g
Energy (kcal)	30	
Energy (kJ)	126	

CARBOHYDRATES

Glucose	3.0	g/100g
Fructose	3.1	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	6.1	g/100g
[1]Available carbohydrate	6.1	g/100g
Fibre (Englyst)	1.0	g/100g
Fibre (AOAC)	3.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	170	mg/100g
Calcium (Ca)	17	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	26	mg/100g
Iron (Fe)	0.25	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.11	mg/100g
Chloride (Cl)	62	mg/100g
Manganese (Mn)	0.31	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.02	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.03	mg/100g
Folate	61	µg/100g
Pantothenic acid	0.37	mg/100g
Biotin	1.2	µg/100g
Vitamin C	57	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	<10	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	<20	µg/100g
Lutein	38	µg/100g
Lycopene	86	µg/100g
Total vitamin A	<4	Ret Equiv
Vitamin E	0.39	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 46: Blueberries, raw

PROXIMATES

Water	85.7	g/100g
Total Nitrogen	0.14	g/100g
Nitrogen conversion factor	6.25	
Protein	0.9	g/100g
Fat	0.2	g/100g
Ash	0.2	g/100g
Energy (kcal)	40	
Energy (kJ)	169	

CARBOHYDRATES

Glucose	3.9	g/100g
Fructose	5.2	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	9.1	g/100g
Available carbohydrate	9.1	g/100g
Fibre (Englyst)	1.5	g/100g
Fibre (AOAC)	1.5	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	2	mg/100g
Potassium (K)	66	mg/100g
Calcium (Ca)	10	mg/100g
Magnesium (Mg)	5	mg/100g
Phosphorus (P)	16	mg/100g
Iron (Fe)	0.55	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.10	mg/100g
Chloride (Cl)	53	mg/100g
Manganese (Mn)	0.69	mg/100g
Iodine (I)	2	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.04	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B_6	0.01	mg/100g
Folate	8	µg/100g
Pantothenic acid	0.20	mg/100g
Biotin	1.5	µg/100g
Vitamin C	6	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	14	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	14	µg/100g
Lutein	76	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	2	Ret Equiv
Vitamin E	0.94	mg/100g

Sample 47: Citrus fruit, soft/easy peelers, flesh only

PROXIMATES

Water	85.8	g/100g
Total Nitrogen	0.12	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.2	g/100g
Ash	0.4	g/100g
Energy (kcal)	41	
Energy (kJ)	173	

CARBOHYDRATES

Glucose	1.6	g/100g
Fructose	1.9	g/100g
Sucrose	6.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	9.6	g/100g
[1]Available carbohydrate	9.6	g/100g
Fibre (Englyst)	1.2	g/100g
Fibre (AOAC)	1.5	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	128	mg/100g
Calcium (Ca)	25	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	15	mg/100g
Iron (Fe)	0.09	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	55	mg/100g
Manganese (Mn)	0.02	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.17	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	19	µg/100g
Pantothenic acid	0.15	mg/100g
Biotin	1.4	µg/100g
Vitamin C	42	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	67	µg/100g
Beta-cryptoxanthin	76	µg/100g
Total carotene	105	µg/100g
Lutein	<10	µg/100g
Lycopene	23	µg/100g
Total vitamin A	18	Ret Equiv
Vitamin E	0.21	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 48: Oranges, flesh only

PROXIMATES

Water	87.0	g/100g
Total Nitrogen	0.13	g/100g
Nitrogen conversion factor	6.25	
Protein	0.8	g/100g
Fat	0.2	g/100g
Ash	0.4	g/100g
Energy (kcal)	36	
Energy (kJ)	152	

CARBOHYDRATES

Glucose	2.0	g/100g
Fructose	2.2	g/100g
Sucrose	4.0	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	8.2	g/100g
[1]Available carbohydrate	8.2	g/100g
Fibre (Englyst)	1.7	g/100g
Fibre (AOAC)	1.2	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	122	mg/100g
Calcium (Ca)	24	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	16	mg/100g
Iron (Fe)	0.11	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	73	mg/100g
Manganese (Mn)	0.02	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.22	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.05	mg/100g
Folate	33	µg/100g
Pantothenic acid	0.27	mg/100g
Biotin	1.0	µg/100g
Vitamin C	52	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	6	µg/100g
Beta-cryptoxanthin	98	µg/100g
Total carotene	55	µg/100g
Lutein	55	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	9	Ret Equiv
Vitamin E	0.35	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 49: Melon, yellow flesh, flesh only

PROXIMATES

Water	91.0	g/100g
Total Nitrogen	0.08	g/100g
Nitrogen conversion factor	6.25	
Protein	0.5	g/100g
Fat	0.1	g/100g
Ash	0.7	g/100g
Energy (kcal)	29	
Energy (kJ)	122	

CARBOHYDRATES

Glucose	1.7	g/100g
Fructose	2.5	g/100g
Sucrose	2.6	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	6.8	g/100g
[1]Available carbohydrate	6.8	g/100g
Fibre (Englyst)	0.4	g/100g
Fibre (AOAC)	0.7	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	11	mg/100g
Potassium (K)	180	mg/100g
Calcium (Ca)	6	mg/100g
Magnesium (Mg)	6	mg/100g
Phosphorus (P)	6	mg/100g
Iron (Fe)	0.18	mg/100g
Copper (Cu)	0.02	mg/100g
Zinc (Zn)	0.10	mg/100g
Chloride (Cl)	97	mg/100g
Manganese (Mn)	0.02	mg/100g
Iodine (I)	<0.7	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.07	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.07	mg/100g
Folate	13	µg/100g
Pantothenic acid	0.24	mg/100g
Biotin	2.6	µg/100g
Vitamin C	8.0	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	7	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	7	µg/100g
Lutein	<10	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	1	Ret Equiv
Vitamin E	0.07	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 50: Peas, frozen, raw

PROXIMATES

Water	78.9	g/100g
Total Nitrogen	0.85	g/100g
Nitrogen conversion factor	6.25	
Protein	5.3	g/100g
Fat	0.7	g/100g
Ash	0.5	g/100g
Energy (kcal)	68	
Energy (kJ)	288	

CARBOHYDRATES

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	5.7	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	5.1	g/100g
Oligosaccharides	<0.1	g/100g
Total sugars	5.7	g/100g
Available carbohydrate	10.7	g/100g
Fibre (Englyst)	3.9	g/100g
Fibre (AOAC)	5.3	g/100g

FATTY ACIDS

Saturated	0.13	g/100g
cis-monounsaturated	0.07	g/100g
cis n-3 polyunsaturated	0.06	g/100g
cis n-6 polyunsaturated	0.31	g/100g
cis polyunsaturated	0.36	g/100g
Trans	<0.01	g/100g

INORGANICS

Sodium (Na)	4	mg/100g
Potassium (K)	171	mg/100g
Calcium (Ca)	36	mg/100g
Magnesium (Mg)	26	mg/100g
Phosphorus (P)	86	mg/100g
Iron (Fe)	1.75	mg/100g
Copper (Cu)	0.13	mg/100g
Zinc (Zn)	0.78	mg/100g
Chloride (Cl)	59	mg/100g
Manganese (Mn)	0.35	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.60	mg/100g
Riboflavin	0.08	mg/100g
Niacin	2.3	mg/100g
Tryptophan/60	0.8	mg/100g
Vitamin B6	0.12	mg/100g
Folate	50	µg/100g
Pantothenic acid	0.11	mg/100g
Biotin	0.5	µg/100g
Vitamin C	22	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	266	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	266	µg/100g
Lutein	1134	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	44	Ret Equiv
Vitamin E	0.11	mg/100g

Sample 51: Peas, frozen, microwaved

PROXIMATES

Water	77.6	g/100g
Total Nitrogen	0.91	g/100g
Nitrogen conversion factor	6.25	
Protein	5.7	g/100g
Fat	0.9	g/100g
Ash	0.6	g/100g
Energy (kcal)	71	
Energy (kJ)	303	

CARBOHYDRATES

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	6.6	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	4.2	g/100g
Total sugars	6.6	g/100g
Available carbohydrate	10.8	g/100g
Fibre (Englyst)	4.5	g/100g
Fibre (AOAC)	5.6	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	4	mg/100g
Potassium (K)	179	mg/100g
Calcium (Ca)	36	mg/100g
Magnesium (Mg)	27	mg/100g
Phosphorus (P)	91	mg/100g
Iron (Fe)	1.75	mg/100g
Copper (Cu)	0.14	mg/100g
Zinc (Zn)	0.82	mg/100g
Chloride (Cl)	73	mg/100g
Manganese (Mn)	0.35	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.59	mg/100g
Riboflavin	0.08	mg/100g
Niacin	2.2	mg/100g
Tryptophan/60	0.8	mg/100g
Vitamin B_6	0.11	mg/100g
Folate	60	µg/100g
Pantothenic acid	0.10	mg/100g
Biotin	0.4	µg/100g
Vitamin C	17	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	0.14	mg/100g

Sample 52: Sweetcorn, canned in water, drained

PROXIMATES

Water	78.7	g/100g
Total Nitrogen	0.41	g/100g
Nitrogen conversion factor	6.25	
Protein	2.6	g/100g
Fat	1.7	g/100g
Ash	0.5	g/100g
[1]Energy (kcal)		
[1]Energy (kJ)		

CARBOHYDRATES

Glucose	0.3	g/100g
Fructose	0.1	g/100g
Sucrose	7.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	6.2	g/100g
Total sugars	7.5	g/100g
[1]Available carbohydrate		g/100g
Fibre (Englyst)	2.5	g/100g
Fibre (AOAC)	3.1	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	158	mg/100g
Calcium (Ca)	3	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	52	mg/100g
Iron (Fe)	0.34	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.37	mg/100g
Chloride (Cl)	84	mg/100g
Manganese (Mn)	0.10	mg/100g
Iodine (I)	<0.7	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.26	mg/100g
Riboflavin	0.06	mg/100g
Niacin	1.9	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.13	mg/100g
Folate	45	µg/100g
Pantothenic acid	0.12	mg/100g
Biotin	1.1	µg/100g
Vitamin C	24	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	13	µg/100g
Beta-carotene	23	µg/100g
Beta-cryptoxanthin	22	µg/100g
Total carotene	41	µg/100g
[2]Lutein		µg/100g
Lycopene	<10	µg/100g
Total vitamin A	7	Ret Equiv
Vitamin E	0.63	mg/100g

[1]Energy values and available carbohydrate have not been calculated because available carbohydrate may include small quantities of oligosaccharides that were not analysed in this sample.

[2]Lutein was analysed but was not consistent with results for sweetcorn, kernels, boiled 'on the cob' (sample 20), possibly because of extraction differences between the two composites, so is not included in this report.

Sample 53: Tomatoes, canned, whole contents

PROXIMATES

Water	92.9	g/100g
Total Nitrogen	0.18	g/100g
Nitrogen conversion factor	6.25	
Protein	1.1	g/100g
Fat	0.1	g/100g
Ash	0.7	g/100g
Energy (kcal)	19	
Energy (kJ)	80	

CARBOHYDRATES

Glucose	1.9	g/100g
Fructose	1.9	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	3.8	g/100g
Available carbohydrate	3.8	g/100g
Fibre (Englyst)	0.7	g/100g
Fibre (AOAC)	0.8	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	5	mg/100g
Potassium (K)	212	mg/100g
Calcium (Ca)	11	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	17	mg/100g
Iron (Fe)	0.57	mg/100g
Copper (Cu)	0.07	mg/100g
Zinc (Zn)	0.10	mg/100g
Chloride (Cl)	74	mg/100g
Manganese (Mn)	0.09	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.13	mg/100g
Riboflavin	0.04	mg/100g
Niacin	1.0	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.12	mg/100g
Folate	11	µg/100g
Pantothenic acid	0.11	mg/100g
Biotin	1.4	µg/100g
Vitamin C	11	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	300	µg/100g
Beta-cryptoxanthin	55	µg/100g
Total carotene	328	µg/100g
Lutein	175	µg/100g
Lycopene	1451	µg/100g
Total vitamin A	55	Ret Equiv
Vitamin E	1.36	mg/100g

Sample 54: Tomato puree

PROXIMATES

Water	72.5	g/100g
Total Nitrogen	0.71	g/100g
Nitrogen conversion factor	6.25	
Protein	4.4	g/100g
Fat	0.2	g/100g
Ash	4.7	g/100g
Energy (kcal)	67	
Energy (kJ)	287	

CARBOHYDRATES

Glucose	5.5	g/100g
Fructose	7.4	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<0.1	g/100g
Total sugars	12.9	g/100g
Available carbohydrate	12.9	g/100g
Fibre (Englyst)	3.0	g/100g
Fibre (AOAC)	4.7	g/100g

FATTY ACIDS

Saturated	0.04	g/100g
cis-monounsaturated	0.02	g/100g
cis n-3 polyunsaturated	0.02	g/100g
cis n-6 polyunsaturated	0.05	g/100g
cis polyunsaturated	0.07	g/100g
Trans	<0.01	g/100g

INORGANICS

Sodium (Na)	49	mg/100g
Potassium (K)	1257	mg/100g
Calcium (Ca)	45	mg/100g
Magnesium (Mg)	57	mg/100g
Phosphorus (P)	94	mg/100g
Iron (Fe)	1.45	mg/100g
Copper (Cu)	0.41	mg/100g
Zinc (Zn)	0.56	mg/100g
Chloride (Cl)	297	mg/100g
Manganese (Mn)	0.34	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.98	mg/100g
Riboflavin	0.12	mg/100g
Niacin	3.6	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B_6	0.28	mg/100g
Folate	39	µg/100g
Pantothenic acid	0.11	mg/100g
Biotin	6.3	µg/100g
Vitamin C	43	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	1633	µg/100g
Beta-cryptoxanthin	242	µg/100g
Total carotene	1754	µg/100g
Lutein	903	µg/100g
Lycopene	5842	µg/100g
Total vitamin A	292	Ret Equiv
Vitamin E	5.22	mg/100g

Sample 55: Baked beans in tomato sauce

PROXIMATES

Water	72.8	g/100g
Total Nitrogen	0.81	g/100g
Nitrogen conversion factor	6.25	
Protein	5.0	g/100g
Fat	0.5	g/100g
Ash	1.7	g/100g
Energy (kcal)	81	
Energy (kJ)	343	

CARBOHYDRATES

Glucose	0.6	g/100g
Fructose	0.8	g/100g
Sucrose	3.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	10.2	g/100g
Total sugars	4.8	g/100g
Oligosaccharides	<0.1	g/100g
Available carbohydrate	15.0	g/100g
Fibre (Englyst)	3.8	g/100g
Fibre (AOAC)	4.9	g/100g

FATTY ACIDS

Saturated	0.09	g/100g
cis-monounsaturated	0.06	g/100g
cis n-3 polyunsaturated	0.15	g/100g
cis n-6 polyunsaturated	0.13	g/100g
cis polyunsaturated	0.27	g/100g
Trans	<0.01	g/100g

INORGANICS

Sodium (Na)	261	mg/100g
Potassium (K)	272	mg/100g
Calcium (Ca)	42	mg/100g
Magnesium (Mg)	30	mg/100g
Phosphorus (P)	88	mg/100g
Iron (Fe)	1.42	mg/100g
Copper (Cu)	0.24	mg/100g
Zinc (Zn)	0.62	mg/100g
Chloride (Cl)	471	mg/100g
Manganese (Mn)	0.33	mg/100g
Iodine (I)	<0.7	µg/100g
Selenium (Se)	3	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.21	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	1.0	mg/100g
Vitamin B_6	0.13	mg/100g
Folate	29	µg/100g
Pantothenic acid	0.11	mg/100g
Biotin	2.5	µg/100g
Vitamin C		mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	23	µg/100g
Beta-cryptoxanthin	<10	µg/100g
Total carotene	23	µg/100g
Lutein	<10	µg/100g
Lycopene	2726	µg/100g
Total vitamin A	4	Ret Equiv
Vitamin E	0.35	mg/100g

Sample 56: Potato products, shaped, frozen, baked

PROXIMATES

Water	55.4	g/100g
Total Nitrogen	0.40	g/100g
Nitrogen conversion factor	6.25	
Protein	2.5	g/100g
Fat	8.3	g/100g
Ash	1.6	g/100g
Energy (kcal)	190	
Energy (kJ)	799	

CARBOHYDRATES

Glucose	0.2	g/100g
Fructose	<0.1	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	27.7	g/100g
Total sugars	0.4	g/100g
Available carbohydrate	28.1	g/100g
Fibre (Englyst)	2.8	g/100g
Fibre (AOAC)	2.7	g/100g

FATTY ACIDS

Saturated	0.89	g/100g
cis-monounsaturated	3.30	g/100g
cis n-3 polyunsaturated	0.18	g/100g
cis n-6 polyunsaturated	3.47	g/100g
cis polyunsaturated	3.65	g/100g
Trans	0.02	g/100g

INORGANICS

Sodium (Na)	254	mg/100g
Potassium (K)	423	mg/100g
Calcium (Ca)	29	mg/100g
Magnesium (Mg)	22	mg/100g
Phosphorus (P)	55	mg/100g
Iron (Fe)	0.74	mg/100g
Copper (Cu)	0.13	mg/100g
Zinc (Zn)	0.41	mg/100g
Chloride (Cl)	423	mg/100g
Manganese (Mn)	0.16	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.19	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.8	mg/100g
Tryptophan/60	0.5	mg/100g
Vitamin B_6	0.10	mg/100g
Folate	17	µg/100g
Pantothenic acid	0.29	mg/100g
Biotin	0.8	µg/100g
Vitamin C	44	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	2.70	mg/100g

Sample 57: Orange juice, chilled (premium and from concentrate)

PROXIMATES

Water	87.7	g/100g
Total Nitrogen	0.14	g/100g
Nitrogen conversion factor	6.25	
Protein	0.9	g/100g
Fat	<0.1	g/100g
Ash	0.5	g/100g
Energy (kcal)	36	
Energy (kJ)	153	

CARBOHYDRATES

Glucose	2.0	g/100g
Fructose	2.4	g/100g
Sucrose	4.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	8.6	g/100g
[1]Available carbohydrate	8.6	g/100g
Fibre (Englyst)	0.2	g/100g
Fibre (AOAC)	<0.5	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	1	mg/100g
Potassium (K)	158	mg/100g
Calcium (Ca)	8	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	15	mg/100g
Iron (Fe)	0.07	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	65	mg/100g
Manganese (Mn)	0.02	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.28	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	<0.1	mg/100g
Vitamin B_6	0.06	mg/100g
Folate	22	µg/100g
Pantothenic acid	0.15	mg/100g
Biotin	0.7	µg/100g
Vitamin C	40	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	<10	µg/100g
Beta-carotene	16	µg/100g
Beta-cryptoxanthin	48	µg/100g
Total carotene	40	µg/100g
Lutein	100	µg/100g
Lycopene	<10	µg/100g
Total vitamin A	7	Ret Equiv
Vitamin E	0.15	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 58: Orange juice, from concentrate, ambient

PROXIMATES

Water	89.4	g/100g
Total Nitrogen	0.09	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	<0.1	g/100g
Ash	0.3	g/100g
Energy (kcal)	34	
Energy (kJ)	146	

CARBOHYDRATES

Glucose	2.0	g/100g
Fructose	2.4	g/100g
Sucrose	4.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	8.5	g/100g
[1]Available carbohydrate	8.5	g/100g
Fibre (Englyst)	0.2	g/100g
Fibre (AOAC)	<0.5	g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	3	mg/100g
Potassium (K)	164	mg/100g
Calcium (Ca)	12	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	16	mg/100g
Iron (Fe)	0.07	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.07	mg/100g
Chloride (Cl)	70	mg/100g
Manganese (Mn)	0.03	mg/100g
Iodine (I)	1	µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.33	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B_6	0.04	mg/100g
Folate	32	µg/100g
Pantothenic acid	0.19	mg/100g
Biotin	0.7	µg/100g
Vitamin C	31	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene	µg/100g
Beta-carotene	µg/100g
Beta-cryptoxanthin	µg/100g
Total carotene	µg/100g
Lutein	µg/100g
Lycopene	µg/100g
Total vitamin A	Ret Equiv
Vitamin E	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Sample 59: Apple juice, clear, from concentrate, ambient and chilled

PROXIMATES

Water	86.6	g/100g
Total Nitrogen	0.02	g/100g
Nitrogen conversion factor	6.25	
Protein	0.1	g/100g
Fat	<0.1	g/100g
Ash	0.2	g/100g
Energy (kcal)	37	
Energy (kJ)	157	

CARBOHYDRATES

Glucose	2.4	g/100g
Fructose	5.5	g/100g
Sucrose	1.8	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Total sugars	9.7	g/100g
[1]Available carbohydrate	9.7	g/100g
Fibre (Englyst)		g/100g
Fibre (AOAC)		g/100g

FATTY ACIDS

Saturated	g/100g
cis-monounsaturated	g/100g
cis n-3 polyunsaturated	g/100g
cis n-6 polyunsaturated	g/100g
cis polyunsaturated	g/100g
Trans	g/100g

INORGANICS

Sodium (Na)	3	mg/100g
Potassium (K)	89	mg/100g
Calcium (Ca)	6	mg/100g
Magnesium (Mg)	4	mg/100g
Phosphorus (P)	6	mg/100g
Iron (Fe)	0.06	mg/100g
Copper (Cu)	0.01	mg/100g
Zinc (Zn)	<0.06	mg/100g
Chloride (Cl)	64	mg/100g
Manganese (Mn)	0.03	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.5	µg/100g

WATER SOLUBLE VITAMINS

Thiamin	0.05	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	<0.1	mg/100g
Vitamin B_6	0.05	mg/100g
Folate	1	µg/100g
Pantothenic acid	0.05	mg/100g
Biotin	0.9	µg/100g
Vitamin C	26	mg/100g

FAT SOLUBLE VITAMINS

Alpha-carotene		µg/100g
Beta-carotene		µg/100g
Beta-cryptoxanthin		µg/100g
Total carotene		µg/100g
Lutein		µg/100g
Lycopene		µg/100g
Total vitamin A		Ret Equiv
Vitamin E	<0.01	mg/100g

[1]Available carbohydrate calculated on the assumption that starch is not present.

Analytical Methods

Moisture:
A homogenised portion of the sample is mixed with sand and heated to 102°C. The moisture loss is determined gravimetrically.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: BS 4401 pt3:1997
LOQ 0.1 g/100g

Ash:
A homogenised portion of the sample is ashed in a muffle furnace at 550°C. The ash is determined gravimetrically.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: BS 4401 pt11:1998
LOQ 0.1 g/100g

Protein:
The sample is analysed using Leco instrumentation following the Dumas procedure: The sample is combusted in an oxygen atmosphere, the gaseous product is cleaned and nitrogen compounds converted to nitrogen which is measured by a thermal conductivity cell. The crude protein is calculated by multiplying by the appropriate conversion factor.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
LOQ 0.1 g/100g

Fat:
The sample is acid hydrolysed with hydrochloric acid, cooled, filtered and dried. The fat is extract from the residue with petroleum ether and the dried fat determined gravimetrically.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: BS 4401 pt4:1970 (Weibull Stoldt)
LOQ 0.1 g/100g

Fatty acids:
The lipid fractions of the sample are solvent extracted. The isolated fat is transesterified with methanolic sodium methoxide to form fatty acid methyl esters (FAMES). The FAME profile is determined using capillary gas chromatography (GC). Quantification and identification of individual FAMEs in the test material is achieved with reference to calibration standards.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
LOQ 0.01 mg/100g

Sugars:
The sugars are extracted with water, clarified and chromatographically separated on an amine column with an acetonitrile/water mobile phase. The sugars are detected using an evaporative light scattering detector and quantified with reference to calibration standards.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
LOQ 0.1 g/100g

Starch:
The method consists of two separate determinations. The sample is treated with warm diluted hydrochloric acid, clarified and filtered; the optical rotation of the resulting solution is determined. In the second determination, the sample is extracted with 40% ethanol and filtered. The filtrate is acidified with hydrochloric acid, clarified and filtered again; the optical rotation of the resulting solution is determined at 20 ±2ºC.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: The Feeding Stuffs (Sampling and Analysis) Regulations 1982 Method 30a.
LOQ 2 g/100g

Oligosaccharides:
Malto-oligosaccharides (DP1-7) are determined individually by High Performance Anion Exchange Chromatography with Pulsed Amperometric Detection. In-house method
LOQ 0.1 g/100g

Dietary Fibre:
AOAC:
The sample is weighed and de-fatted if necessary. It is then gelatinised and treated with α-amylase and further digested enzymatically with protease and amyloglucosidase to remove the starch and protein. The dietary fibre is precipitated with IMS, filtered, washed, dried and weighed. Total dietary fibre is then determined gravimetrically and corrected for protein and ash.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: AOAC 985.29/45.4.07 (2007)
LOQ 0.5 g/100g

Englyst (Non-starch polysaccharides):
Englyst Fibrezym kit with colorimetric end point
LOQ 0.2 g/100g

Inorganics:
Sodium, Potassium, Calcium, Magnesium, Copper, Iron, Manganese, Zinc, Phosphorus, Selenium
Samples are digested in acid under oxidising conditions, using sealed ‘bombs’ in automated microwave digestors, to prevent losses of volatile metals/inorganics, Metals (and some inorganics) are then determined by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) or by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). These techniques allow the sensitive and accurate (true and precise) determination of metals in foods and allow matrix interferences to be overcome.
In house methods - UKAS accredited.

Iodide:
Concentrations are determined by high resolution ICP-MS after extraction with tetra methyl ammonium hydroxide.
UKAS accredited.

Chloride:
Concentrations are determined using a Corning Chloride Analyser after extraction with nitric acid.
In house method FFF/B1-2104 - UKAS accredited.

Vitamins – Water Soluble:
Thiamin, Riboflavin & Vitamin B6
Thiamin, riboflavin and Vitamin B6 are determined by HPLC after appropriate and controlled acid and enzymatic hydrolysis. The methods are based on published CEN Standards. The selected method enables determination of total B6 as pyridoxine and is most appropriate to samples of this type where pyridoxine or its phosphate will form the major vitamin B6 component.
UKAS accredited.

Niacin, Total Folate, Biotin, Pantothenic acid
Determined using microbiological assay (MBA) procedures with detection carried out using VitaFast® MBA test kits.
UKAS accredited.

Tryptophan
Determined by HPLC using fluorescence detection after alkaline hydrolysis. Tryptophan contributes to the available Niacin on the basis that Niacin = Tryptophan/60.

Vitamin B12
Vitamin B12 is extracted from food by autoclaving in acetate buffer in the presence of cyanide. Vitamin B12 is determined by microbiological assay using *L.Delbrueckii.Lactis.*
UKAS accredited.

The B-vitamin results are expressed as follows:

Thiamin:	thiamin chloride hydrochloride
Riboflavin:	free riboflavin
Niacin:	nicotinic acid
Vitamin B6:	pyridoxine hydrochloride
Pantothenate:	pantothenic acid
Biotin:	d-biotin
B12:	cyanocobalamin
Total folate:	pteroyglutamic acid

Vitamin C
Vitamin C is determined by HPLC using fluorescence detection.

Oil Soluble Vitamins:
Vitamins A, E and the carotenoids are determined using an in house procedure involving saponification of the sample, solvent extraction and HPLC determination - UKAS accredited methods based on:

- Vitamin A – Retinol: BS EN 12823-1:2000. Foodstuffs-Determination of Vitamin A by High Performance Liquid Chromatography-Part 1: Measurement of Retinol.
- Vitamin A – β-Carotene: BS EN 12823-2:2000. Foodstuffs-Determination of Vitamin A by High Performance Liquid Chromatography-Part 2: Measurement of β-Carotene.

- Vitamin E: BS EN 12822:2000. Foodstuffs-Determination of Vitamin E by High Performance Liquid Chromatography-Measurement of α-, β-, γ- and δ-tocopherols.

The total vitamin E figure takes into account the relative biological activities of the different isomers. Vitamin E is given as mg/100g of α - tocopherol equivalent. The activities used for these calculations are as shown below:

α - tocopherol	1.0
β - tocopherol	0.4
γ - tocopherol	0.1
δ - tocopherol	0.01

Total vitamin A is expressed as ug/100g all-trans retinol equivalent (ATRE) and is calculated as follows:

All-trans retinol + (0.75*13-cis retinol) + (β-carotene/6) + (other active carotenoids/12)

UKAS accredited.

Quality Assurance

Eurofins Laboratories followed standard operating procedures to assure quality of data reported. Procedures are described in the documents listed below.

Document No.	Edition	Title/content
AQC/001	7	Procedures for the establishment of internal quality control charts for AQC samples
AQC/005	5	Procedures for the conduct of external proficiency schemes
AQC/006	4	Storage of chemicals, stock solutions & standards and verification of 'critical reagents'
AQC/011	1	Analytical quality control charts for AQC samples, preparation, interpretation and action
SAMP/031	2	Procedure for managing repeat analyses
DATA/009	9	Manual recording of data and data verification
DATA/016	2	Approval of results in eLIMS

Listed below are details of the analytical methods used in the analysis of proximates and fatty acids and the quality control procedures used. Where any proficiency test results from FAPAS are quoted they are from the rounds near to the time at which analysis was carried out.

Q/005: The determination of moisture content of food products (UD006)
A homogenised portion of the sample is mixed with sand and heated to 102°C. The moisture loss determined gravimetrically.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: BS 4401 pt3:1997
LOQ 0.1 g/100g
The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)
Wet pet food is 76.33 g/100g +/- 1.4 g/100g.
FAPAS Results

Round	Date	Sample Type	Determination	Z score
0177	01/12	Canned meat	Moisture	-0.6
0179	04/12	Canned meat	Moisture	0.1
0181	08/12	Canned meat	Moisture	0.7
2445	03/12	Breadcrumbs	Moisture	0.2
2446	05/12	Wheat flour	Moisture	-0.5
2594	01/12	Chocolate	Moisture	3.0
2597	04/12	Cheese & Pasta meal	Moisture	-0.6
2598	05/12	Maize snack food	Moisture	-0.2
2599	07/12	Fish paste	Moisture	0.3

Q/002: The determination of the fat content (UD003)
The sample is acid hydrolysed with hydrochloric acid, cooled, filtered and dried. The fat is extract from the residue with petroleum ether and the dried fat determined gravimetrically.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: BS 4401 pt4:1970
LOQ 0.1 g/100g
The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)
Wet pet food is 7.34 g/100g +/- 0.36 g/100g.
Dry pet food is 7.34 g/100g +/- 0.22 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
103	7/11	Cereal product	Total fat	0.5
105	8/11	Mixed fat spread	Total fat	0.7
0177	01/12	Canned meat	Total fat	-0.2
0179	04/12	Canned meat	Total fat	0.1
0181	08/12	Canned meat	Total fat	0.8
2594	03/12	Chocolate	Total fat	-1.7
2597	04/12	Cheese & Pasta meal	Total fat	-0.2
2598	05/12	Maize snack food	Total fat	-0.2
2599	07/12	Fish paste	Total fat	0

Q/001: The determination of the ash content. (UD007)
A homogenised portion of the sample is ashed in a muffle furnace at 550°C. The ash is determined gravimetrically.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: BS 4401 pt11:1998
LOQ 0.1 g/100g
The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)
Dry pet food is 7.18 g/100g +/- 0.18 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
0177	01/12	Canned meat	Ash	-0.1
0179	04/12	Canned meat	Ash	0
0181	08/12	Canned meat	Ash	0.7
2445	03/12	Breadcrumbs	Ash	0.5
2446	05/12	Wheat flour	Ash	0.9
2597	04/12	Cheese & Pasta meal	Ash	0.5
2598	05/12	Maize snack food	Ash	-1.2
2599	07/12	Fish paste	Ash	0.3
25101	08/12	Condensed milk	Ash	0.3

Z/001: The determination of nitrogen and crude protein using Leco instrumentation (UD001)
The sample is analysed by a Leco instrumentation following Dumas procedure: The sample is combusted in an oxygen atmosphere, the gaseous product is cleaned and nitrogen compounds converted to nitrogen which is measured by a thermal conductivity cell. The crude protein is calculated by multiplying by the appropriate conversion factor.

Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
LOQ 0.1 g/100g
The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)
Wet pet food is 8.09 g/100g +/- 0.4 g/100g.
Feed is 2.72 g/100g +/- 0.06 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
67	4/10	Canned meat	Nitrogen	0.4
70	7/10	Canned meat	Nitrogen	0.9
71	9/10	Canned meat meal	Nitrogen	0.8
73	4/11	Canned meat	Nitrogen	0.8
0177	01/12	Canned meat	Nitrogen	1.1
0179	04/12	Canned meat	Nitrogen	-0.5
0181	08/12	Canned meat	Nitrogen	1.4

H/085: The determination of total dietary fibre by the AOAC method ((H/085)
The sample is weighed and de-fatted if necessary. It is then gelatinised and treated with α-amylase and further digested enzymatically with protease and amyloglucosidase to remove the starch and protein. The dietary fibre is precipitated with IMS, filtered, washed, dried and weighed. Total dietary fibre is then determined gravimetrically and corrected for protein and ash.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: AOAC 985.29/45.4.07 (2007)
LOQ 0.5 g/100g
The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)
Weetabix cereal is 10.72 g/100g +/- 1.07 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
33	2/09	Breadcrumbs	AOAC fibre	0.3
34	5/09	Wheat flour	AOAC fibre	0.3
35	8/09	Porridge oats	AOAC fibre	0.6
36	10/09	Cereal	AOAC fibre	0.4
2445	03/12	Breadcrumbs	AOAC fibre	-0.1
2446	05/12	Wheat flour	AOAC fibre	0.1

CHROM/104: The determination of extractable sugars (UD296)
The sugars are extracted with water, clarified and chromatographically separated on an amine column with an acetonitrile/water mobile phase. The sugars are detected using an evaporative light scattering detector and quantified with reference to calibration standards.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
LOQ 0.1 g/100g

The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)

Sugar	Matrix	Level	Uncertainty ±	Unit
Sugar (total)	Cornflakes	26.10	1.59	g/100g
Fructose	Cornflakes	5.22	0.58	g/100g
Glucose	Cornflakes	5.12	0.60	g/100g
Galactose	Cornflakes	4.00	0.58	g/100g
Sucrose	Cornflakes	4.01	0.68	g/100g
Maltose	Cornflakes	4.00	0.78	g/100g
Lactose	Cornflakes	3.75	0.64	g/100g

FAPAS Results

Round	Date	Sample Type	Determination	Z score
33	10/09	Orange juice	Fructose	-1.8
33	10/09	Orange juice	Glucose	-4.8
33	10/09	Orange juice	Sucrose	-2.6
33	10/09	Orange juice	Total sugars	-3.8
65	1/09	Chocolate cake mix	Total sugars	-0.4
74	8/09	Milk powder	Lactose	-0.4
71	9/10	Canned meat meal	Total sugars	-0.4
0841	12/11	Orange juice	Fructose	-0.3
0841	12/11	Orange juice	Glucose	0.2
0841	12/11	Orange juice	Sucrose	1.0
0841	12/11	Orange juice	Total sugars	1.2

H/050: The determination of Starch (UD012)

Determination of starch and high molecular weight degradation products of starch in feeding stuffs and milk powders. It is not applicable to feeding stuffs containing beet chips, beet pulp, dried beet tops or leaves, potato pulp, dried yeasts, products rich in inulin (e.g. dried or powdered Jerusalem artichokes) and products containing greaves.

The method consists of two separate determinations. The sample is treated with warm diluted hydrochloric acid, clarified and filtered; the optical rotation of the resulting solution is determined. In the second determination, the sample is extracted with 40% ethanol and filtered. The filtrate is acidified with hydrochloric acid, clarified and filtered again; the optical rotation of the resulting solution is determined at 20 ± 2ºC.

Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
Ref: The Feeding Stuffs (Sampling and Analysis) Regulations 1982 Method 30a.
LOQ 2 g/100g

The method of uncertainty with a coverage factor of 2 (ie 95% confidence level) Wheat grain is 68.8 g/100g +/- 1.50 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
77	1/09	Poultry ration	Starch	0.4
66	1/10	Canned meat meal	Starch	-0.2
1098	1/12	Poultry ration	Starch	-0.8

CHROM/215: The determination of fatty acids by GC (UD751)
The lipid fractions of the sample are solvent extracted. The isolated fat is transesterified with methanolic sodium methoxide to form fatty acid methyl esters (FAMES). The FAME profile is determined using capillary gas chromatography (GC). Quantification and identification of individual FAMEs in the test material is achieved with reference to calibration standards.
Accredited to BS/EN ISO/IEC 17025:2005. UKAS 0680
LOQ 0.01 mg/100g

The method of uncertainty with a coverage factor of 2 (ie 95% confidence level)

Fatty Acid	Matrix	Level	Uncertainty ±	Unit
FAMES-saturates	Butter	63.6	1.60	%
FAMES-monunsaturates	Butter	26.2	1.00	%
FAMES-polyunsaturates	Butter	3.88	0.26	%
FAMES-trans fatty acids	Butter	2.95	0.20	%
alpha-linolenic acid (ALA)	Butter	0.524	0.046	%
Eicosapentenoic acid (EPA)	Butter	0.42	0.040	%
Docosapentaenoic acid (DPA)	Butter	0.12	0.014	%
Docosahexaenoic avid (DHA)	Butter	0.472	0.042	%

FAPAS Results

Round	Date	Sample Type	Determination	Z score
101	05/11	Infant Milk formula	Saturates	0.4
101	05/11	Infant Milk formula	Monounsaturates	0.5
101	05/11	Infant Milk formula	Polyunsaturates	0.5
101	05/11	Infant Milk formula	Total TFA	0.5
101	05/11	Infant Milk formula	Linoleic acid	0.4
101	05/11	Infant Milk formula	DHA	-0.8
103	07/11	Cereal product	Saturates	-1.5
103	07/11	Cereal product	Monounsaturates	0.8
103	07/11	Cereal product	Polyunsaturates	0.9
103	07/11	Cereal product	Total TFA	-2.3
103	07/11	Cereal product	Linoleic acid	1.6
105	08/11	Mixed fat spread	Saturates	-0.7
105	08/11	Mixed fat spread	Monounsaturates	0.3
105	08/11	Mixed fat spread	Polyunsaturates	0.3
105	08/11	Mixed fat spread	Total TFA	-0.4
14112	06/12	Infant Milk formula	Saturates	0.8
14116	08/12	Infant Milk formula	Saturates	0.1
14112	06/12	Infant Milk formula	Monounsaturates	0.2
14116	08/12	Infant Milk formula	Monounsaturates	-0.4
14112	06/12	Infant Milk formula	Polyunsaturates	0
14116	08/12	Infant Milk formula	Polyunsaturates	-0.7
14112	06/12	Infant Milk formula	Total TFA	-0.1
14116	08/12	Infant Milk formula	Total TFA	0.1
14112	06/12	Infant Milk formula	Linoleic acid	0.5

Listed below are details of the analytical methods used in the analysis of inorganics and vitamins and the quality control procedures used with results from reference material measurements during sample analysis.

Inorganics:
Sodium, Potassium, Calcium, Magnesium, Copper, Iron, Manganese, Zinc, Phosphorus, Selenium
Samples are digested in acid under oxidising conditions, using sealed 'bombs' in automated microwave digesters, to prevent losses of volatile metals/inorganics, Metals (and some inorganics) are then determined by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) or by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). These techniques allow the sensitive and accurate (true and precise) determination of metals in foods and allow matrix interferences to be overcome.
In house methods - UKAS accredited.

Sodium

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	24±2	29.8
SRM 1547	Peach leaves	24±2	29.6
SRM 1547	Peach leaves	24±2	29.5
SRM 1547	Peach leaves	24±2	28.6
SRM 1547	Peach leaves	24±2	29.3
SRM 1547	Peach leaves	24±2	27.0
SRM 1547	Peach leaves	24±2	27.6
SRM 1547	Peach leaves	24±2	28.6

Potassium

Reference Material	Matrix	Expected Level (mg/100g)	Measured Level (mg/100g)
SRM 1547	Peach leaves	2430±30	2368
SRM 1547	Peach leaves	2430±30	2357
SRM 1547	Peach leaves	2430±30	2332
SRM 1547	Peach leaves	2430±30	2336
SRM 1547	Peach leaves	2430±30	2372
SRM 1547	Peach leaves	2430±30	2285
SRM 1547	Peach leaves	2430±30	2276
SRM 1547	Peach leaves	2430±30	2317

Calcium

Reference Material	Matrix	Expected Level (mg/100g)	Measured Level (mg/kg)
SRM 1547	Peach leaves	1560±20	1529
SRM 1547	Peach leaves	1560±20	1510
SRM 1547	Peach leaves	1560±20	1503
SRM 1547	Peach leaves	1560±20	1520
SRM 1547	Peach leaves	1560±20	1535

SRM 1547	Peach leaves	1560±20	1501
SRM 1547	Peach leaves	1560±20	1497
SRM 1547	Peach leaves	1560±20	1501

Magnesium

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	4320±80	4240
SRM 1547	Peach leaves	4320±80	4207
SRM 1547	Peach leaves	4320±80	4191
SRM 1547	Peach leaves	4320±80	4057
SRM 1547	Peach leaves	4320±80	4116
SRM 1547	Peach leaves	4320±80	4006
SRM 1547	Peach leaves	4320±80	4015
SRM 1547	Peach leaves	4320±80	4061

Copper

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	3.7±0.4	4.51
SRM 1547	Peach leaves	3.7±0.4	3.78
SRM 1547	Peach leaves	3.7±0.4	3.64
SRM 1547	Peach leaves	3.7±0.4	3.75
SRM 1547	Peach leaves	3.7±0.4	3.67
SRM 1547	Peach leaves	3.7±0.4	3.65
SRM 1547	Peach leaves	3.7±0.4	3.66
SRM 1547	Peach leaves	3.7±0.4	3.78

Iron

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	218±14	205.2
SRM 1547	Peach leaves	218±14	199.8
SRM 1547	Peach leaves	218±14	204.8
SRM 1547	Peach leaves	218±14	200.4
SRM 1547	Peach leaves	218±14	200.7
SRM 1547	Peach leaves	218±14	199.5
SRM 1547	Peach leaves	218±14	196.1
SRM 1547	Peach leaves	218±14	199.3

Manganese

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	98±3	97.23
SRM 1547	Peach leaves	98±3	95.80
SRM 1547	Peach leaves	98±3	95.62
SRM 1547	Peach leaves	98±3	94.41
SRM 1547	Peach leaves	98±3	96.04
SRM 1547	Peach leaves	98±3	93.96
SRM 1547	Peach leaves	98±3	93.31
SRM 1547	Peach leaves	98±3	94.82

Zinc

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	17.9±0.4	22.10
SRM 1547	Peach leaves	17.9±0.4	21.28
SRM 1547	Peach leaves	17.9±0.4	21.77
SRM 1547	Peach leaves	17.9±0.4	20.41
SRM 1547	Peach leaves	17.9±0.4	20.25
SRM 1547	Peach leaves	17.9±0.4	23.22
SRM 1547	Peach leaves	17.9±0.4	20.05
SRM 1547	Peach leaves	17.9±0.4	19.65

Phosphorous

Reference Material	Matrix	Expected Level (mg/100g)	Measured Level (mg/100g)
SRM 1547	Peach leaves	137±7	133
SRM 1547	Peach leaves	137±7	130
SRM 1547	Peach leaves	137±7	131
SRM 1547	Peach leaves	137±7	131
SRM 1547	Peach leaves	137±7	132
SRM 1547	Peach leaves	137±7	129
SRM 1547	Peach leaves	137±7	128
SRM 1547	Peach leaves	137±7	130

Selenium

Reference Material	Matrix	Expected Level (μg/g)	Measured Level (μg/g)
SRM 1547	Peach leaves	120±9	120
SRM 1547	Peach leaves	120±9	119
SRM 1547	Peach leaves	120±9	129
SRM 1547	Peach leaves	120±9	120
SRM 1547	Peach leaves	120±9	115
SRM 1547	Peach leaves	120±9	111
SRM 1547	Peach leaves	120±9	109
SRM 1547	Peach leaves	120±9	106

Iodide:

Concentrations are determined by high resolution ICP-MS after extraction with tetra methyl ammonium hydroxide.
UKAS accredited.

Reference Material	Matrix	Expected Level (μg/g)	Iodide (μg/kg)
NIST 1849	Infant formula	1370±410	1038
NIST 1849	Infant formula	1370±410	1026
NIST 1849	Infant formula	1370±410	1039
NIST 1849	Infant formula	1370±410	1059
NIST 1849	Infant formula	1370±410	1066

Vitamins – Water Soluble:

The B-vitamin results are expressed as follows:

Thiamin: thiamin chloride hydrochloride
Riboflavin: free riboflavin
Niacin: nicotinic acid
Vitamin B6: pyridoxine hydrochloride
Pantothenate: pantothenic acid
Biotin: d-biotin
B12: cyanocobalamin
Total folate: pteroyglutamic acid

Thiamin, Riboflavin & Vitamin B6
Thiamin, riboflavin and Vitamin B6 are determined by HPLC after appropriate and controlled acid and enzymatic hydrolysis. The methods are based on published CEN Standards. The selected method enables determination of total B6 as pyridoxine and is most appropriate to samples of this type where pyridoxine or its phosphate will form the major vitamin B6 component.
UKAS accredited.

Thiamin

Reference Material	Matrix	Expected Level (mg/kg)	Thiamin (mg/kg)
NIST 1849a	Infant formula	15.80±1.95	13.38
NIST 1849a	Infant formula	15.80±1.95	13.38
NIST 1849a	Infant formula	15.80±1.95	12.21
BCR 485	Mixed veg	3.07±0.34	3.07
BCR 485	Mixed veg	3.07±0.34	2.99
BCR 485	Mixed veg	3.07±0.34	3.03

Riboflavin

Reference Material	Matrix	Expected Level (mg/kg)	Riboflavin (mg/kg)
NIST 1849a	Infant formula	20.37±0.52	20.313
NIST 1849a	Infant formula	20.37±0.52	20.858
NIST 1849a	Infant formula	20.37±0.52	20.515

Vitamin B6

Reference Material	Matrix	Expected Level (mg/kg)	Vitamin B6 (mg/kg)
NIST 1849a	Infant formula	13.46±0.93	14.32
NIST 1849a	Infant formula	13.46±0.93	13.26
NIST 1849a	Infant formula	13.46±0.93	14.55
BCR 485	Mixed veg	4.8±0.8	4.95
BCR 485	Mixed veg	4.8±0.8	4.60
BCR 485	Mixed veg	4.8±0.8	4.81

Niacin, Total Folate, Biotin, Pantothenic acid
Determined using microbiological assay (MBA) procedures with detection carried out using VitaFast® MBA test kits.
UKAS accredited.

Niacin

Reference Material	Matrix	Expected Level (mg/kg)	Niacin (mg/kg)
NIST 1849a	Infant formula	97.5±11.7	114.0
NIST 1849a	Infant formula	97.5±11.7	133.0
NIST 1849a	Infant formula	97.5±11.7	110.0
BCR 431	Brussel sprout	43±3	55.0
BCR 431	Brussel sprout	43±3	39.0

Folate

Reference Material	Matrix	Expected Level (mg/kg)	Folate (mg/kg)
NIST 1849a	Infant formula	2.293±0.062	2.30
NIST 1849a	Infant formula	2.293±0.062	2.40
NIST 1849a	Infant formula	2.293±0.062	2.30
BCR 485	Mixed veg	3.15±0.28	3.05
BCR 485	Mixed veg	3.15±0.28	2.99
BCR 485	Mixed veg	3.15±0.28	3.35

Biotin

Reference Material	Matrix	Expected Level (mg/kg)	Biotin (mg/kg)
NIST 1849a	Infant formula	1.99±0.13	1.960
NIST 1849a	Infant formula	1.99±0.13	1.884
NIST 1849a	Infant formula	1.99±0.13	1.823

Pantothenate

Reference Material	Matrix	Expected Level (mg/kg)	Pantothenate (mg/kg)
NIST 1849a	Infant formula	68.2±1.9	77.8
NIST 1849a	Infant formula	68.2±1.9	73.6
NIST 1849a	Infant formula	68.2±1.9	75.7

Tryptophan
Determined by HPLC using fluorescence detection after alkaline hydrolysis. Tryptophan contributes to the available Niacin on the basis that Niacin = Tryptophan/60.

Reference Material	Matrix	Expected Level (g/100g)	Tryptophan (g/100g)
NIST 1849	Infant formula	1.880±1.5	1.894
NIST 1849	Infant formula	1.880±1.5	1.999
NIST 1849	Infant formula	1.880±1.5	1.703
NIST 1849	Infant formula	1.880±1.5	2.200

Vitamin B12
Vitamin B12 is extracted from food by autoclaving in acetate buffer in the presence of cyanide. Vitamin B12 is determined by microbiological assay using *L.Delbrueckii.Lactis.*
UKAS accredited.

Reference Material	Matrix	Expected Level (mg/kg)	Vitamin B12 (mg/kg)
NIST 1849a	Infant formula	0.0482±0.0085	0.050
NIST 1849a	Infant formula	0.0482±0.0085	0.040
NIST 1849a	Infant formula	0.0482±0.0085	0.044

Vitamin C
Vitamin C is determined by HPLC using fluorescence detection.

Reference Material	Matrix	Expected Level (mg/kg)	Vitamin C (mg/kg)
NIST 1849a	Infant formula	784±65	785
NIST 1849a	Infant formula	784±65	784
NIST 1849a	Infant formula	784±65	801
BCR 431	Brussel sprout	4830±240	5000
BCR 431	Brussel sprout	4830±240	4899

Oil Soluble Vitamins:
Vitamins A, E and the carotenoids are determined using an in house procedure involving saponification of the sample, solvent extraction and HPLC determination - UKAS accredited methods based on:

- Vitamin A – Retinol: BS EN 12823-1:2000. Foodstuffs-Determination of Vitamin A by High Performance Liquid Chromatography-Part 1: Measurement of Retinol.
- Vitamin A – β-Carotene: BS EN 12823-2:2000. Foodstuffs-Determination of Vitamin A by High Performance Liquid Chromatography-Part 2: Measurement of β-Carotene.
- Vitamin E: BS EN 12822:2000. Foodstuffs-Determination of Vitamin E by High Performance Liquid Chromatography-Measurement of α-, β-, γ- and δ-tocopherols.

UKAS accredited.

Vitamin A

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
NIST 1849a	Infant formula	7.68±0.23	6.85
NIST 1849a	Infant formula	7.68±0.23	7.27
NIST 1849a	Infant formula	7.68±0.23	7.21
NIST 1849a	Infant formula	7.68±0.23	7.34
NIST 1849a	Infant formula	7.68±0.23	6.28
NIST 1849a	Infant formula	7.68±0.23	6.36

Beta-carotene

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
BCR-485	Mixed vegetables	25.6±1.8	23
BCR-485	Mixed vegetables	25.6±1.8	22
BCR-485	Mixed vegetables	25.6±1.8	21

Alpha-tocopherol

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
NIST 1849a	Infant formula	177±47	215.07
NIST 1849a	Infant formula	177±47	200.51
NIST 1849a	Infant formula	177±47	184.88

NIST 1849a	Infant formula	177±47	187.56
NIST 1849a	Infant formula	177±47	191.73
NIST 1849a	Infant formula	177±47	185.23

References

[1] Responsibility for nutrition policy in England transferred from the Food Standards Agency to the Department of Health (DH) on 1st October 2010. Management of the rolling programme of nutrient analysis also transferred to DH.