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England

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# **Nutrient analysis survey of fresh and processed fruit and vegetables with respect to fibre**

## **Analytical report**

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## Executive summary

The aim of this survey was to deliver a nutrient composition survey of commonly consumed fruit and vegetables, with a focus on fibre measured by the Association of Official Analytical Chemists (AOAC) method. The Carbohydrates and Health report from the Scientific Advisory Committee on Nutrition (SACN) recommended that dietary fibre should be defined based on this method. Fibre intakes in the UK have been based on non-starch polysaccharides and, following the SACN recommendations, there is a need to assess intakes based on fibre measured using the AOAC method. The National Diet and Nutrition Survey (NDNS) nutrient databank does include AOAC fibre for many foods but there is a need for new analytical data in some foods, particularly fruit and vegetables. This survey provides AOAC fibre values for a range of fruit and vegetables that have not yet been analysed by this method and also updates and extends information on other nutrients which were last analysed in the 1980s. It complements the nutrient analysis of fruit and vegetables analytical report, 2013 [1] where 59 composite samples were analysed.

The nutrient composition data generated by this survey will be used to update the NDNS nutrient databank, thus providing more robust data on nutrient intakes. This update will allow estimation of fibre intakes and comparison with the new recommendation that the dietary reference value for the average population intake for adults should be 30g/day of dietary fibre measured using the AOAC methods. The data will be disseminated via the authoritative UK food composition tables, *McCance and Widdowson's The Composition of Foods*.

This survey includes analysis of 62 composite samples that were made up of between 6 and 11 sub-samples that were representative of fruit and vegetables consumed in the UK. Sub-samples included were based on the need to take into account factors including cultivar, region and country of origin and season. Where necessary, seasonal sampling was required in order to collect foods from a range of countries. Samples were purchased from retail outlets and prepared for analysis between July 2015 and February 2016.

These composite samples were analysed for proximates and, for selected samples, individual fatty acids between December 2015 and February 2016. Analyses for vitamins and minerals were carried out between December 2015 and July 2016. 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

This survey provides AOAC fibre values for a range of fruit and vegetables that have not yet been analysed by this method and also updates and extends information on other nutrients which were last analysed in the 1980s. It complements the nutrient analysis of fruit and vegetables analytical report, 2013 [1] where 59 composite samples were analysed. Priorities were identified based on consumption and market share data with consumption determined based on data from the National Diet and Nutrition Survey Rolling Programme (years 1-4) 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 were not included in the 2013 survey and are most commonly consumed or fruit and vegetables where there were gaps in the data available and consumption was increasing.

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 July 2015 and February 2016. The retail outlets included supermarkets, independent retailers, independent greengrocers and market stalls and catering suppliers. Food samples were combined into 62 composite samples for analysis. Each composite was made up of between 6 and 11 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, including loose and pre-packed. Organic produce was not included because of the very low market share in these products.

Where sub-samples were purchased over two seasons, sub-samples from each season were prepared and stored frozen at -40 °C until all sub-samples were available. Once all subsamples 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.

Composites were analysed for proximates and, for selected samples, individual fatty acids between December 2015 and February 2016 and for vitamins and minerals between December 2015 and July 2016.

Samples requiring preparation/cooking were prepared using normal domestic practices and in accordance with packaging instructions. Where necessary, fruits were allowed to ripen following purchase so that the analyses were representative of usual consumer consumption. A full list of the composite food samples analysed is given on page 8.

## Composite sample list

Sample Number	Sample Name	Description
1	Kiwi fruit, raw, flesh only	11 samples, imported, loose and pre-packed, ripe and ripen at home
2	Plums, dessert, raw, flesh and skin	11 samples, UK and imported, loose and pre-packed, ripe and ripen at home, including red, purple and yellow
3	Raspberries, raw	11 samples, UK and imported
4	Pineapple, fresh, raw, flesh only	11 samples, imported, whole and pre-packed chunks
5	Mangoes, ripe, raw, flesh only	11 samples, imported, whole and pre-packed chunks, ripe and ripen at home
6	Nectarines, yellow flesh, raw, flesh and skin	11 samples, imported, pre-packed and loose, ripe and ripen at home
7	Cherries, raw, flesh only	11 samples, UK and imported, pre-packed and loose
8	Grapefruit, raw, flesh only	11 samples, imported, including pink, red and white
9	Leeks, fresh, raw	11 samples, UK, pre-packed and loose
10	Leeks, fresh, boiled	11 samples, UK, pre-packed and loose
11	Leeks, fresh, roasted in rapeseed oil	11 samples, UK, pre-packed and loose
12	Courgettes, fresh, raw	11 samples, UK and imported, pre-packed and loose
13	Courgettes, fresh, boiled	11 samples, UK and imported, pre-packed and loose

<b>Sample Number</b>	<b>Sample Name</b>	<b>Description</b>
14	Courgettes, fresh, roasted in rapeseed oil	11 samples, UK and imported, pre-packed and loose
15	Brussels sprouts, boiled	11 samples, UK, pre-packed and loose, including standard, peeled and baby
16	Parsnips, boiled	11 samples, UK, pre-packed and loose
17	Parsnips, roasted	11 samples, UK, pre-packed and loose
18	Beetroot, cooked	11 samples, UK and imported, including fresh and ready-cooked vacuum-packed beetroot, no added vinegar
19	Sweetcorn, baby, fresh, boiled	11 samples, imported, pre-packed
20	Sweetcorn, baby, fresh, stir-fried in rapeseed oil	11 samples, imported, pre-packed
21	Celery, raw	11 samples, UK, pre-packed, including whole heads, hearts and sticks
22	Celery, boiled	11 samples, UK, pre-packed, including whole heads, hearts and sticks
23	Asparagus, fresh, steamed	11 samples, UK and imported, pre-packed and loose, including tips and thicker stems
24	Asparagus, fresh, grilled	7 samples, imported, pre-packed and loose, including tips and thicker stems
25	Asparagus, fresh, roasted in rapeseed oil	7 samples, imported, pre-packed and loose, including tips and thicker stems
26	Mangetout, fresh, boiled	11 samples, imported, prepacked
27	Mangetout, fresh, stir-fried in rapeseed oil	11 samples, imported, prepacked

<b>Sample Number</b>	<b>Sample Name</b>	<b>Description</b>
28	Butternut squash, boiled, flesh only	11 samples, imported, loose and pre-packed chunks
29	Butternut squash, baked, flesh only	11 samples, imported, loose and pre-packed chunks
30	Avocado pear, raw, flesh only	11 samples, imported, Hass variety, pre-packed and loose, ripe and ripen at home
31	Sweet potato, boiled, flesh only	11 samples, imported, pre-packed and loose
32	Sweet potato, baked in rapeseed oil, flesh and skin, wedges	11 samples, imported, pre-packed and loose
33	Broad beans, fresh, boiled	11 samples, UK, pre-packed and loose
34	Curly kale, fresh, boiled	11 samples, UK, pre-packed and loose
35	Swede, fresh, boiled	11 samples, UK, pre-packed and loose, including whole, portions and diced
36	Aubergine, boiled, flesh and skin	11 samples, UK and imported, pre-packed and loose
37	Aubergine, roasted in rapeseed oil, flesh and skin	11 samples, UK and imported, pre-packed and loose
38	Okra, boiled	11 samples, imported, pre-packed and loose
39	Watercress, raw	11 samples, UK and imported, pre-packed and loose
40	Runner beans, fresh, boiled	11 samples, UK and imported, pre-packed and loose
41	Yam, fresh, boiled	8 samples, imported, loose

<b>Sample Number</b>	<b>Sample Name</b>	<b>Description</b>
42	Blackberries, raw	11 samples, UK and imported, pre-packed and loose
43	Rhubarb, stewed without sugar	11 samples, UK and imported, pre-packed, including outdoor and forced
44	Papaya, ripe, raw, flesh only	11 samples, imported, pre-packed and loose, ripe and ripen at home
45	Radish, raw	10 samples, UK and imported, pre-packed and loose bunches
46	Prunes, ready to eat, semi-dried	10 samples, including soft, ready to eat and partially rehydrated
47	Apricots, ready to eat, semi-dried	10 samples, including soft, ready to eat and partially rehydrated
48	Raisins, dried	10 samples, not including soft, ready to eat or partially hydrated
49	Lentils, split, dried, raw	10 samples, red split lentils
50	Lentils, split, dried, boiled	10 samples, red split lentils
51	Red kidney beans, dried, boiled	10 samples
52	Red kidney beans, canned, reheated	10 samples, canned in water, no added salt
53	Lentils, brown/green, dried, boiled	11 samples, including dark green/puy type and brown
54	Chickpeas, dried, boiled	10 samples
55	Chickpeas, canned, reheated	10 samples, canned in water, no added salt
56	Butter beans, dried, boiled	7 samples

<b>Sample Number</b>	<b>Sample Name</b>	<b>Description</b>
57	Dates, dried, flesh only	10 samples, including whole and chopped, not including partially rehydrated dates, no added glucose syrup
58	Mung beans, dried, boiled	6 samples
59	Haricot beans, canned, reheated	6 samples, canned in water, no added salt
60	Cannellini beans, canned, reheated	10 samples, canned in water, no added salt
61	Edamame, frozen, boiled	7 samples, including shelled and in pods (pods removed before analysis)
62	Figs, ready to eat, semi-dried	10 samples, including soft, ready to eat and partially rehydrated

## 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 individual 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 7th Summary edition of *McCance and Widdowson's The Composition of Foods*

- results for individual fatty acids, for selected samples, are available separately in electronic format
- total vitamin A is calculated as retinol equivalents and is equal to all-trans retinol + (betacarotene 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:

$\alpha$ -tocopherol	x	1.00
$\beta$ -tocopherol	x	0.40
$\delta$ -tocopherol	x	0.01
$\gamma$ -tocopherol	x	0.10
$\alpha$ -tocotrienol	x	0.30
$\beta$ -tocotrienol	x	0.05
$\gamma$ -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'
- where no value is given, the nutrient was not analysed in that sample. It should not be assumed that the sample does not contain that nutrient
- proximate analysis and analysis of individual fatty acids was performed by Eurofins laboratories between December 2015 and February 2016. Analysis of inorganics and vitamins was performed by LGC between December 2015 and July 2016

## 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:

## Sample 1: Kiwi fruit, raw, flesh only

**PROXIMATES**

Water	85.4	g/100g
Total Nitrogen	0.13	g/100g
Nitrogen conversion factor	6.25	
Protein	0.8	g/100g
Fat	0.9	g/100g
Ash	0.6	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	3.6	g/100g
Fructose	4.5	g/100g
Sucrose	<0.1	g/100g
Maltose	0.2	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	8.3	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	2.7	g/100g

**FATTY ACIDS**

Saturated	0.07	g/100g
cis-monounsaturated	0.10	g/100g
cis n-3 polyunsaturated	0.40	g/100g
cis n-6 polyunsaturated	0.12	g/100g
cis polyunsaturated	0.52	g/100g
Trans	<0.01	g/100g

**INORGANICS**

Sodium (Na)	1	mg/100g
Potassium (K)	289	mg/100g
Calcium (Ca)	33	mg/100g
Magnesium (Mg)	13	mg/100g
Phosphorus (P)	33	mg/100g
Iron (Fe)	0.22	mg/100g
Copper (Cu)	0.17	mg/100g
Zinc (Zn)	0.09	mg/100g
Chloride (Cl)	33	mg/100g
Manganese (Mn)	0.08	mg/100g
Iodine (I)	1.7	µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	<0.01	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B <sub>6</sub>	0.09	mg/100g
Folate	33	µg/100g
Pantothenic acid	0.42	mg/100g
Biotin		µg/100g
Vitamin C	71	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	39	µg/100g
Beta-cryptoxanthin	1	µg/100g
Total carotene	40	µg/100g
Lutein	161	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	7	Ret Equiv
Alpha-tocopherol	2.17	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	2.17	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 2: Plums, dessert, raw, flesh and skin

**PROXIMATES**

Water	87.1	g/100g
Total Nitrogen	0.10	g/100g
Nitrogen conversion factor	6.25	
Protein	0.6	g/100g
Fat	0.3	g/100g
Ash	0.3	g/100g
Energy (kcal)	42	kcal/100g
Energy (kJ)	179	kJ/100g

**CARBOHYDRATES**

Glucose	5.3	g/100g
Fructose	3.7	g/100g
Sucrose	0.7	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	9.8	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	9.8	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)	187	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	7	mg/100g
Phosphorus (P)	17	mg/100g
Iron (Fe)	0.12	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.06	mg/100g
Chloride (Cl)	6	mg/100g
Manganese (Mn)	0.06	mg/100g
Iodine (I)		µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.03	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.9	mg/100g
Tryptophan/60	0.02	mg/100g
Vitamin B <sub>6</sub>	0.02	mg/100g
Folate	1.3	µg/100g
Pantothenic acid	0.20	mg/100g
Biotin		µg/100g
Vitamin C	1	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	89	µg/100g
Beta-cryptoxanthin	9	µg/100g
Total carotene	94	µg/100g
Lutein	124	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	16	Ret Equiv
Alpha-tocopherol	0.27	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.27	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 3: Raspberries, raw****PROXIMATES**

Water	87.7	g/100g
Total Nitrogen	0.13	g/100g
Nitrogen conversion factor	6.25	
Protein	0.8	g/100g
Fat	0.3	g/100g
Ash	0.4	g/100g
Energy (kcal)	25	kcal/100g
Energy (kJ)	106	kJ/100g

**CARBOHYDRATES**

Glucose	2.1	g/100g
Fructose	3.0	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	5.1	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	5.1	g/100g
Fibre (AOAC)	3.7	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)	164	mg/100g
Calcium (Ca)	16	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	28	mg/100g
Iron (Fe)	0.41	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.21	mg/100g
Chloride (Cl)	11	mg/100g
Manganese (Mn)	0.37	mg/100g
Iodine (I)	4.4	µg/100g
Selenium (Se)	0.2	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.01	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.11	mg/100g
Folate	55	µg/100g
Pantothenic acid	0.73	mg/100g
Biotin	1.6	µg/100g
Vitamin C	19	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
Alpha-tocopherol	0.65	mg/100g
Beta-tocopherol	0.15	mg/100g
Delta-tocopherol	1.40	mg/100g
Gamma-tocopherol	0.97	mg/100g
Vitamin E	0.82	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 4: Pineapple, fresh, raw, flesh only

**PROXIMATES**

Water	86.4	g/100g
Total Nitrogen	0.08	g/100g
Nitrogen conversion factor	6.25	
Protein	0.5	g/100g
Fat	0.1	g/100g
Ash	0.3	g/100g
Energy (kcal)	45	kcal/100g
Energy (kJ)	194	kJ/100g

**CARBOHYDRATES**

Glucose	2.7	g/100g
Fructose	3.4	g/100g
Sucrose	5.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	11.4	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	11.4	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)	121	mg/100g
Calcium (Ca)	14	mg/100g
Magnesium (Mg)	11	mg/100g
Phosphorus (P)	6	mg/100g
Iron (Fe)	0.16	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.11	mg/100g
Chloride (Cl)	19	mg/100g
Manganese (Mn)	1.49	mg/100g
Iodine (I)		µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.08	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.10	mg/100g
Folate	12	µg/100g
Pantothenic acid	0.14	mg/100g
Biotin	0.5	µg/100g
Vitamin C	53	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
Alpha-tocopherol	0.03	mg/100g
Beta-tocopherol	0.08	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.06	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 5: Mangoes, ripe, raw, flesh only****PROXIMATES**

Water	86.0	g/100g
Total Nitrogen	0.11	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.6	g/100g
Ash	0.3	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	1.0	g/100g
Fructose	3.4	g/100g
Sucrose	6.0	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	10.4	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	1.1	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)	4	mg/100g
Potassium (K)	150	mg/100g
Calcium (Ca)	15	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	13	mg/100g
Iron (Fe)	0.12	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.06	mg/100g
Chloride (Cl)	27	mg/100g
Manganese (Mn)	0.11	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	0.2	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.05	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.9	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.1	mg/100g
Folate	24	µg/100g
Pantothenic acid	0.19	mg/100g
Biotin	0.6	µg/100g
Vitamin C	26	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	156	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	156	µg/100g
Lutein	10	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	26	Ret Equiv
Alpha-tocopherol	0.93	mg/100g
Beta-tocopherol	0.08	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.96	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 6: Nectarines, yellow flesh, raw, flesh and skin

### PROXIMATES

Water	86.1	g/100g
Total Nitrogen	0.15	g/100g
Nitrogen conversion factor	6.25	
Protein	1.0	g/100g
Fat	0.3	g/100g
Ash	0.5	g/100g
Energy (kcal)	43	kcal/100g
Energy (kJ)	184	kJ/100g

### CARBOHYDRATES

Glucose	2.1	g/100g
Fructose	2.1	g/100g
Sucrose	5.6	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	9.8	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	9.8	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)	257	mg/100g
Calcium (Ca)	7	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	25	mg/100g
Iron (Fe)	0.20	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.11	mg/100g
Chloride (Cl)	7	mg/100g
Manganese (Mn)	0.08	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.16	µg/100g

### WATER SOLUBLE VITAMINS

Thiamin	0.02	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.04	mg/100g
Folate	8	µg/100g
Pantothenic acid	0.39	mg/100g
Biotin	0.1	µg/100g
Vitamin C	3	mg/100g

### FAT SOLUBLE VITAMINS

Alpha-carotene	7	µg/100g
Beta-carotene	106	µg/100g
Beta-cryptoxanthin	90	µg/100g
Total carotene	155	µg/100g
Lutein	72	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	26	Ret Equiv
Alpha-tocopherol	0.43	mg/100g
Beta-tocopherol	0.03	mg/100g
Delta-tocopherol	0.57	mg/100g
Gamma-tocopherol	0.03	mg/100g
Vitamin E	0.45	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 7: Cherries, raw, flesh only

**PROXIMATES**

Water	81.1	g/100g
Total Nitrogen	0.20	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	0.4	g/100g
Ash	0.5	g/100g
Energy (kcal)	63	kcal/100g
Energy (kJ)	269	kJ/100g

**CARBOHYDRATES**

Glucose	8.6	g/100g
Fructose	6.0	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	14.6	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	14.6	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)	<1	mg/100g
Potassium (K)	238	mg/100g
Calcium (Ca)	12	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	26	mg/100g
Iron (Fe)	0.25	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.05	mg/100g
Chloride (Cl)	5	mg/100g
Manganese (Mn)	0.07	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.03	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.10	mg/100g
Folate	3	µg/100g
Pantothenic acid	0.25	mg/100g
Biotin	0.4	µg/100g
Vitamin C	3	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	4	µg/100g
Beta-carotene	15	µg/100g
Beta-cryptoxanthin	3	µg/100g
Total carotene	19	µg/100g
Lutein	40	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	3	Ret Equiv
Alpha-tocopherol	0.14	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.14	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 8: Grapefruit, raw, flesh only****PROXIMATES**

Water	88.6	g/100g
Total Nitrogen	0.14	g/100g
Nitrogen conversion factor	6.25	
Protein	0.9	g/100g
Fat	0.5	g/100g
Ash	0.8	g/100g
Energy (kcal)	34	kcal/100g
Energy (kJ)	145	kJ/100g

**CARBOHYDRATES**

Glucose	1.9	g/100g
Fructose	2.1	g/100g
Sucrose	2.9	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	6.9	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	6.9	g/100g
Fibre (AOAC)	0.9	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)	1	mg/100g
Potassium (K)	129	mg/100g
Calcium (Ca)	23	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	18	mg/100g
Iron (Fe)	0.09	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.05	mg/100g
Chloride (Cl)	12	mg/100g
Manganese (Mn)	0.03	mg/100g
Iodine (I)	0.3	µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.07	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.02	mg/100g
Folate	23	µg/100g
Pantothenic acid	0.31	mg/100g
Biotin	0.7	µg/100g
Vitamin C	35	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	87	µg/100g
Beta-carotene	265	µg/100g
Beta-cryptoxanthin	3	µg/100g
Total carotene	310	µg/100g
Lutein	16	µg/100g
Lycopene	61	µg/100g
Total vitamin A	52	Ret Equiv
Alpha-tocopherol	0.27	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.27	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 9: Leeks, fresh, raw

**PROXIMATES**

Water	90.7	g/100g
Total Nitrogen	0.24	g/100g
Nitrogen conversion factor	6.25	
Protein	1.5	g/100g
Fat	0.2	g/100g
Ash	0.6	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	1.6	g/100g
Fructose	2.0	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	3.8	g/100g
Oligosaccharides	<0.3	g/100g
<sup>1</sup> Available carbohydrate		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)	<1	mg/100g
Potassium (K)	230	mg/100g
Calcium (Ca)	52	mg/100g
Magnesium (Mg)	7	mg/100g
Phosphorus (P)	23	mg/100g
Iron (Fe)	0.42	mg/100g
Copper (Cu)	<0.06	mg/100g
Zinc (Zn)	<0.2	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)		mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1.0	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.05	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.17	mg/100g
Folate	33	µg/100g
Pantothenic acid	0.15	mg/100g
Biotin	3.0	µg/100g
Vitamin C	3	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	20	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	20	µg/100g
Lutein	65	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	3	Ret Equiv
Alpha-tocopherol	0.35	mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E	0.35	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 10: Leeks, fresh, boiled

**PROXIMATES**

Water	92.4	g/100g
Total Nitrogen	0.19	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	0.2	g/100g
Ash	0.3	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.7	g/100g
Fructose	1.3	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	2.3	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	1	mg/100g
Potassium (K)	169	mg/100g
Calcium (Ca)	42	mg/100g
Magnesium (Mg)	5	mg/100g
Phosphorus (P)	22	mg/100g
Iron (Fe)	0.22	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.13	mg/100g
Chloride (Cl)	41	mg/100g
Manganese (Mn)	0.07	mg/100g
Iodine (I)	2.2	µg/100g
Selenium (Se)	0.2	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.05	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.08	mg/100g
Folate	44	µg/100g
Pantothenic acid	0.16	mg/100g
Biotin	0.7	µg/100g
Vitamin C	2	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	5	µg/100g
Beta-carotene	48	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	51	µg/100g
Lutein	99	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	9	Ret Equiv
Alpha-tocopherol	0.27	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	0.57	mg/100g
Gamma-tocopherol	0.20	mg/100g
Vitamin E	0.30	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 11: Leeks, fresh, roasted in rapeseed oil

### PROXIMATES

Water	87.9	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	1.9	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

## Sample 12: Courgettes, fresh, raw

**PROXIMATES**

Water	95.0	g/100g
Total Nitrogen	0.21	g/100g
Nitrogen conversion factor	6.25	
Protein	1.3	g/100g
Fat	0.2	g/100g
Ash	0.6	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.9	g/100g
Fructose	1.3	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	2.2	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	341	mg/100g
Calcium (Ca)	27	mg/100g
Magnesium (Mg)	24	mg/100g
Phosphorus (P)	40	mg/100g
Iron (Fe)	0.42	mg/100g
Copper (Cu)	0.08	mg/100g
Zinc (Zn)	0.27	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)		mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1.3	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.03	mg/100g
Riboflavin	0.02	mg/100g
Niacin	<0.1	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.07	mg/100g
Folate	34	µg/100g
Pantothenic acid	0.18	mg/100g
Biotin	3.1	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
Alpha-tocopherol	0.31	mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E	0.31	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 13: Courgettes, fresh, boiled

**PROXIMATES**

Water	95.0	g/100g
Total Nitrogen	0.21	g/100g
Nitrogen conversion factor	6.25	
Protein	1.3	g/100g
Fat	0.3	g/100g
Ash	0.6	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.4	g/100g
Fructose	1.1	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.7	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	<1	mg/100g
Potassium (K)	238	mg/100g
Calcium (Ca)	22	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	36	mg/100g
Iron (Fe)	0.37	mg/100g
Copper (Cu)	0.07	mg/100g
Zinc (Zn)	0.22	mg/100g
Chloride (Cl)	41	mg/100g
Manganese (Mn)	0.10	mg/100g
Iodine (I)	4.9	µg/100g
Selenium (Se)	0.3	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.05	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.07	mg/100g
Folate	21	µg/100g
Pantothenic acid	0.23	mg/100g
Biotin	0.7	µg/100g
Vitamin C	1	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	9	µg/100g
Beta-carotene	185	µg/100g
Beta-cryptoxanthin	11	µg/100g
Total carotene	195	µg/100g
Lutein	1322	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	33	Ret Equiv
Alpha-tocopherol	0.45	mg/100g
Beta-tocopherol	0.07	mg/100g
Delta-tocopherol	0.27	mg/100g
Gamma-tocopherol	0.34	mg/100g
Vitamin E	0.51	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 14: Courgettes, fresh, roasted in rapeseed oil

### PROXIMATES

Water	90.7	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	1.9	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 15: Brussels sprouts, boiled****PROXIMATES**

Water	85.8	g/100g
Total Nitrogen	0.50	g/100g
Nitrogen conversion factor	6.25	
Protein	3.1	g/100g
Fat	0.4	g/100g
Ash	0.9	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.6	g/100g
Fructose	0.5	g/100g
Sucrose	2.6	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	3.7	g/100g
Oligosaccharides	<0.3	g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	3.2	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)	404	mg/100g
Calcium (Ca)	26	mg/100g
Magnesium (Mg)	17	mg/100g
Phosphorus (P)	71	mg/100g
Iron (Fe)	0.60	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.25	mg/100g
Chloride (Cl)	25	mg/100g
Manganese (Mn)	0.23	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1.3	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.05	mg/100g
Riboflavin	0.07	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.5	mg/100g
Vitamin B <sub>6</sub>	0.23	mg/100g
Folate	124	µg/100g
Pantothenic acid	0.40	mg/100g
Biotin	0.5	µg/100g
Vitamin C	40	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	158	µg/100g
Beta-cryptoxanthin	4	µg/100g
Total carotene	160	µg/100g
Lutein	403	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	27	Ret Equiv
Alpha-tocopherol	0.26	mg/100g
Beta-tocopherol	0.12	mg/100g
Delta-tocopherol	0.85	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.32	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

**Sample 16: Parsnips, boiled****PROXIMATES**

Water	80.5	g/100g
Total Nitrogen	0.19	g/100g
Nitrogen conversion factor	6.25	
Protein	1.2	g/100g
Fat	0.7	g/100g
Ash	0.7	g/100g
Energy (kcal)	66	kcal/100g
Energy (kJ)	282	kJ/100g

**CARBOHYDRATES**

Glucose	0.1	g/100g
Fructose	0.1	g/100g
Sucrose	4.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	10.4	g/100g
Resistant starch	<0.3	g/100g
Phytic acid		g/100g
Total sugars	4.3	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	14.7	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)	319	mg/100g
Calcium (Ca)	34	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	55	mg/100g
Iron (Fe)	0.44	mg/100g
Copper (Cu)	0.07	mg/100g
Zinc (Zn)	26	mg/100g
Chloride (Cl)	40	mg/100g
Manganese (Mn)	0.27	mg/100g
Iodine (I)	3.8	µg/100g
Selenium (Se)	0.4	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.06	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B <sub>6</sub>	0.16	mg/100g
Folate	49	µg/100g
Pantothenic acid	0.35	mg/100g
Biotin		µg/100g
Vitamin C	10	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
Alpha-tocopherol	1.23	mg/100g
Beta-tocopherol	0.06	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.04	mg/100g
Vitamin E	1.26	mg/100g

## Sample 17: Parsnips, roasted in rapeseed oil

### PROXIMATES

Water	58.6	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	4.5	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 18: Beetroot, cooked****PROXIMATES**

Water	85.3	g/100g
Total Nitrogen	0.26	g/100g
Nitrogen conversion factor	6.25	
Protein	1.6	g/100g
Fat	0.3	g/100g
Ash	0.7	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.2	g/100g
Fructose	0.2	g/100g
Sucrose	10.5	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	10.9	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	52	mg/100g
Potassium (K)	302	mg/100g
Calcium (Ca)	27	mg/100g
Magnesium (Mg)	15	mg/100g
Phosphorus (P)	26	mg/100g
Iron (Fe)	0.36	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.30	mg/100g
Chloride (Cl)	70	mg/100g
Manganese (Mn)	0.29	mg/100g
Iodine (I)	1.8	µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	<0.01	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.2	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.06	mg/100g
Folate	90	µg/100g
Pantothenic acid	0.17	mg/100g
Biotin		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
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 19: Sweetcorn, baby, fresh, boiled

**PROXIMATES**

Water	90.0	g/100g
Total Nitrogen	0.35	g/100g
Nitrogen conversion factor	6.25	
Protein	2.2	g/100g
Fat	0.6	g/100g
Ash	0.4	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	1.6	g/100g
Fructose	1.3	g/100g
Sucrose	0.9	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	3.8	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	2.4	g/100g

**FATTY ACIDS**

Saturated	0.13	g/100g
cis-monounsaturated	0.07	g/100g
cis n-3 polyunsaturated	0.04	g/100g
cis n-6 polyunsaturated	0.24	g/100g
cis polyunsaturated	0.27	g/100g
Trans	<0.01	g/100g

**INORGANICS**

Sodium (Na)	<1	mg/100g
Potassium (K)	145	mg/100g
Calcium (Ca)	11	mg/100g
Magnesium (Mg)	22	mg/100g
Phosphorus (P)	50	mg/100g
Iron (Fe)	0.25	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.40	mg/100g
Chloride (Cl)	30	mg/100g
Manganese (Mn)	0.30	mg/100g
Iodine (I)	1.2	µg/100g
Selenium (Se)	1.0	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.05	mg/100g
Riboflavin	0.06	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.3	mg/100g
Vitamin B <sub>6</sub>	0.09	mg/100g
Folate	160	µg/100g
Pantothenic acid	0.19	mg/100g
Biotin	1.5	µg/100g
Vitamin C	3	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	13	µg/100g
Beta-cryptoxanthin	3	µg/100g
Total carotene	15	µg/100g
Lutein	108	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	3	Ret Equiv
Alpha-tocopherol	0.23	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.11	mg/100g
Vitamin E	0.24	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 20: Sweetcorn, baby, fresh, stir-fried in rapeseed oil

### PROXIMATES

Water	83.0	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	6.0	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 21: Celery, raw****PROXIMATES**

Water	94.8	g/100g
Total Nitrogen	<0.1	g/100g
Nitrogen conversion factor	6.25	
Protein	<0.6	g/100g
Fat	0.1	g/100g
Ash	0.8	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	1.0	g/100g
Fructose	0.4	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.4	g/100g
Oligosaccharides		g/100g
<sup>2</sup> Available carbohydrate	1.4	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)	77	mg/100g
Potassium (K)	304	mg/100g
Calcium (Ca)	41	mg/100g
Magnesium (Mg)	6	mg/100g
Phosphorus (P)	20	mg/100g
Iron (Fe)	0.06	mg/100g
Copper (Cu)	0.01	mg/100g
Zinc (Zn)	0.07	mg/100g
Chloride (Cl)	210	mg/100g
Manganese (Mn)	0.06	mg/100g
Iodine (I)	1.1	µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.03	mg/100g
Riboflavin	0.02	mg/100g
Niacin	0.3	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.03	mg/100g
Folate	11	µg/100g
Pantothenic acid	0.29	mg/100g
Biotin	0.1	µg/100g
Vitamin C	1	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	20	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	20	µg/100g
Lutein	65	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	3	Ret Equiv
Alpha-tocopherol	0.06	mg/100g
Beta-tocopherol	<0.01	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	0.06	mg/100g

<sup>1</sup>Energy values have not been calculated because a small quantity of protein that is below the limit of quantification will be present.

<sup>2</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 22: Celery, boiled****PROXIMATES**

Water	97.1	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat		g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 23: Asparagus, fresh, steamed****PROXIMATES**

Water	92.4	g/100g
Total Nitrogen	0.46	g/100g
Nitrogen conversion factor	6.25	
Protein	2.9	g/100g
Fat	0.4	g/100g
Ash	0.6	g/100g
Energy (kcal)	21	kcal/100g
Energy (kJ)	90	kJ/100g

**CARBOHYDRATES**

Glucose	0.4	g/100g
Fructose	0.9	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.6	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	1.6	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)	3	mg/100g
Potassium (K)	283	mg/100g
Calcium (Ca)	23	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	66	mg/100g
Iron (Fe)	0.50	mg/100g
Copper (Cu)	0.12	mg/100g
Zinc (Zn)	0.51	mg/100g
Chloride (Cl)	71	mg/100g
Manganese (Mn)	0.13	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	8.9	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.09	mg/100g
Riboflavin	0.14	mg/100g
Niacin	1.5	mg/100g
Tryptophan/60	0.5	mg/100g
Vitamin B <sub>6</sub>	0.15	mg/100g
Folate	102	µg/100g
Pantothenic acid	0.32	mg/100g
Biotin	0.3	µg/100g
Vitamin C	8	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	191	µg/100g
Beta-carotene	95	µg/100g
Beta-cryptoxanthin	6	µg/100g
Total carotene	194	µg/100g
Lutein	1450	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	32	Ret Equiv
Alpha-tocopherol	1.39	mg/100g
Beta-tocopherol	0.1	mg/100g
Delta-tocopherol	0.17	mg/100g
Gamma-tocopherol	0.22	mg/100g
Vitamin E	1.45	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 24: Asparagus, fresh, grilled****PROXIMATES**

Water	90.9	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	0.4	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

## Sample 25: Asparagus, fresh, roasted in rapeseed oil

### PROXIMATES

Water	89.8	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	1.5	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

## Sample 26: Mangetout, fresh, boiled

**PROXIMATES**

Water	89.9	g/100g
Total Nitrogen	0.52	g/100g
Nitrogen conversion factor	6.25	
Protein	3.3	g/100g
Fat	0.4	g/100g
Ash	0.4	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	2.2	g/100g
Fructose	0.3	g/100g
Sucrose	1.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	3.7	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	169	mg/100g
Calcium (Ca)	45	mg/100g
Magnesium (Mg)	21	mg/100g
Phosphorus (P)	60	mg/100g
Iron (Fe)	0.83	mg/100g
Copper (Cu)	0.08	mg/100g
Zinc (Zn)	0.49	mg/100g
Chloride (Cl)	25	mg/100g
Manganese (Mn)	0.26	mg/100g
Iodine (I)	7.6	µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.13	mg/100g
Riboflavin	0.06	mg/100g
Niacin	0.6	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B <sub>6</sub>	0.09	mg/100g
Folate	12	µg/100g
Pantothenic acid	0.33	mg/100g
Biotin	2.4	µg/100g
Vitamin C	6	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	164	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	164	µg/100g
Lutein	659	µg/100g
Lycopene	0	µg/100g
Total vitamin A	27	Ret Equiv
Alpha-tocopherol	0.50	mg/100g
Beta-tocopherol	0.05	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.15	mg/100g
Vitamin E	0.54	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

## Sample 27: Mangetout, stir-fried in rapeseed oil

### PROXIMATES

Water	86.9	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	4.9	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

## Sample 28: Butternut squash, boiled, flesh only

### PROXIMATES

Water	91.0	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat		g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

## Sample 29: Butternut squash, baked, flesh only

### PROXIMATES

Water	85.2	g/100g
Total Nitrogen	0.23	g/100g
Nitrogen conversion factor	6.25	
Protein	1.4	g/100g
Fat	0.2	g/100g
Ash	1.1	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

### CARBOHYDRATES

Glucose	0.8	g/100g
Fructose	0.8	g/100g
Sucrose	6.8	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	8.4	g/100g
Oligosaccharides	<0.3	g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	2.1	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)	242	mg/100g
Calcium (Ca)	35	mg/100g
Magnesium (Mg)	10	mg/100g
Phosphorus (P)	32	mg/100g
Iron (Fe)	0.22	mg/100g
Copper (Cu)	0.06	mg/100g
Zinc (Zn)	0.14	mg/100g
Chloride (Cl)	49	mg/100g
Manganese (Mn)	0.08	mg/100g
Iodine (I)	2.7	µg/100g
Selenium (Se)	0.2	µg/100g

### WATER SOLUBLE VITAMINS

Thiamin	0.05	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.8	mg/100g
Tryptophan/60	0.2	mg/100g
Vitamin B <sub>6</sub>	0.05	mg/100g
Folate	9	µg/100g
Pantothenic acid	0.27	mg/100g
Biotin	0.9	µg/100g
Vitamin C	1	mg/100g

### FAT SOLUBLE VITAMINS

Alpha-carotene	181	µg/100g
Beta-carotene	653	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	744	µg/100g
Lutein	1771	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	124	Ret Equiv
Alpha-tocopherol	1.08	mg/100g
Beta-tocopherol	0.17	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	1.15	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

**Sample 30: Avocado pear, flesh only****PROXIMATES**

Water	71.5	g/100g
Total Nitrogen	0.29	g/100g
Nitrogen conversion factor	6.25	
Protein	1.8	g/100g
Fat	17.4	g/100g
Ash	2.6	g/100g
Energy (kcal)	171	kcal/100g
Energy (kJ)	703	kJ/100g

**CARBOHYDRATES**

Glucose	0.2	g/100g
Fructose	0.2	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	0.4	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	1.8	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)	7	mg/100g
Potassium (K)	583	mg/100g
Calcium (Ca)	19	mg/100g
Magnesium (Mg)	27	mg/100g
Phosphorus (P)	57	mg/100g
Iron (Fe)	0.51	mg/100g
Copper (Cu)	0.25	mg/100g
Zinc (Zn)	0.55	mg/100g
Chloride (Cl)	17	mg/100g
Manganese (Mn)	0.28	mg/100g
Iodine (I)	0.6	µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.09	mg/100g
Riboflavin	0.09	mg/100g
Niacin	2.1	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B <sub>6</sub>	0.30	mg/100g
Folate	31	µg/100g
Pantothenic acid	1.34	mg/100g
Biotin	2.4	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
Alpha-tocopherol	1.74	mg/100g
Beta-tocopherol	1.07	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.22	mg/100g
Vitamin E	2.19	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that 1.4g of mannoheptulose is present (McCance and Widdowson's The Composition of Foods Seventh Summary Edition<sup>2</sup>)

**Sample 31: Sweet potato, boiled, flesh only****PROXIMATES**

Water	81.2	g/100g
Total Nitrogen	0.27	g/100g
Nitrogen conversion factor	6.25	
Protein	1.7	g/100g
Fat	0.2	g/100g
Ash	0.6	g/100g
Energy (kcal)	58	kcal/100g
Energy (kJ)	245	kJ/100g

**CARBOHYDRATES**

Glucose	0.7	g/100g
Fructose	0.5	g/100g
Sucrose	4.1	g/100g
Maltose	4.1	g/100g
Lactose	<0.1	g/100g
Starch	3.6	g/100g
Resistant starch	0.4	g/100g
Phytic acid		g/100g
Total sugars	9.4	g/100g
Oligosaccharides		g/100g
Available carbohydrate	13.0	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)	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 <sub>6</sub>	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	5560	µg/100g
Beta-cryptoxanthin		µg/100g
<sup>1</sup> Total carotene	5560	µg/100g
Lutein		µg/100g
Lycopene		µg/100g
<sup>1</sup> Total vitamin A	927	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Total vitamin A and total carotene calculated on the assumption that alpha-carotene and beta-cryptoxanthin are not present.

## Sample 32: Sweet potato, baked in rapeseed oil, flesh and skin, wedges

**PROXIMATES**

Water	61.3	g/100g
Total Nitrogen	0.47	g/100g
Nitrogen conversion factor	6.25	
Protein	2.9	g/100g
Fat	3.9	g/100g
Ash	1.8	g/100g
Energy (kcal)	139	kcal/100g
Energy (kJ)	589	kJ/100g

**CARBOHYDRATES**

Glucose	1.5	g/100g
Fructose	1.2	g/100g
Sucrose	8.5	g/100g
Maltose	7.6	g/100g
Lactose	<0.1	g/100g
Starch	5.9	g/100g
Resistant starch	0.5	g/100g
Phytic acid		g/100g
Total sugars	18.8	g/100g
Oligosaccharides		g/100g
Available carbohydrate	24.7	g/100g
Fibre (AOAC)	5.2	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)	69	mg/100g
Potassium (K)	701	mg/100g
Calcium (Ca)	109	mg/100g
Magnesium (Mg)	38	mg/100g
Phosphorus (P)	73	mg/100g
Iron (Fe)	1.00	mg/100g
Copper (Cu)	0.27	mg/100g
Zinc (Zn)	0.47	mg/100g
Chloride (Cl)	161	mg/100g
Manganese (Mn)	0.73	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	0.3	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.06	mg/100g
Riboflavin	0.05	mg/100g
Niacin	1.1	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B <sub>6</sub>	0.20	mg/100g
Folate	11	µg/100g
Pantothenic acid	0.94	mg/100g
Biotin	3.4	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
Alpha-tocopherol	1.37	mg/100g
Beta-tocopherol	0.31	mg/100g
Delta-tocopherol	0.09	mg/100g
Gamma-tocopherol	1.01	mg/100g
Vitamin E	1.60	mg/100g

**Sample 33: Broad beans, boiled****PROXIMATES**

Water	70.2	g/100g
Total Nitrogen	1.44	g/100g
Nitrogen conversion factor	6.25	
Protein	9.0	g/100g
Fat	1.0	g/100g
Ash	1.1	g/100g
Energy (kcal)	91	kcal/100g
Energy (kJ)	387	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	1.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	11.2	g/100g
Resistant starch	0.9	g/100g
Phytic acid	0.27	g/100g
Total sugars	1.1	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	12.3	g/100g
Fibre (AOAC)	9.0	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)	413	mg/100g
Calcium (Ca)	35	mg/100g
Magnesium (Mg)	41	mg/100g
Phosphorus (P)	162	mg/100g
Iron (Fe)	1.82	mg/100g
Copper (Cu)	0.42	mg/100g
Zinc (Zn)	1.13	mg/100g
Chloride (Cl)	24	mg/100g
Manganese (Mn)	0.48	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	0.3	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.15	mg/100g
Riboflavin	0.14	mg/100g
Niacin	1.7	mg/100g
Tryptophan/60	1.2	mg/100g
Vitamin B <sub>6</sub>	0.16	mg/100g
Folate	66	µg/100g
Pantothenic acid	0.96	mg/100g
Biotin	1.5	µg/100g
Vitamin C	2	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	96	µg/100g
Beta-cryptoxanthin	2	µg/100g
<sup>1</sup> Total carotene	97	µg/100g
Lutein	342	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	16	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Total carotene calculated on the assumption that alpha-carotene is not present.

**Sample 34: Curly kale, fresh, boiled****PROXIMATES**

Water	88.4	g/100g
Total Nitrogen	0.43	g/100g
Nitrogen conversion factor	6.25	
Protein	2.7	g/100g
Fat	1.3	g/100g
Ash	1.0	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**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	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	0.9	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	3.5	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)	6	mg/100g
Potassium (K)	229	mg/100g
Calcium (Ca)	231	mg/100g
Magnesium (Mg)	13	mg/100g
Phosphorus (P)	46	mg/100g
Iron (Fe)	1.11	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.16	mg/100g
Chloride (Cl)	57	mg/100g
Manganese (Mn)	0.38	mg/100g
Iodine (I)	2.4	µg/100g
Selenium (Se)	2.5	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	<0.015	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.4	mg/100g
Tryptophan/60	0.8	mg/100g
Vitamin B <sub>6</sub>	0.09	mg/100g
Folate	97	µg/100g
Pantothenic acid	0.13	mg/100g
Biotin	0.3	µg/100g
Vitamin C	25	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	2097	µg/100g
Beta-cryptoxanthin	<1	µg/100g
<sup>2</sup> Total carotene	2097	µg/100g
Lutein	6097	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	350	Ret Equiv
Alpha-tocopherol	2.63	mg/100g
Beta-tocopherol	0.14	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	<0.01	mg/100g
Vitamin E	2.69	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

<sup>2</sup>Total carotene calculated on the assumption that alpha-carotene and beta-cryptoxanthin are not present.

**Sample 35: Swede, fresh, boiled****PROXIMATES**

Water	88.5	g/100g
Total Nitrogen	0.11	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.1	g/100g
Ash	0.4	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	3.0	g/100g
Fructose	2.2	g/100g
Sucrose	0.5	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	5.7	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	4	mg/100g
Potassium (K)	175	mg/100g
Calcium (Ca)	37	mg/100g
Magnesium (Mg)	8	mg/100g
Phosphorus (P)	32	mg/100g
Iron (Fe)	0.16	mg/100g
Copper (Cu)	0.02	mg/100g
Zinc (Zn)	0.08	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.08	mg/100g
Iodine (I)	0.3	µg/100g
Selenium (Se)	0.4	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.02	mg/100g
Riboflavin	<0.01	mg/100g
Niacin	0.5	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.07	mg/100g
Folate	19	µg/100g
Pantothenic acid	0.10	mg/100g
Biotin		µg/100g
Vitamin C	15	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	6	µg/100g
Beta-carotene	8	µg/100g
Beta-cryptoxanthin	22	µg/100g
Total carotene	22	µg/100g
Lutein	<1	µg/100g
Lycopene	112	µg/100g
Total vitamin A	4	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

**Sample 36: Aubergine, boiled, flesh and skin****PROXIMATES**

Water	95.2	g/100g
Total Nitrogen	0.12	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.5	g/100g
Ash	0.2	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.7	g/100g
Fructose	0.6	g/100g
Sucrose	0.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.6	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	1	mg/100g
Potassium (K)	136	mg/100g
Calcium (Ca)	8	mg/100g
Magnesium (Mg)	9	mg/100g
Phosphorus (P)	20	mg/100g
Iron (Fe)	0.17	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.08	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.15	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.4	µg/100g
Vitamin C		mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	33	µg/100g
Beta-cryptoxanthin	<1	µg/100g
<sup>2</sup> Total carotene	33	µg/100g
Lutein	117	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	6	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

<sup>2</sup>Total carotene calculated on the assumption that alpha-carotene and beta-cryptoxanthin are not present.

### Sample 37: Aubergine, roasted in rapeseed oil, flesh and skin

#### PROXIMATES

Water	83.9	g/100g
Total Nitrogen		g/100g
Nitrogen conversion factor		
Protein		g/100g
Fat	3.8	g/100g
Ash		g/100g
Energy (kcal)		kcal/100g
Energy (kJ)		kJ/100g

#### CARBOHYDRATES

Glucose		g/100g
Fructose		g/100g
Sucrose		g/100g
Maltose		g/100g
Lactose		g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars		g/100g
Oligosaccharides		g/100g
Available carbohydrate		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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 38: Okra, boiled****PROXIMATES**

Water	91.7	g/100g
Total Nitrogen	0.29	g/100g
Nitrogen conversion factor	6.25	
Protein	1.8	g/100g
Fat	0.2	g/100g
Ash	0.7	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.5	g/100g
Fructose	0.5	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.4	g/100g
Oligosaccharides	<0.3	g/100g
<sup>1</sup> Available carbohydrate		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)	5	mg/100g
Potassium (K)	213	mg/100g
Calcium (Ca)	93	mg/100g
Magnesium (Mg)	42	mg/100g
Phosphorus (P)	49	mg/100g
Iron (Fe)	0.39	mg/100g
Copper (Cu)	0.09	mg/100g
Zinc (Zn)	0.36	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.31	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	0.5	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	2.2	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
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

### Sample 39: Watercress, raw

#### PROXIMATES

Water	94.8	g/100g
Total Nitrogen	0.30	g/100g
Nitrogen conversion factor	6.25	
Protein	1.9	g/100g
Fat	0.3	g/100g
Ash	1.0	g/100g
Energy (kcal)	10	kcal/100g
Energy (kJ)	43	kJ/100g

#### 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
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	<0.1	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	<0.1	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)	37	mg/100g
Potassium (K)	300	mg/100g
Calcium (Ca)	138	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	61	mg/100g
Iron (Fe)	0.72	mg/100g
Copper (Cu)	0.05	mg/100g
Zinc (Zn)	0.47	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.34	mg/100g
Iodine (I)	7.1	µg/100g
Selenium (Se)	1.5	µg/100g

#### WATER SOLUBLE VITAMINS

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate	43	µg/100g
Pantothenic acid		mg/100g
Biotin		µg/100g
Vitamin C	3	mg/100g

#### FAT SOLUBLE VITAMINS

Alpha-carotene	<1	µg/100g
Beta-carotene	1589	µg/100g
Beta-cryptoxanthin	<1	µg/100g
<sup>2</sup> Total carotene	1589	µg/100g
Lutein	5932	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	265	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

<sup>2</sup>Total carotene calculated on the assumption that alpha-carotene and beta-cryptoxanthin are not present.

**Sample 40: Runner beans, fresh, boiled****PROXIMATES**

Water	94.2	g/100g
Total Nitrogen	0.17	g/100g
Nitrogen conversion factor	6.25	
Protein	1.1	g/100g
Fat	0.5	g/100g
Ash	0.3	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	0.2	g/100g
Fructose	1.0	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	<2	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.6	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		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)	103	mg/100g
Calcium (Ca)	18	mg/100g
Magnesium (Mg)	11	mg/100g
Phosphorus (P)	22	mg/100g
Iron (Fe)	0.44	mg/100g
Copper (Cu)	0.02	mg/100g
Zinc (Zn)	0.12	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.13	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	0.3	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin		µg/100g
Vitamin C	2	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	2	µg/100g
Beta-carotene	71	µg/100g
Beta-cryptoxanthin	<1	µg/100g
<sup>2</sup> Total carotene	72	µg/100g
Lutein	386	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	12	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch that is below the limit of quantification.

<sup>2</sup>Total carotene calculated on the assumption that beta-cryptoxanthin is not present.

## Sample 41: Yam, fresh, boiled

**PROXIMATES**

Water	67.9	g/100g
Total Nitrogen	0.25	g/100g
Nitrogen conversion factor	6.25	
Protein	1.6	g/100g
Fat	0.2	g/100g
Ash	0.6	g/100g
Energy (kcal)	118	kcal/100g
Energy (kJ)	504	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	1.9	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	27.4	g/100g
Resistant starch	2.5	g/100g
Phytic acid		g/100g
Total sugars	1.9	g/100g
Oligosaccharides		g/100g
Available carbohydrate	29.3	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)	<1	mg/100g
Potassium (K)	271	mg/100g
Calcium (Ca)	3	mg/100g
Magnesium (Mg)	16	mg/100g
Phosphorus (P)	34	mg/100g
Iron (Fe)	0.34	mg/100g
Copper (Cu)	0.15	mg/100g
Zinc (Zn)	0.31	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.04	mg/100g
Iodine (I)	0.9	µg/100g
Selenium (Se)	0.8	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.3	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
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

**Sample 42: Blackberries, raw****PROXIMATES**

Water	87.5	g/100g
Total Nitrogen	0.18	g/100g
Nitrogen conversion factor	6.25	
Protein	1.1	g/100g
Fat	0.2	g/100g
Ash	0.3	g/100g
Energy (kcal)	27	kcal/100g
Energy (kJ)	115	kJ/100g

**CARBOHYDRATES**

Glucose	2.6	g/100g
Fructose	3.0	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	5.6	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	5.6	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)	1	mg/100g
Potassium (K)	154	mg/100g
Calcium (Ca)	24	mg/100g
Magnesium (Mg)	18	mg/100g
Phosphorus (P)	24	mg/100g
Iron (Fe)	0.31	mg/100g
Copper (Cu)	0.07	mg/100g
Zinc (Zn)	0.17	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.69	mg/100g
Iodine (I)	1.0	µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin		µg/100g
Vitamin C	7	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	4	µg/100g
Beta-carotene	38	µg/100g
Beta-cryptoxanthin	1	µg/100g
Total carotene	41	µg/100g
Lutein	125	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	7	Ret Equiv
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 43: Rhubarb, stewed without sugar

**PROXIMATES**

Water	93.7	g/100g
Total Nitrogen	0.16	g/100g
Nitrogen conversion factor	6.25	
Protein	1.0	g/100g
Fat	0.6	g/100g
Ash	0.6	g/100g
Energy (kcal)	14	kcal/100g
Energy (kJ)	59	kJ/100g

**CARBOHYDRATES**

Glucose	0.5	g/100g
Fructose	0.5	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.2	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	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)	1	mg/100g
Potassium (K)	261	mg/100g
Calcium (Ca)	76	mg/100g
Magnesium (Mg)	12	mg/100g
Phosphorus (P)	26	mg/100g
Iron (Fe)	0.20	mg/100g
Copper (Cu)	0.04	mg/100g
Zinc (Zn)	0.18	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.18	mg/100g
Iodine (I)	0.9	µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.5	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
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 44: Papaya, ripe, raw, flesh only

**PROXIMATES**

Water	87.6	g/100g
Total Nitrogen	0.12	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.6	g/100g
Ash	0.4	g/100g
Energy (kcal)	44	kcal/100g
Energy (kJ)	186	kJ/100g

**CARBOHYDRATES**

Glucose	4.8	g/100g
Fructose	4.7	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	9.5	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	9.5	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)	14	mg/100g
Potassium (K)	215	mg/100g
Calcium (Ca)	21	mg/100g
Magnesium (Mg)	17	mg/100g
Phosphorus (P)	9	mg/100g
Iron (Fe)	0.22	mg/100g
Copper (Cu)	0.03	mg/100g
Zinc (Zn)	0.08	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.02	mg/100g
Iodine (I)	0.1	µg/100g
Selenium (Se)	0.9	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.3	µg/100g
Vitamin C	68	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	70	µg/100g
Beta-carotene	185	µg/100g
Beta-cryptoxanthin	491	µg/100g
Total carotene	466	µg/100g
Lutein	85	µg/100g
Lycopene	366	µg/100g
Total vitamin A	78	Ret Equiv
Alpha-tocopherol	0.28	mg/100g
Beta-tocopherol	0.11	mg/100g
Delta-tocopherol	0.07	mg/100g
Gamma-tocopherol	0.24	mg/100g
Vitamin E	0.35	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 45: Radish, raw****PROXIMATES**

Water	96.5	g/100g
Total Nitrogen	0.11	g/100g
Nitrogen conversion factor	6.25	
Protein	0.7	g/100g
Fat	0.4	g/100g
Ash	0.6	g/100g
Energy (kcal)	12	kcal/100g
Energy (kJ)	50	kJ/100g

**CARBOHYDRATES**

Glucose	0.9	g/100g
Fructose	0.5	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.4	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	1.4	g/100g
Fibre (AOAC)	1.1	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)	21	mg/100g
Potassium (K)	209	mg/100g
Calcium (Ca)	24	mg/100g
Magnesium (Mg)	6	mg/100g
Phosphorus (P)	15	mg/100g
Iron (Fe)	0.19	mg/100g
Copper (Cu)	0.01	mg/100g
Zinc (Zn)	0.09	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.04	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.4	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
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 46: Prunes, ready to eat, semi-dried

**PROXIMATES**

Water	37.3	g/100g
Total Nitrogen	0.37	g/100g
Nitrogen conversion factor	6.25	
Protein	2.3	g/100g
Fat	0.3	g/100g
Ash	6.3	g/100g
Energy (kcal)	149	kcal/100g
Energy (kJ)	633	kJ/100g

**CARBOHYDRATES**

Glucose	24.8	g/100g
Fructose	11.7	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	36.5	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	36.5	g/100g
Fibre (AOAC)	5.2	g/100g

**FATTY ACIDS**

Saturated	0.06	g/100g
cis-monounsaturated	0.04	g/100g
cis n-3 polyunsaturated	0.02	g/100g
cis n-6 polyunsaturated	0.09	g/100g
cis polyunsaturated	0.12	g/100g
Trans	<0.01	g/100g

**INORGANICS**

Sodium (Na)	3	mg/100g
Potassium (K)	734	mg/100g
Calcium (Ca)	64	mg/100g
Magnesium (Mg)	36	mg/100g
Phosphorus (P)	69	mg/100g
Iron (Fe)	1.44	mg/100g
Copper (Cu)	0.28	mg/100g
Zinc (Zn)	0.37	mg/100g
Chloride (Cl)	11	mg/100g
Manganese (Mn)	0.41	mg/100g
Iodine (I)	1.8	µg/100g
Selenium (Se)	<0.16	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.03	mg/100g
Riboflavin	0.03	mg/100g
Niacin	2.7	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.04	mg/100g
Folate	1	µg/100g
Pantothenic acid	0.27	mg/100g
Biotin		µg/100g
Vitamin C		mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	11	µg/100g
Beta-carotene	193	µg/100g
Beta-cryptoxanthin	67	µg/100g
Total carotene	232	µg/100g
Lutein	175	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	39	Ret Equiv
Alpha-tocopherol	1.05	mg/100g
Beta-tocopherol	0.07	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.16	mg/100g
Vitamin E	1.09	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 47: Apricots, ready to eat, semi-dried

**PROXIMATES**

Water	39.6	g/100g
Total Nitrogen	0.35	g/100g
Nitrogen conversion factor	6.25	
Protein	2.2	g/100g
Fat	0.5	g/100g
Ash	11.4	g/100g
Energy (kcal)	161	kcal/100g
Energy (kJ)	686	kJ/100g

**CARBOHYDRATES**

Glucose	25.1	g/100g
Fructose	10.4	g/100g
Sucrose	3.9	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	39.4	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	39.4	g/100g
Fibre (AOAC)	5.3	g/100g

**FATTY ACIDS**

Saturated	0.13	g/100g
cis-monounsaturated	0.02	g/100g
cis n-3 polyunsaturated	0.12	g/100g
cis n-6 polyunsaturated	0.13	g/100g
cis polyunsaturated	0.25	g/100g
Trans	<0.01	g/100g

**INORGANICS**

Sodium (Na)	9	mg/100g
Potassium (K)	1039	mg/100g
Calcium (Ca)	71	mg/100g
Magnesium (Mg)	34	mg/100g
Phosphorus (P)	67	mg/100g
Iron (Fe)	1.35	mg/100g
Copper (Cu)	0.30	mg/100g
Zinc (Zn)	0.25	mg/100g
Chloride (Cl)	10	mg/100g
Manganese (Mn)	0.24	mg/100g
Iodine (I)	18.0	µg/100g
Selenium (Se)	0.2	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.02	mg/100g
Riboflavin	0.01	mg/100g
Niacin	2.5	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.09	mg/100g
Folate	13	µg/100g
Pantothenic acid	0.26	mg/100g
Biotin	0.5	µg/100g
Vitamin C	1	mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	10	µg/100g
Beta-carotene	525	µg/100g
Beta-cryptoxanthin	40	µg/100g
Total carotene	550	µg/100g
Lutein	23	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	92	Ret Equiv
Alpha-tocopherol	3.57	mg/100g
Beta-tocopherol	0.24	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.16	mg/100g
Vitamin E	3.68	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

## Sample 48: Raisins, dried

### PROXIMATES

Water	17.4	g/100g
Total Nitrogen	0.48	g/100g
Nitrogen conversion factor	6.25	
Protein	3.0	g/100g
Fat	1.0	g/100g
Ash	3.5	g/100g
Energy (kcal)	256	kcal/100g
Energy (kJ)	1090	kJ/100g

### CARBOHYDRATES

Glucose	28.2	g/100g
Fructose	34.4	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	62.6	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	62.6	g/100g
Fibre (AOAC)	2.7	g/100g

### FATTY ACIDS

Saturated	0.14	g/100g
cis-monounsaturated	0.44	g/100g
cis n-3 polyunsaturated	0.02	g/100g
cis n-6 polyunsaturated	0.17	g/100g
cis polyunsaturated	0.19	g/100g
Trans	<0.01	g/100g

### INORGANICS

Sodium (Na)	17	mg/100g
Potassium (K)	889	mg/100g
Calcium (Ca)	58	mg/100g
Magnesium (Mg)	32	mg/100g
Phosphorus (P)	101	mg/100g
Iron (Fe)	2.21	mg/100g
Copper (Cu)	0.37	mg/100g
Zinc (Zn)	0.21	mg/100g
Chloride (Cl)	18	mg/100g
Manganese (Mn)	0.31	mg/100g
Iodine (I)	2.9	µg/100g
Selenium (Se)	0.6	µg/100g

### WATER SOLUBLE VITAMINS

Thiamin	0.11	mg/100g
Riboflavin	0.01	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.1	mg/100g
Vitamin B <sub>6</sub>	0.24	mg/100g
Folate	6	µg/100g
Pantothenic acid	0.09	mg/100g
Biotin	11	µg/100g
Vitamin C	0.3	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
Alpha-tocopherol	0.47	mg/100g
Beta-tocopherol	0.09	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	0.12	mg/100g
Vitamin E	0.52	mg/100g

<sup>1</sup>Available carbohydrate calculated on the assumption that starch is not present.

**Sample 49: Lentils, split, dried, raw****PROXIMATES**

Water	9.7	g/100g
Total Nitrogen	4.10	g/100g
Nitrogen conversion factor	6.25	
Protein	25.6	g/100g
Fat	1.8	g/100g
Ash	2.4	g/100g
Energy (kcal)	311	kcal/100g
Energy (kJ)	1321	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	1.3	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	49.9	g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	1.3	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	51.2	g/100g
Fibre (AOAC)	17.4	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)	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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 50: Lentils, split, dried, boiled****PROXIMATES**

Water	72.3	g/100g
Total Nitrogen	1.30	g/100g
Nitrogen conversion factor	6.25	
Protein	8.1	g/100g
Fat	0.7	g/100g
Ash	0.5	g/100g
Energy (kcal)	102	kcal/100g
Energy (kJ)	434	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	16.5	g/100g
Resistant starch	1.5	g/100g
Phytic acid	0.18	g/100g
Total sugars	0.4	g/100g
Oligosaccharides		g/100g
Available carbohydrate	16.9	g/100g
Fibre (AOAC)	6.3	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)	220	mg/100g
Calcium (Ca)	10	mg/100g
Magnesium (Mg)	18	mg/100g
Phosphorus (P)	107	mg/100g
Iron (Fe)	2.14	mg/100g
Copper (Cu)	0.22	mg/100g
Zinc (Zn)	1.02	mg/100g
Chloride (Cl)	18	mg/100g
Manganese (Mn)	0.41	mg/100g
Iodine (I)	1.8	µg/100g
Selenium (Se)	10.4	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.13	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	0.9	mg/100g
Vitamin B <sub>6</sub>	0.07	mg/100g
Folate	36	µg/100g
Pantothenic acid	0.33	mg/100g
Biotin	0.9	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
Alpha-tocopherol	0.14	mg/100g
Beta-tocopherol	0.10	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	1.55	mg/100g
Vitamin E	0.34	mg/100g

**Sample 51: Red kidney beans, dried, boiled****PROXIMATES**

Water	66.5	g/100g
Total Nitrogen	1.37	g/100g
Nitrogen conversion factor	6.25	
Protein	8.6	g/100g
Fat	1.0	g/100g
Ash	1.0	g/100g
Energy (kcal)	100	kcal/100g
Energy (kJ)	425	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.8	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	14.3	g/100g
Resistant starch	1.6	g/100g
Phytic acid	0.4	g/100g
Total sugars	0.8	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	15.1	g/100g
Fibre (AOAC)	11.1	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)	366	mg/100g
Calcium (Ca)	38	mg/100g
Magnesium (Mg)	40	mg/100g
Phosphorus (P)	153	mg/100g
Iron (Fe)	2.26	mg/100g
Copper (Cu)	0.26	mg/100g
Zinc (Zn)	0.88	mg/100g
Chloride (Cl)	9	mg/100g
Manganese (Mn)	0.64	mg/100g
Iodine (I)	4.7	µg/100g
Selenium (Se)	1.5	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.10	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	1.6	mg/100g
Vitamin B <sub>6</sub>	0.07	mg/100g
Folate	45	µg/100g
Pantothenic acid	0.15	mg/100g
Biotin	0.5	µg/100g
Vitamin C	<0.1	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
Alpha-tocopherol	0.24	mg/100g
Beta-tocopherol	0.13	mg/100g
Delta-tocopherol	0.17	mg/100g
Gamma-tocopherol	2.28	mg/100g
Vitamin E	0.52	mg/100g

## Sample 52: Red kidney beans, canned, reheated

### PROXIMATES

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

### CARBOHYDRATES

Glucose	g/100g
Fructose	g/100g
Sucrose	g/100g
Maltose	g/100g
Lactose	g/100g
Starch	g/100g
Resistant starch	g/100g
Phytic acid	g/100g
Total sugars	g/100g
Oligosaccharides	g/100g
Available carbohydrate	g/100g
Fibre (AOAC)	6.8 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)	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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 53: Lentils, brown/green, dried, boiled****PROXIMATES**

Water	71.3	g/100g
Total Nitrogen	1.24	g/100g
Nitrogen conversion factor	6.25	
Protein	7.8	g/100g
Fat	0.7	g/100g
Ash	0.5	g/100g
Energy (kcal)	92	kcal/100g
Energy (kJ)	391	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.2	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	14.3	g/100g
Resistant starch	1.3	g/100g
Phytic acid	<0.14	g/100g
Total sugars	0.2	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	14.5	g/100g
Fibre (AOAC)	7.4	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)	<1	mg/100g
Potassium (K)	202	mg/100g
Calcium (Ca)	21	mg/100g
Magnesium (Mg)	25	mg/100g
Phosphorus (P)	102	mg/100g
Iron (Fe)	2.11	mg/100g
Copper (Cu)	0.21	mg/100g
Zinc (Zn)	0.79	mg/100g
Chloride (Cl)	14	mg/100g
Manganese (Mn)	0.46	mg/100g
Iodine (I)	1.0	µg/100g
Selenium (Se)	17.6	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.10	mg/100g
Riboflavin	0.04	mg/100g
Niacin	1.8	mg/100g
Tryptophan/60	0.9	mg/100g
Vitamin B <sub>6</sub>	0.19	mg/100g
Folate	152	µg/100g
Pantothenic acid	0.33	mg/100g
Biotin	0.4	µg/100g
Vitamin C		mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	<1	µg/100g
Beta-cryptoxanthin	<1	µg/100g
Total carotene	<1	µg/100g
Lutein	357	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	<1	Ret Equiv
Alpha-tocopherol	0.38	mg/100g
Beta-tocopherol	0.17	mg/100g
Delta-tocopherol	0.08	mg/100g
Gamma-tocopherol	1.63	mg/100g
Vitamin E	0.61	mg/100g

**Sample 54: Chickpeas, dried, boiled****PROXIMATES**

Water	62.3	g/100g
Total Nitrogen	1.35	g/100g
Nitrogen conversion factor	6.25	
Protein	8.4	g/100g
Fat	3.0	g/100g
Ash	0.8	g/100g
Energy (kcal)	129	kcal/100g
Energy (kJ)	547	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.7	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	17.6	g/100g
Resistant starch	1.6	g/100g
Phytic acid	0.29	g/100g
Total sugars	0.7	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	18.3	g/100g
Fibre (AOAC)	10.6	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)	281	mg/100g
Calcium (Ca)	48	mg/100g
Magnesium (Mg)	44	mg/100g
Phosphorus (P)	141	mg/100g
Iron (Fe)	1.90	mg/100g
Copper (Cu)	0.26	mg/100g
Zinc (Zn)	1.13	mg/100g
Chloride (Cl)	13	mg/100g
Manganese (Mn)	1.38	mg/100g
Iodine (I)	1.3	µg/100g
Selenium (Se)	29.9	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.14	mg/100g
Riboflavin	0.03	mg/100g
Niacin	0.7	mg/100g
Tryptophan/60	1.3	mg/100g
Vitamin B <sub>6</sub>	0.38	mg/100g
Folate	35	µg/100g
Pantothenic acid	0.37	mg/100g
Biotin	1.3	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
Alpha-tocopherol	1.13	mg/100g
Beta-tocopherol	0.24	mg/100g
Delta-tocopherol	0.49	mg/100g
Gamma-tocopherol	4.66	mg/100g
Vitamin E	1.70	mg/100g

## Sample 55: Chickpeas, canned, reheated

### PROXIMATES

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

### CARBOHYDRATES

Glucose	g/100g
Fructose	g/100g
Sucrose	g/100g
Maltose	g/100g
Lactose	g/100g
Starch	g/100g
Resistant starch	g/100g
Phytic acid	g/100g
Total sugars	g/100g
Oligosaccharides	g/100g
Available carbohydrate	g/100g
Fibre (AOAC)	7.1 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)	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 <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 56: Butter beans, dried, boiled****PROXIMATES**

Water	64.9	g/100g
Total Nitrogen	1.30	g/100g
Nitrogen conversion factor	6.25	
Protein	8.1	g/100g
Fat	1.1	g/100g
Ash	1.3	g/100g
Energy (kcal)	105	kcal/100g
Energy (kJ)	447	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	1.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	15.4	g/100g
Resistant starch	1.9	g/100g
Phytic acid	0.31	g/100g
Total sugars	1.4	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	16.8	g/100g
Fibre (AOAC)	11.2	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)	477	mg/100g
Calcium (Ca)	31	mg/100g
Magnesium (Mg)	43	mg/100g
Phosphorus (P)	134	mg/100g
Iron (Fe)	1.93	mg/100g
Copper (Cu)	0.25	mg/100g
Zinc (Zn)	0.88	mg/100g
Chloride (Cl)	11	mg/100g
Manganese (Mn)	0.62	mg/100g
Iodine (I)	0.9	µg/100g
Selenium (Se)	3.2	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	mg/100g
Riboflavin	mg/100g
Niacin	mg/100g
Tryptophan/60	mg/100g
Vitamin B <sub>6</sub>	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
Alpha-tocopherol	mg/100g
Beta-tocopherol	mg/100g
Delta-tocopherol	mg/100g
Gamma-tocopherol	mg/100g
Vitamin E	mg/100g

**Sample 57: Dates, dried, flesh only****PROXIMATES**

Water	16.0	g/100g
Total Nitrogen	0.38	g/100g
Nitrogen conversion factor	6.25	
Protein	2.4	g/100g
Fat	0.6	g/100g
Ash	1.6	g/100g
<sup>1</sup> Energy (kcal)		kcal/100g
<sup>1</sup> Energy (kJ)		kJ/100g

**CARBOHYDRATES**

Glucose	28.1	g/100g
Fructose	29.9	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	58.0	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate		g/100g
Fibre (AOAC)	7.5	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)	11	mg/100g
Potassium (K)	727	mg/100g
Calcium (Ca)	68	mg/100g
Magnesium (Mg)	55	mg/100g
Phosphorus (P)	68	mg/100g
Iron (Fe)	2.21	mg/100g
Copper (Cu)	0.26	mg/100g
Zinc (Zn)	0.43	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.68	mg/100g
Iodine (I)	17.3	µg/100g
Selenium (Se)	2.7	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	1.5	µg/100g
Vitamin C		mg/100g

**FAT SOLUBLE VITAMINS**

Alpha-carotene	<1	µg/100g
Beta-carotene	9	µg/100g
Beta-cryptoxanthin	2	µg/100g
<sup>2</sup> Total carotene	10	µg/100g
Lutein	122	µg/100g
Lycopene	<1	µg/100g
Total vitamin A	2	Ret Equiv
Alpha-tocopherol	0.67	mg/100g
Beta-tocopherol	0.13	mg/100g
Delta-tocopherol	<0.01	mg/100g
Gamma-tocopherol	2.03	mg/100g
Vitamin E	0.93	mg/100g

<sup>1</sup>Energy values and available carbohydrate have not been calculated because available carbohydrate will include a small quantity of starch (from added rice flour) that is below the limit of quantification.

<sup>2</sup>Total carotene calculated on the assumption that alpha-carotene is not present.

**Sample 58: Mung beans, dried, boiled****PROXIMATES**

Water	69.3	g/100g
Total Nitrogen	1.38	g/100g
Nitrogen conversion factor	6.25	
Protein	8.6	g/100g
Fat	0.7	g/100g
Ash	0.8	g/100g
Energy (kcal)	100	kcal/100g
Energy (kJ)	426	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.4	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	15.4	g/100g
Resistant starch	1.2	g/100g
Phytic acid	0.23	g/100g
Total sugars	0.4	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	15.8	g/100g
Fibre (AOAC)	6.1	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)	339	mg/100g
Calcium (Ca)	30	mg/100g
Magnesium (Mg)	42	mg/100g
Phosphorus (P)	133	mg/100g
Iron (Fe)	1.66	mg/100g
Copper (Cu)	0.30	mg/100g
Zinc (Zn)	0.87	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.41	mg/100g
Iodine (I)	1.80	µg/100g
Selenium (Se)	4.9	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.9	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
Alpha-tocopherol	0.26	mg/100g
Beta-tocopherol	0.19	mg/100g
Delta-tocopherol	0.36	mg/100g
Gamma-tocopherol	3.33	mg/100g
Vitamin E	0.67	mg/100g

**Sample 59: Haricot beans, canned, reheated****PROXIMATES**

Water	69.5	g/100g
Total Nitrogen	1.14	g/100g
Nitrogen conversion factor	6.25	
Protein	7.1	g/100g
Fat	1.0	g/100g
Ash	1.0	g/100g
Energy (kcal)	96	kcal/100g
Energy (kJ)	407	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.6	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	15.0	g/100g
Resistant starch	1.7	g/100g
Phytic acid	0.33	g/100g
Total sugars	0.6	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	15.6	g/100g
Fibre (AOAC)	6.8	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)	340	mg/100g
Calcium (Ca)	111	mg/100g
Magnesium (Mg)	41	mg/100g
Phosphorus (P)	140	mg/100g
Iron (Fe)	2.29	mg/100g
Copper (Cu)	0.33	mg/100g
Zinc (Zn)	0.83	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.50	mg/100g
Iodine (I)	1.0	µg/100g
Selenium (Se)	2.7	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin		mg/100g
Riboflavin		mg/100g
Niacin		mg/100g
Tryptophan/60		mg/100g
Vitamin B <sub>6</sub>		mg/100g
Folate		µg/100g
Pantothenic acid		mg/100g
Biotin	0.9	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
Alpha-tocopherol		mg/100g
Beta-tocopherol		mg/100g
Delta-tocopherol		mg/100g
Gamma-tocopherol		mg/100g
Vitamin E		mg/100g

**Sample 60: Cannellini beans, canned, reheated****PROXIMATES**

Water	70.0	g/100g
Total Nitrogen	1.21	g/100g
Nitrogen conversion factor	6.25	
Protein	7.6	g/100g
Fat	1.6	g/100g
Ash	1.0	g/100g
Energy (kcal)	104	kcal/100g
Energy (kJ)	443	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	<0.1	g/100g
Sucrose	0.7	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch	15.2	g/100g
Resistant starch		g/100g
Phytic acid	0.29	g/100g
Total sugars	0.7	g/100g
Oligosaccharides		g/100g
Available carbohydrate	15.9	g/100g
Fibre (AOAC)	6.8	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)	299	mg/100g
Calcium (Ca)	93	mg/100g
Magnesium (Mg)	33	mg/100g
Phosphorus (P)	128	mg/100g
Iron (Fe)	1.90	mg/100g
Copper (Cu)	0.32	mg/100g
Zinc (Zn)	0.78	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.49	mg/100g
Iodine (I)	0.6	µg/100g
Selenium (Se)	5.4	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.04	mg/100g
Riboflavin	0.03	mg/100g
Niacin	1.0	mg/100g
Tryptophan/60	1.3	mg/100g
Vitamin B <sub>6</sub>	0.06	mg/100g
Folate	8.4	µg/100g
Pantothenic acid	1.30	mg/100g
Biotin	0.2	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
Alpha-tocopherol	0.12	mg/100g
Beta-tocopherol	0.06	mg/100g
Delta-tocopherol	0.09	mg/100g
Gamma-tocopherol	1.21	mg/100g
Vitamin E	0.27	mg/100g

**Sample 61: Edamame, frozen, boiled****PROXIMATES**

Water	68.3	g/100g
Total Nitrogen	2.13	g/100g
Nitrogen conversion factor	5.71	
Protein	12.2	g/100g
Fat	7.6	g/100g
Ash	1.4	g/100g
Energy (kcal)	141	kcal/100g
Energy (kJ)	591	kJ/100g

**CARBOHYDRATES**

Glucose	<0.1	g/100g
Fructose	0.1	g/100g
Sucrose	1.3	g/100g
Maltose	1.2	g/100g
Lactose	<0.1	g/100g
Starch	3.9	g/100g
Resistant starch	<0.3	g/100g
Phytic acid	0.46	g/100g
Total sugars	2.5	g/100g
Oligosaccharides	<0.3	g/100g
Available carbohydrate	6.4	g/100g
Fibre (AOAC)	5.9	g/100g

**FATTY ACIDS**

Saturated	0.85	g/100g
cis-monounsaturated	2.44	g/100g
cis n-3 polyunsaturated	0.42	g/100g
cis n-6 polyunsaturated	2.33	g/100g
cis polyunsaturated	2.74	g/100g
Trans	<0.01	g/100g

**INORGANICS**

Sodium (Na)	5	mg/100g
Potassium (K)	497	mg/100g
Calcium (Ca)	88	mg/100g
Magnesium (Mg)	65	mg/100g
Phosphorus (P)	204	mg/100g
Iron (Fe)	2.73	mg/100g
Copper (Cu)	0.39	mg/100g
Zinc (Zn)	1.17	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	1.17	mg/100g
Iodine (I)		µg/100g
Selenium (Se)	1.7	µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.14	mg/100g
Riboflavin	0.06	mg/100g
Niacin	2.1	mg/100g
Tryptophan/60	2.7	mg/100g
Vitamin B <sub>6</sub>	0.31	mg/100g
Folate	15.2	µg/100g
Pantothenic acid	2.80	mg/100g
Biotin	1.70	µg/100g
Vitamin C	11	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
Alpha-tocopherol	1.55	mg/100g
Beta-tocopherol	0.60	mg/100g
Delta-tocopherol	3.45	mg/100g
Gamma-tocopherol	6.63	mg/100g
Vitamin E	2.49	mg/100g

## Sample 62: Figs, ready to eat, semi-dried

**PROXIMATES**

Water	27.5	g/100g
Total Nitrogen	0.49	g/100g
Nitrogen conversion factor	6.25	
Protein	3.1	g/100g
Fat	1.2	g/100g
Ash	2.3	g/100g
Energy (kcal)	186	kcal/100g
Energy (kJ)	790	kJ/100g

**CARBOHYDRATES**

Glucose	21.2	g/100g
Fructose	22.1	g/100g
Sucrose	<0.1	g/100g
Maltose	<0.1	g/100g
Lactose	<0.1	g/100g
Starch		g/100g
Resistant starch		g/100g
Phytic acid		g/100g
Total sugars	43.3	g/100g
Oligosaccharides		g/100g
<sup>1</sup> Available carbohydrate	43.3	g/100g
Fibre (AOAC)	10.0	g/100g

**FATTY ACIDS**

Saturated	0.13	g/100g
cis-monounsaturated	0.19	g/100g
cis n-3 polyunsaturated	0.38	g/100g
cis n-6 polyunsaturated	0.29	g/100g
cis polyunsaturated	0.67	g/100g
Trans	<0.01	g/100g

**INORGANICS**

Sodium (Na)	111	mg/100g
Potassium (K)	784	mg/100g
Calcium (Ca)	191	mg/100g
Magnesium (Mg)	67	mg/100g
Phosphorus (P)	75	mg/100g
Iron (Fe)	1.44	mg/100g
Copper (Cu)	0.30	mg/100g
Zinc (Zn)	0.48	mg/100g
Chloride (Cl)		mg/100g
Manganese (Mn)	0.67	mg/100g
Iodine (I)	1.6	µg/100g
Selenium (Se)		µg/100g

**WATER SOLUBLE VITAMINS**

Thiamin	0.07	mg/100g
Riboflavin	0.04	mg/100g
Niacin	0.9	mg/100g
Tryptophan/60	0.4	mg/100g
Vitamin B <sub>6</sub>	0.35	mg/100g
Folate	3	µg/100g
Pantothenic acid	0.44	mg/100g
Biotin	1.1	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
Alpha-tocopherol	0.32	mg/100g
Beta-tocopherol	0.04	mg/100g
Delta-tocopherol	0.05	mg/100g
Gamma-tocopherol	0.74	mg/100g
Vitamin E	0.41	mg/100g

<sup>1</sup>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 ±2°C.

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

**Resistant starch:**

Resistant starch is determined using an in-house method based on AOAC 2002.02. The sample is suspended in an aqueous buffer solution and incubated with α-amylase and amyloglucosidase using conditions that reflect the human small intestine. After ethanol precipitation and centrifugation the remaining resistant starch in the pellet is solubilized, quantitatively converted into glucose and enzymatically quantified.

LOQ 0.3 g/100g

**Phytic acid:**

The sample aliquot is extracted with Na<sub>2</sub>SO<sub>4</sub> solution overnight. Phytic acid (phytate) is precipitated with FeCl<sub>3</sub>, the precipitant ashed, and the phosphorus content in the precipitate is determined by ICP-OES method. The resultant phosphorus content is calculated as phytic acid.

**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  $\alpha$ -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

#### **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 and 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 hydrochloride.

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.

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: pteroylglutamic acid

## **Vitamin C**

Vitamin C is determined by HPLC using fluorescence detection.

## **Oil soluble vitamins**

Vitamins A, E and the carotenoids (including lutein and lycopene) 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 –  $\beta$ -Carotene: BS EN 12823-2:2000. Foodstuffs-Determination of Vitamin A by High Performance Liquid Chromatography-Part 2: Measurement of  $\beta$ -Carotene.

Vitamin E: BS EN 12822:2000. Foodstuffs-Determination of Vitamin E by High Performance Liquid Chromatography-Measurement of  $\alpha$ -,  $\beta$ -,  $\gamma$ - and  $\delta$ -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  $\alpha$  - tocopherol equivalent. The activities used for these calculations are as shown below:

$\alpha$ - tocopherol	1.0
$\beta$ - tocopherol	0.4
$\gamma$ - tocopherol	0.1
$\delta$ - tocopherol	0.01

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

Nutrient analysis survey of fresh and processed fruit and vegetables with respect to fibre

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

UKAS accredited.

## Quality assurance

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 (i.e. 95% confidence level)

Wet pet food is 76.33 g/100g +/- 1.4 g/100g.

#### FAPAS Results

Round	Date	Sample Type	Determination	Z score
98	3/15	Canned Meat Meal	Moisture	-0.2
59	3/15	Breadcrumbs	Moisture	1.4
126	3/15	Infant Formula	Moisture	-0.1
127	4/15	Cheese & Pasta Meal	Moisture	0.5
99	5/15	Canned Meat	Moisture	-0.3
60	5/15	Biscuit	Moisture	-1.2
128	5/15	Butter	Moisture	-0.5
130	5/15	Snack Food	Moisture	0.1
100	6/15	Canned Meat	Moisture	-0.1
61	6/15	Wheat Flour	Moisture	-1.2
131	7/15	Fish Paste	Moisture	-0.8
101	8/15	Canned Meat meal	Moisture	-0.2
62	8/15	Porridge Oats	Moisture	0.9
102	9/15	Canned Meat	Moisture	0
135	12/15	Chocolate	Moisture	0.2
104	1/16	Canned Meat	Moisture	0.7
65	1/16	Biscuit	Moisture	-1.5
136	2/16	Milk Powder	Moisture	-0.5
105	3/16	Canned Meat Meal	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 (i.e. 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
98	3/15	Canned Meat Meal	Total Fat	-0.7
126	3/15	Infant Formula	Total Fat	1.1
127	4/15	Cheese & Pasta Meal	Total Fat	-1.7
99	5/15	Canned Meat	Total Fat	-1.2
60	5/15	Biscuit	Total Fat	-0.7
128	5/15	Butter	Total Fat	0.1
130	5/15	Snack Food	Total Fat	-0.3
100	6/15	Canned Meat	Total Fat	-1.2
131	7/15	Fish Paste	Total Fat	-0.4
101	8/15	Canned Meat Meal	Total Fat	-2.2
62	8/15	Porridge Oats	Total Fat	1.0
102	9/15	Canned Meat	Total Fat	-0.3
103	11/15	Canned Meat Meal	Total Fat	-0.1
135	12/15	Chocolate	Total Fat	0.5
104	1/16	Canned Meat	Total Fat	0.2
65	1/16	Biscuit	Total Fat	0.1
136	2/16	Milk Powder	Total Fat	0
105	3/16	Canned Meat Meal	Total Fat	-0.9

**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 (i.e. 95% confidence level)

Dry pet food is 7.18 g/100g +/- 0.18 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
98	3/15	Canned Meat Meal	Ash	0.2
59	3/15	Breadcrumbs	Ash	0.1
126	3/15	Infant Formula	Ash	1.1
127	4/15	Cheese & Pasta Meal	Ash	-0.5
99	5/15	Canned Meat	Ash	-0.1
60	5/15	Biscuit	Ash	-1.1
130	5/15	Snack Food	Ash	-0.3
100	6/15	Canned Meat	Ash	0.2

61	6/15	Wheat Flour	Ash	-1.9
131	7/15	Fish Paste	Ash	1.1
101	8/15	Canned Meat Meal	Ash	0
62	8/15	Porridge Oats	Ash	1.1
102	9/15	Canned Meat	Ash	0
63	11/15	Cereal	Ash	1.0
104	1/16	Canned Meat	Ash	-0.6
65	1/16	Biscuit	Ash	1.2
136	2/16	Milk Powder	Ash	0
105	3/16	Canned Meat Meal	Ash	0.5

### **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 (i.e. 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**

<b>Round</b>	<b>Date</b>	<b>Sample Type</b>	<b>Determination</b>	<b>Z score</b>
98	3/15	Canned Meat Meal	Nitrogen	1.6
59	3/15	Breadcrumbs	Nitrogen	0.7
126	3/15	Infant Formula	Nitrogen	1.1
127	4/15	Cheese & Pasta Meal	Nitrogen	0.4
99	5/15	Canned Meat	Nitrogen	1.2
60	5/15	Biscuit	Nitrogen	0.8
130	5/15	Snack Food	Nitrogen	0.8
100	6/15	Canned Meat	Nitrogen	0
61	6/15	Wheat Flour	Nitrogen	0.3
131	7/15	Fish Paste	Nitrogen	-0.4
101	8/15	Canned Meat Meal	Nitrogen	0.8
62	8/15	Porridge Oats	Nitrogen	0.6
102	9/15	Canned Meat	Nitrogen	0.9
63	11/15	Cereal	Nitrogen	0
135	12/15	Chocolate	Nitrogen	-0.2
104	1/16	Canned Meat	Nitrogen	0.8
65	1/16	Biscuit	Nitrogen	0.8
136	2/16	Milk Powder	Nitrogen	0.7
105	3/16	Canned Meat Meal	Nitrogen	-0.5

**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  $\alpha$ -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 (i.e. 95% confidence level)

Weetabix cereal is 10.72 g/100g +/- 1.07 g/100g.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
59	3/15	Breadcrumbs	AOAC fibre	-1.2
60	5/15	Biscuit	AOAC fibre	-1.4
61	6/15	Wheat Flour	AOAC fibre	-2.2
62	8/15	Porridge Oats	AOAC fibre	-0.2
63	11/15	Cereal	AOAC fibre	-0.4
65	1/16	Biscuit	AOAC fibre	-1.2
64	3/16	Breadcrumbs	AOAC fibre	0.3

**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

FAPAS Results

Round	Date	Sample Type	Determination	Z score
96	11/14	Canned Meat Meal	Total Sugars	-0.9
53	11/14	Fruit Juice	Fructose	-0.3
53	11/14	Fruit Juice	Glucose	-0.2
53	11/14	Fruit Juice	Sucrose	1.1
53	11/14	Fruit Juice	Total Sugars	0.3
123	11/14	Milk Shake Powder	Fructose	-0.7
123	11/14	Milk Shake Powder	Glucose	-1.4
123	11/14	Milk Shake Powder	Lactose	0.7

123	11/14	Milk Shake Powder	Maltose	0
123	11/14	Milk Shake Powder	Sucrose	0.7
124	1/15	Chocolate	Lactose	-2.3
124	1/15	Chocolate	Sucrose	-2.5
98	3/15	Canned Meat Meal	Total Sugars	-0.5
126	3/15	Infant Formula	Lactose	0.8
56	7/15	Apple Juice	Total Sugars	0.3
119	9/15	Chocolate cake mix	Total Sugars	-0.1
103	11/15	Canned Meat Meal	Total Sugars	-0.4
134	11/15	Milk Shake Powder	Fructose	-2.2
134	11/15	Milk Shake Powder	Galactose	-4.2
134	11/15	Milk Shake Powder	Glucose	-2.4
134	11/15	Milk Shake Powder	Lactose	-0.8
134	11/15	Milk Shake Powder	Maltose	0.2
134	11/15	Milk Shake Powder	Sucrose	0.2
135	12/15	Chocolate	Lactose	-1.6
135	12/15	Chocolate	Sucrose	-2.0
58	1/16	Grapefruit Juice	Total Sugars	-0.3
136	2/16	Milk Powder	Lactose	0.3
105	3/16	Canned Meat Meal	Total Sugars	-0.2
137	3/16	Infant Powder	Lactose	1.0
59	5/16	Cranberry Juice	Total Sugars	0

#### **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  $20 \pm 2^{\circ}\text{C}$ .

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.

FAPAS Results

Round	Date	Sample Type	Determination	Z score
59	3/15	Breadcrumbs	Starch	-1.8
64	3/16	Breadcrumbs	Starch	1.7

**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

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	31.9
SRM 1547	Peach leaves	24±2	33.4
SRM 1547	Peach leaves	24±2	27.5

**Potassium**

Reference Material	Matrix	Expected Level (mg/100g)	Measured Level (mg/100g)
SRM 1547	Peach leaves	2430±30	2445
SRM 1547	Peach leaves	2430±30	2435
SRM 1547	Peach leaves	2430±30	2413

**Calcium**

Reference Material	Matrix	Expected Level (mg/100g)	Measured Level (mg/kg)
SRM 1547	Peach leaves	1560±20	1651
SRM 1547	Peach leaves	1560±20	1642
SRM 1547	Peach leaves	1560±20	1595

**Magnesium**

Reference Material	Matrix	Expected Level (µg/g)	Measured Level (µg/g)
SRM 1547	Peach leaves	4320±80	3782
SRM 1547	Peach leaves	4320±80	3765
SRM 1547	Peach leaves	4320±80	3749

**Copper**

Reference Material	Matrix	Expected Level (µg/g)	Measured Level (µg/g)
SRM 1547	Peach leaves	3.7±0.4	3.5
SRM 1547	Peach leaves	3.7±0.4	3.8
SRM 1547	Peach leaves	3.7±0.4	3.74

**Iron**

Reference Material	Matrix	Expected Level (µg/g)	Measured Level (µg/g)
SRM 1547	Peach leaves	218±14	210
SRM 1547	Peach leaves	218±14	210
SRM 1547	Peach	218±14	213

	leaves		
SRM 1547	Peach leaves	218±14	203

### Manganese

Reference Material	Matrix	Expected Level (µg/g)	Measured Level (µg/g)
SRM 1547	Peach leaves	98±3	98.6
SRM 1547	Peach leaves	98±3	98.4
SRM 1547	Peach leaves	98±3	96.5

### Zinc

Reference Material	Matrix	Expected Level (µg/g)	Measured Level (µg/g)
SRM 1547	Peach leaves	17.9±0.4	15.7
SRM 1547	Peach leaves	17.9±0.4	15.3
SRM 1547	Peach leaves	17.9±0.4	15.1

### Phosphorus

Reference Material	Matrix	Expected Level (mg/100g)	Measured Level (mg/100g)
SRM 1547	Peach leaves	137±7	148
SRM 1547	Peach leaves	137±7	148
SRM 1547	Peach leaves	137±7	143

### Selenium

Reference Material	Matrix	Expected Level (µg/g)	Measured Level (µg/g)
SRM 1547	Peach leaves	0.120±0.009	0.121
SRM 1547	Peach leaves	0.120±0.009	0.121

### Iodide:

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

UKAS accredited.

Reference Material	Matrix	Expected Level ( $\mu\text{g/g}$ )	Iodide ( $\mu\text{g/kg}$ )
ERM BD150	Skimmed milk powder	1730 $\pm$ 140	1767
ERM BD150	Skimmed milk powder	1730 $\pm$ 140	1767

### Chloride:

Concentrations are determined using a Corning Chloride Analyser after extraction with nitric acid.

In-house method FFF/B1-2104 - UKAS accredited.

Reference Material	Matrix	Expected Level (g/kg)	Chloride (g/kg)
ERM BB501b	Processed meat	14.5 $\pm$ 0.5	11.1
ERM BB501b	Processed meat	14.5 $\pm$ 0.5	11.41

### 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

Total folate: pteroylglutamic acid

### Thiamin, riboflavin and 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 $\pm$ 1.95	13.90
BCR 485	Mixed veg	3.07 $\pm$ 0.34	2.6
BCR 485	Mixed veg	3.07 $\pm$ 0.34	2.89

#### Riboflavin

Reference Material	Matrix	Expected Level (mg/kg)	Riboflavin (mg/kg)
NIST 1849a	Infant formula	17.4 $\pm$ 1.0	21.1
NIST 1849a	Infant formula	17.4 $\pm$ 1.0	16.18

**Vitamin B6**

Reference Material	Matrix	Expected Level (mg/kg)	Vitamin B6 (mg/kg)
BCR 485	Mixed veg	4.8±0.8	5.32
BCR 485	Mixed veg	4.8±0.8	5.45
NIST 1849a	Infant formula	14.2±1.5	13.5
NIST 1849a	Infant formula	14.2±1.5	13.44

**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	116.7
NIST 1849a	Infant formula	97.5±11.7	105.6

**Folate**

Reference Material	Matrix	Expected Level (mg/kg)	Folate (mg/kg)
NIST 1849a	Infant formula	2.293±0.062	2.82
NIST 1849a	Infant formula	2.293±0.062	2.82

**Biotin**

Reference Material	Matrix	Expected Level (mg/kg)	Biotin (mg/kg)
NIST 1849a	Infant formula	1.99±0.13	1.95
NIST 1849a	Infant formula	1.99±0.13	1.95

**Pantothenate**

Reference Material	Matrix	Expected Level (mg/kg)	Pantothenate (mg/kg)
NIST 1849a	Infant formula	68.2±1.9	62.4
NIST 1849a	Infant formula	68.2±1.9	62.9

**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	0.188±0.015	0.183
NIST 1849	Infant formula	0.188±0.015	0.181

**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	833
NIST 1849a	Infant formula	784±65	782
NIST 1849a	Infant formula	784±65	735

**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 –  $\beta$ -Carotene: BS EN 12823-2:2000. Foodstuffs-Determination of Vitamin A by High Performance Liquid Chromatography-Part 2: Measurement of  $\beta$ -Carotene
- vitamin E: BS EN 12822:2000. Foodstuffs-Determination of Vitamin E by High Performance Liquid Chromatography-Measurement of  $\alpha$ -,  $\beta$ -,  $\gamma$ - and  $\delta$ -tocopherols.

UKAS accredited.

**Alpha-carotene**

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
BCR-485	Mixed vegetables	10.5±0.6	6.9
BCR-485	Mixed vegetables	10.5±0.6	9.5
BCR-485	Mixed vegetables	10.5±0.6	8.1

**Beta-carotene**

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
BCR-485	Mixed vegetables	25.6±1.8	21
BCR-485	Mixed vegetables	25.6±1.8	20
BCR-485	Mixed vegetables	25.6±1.8	20

**Lutein**

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
BCR-485	Mixed vegetables	12.5±0.8	8
BCR-485	Mixed vegetables	12.5±0.8	12
BCR-485	Mixed vegetables	12.5±0.8	12

**Alpha-tocopherol**

Reference Material	Matrix	Expected Level (mg/kg)	Measured Level (mg/kg)
BCR122	Margarine	241±12	226
BCR122	Margarine	241±12	209
BCR122	Margarine	241±12	209

## References

1. Department of Health, *Nutrient Analysis of Fruit and Vegetables*. 2013. <https://www.gov.uk/government/publications/nutrient-analysis-of-fruit-and-vegetables>.
2. Finglas et al. 2015. McCance and Widdowson's *The Composition of Foods*. Seventh Summary Edition, Cambridge, Royal Society of Chemistry.