



Plant & Food
RESEARCH
RANGAHAU AHUMĀRA KAI



Developing our Database Assets: Strategic Food Information for NZ

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THE SCIENCE OF PREMIUM™

The New Zealand Institute for Plant & Food Research Limited

Talk outline

- » A little about us
- » About the New Zealand Food Composition Database: a database of national significance
- » Current issues
- » New developments
 - » FoodCASE
 - » Revamped website
 - » Search Tool
- » Future plans



Plant & Food Research

Incorporated December 2008

- » Based in New Zealand
- » Government-owned Crown Research Institute
- » Revenue **NZ\$146 million** (2016/17)
- » Legacy extends back to 1926

More than **900 employees**

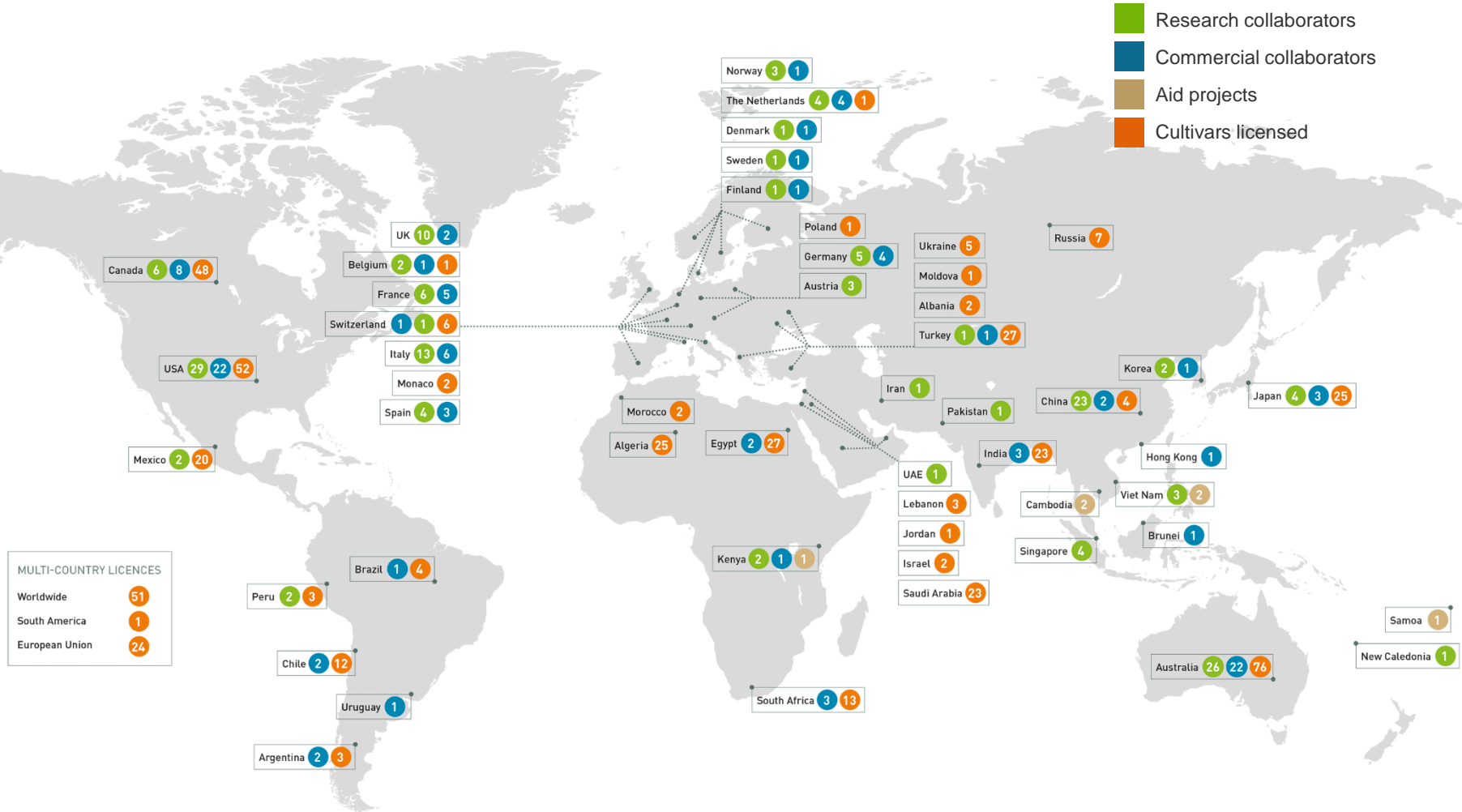
- » 660+ research staff
- » 14 sites in New Zealand
- » Representatives in the USA, Australia

Income

- » 57% private contracts and royalties
- » 43% New Zealand Government contracts



Our global reach



Our Food Composition Database

Food Composition Database

- Nutrient information for more than 2600 foods commonly eaten in New Zealand
- Aligns with in FSANZ and INFOODS standards

- » Database of national significance
- » Partnership between Ministry of Health & PFR - started in 1980
- » Data freely available via: www.foodcomposition.co.nz



FSANZ = Food Standards Australia New Zealand
INFOODS = International Network of Food Data System

Why NZ needs a national FCD

- » National surveys to drive policy for NZ health, Food and Nutritional Guidelines and National Health Policy.
- » Validated source of NZ data to analyse the nutrient intake:
 - » 2008/09 New Zealand Adult Nutrition Survey
 - » 2002 National Children's Nutrition Survey
 - » Total Dietary Survey
- » Food regulation and safety
 - » Foods Standard Code
 - » Nutrition Information Panels (NIP)
 - » Nutrient content & health claims
- » Support the food industry
 - » Independent benchmark data to promote foods and ingredients for NZ and export markets

Provision of NZ specific data for companies

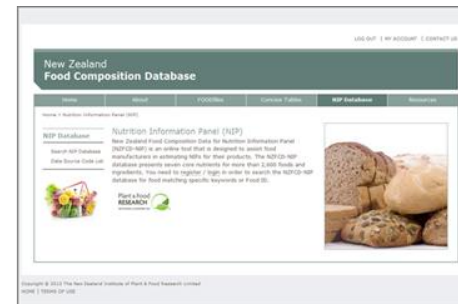
- » Provide a commercial confidential analytical and database option to the food industry, particularly for fresh produce, to analyse their products and track the composition over seasons and across varieties.
- » Analysis of beef and lamb cuts targeted for export
 - » To update database to reflect latest cuts and feeding practice
 - » Target USDA National Nutrient Database
 - » Analytical results for 288 cuts were updated in NZ and USDA for specific NZ meat cuts
 - » Fat and fatty acid results had major revisions
 - » > 24,000 values were entered into NZFCD
- » Analyse different kiwifruit cultivars for Zespri

BEEF + LAMB
NEW ZEALAND



Current formats

- » Currently have to register/login to use any of our products
- » Data file downloads for off-line use:
 - » New Zealand FOODfiles™: includes data for up to 360 components for 2,631 foods, as Excel or ASCII text files
 - » The Concise New Zealand Food Composition Tables: printable tables of 36 components for 1,063 foods in pdf or Excel
- » NIP online tool:
 - » New Zealand Food Composition Data for Nutrition Information Panel (NZFCD-NIP) presents seven core nutrients for 2,574 foods and ingredients



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SYSTEM FAILURE



What is wrong with the current system & tools?

Alpha-carotene	Alpha-tocopherol	Ash	Available carbohydrate by difference	Available carbohydrate, FSANZ	Available carbohydrate weight	Available carbohydrate in monosaccharide equivalent	Beta-carotene
µg/100g	mg/100g	g/100g	g/100g	g/100g	g/100g	g/100g	µg/100g
0	0.3	1.7	45.18	43.1	43.1	43.1	40.17
0	0.8	1.9	38.31	36.3	36.3	36.3	47.05
0	0.5	1.9	41.99	40.7	40.7	40.7	44.54
0	1.3	1.3	41.04	38.63	38.63	38.63	42
0	0.5	1.6	36.32	42.6	42.6	42.6	46.63
0	0.29	1.8	21.54	25.78	25.78	25.78	28.25
0	0.73	1.4	48.23	43.5	43.5	43.5	47.61
0	0.81	1.5	42.04	39.1	39.1	39.1	42.87
0	0.73	2	80.84	77.5	77.5	77.5	85.12
0	0.44	2	39.12	41.47	41.47	41.47	45.45
0	2.78	2	36.17	41.47	41.47	41.47	45.45
0	3.78	2.1	39.96	34.98	34.98	34.98	38.36
0	0.47	1.5	36.71	32.32	32.32	32.32	36.02
10	0.04	1.95	80.15	73.29	73.29	73.29	80.5
0	0.21	3	75.61	66.32	66.32	66.32	72.87
0	0.25	2.85	72.64	65.15	65.15	65.15	71.53
0	0.29	2.2	74.83	66.34	66.34	66.34	72.65
0	0.5	1.7	73.89	66.17	66.17	66.17	72.68
0	0.87	1.5	83.71	75.66	75.66	75.66	83.12
10	0.08	2.9	80.72	72.6	72.6	72.6	79.64
10	0.08	2.65	81.16	73.63	73.63	73.63	80.78
10	0.12	1.7	82.51	71.88	71.88	71.88	78.94
0	0.47	1.5	61.84	52	52	52	57.04
0	0.31	1.69	31.33	30.05	30.05	30.05	33.04
0	0.28	2.3	33.77	31	31	31	33.98



Issues

- » Current database is old and 'at risk'
 - » staff who developed no longer with us
 - » not the right platform
 - » Can't easily change the framework
 - » not very flexible
 - » recipe calculation is not done in real time – left to process overnight
- » Issues with existing formats:
 - » Not easy to search
 - » Can't easily tailor outputs to clients needs
 - » Further data manipulation (e.g. calculation of RDIs) has to be done 'manually'
 - » Not easy to print selected information



Solutions

- » Objective: Improve the management of food composition data and improve the accessibility and functionality of data through new tools & resources
- » Milestones:
 1. Implement a replacement for FIMS (our own **F**ood **I**nformation **M**anagement **S**ystem)
 2. Provide a web access portal that allows the user to find and print/download the data they want
 - » Builds on what some other international databases are doing but takes a step further
 - » Initial focus on the Food Industry including nutrient content claims compliant with FSANZ regulations
 - » Future developments will extend user groups targeted



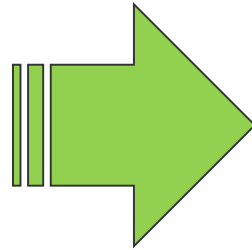
Benefits of this work

- » Ultimately the strategic food composition & information tools will deliver benefits to users, both within PFR and externally
- » Information & tools are critical to guide research (e.g. targets for breeding, guidance on clinical trial design) and avoid potential issues (e.g. non-acceptance of clinical trial evidence due to application of non-compliant biomarkers)
- » Strengthen our relationship & visibility for MoH
- » Improved success with health claims
- » Information for food industry to promote their products
- » These will be world leading resources and offer future potential to link with other databases internationally - could help with food exports (including labelling requirements & claims)

NZFCD system (FIMS) replacement



D78_6294



FIMS
Food Information
Management System

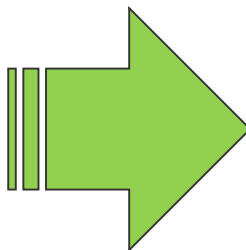
FoodCASE
Food Composition And
System Environment



FoodCASE implementation

- » Identified replacement options
 - » Redevelop, FoodCASE, USDA, NUTTAB system, FAO
- » FoodCASE identified as best option
- » Completed evaluation and testing of FoodCASE
 - » Some modifications required to meet our needs but largely meets our requirements
- » Identification and final prioritisation of changes (must have versus future)
- » Finalising contracts and Premotec about to work on enhancements
- » NZFCD data migration to 'FoodCASE Plus' later this year ahead of possible NZ dietary surveys

Transforming accessing NZFCD Data



FoodID	Chapter	Food Name	Alcohol	Alpha-carotene	Alpha-tocopherol	Ash
FoodID	Chapter	Food Name	g/100g	µg/100g	mg/100g	g/100g
A1007	A	Bread, white wheat, sliced, prepacked, composite	0	0	0.3	1.7
A1008	A	Bread, wheatmeal, sliced, prepacked, composite	0	0	0.8	1.9
A1009	A	Bread, mixed grain, light, sliced, prepacked, composite	0	0	0.5	1.9
A101	A	Croissant, plain, composite	0	0		1.3
A1010	A	Bread, mixed grain, heavy, sliced, prepacked, composite	0	0	0.5	1.6
A1011	A	Stuffing, from chicken, deli cooked	0	0	0.29	1.8
A1014	A	Bread, gluten free, white, sliced & unsliced, prepacked,	0	0	0.73	1.4
A1015	A	Bread, gluten free, mixed grain, sliced, prepacked,	0	0	0.81	1.5
A1016	A	Bread mix, gluten free, Simple Baking Mix, Healthieries,	0	0	0.73	2
A1017	A	Bread, garlic, made with butter, Garlic Bread Traditional				
A1019	A	Style, La Famiglia & Garlic Bread Italian Style, Signature	0	0	0.44	2
A1021	A	Bread, garlic, made with margarine, Garlic Bread, Pams &	0	0	2.78	2
A1024	A	Bread, mixed grain & seed, sliced, prepacked, 9 Grain &	0	0	3.78	2.1
A1029	A	Bread, mixed grain, sliced, prepacked, Ancient Grains,	0	0	0.47	1.5
A1030	A	Cracker, corn, ready to eat, Cruskits, Corn, Annett's	0	12	0.04	1.95
A1031	A	Cracker, wheat, ready to eat, Salada, Light, Original,	0	0	0.21	3
A1032	A	Cracker, mixed grain, ready to eat, Cruskits, Light,	0	0	0.25	2.85
A1033	A	Cracker, mixed grain, ready to eat, Crisp Bread Original,	0	0	0.29	2.2
A1034	A	Cracker, wheat, ready to eat, Cream Crackers, Reduced	0	0	0.5	1
A1035	A	Cracker, rice, plain, composite	0	0	0.87	1.5
A1036	A	Cracker, rice, seaweed flavoured, Rice Cracker Seaweed,	0	10	0.08	2.9
A1037	A	Cracker, rice & seaweed flavoured Rice Cracker	0	10	0.08	2.65
A1037	A	Cracker, rice & seaweed flavoured, Rice Cracker	0	10	0.12	1.7

Food details

Testfruit, Raw



FCDB food ID:	L1014
Alternate name:	synonym if there is one
Scientific name:	Latin name
Description:	This data is for raw - ripe - flesh... blah blah blah
Food group:	Fruit
Serving size:	130 g

More detail

Nutritional Information Panel (NIP)				
* Percentage daily intakes are based on an average adult diet of 8700 kJ				
NUTRIENT	UNIT	QUANTITY PER SERVE	%RDI* PER SERVE	QUANTITY PER 100g
Energy	kJ	x	xx%	x
Protein	g	x	xx%	x
Fat, total	g	x	xx%	x
Fat, saturated	g	x	xx%	x
Available carbohydrate	g	x	xx%	x
Sugars	g	x	xx%	x
Dietary Fibre	g	x	xx%	x
Sodium	mg	x	xx%	x



New ways to access data

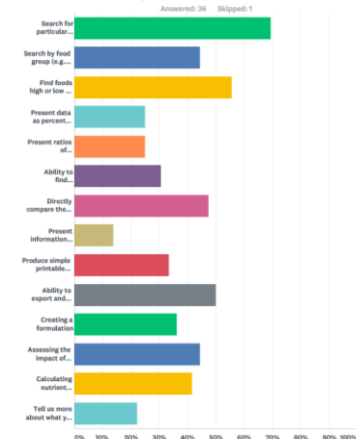
- » Designed with a series of use cases and questions in mind:
 - » What nutrients are present in an orange?
 - » What nutrient content claims can I make for potatoes?
 - » What vegetables have the highest amount of iron?
 - » How do apples compare to oranges nutritionally?
 - » What is the effect of cooking: how does a raw carrot compare to boiled or steamed?
- » Wanted to be able to access on:
 - » Computer
 - » iPad
 - » Phone



Defining & refining of user needs

- » Identified Food Industry as the 'test case' as simpler to implement (e.g. single set RDI, fixed rules to follow)
- » Survey Monkey questionnaire to survey users of NZFCD and provide valuable insights (usability issues, current barriers to use and what users want in a tool)
- » Development of mock-ups for user testing

Q5 What functionality would you like when accessing food composition information?



Search the NZFCD

You can search the database by food item to find the nutrient information for your food item.
You can also generate lists of foods sorted by nutrient content.

Outputs are tailored depending on your user type.

CONSUMER **INDUSTRY** **TECHNICAL**

Use in this category include consumers, students, educators and those interested in public health. Nutrient data presented includes % Recommended Dietary Intake (RDI) to help ensure you're getting what you need.

This category is tailored to industry users and provides food composition information to assist with FSANZ labelling requirements and compliance including nutrient content.

This category is targeted to researchers, nutritionists and dietitians, and those who want more detailed food composition information.

MOH logo

Food details for...

Testfruit, Raw

Food ID: L1014

Alternate name: synonym if there is one

Scientific name: Latin Name

Description: This data is for raw - ripe - flesh.

Group: Fruit

Serving size: 100g

Basic NCP panel:

NUTRIENT	UNITS	PER 100g	PER SERVING	%RDI
Energy	kJ	233.54	x	xx%
Protein	g	0.46	x	xx%
Fat	g	0.3	x	xx%
Saturated Fat	g	0.008	x	xx%
Available Carbohydrate	g	11.64	x	xx%
Sugar	g	0.8	x	xx%
Dietary Fibre	g	2.1	x	xx%
Sodium (Na)	mg	1	x	xx%

Other report options:

- [Nutrient Claims Report](#)
- [Basic Report](#)
- [Detailed Report](#)

[Return to Search Results](#) [Start a new search](#)

Multi-nutrient search results

XXXX foods found.

Nutrients: XXX; XXX; XXX Measured by: 100g

Sort foods by nutrient: XXX (x, y) **PDF REPORT**

FOOD	% RDI	ENERGY	PROTEIN	FAT	SAT FAT	CHO	SUGAR	FIBRE	Na
Testfruit B	100g	A1234	282	0.4	15				
Coprosma Red	50g	B1235	200	0.8	30				
Orange	150g	A1236	199	0.3	20				
Kale	30g	B1237	180	0.9	18				
Kiwifruit	70g	A1238	120	1	16				
Coprosma Green	50g	B1239	100	0.2	11				
Broccoli	100g	B1240	99	0.5	30				
Brussels sprouts	100g	B1241	80	0.4	22				
Grapefruit	200g	A1242	50	0.5	17				
Strawberry	150g	A1243	40	0.2	20				

[Start a new search](#)

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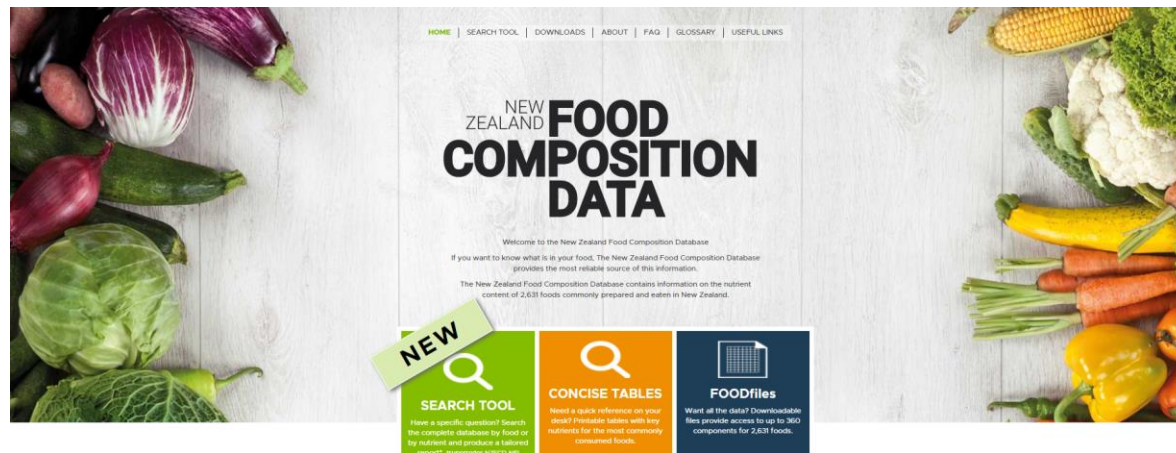
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2008/12/24/08

The build

- » JustinMind (<https://www.justinmind.com/>) used to develop a website demo
 - » Development of design & skin
- » Preparation of final files for developers:
 - » Use case document
 - » Food Files Web Access Specification
- » Catalyst (software developer) engaged and started on a series of sprints to complete building of the new product - sprints based around the various search functionality
- » Revamp of existing foodcomposition.co.nz website completed including new sections, e.g. comprehensive glossary

Refreshed website

- » We have taken the opportunity to modernise the look of website while incorporating the Search functionality
- » Restructured for easier navigation & use
- » Added new content: glossary, new FAQs



<http://demo.foodcomposition.co.nz/>



New Search functionality



SEARCH FOR A FOOD

SEARCH FOR A NUTRIENT

MULTI-FOOD SEARCH

MULTI-NUTRIENT SEARCH

Provides the details of the amount of each nutrient in a food.

Search for

Showing 1-25 of 2,631 foods

FOOD ▾

Alfonsino, flesh, raw

All Bran Honey Almond, Kellogg's, fortified

All Bran Original, Kellogg's, fortified

All Bran Wheat Flakes, Kellogg's, fortified

Anchovy, canned in oil, drained

Apple, 'Braeburn', flesh & skin, raw

Apple, 'Granny Smith', flesh & skin, raw

Apple, 'Royal Gala', flesh & skin, raw

Apple, cooking, baked with sugar

in food group(s)

All

All

Bakery products

Beverages, alcoholic

Beverages, non-alcoholic

Breakfast cereals

Cereals & pseudo-cereals

Dairy

Eggs

Fast foods

Fats & oils

Finfish

Fruit

Meat

Meat products

Miscellaneous

Nuts & seeds

Recipes

Sauces & condiments

Shellfish


Snack foods

	Fruit	L1152
	Fruit	L1150
	Fruit	L12

Reporting

- » Offer a range of reporting options so user can drill down in terms of level of detail
 - » Nutrition Information Panel (NIP)
 - » Nutrient claims report
 - » Basic report (core nutrients plus key vitamins and minerals)
 - » Detailed report (alphabetical)
 - » Detailed report (by nutrient group)

Food details



Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw

FCDB food ID	L1026
Scientific name	Actinidia deliciosa
Food group	Fruit
Serving size or CSM	74 g Reset

[print this page](#)

Nutritional Information Panel (NIP)

Nutritional Information Panel (NIP)

Nutrient Claims Report

Basic Report

Detailed Report (alphabetical)

Detailed Report (by group)

	QUANTITY PER SERVE	%DI* PER SERVE	QUANTITY PER 100 g
	185	2 %	250
	0.9	2 %	1.2
Fat, total	0.5	1 %	0.7
Fat, saturated	0.07	0 %	0.09
Carbohydrate	6.7	2 %	9.1
Sodium	2	0 %	2
Sugars	6.5	7 %	8.8
Dietary Fibre	2.2	7 %	3.0



Examples of reports

Food details

Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw



FCDB food ID	L1026
Scientific name	Actinidia deliciosa
Food group	Fruit
Serving size or CSM	<input type="text" value="74"/> g <button>Reset</button>

Nutritional Information Panel (NIP)

print this page

* Percentage daily intakes are based on an average adult diet of 8700 kJ

NUTRIENT	UNIT	QUANTITY PER SERVE	%DI* PER SERVE	QUANTITY PER 100 g
Energy	kJ	185	2 %	250
Protein	g	0.9	2 %	1.2
Fat, total	g	0.5	1 %	0.7
Fat, saturated	g	0.07	0 %	0.09
Carbohydrate	g	6.7	2 %	9.1
Sodium	mg	2	0 %	2
Sugars	g	6.5	7 %	8.8
Dietary Fibre	g	2.2	7 %	3.0

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4/6/2018 Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw - Nutritional Information Panel (NIP) - New Zealand Food Composition Database

Nutritional Information Panel (NIP)

Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw

FCDB food ID	L1026
Scientific name	Actinidia deliciosa
Food group	Fruit
Serving size or CSM	<input type="text" value="74"/> g

* Percentage daily intakes are based on an average adult diet of 8700 kJ

NUTRIENT	UNIT	QUANTITY PER SERVE	%DI* PER SERVE	QUANTITY PER 100 g
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Fat, total	g	0.5	1 %	0.7
Fat, saturated	g	0.07	0 %	0.09
Carbohydrate	g	6.7	2 %	9.1
Sodium	mg	2	0 %	2
Sugars	g	6.5	7 %	8.8
Dietary Fibre	g	2.2	7 %	3.0

DISCLAIMER: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce metus enim, interdum at dui ut, interdum vestibulum ex. Curabitur lacinia aliquam massa eget lacinia. Sed porta eros tristique dignissim tristique. Curabitur dapibus et elit vitae auctor. Nulla ut semper diam. In hac habitasse platea dictumst. Ut eget euismod nunc.

Examples of reports...

Food details



Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw

FCDB food ID	L1026
Scientific name	<i>Actinidia deliciosa</i>
Food group	Fruit
Serving size or CSM	<input type="text" value="74"/> g <button>Reset</button>

Nutrient Claims Report

print this page

* Percentage daily intakes are based on an average adult diet of 8700 kJ

NUTRIENT	UNIT	QUANTITY PER SERVE	%DI* PER SERVE	QUANTITY PER 100 g	POSSIBLE CLAIM
NIP					
Energy	kJ	185	2 %	250	
Protein	g	0.9	2 %	1.2	
Fat, total	g	0.5	1 %	0.7	Fat - low, Fat - % free
Fat, saturated	g	0.07	0 %	0.09	Saturated fatty acids - low
Carbohydrate	g	6.7	2 %	9.1	
Sodium	mg	2	0 %	2	Salt or sodium - low
Sugars	g	6.5	7 %	8.8	
Dietary Fibre	g	2.2	7 %	3.0	Source
OTHER POTENTIAL CLAIMABLE					
Cholesterol	mg	0.0		0.0	Cholesterol - low
Folate	µg	28	14 %	38	Source
Potassium	mg	222		301	Source
Lactose	g	0.0		0.0	Lactose free
Manganese	µg	59	1180 %	80	Good Source
Vitamin C	mg	63.0	157 %	85.1	Good Source
Vitamin K	µg	8.1	10 %	11.0	Source

[TERMS OF USE](#)

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Examples of reports...

Food details

Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw



FCDB food ID	L1026
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Food group	Fruit
Serving size or CSM	<input type="text" value="74"/> g <button>Reset</button>

Detailed Report (alphabetical)

[print this page](#)

* Percentage daily intakes are based on an average adult diet of 8700 kJ

NUTRIENT	UNIT	QUANTITY PER SERVE	%DI* PER SERVE	QUANTITY PER 100 g
25-hydroxyvitamin D3	µg			
Acetic acid (grams)	g	0.00		0.00
Alanine (grams)	g	0.030		0.040
Alcohol	g	0.0		0.0
Alpha-carotene	µg	0		0
Alpha-tocopherol	mg	0.64		0.86
Aluminium	µg	333		450
Arginine (grams)	g	0.044		0.060
Arsenic	µg			
Ash	g	0.5		0.7
Asparagine (grams)	g			
Aspartic acid (grams)	g	0.081		0.110
Available carbohydrate by difference	g	8.2		11.0
Available carbohydrates by weight	g	6.7		9.1
Available carbohydrates in monosaccharide equivalent	g	6.8		9.2
Beta-carotene	µg	40		54
Beta-carotene equivalents	µg	40		54
Beta-tocopherol	mg			
Beta-tocopherol + Gamma-tocopherol	µg			

4/6/2018

Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw - Detailed Report (by group) - New Zealand Food Composition Database

Detailed Report (by group)

Kiwifruit, Zespri Green (Hayward) Kiwifruit, Zespri, raw

FCDB food ID	L1026
Scientific name	Actinidia deliciosa
Food group	Fruit
Serving size or CSM	<input type="text" value="74"/> g

* Percentage daily intakes are based on an average adult diet of 8700 kJ

CATEGORY	NUTRIENT	UNIT	QUANTITY PER SERVE	%DI* PER SERVE	QUANTITY PER 100 g
Carbohydrates					
	Carbohydrate by difference, FSANZ	g	6.7		9.0
	Total carbohydrate by difference	g	10.4		14.0
	Total carbohydrates by summation	g	9.0		12.1
	Carbohydrate exchanges	Exchanges per 100 g	0.67		0.91
Available					
	Available carbohydrates by weight	g	6.7		9.1
	Available carbohydrate by difference	g	8.2		11.0
	Available carbohydrates in monosaccharide equivalent	g	6.8		9.2
	Available carbohydrate, FSANZ	g	6.7	2 %	9.1
Sugars					
	Disaccharides, total	g	0.0		0.0
	Disaccharides, total (monosaccharide equivalents)	g	0.0		0.0
	Monosaccharides, total	g	6.5		8.8
	Polysaccharides, non-starch	g	1.2		1.7
	Polysaccharides, non-starch, water-insoluble	g	0.9		1.2
	Polysaccharides, non-starch, water-soluble	g	0.4		0.5
	Sugars, total (monosaccharide equivalents)	g	6.5		8.8
	Sugars, total	g	6.5	7 %	8.8
Individual Sugars					
	Fructose	g	3.5		4.7
	Glucose	g	3.1		4.1
	Glycogen	g			
	Glycogen (monosaccharide equivalents)	g			
	Lactose	g	0.0		0.0
	Lactose (monosaccharide equivalents)	g	0.0		0.0
	Maltose	g	0.0		0.0
	Maltose (monosaccharide equivalents)	g	0.0		0.0
	Maltodextrin	g			

<http://dev.foodcomposition.co.nz/search/food/L1026/full-grouped>

1/6

Use of Google analytics

- » Currently registration of users and login monitored
- » With new website will use Google Analytics to monitor:
 - » unique users
 - » user location
 - » the technology used
 - » how they arrived at the site
 - » pages visited
 - » length of time spent
 - » specific data they sought
- » We will be using as a tool to help guide our future developments but may also help with our food analysis programme (what foods are people looking for?)

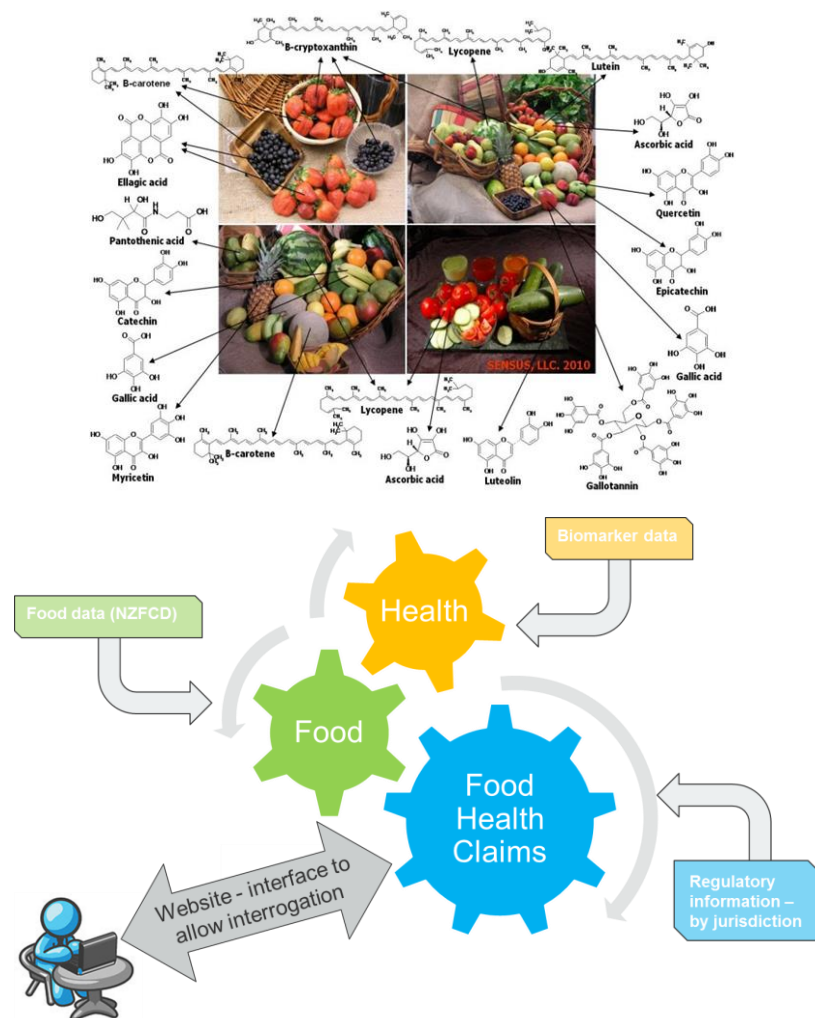


Next steps & future plans

- » Further testing with Food Industry users over the rest of April
- » Plan to go live at end of April once some additional features & fixtures implemented
- » Further enhancements for Food Industry (e.g. formulation)
- » Turn our focus to other user groups:
 - » Students and educators
 - » General public
 - » Health professionals
 - » Researchers
- » In some cases these present challenges in providing more personalised information, what data & how to display, etc
- » Regularly updates

Next steps & future plans

- » Addition of more branded foods (e.g. GS1)
 - » Limited dataset
- » Migration of phytochemical data from our internal Dotmatics chemistry database
 - » What data (drill down approach)
 - » Challenges of data quality
- » International data & regs
 - » Imported foods
 - » Exports (e.g. labelling)
- » Integration of Food-Health Relationship Database



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- » Catalyst

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HĪKINA WHAKATUTUKI



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Thank you

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