

HEALTH & *Nutrition* SUMMARY



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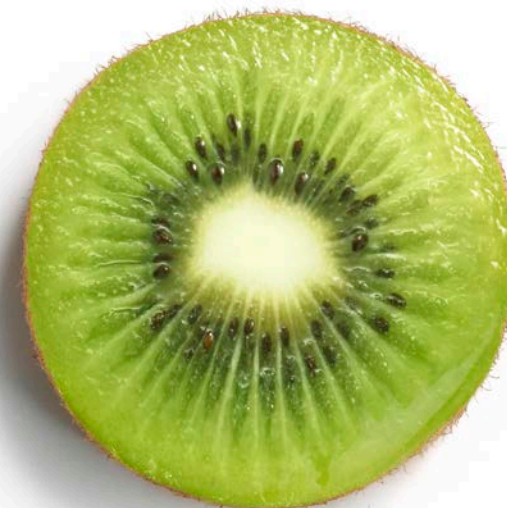
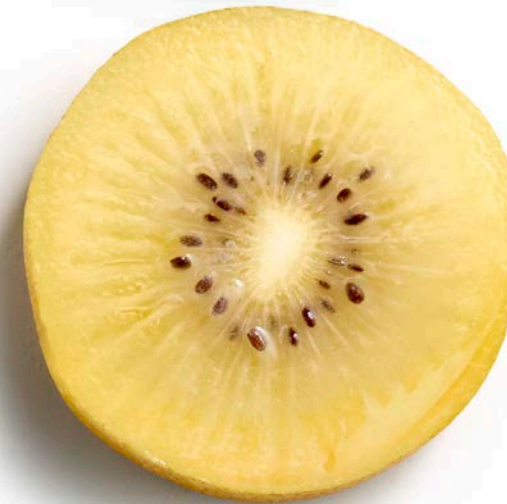
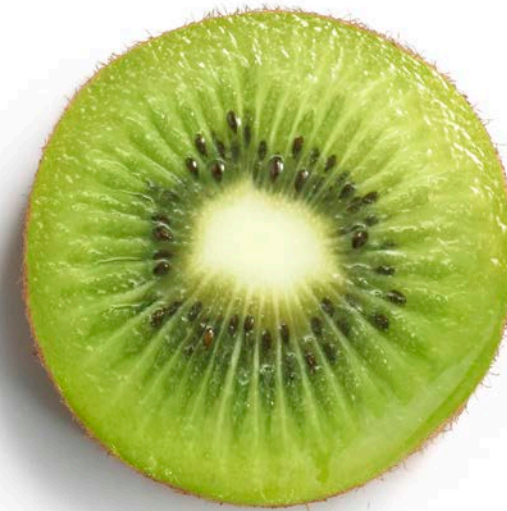
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INTRODUCTION

At Zespri, we believe in taking a holistic and feel-good approach to healthy living. Every day we help consumers around the world make healthier lifestyle choices by delivering refreshingly delicious kiwifruit that are packed with unrivalled nutrition. We take pride in our land and what comes out of it, so we're always thinking of kiwifruit and the ways in which this delicious fruit is good for everyone.

We continue to invest in health and nutrition research to help build new knowledge and increase the awareness and understanding of kiwifruit's benefits to overall human health. Zespri developed a world-class health and nutrition research programme by joining forces with the Riddet Institute to form the Scientific Advisory Board (SAB) back in 2008. The Riddet Institute is a New Zealand Government-funded Centre of Research Excellence with a widely acknowledged international standing. The main aims of the SAB are to ensure that Zespri research projects are independently reviewed by experienced and respected scientists in the nutrition and health field. The projects are considered for their fit with the overarching Zespri Health Strategy and the SAB also reviews the scientific protocols and ensures that the research provider is the best science team for the required work. SAB members have been carefully selected to cover the range of activities that we are working on, with diverse expertise from dietetics to gastroenterology to psychology.

We know the importance of demonstrating the scientific efficacy of our kiwifruit, and as such, this health booklet summarises the existing and latest research on the nutritional goodness of kiwifruit.

Health starts from within, and Zespri aims to support people feeling good from the inside out.



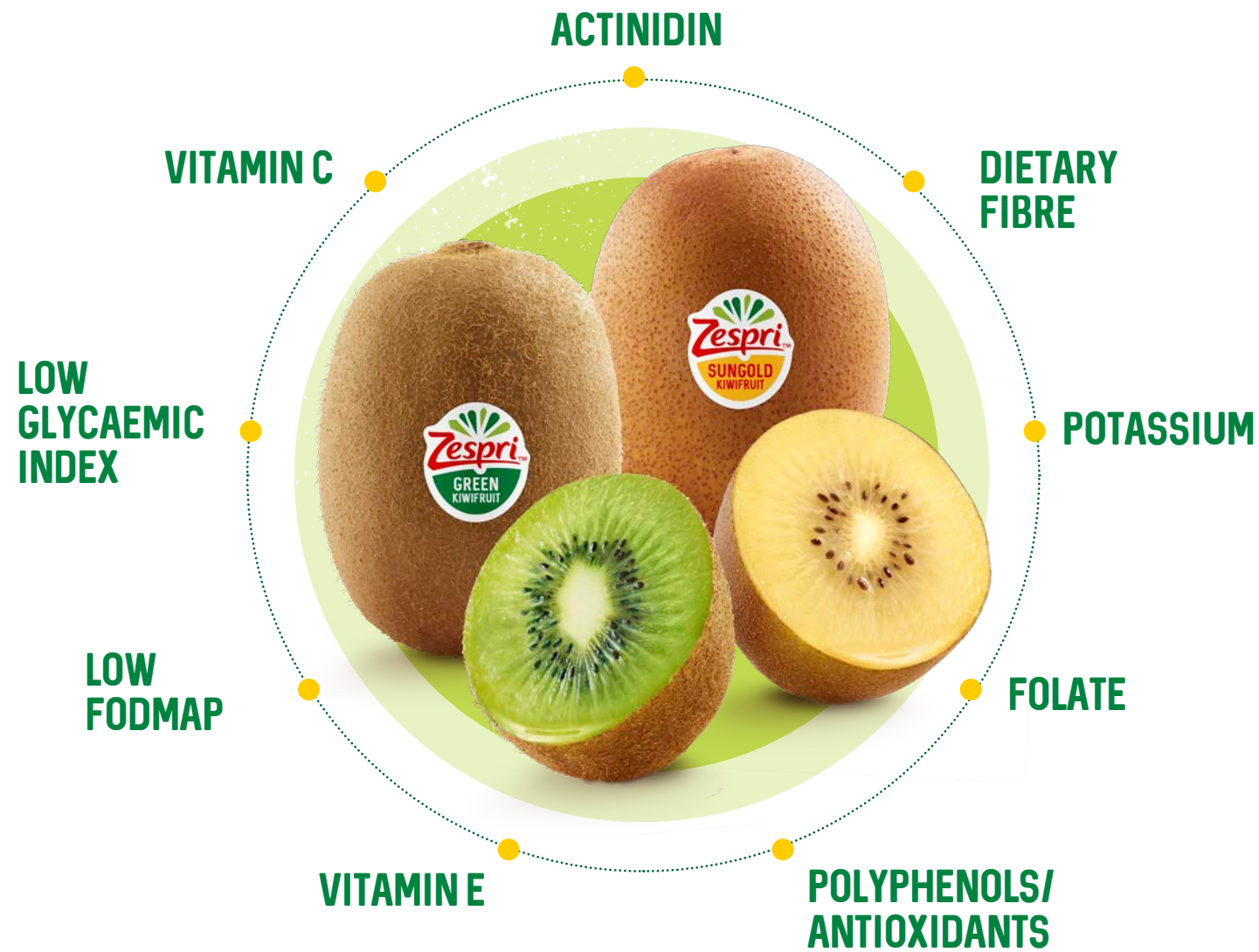
THE GOODNESS OF KIWIFRUIT

THE GOODNESS OF KIWIFRUIT

Key Health Attributes

Zespri SunGold and Green Kiwifruit contain plenty of healthful nutrients and attributes to help our bodies thrive and support our overall health, particularly with regard to:

- THE POWER OF VITAMIN C
- DIGESTIVE HEALTH
- METABOLIC HEALTH



THE GOODNESS OF KIWIFRUIT

Nutritional Composition

NUTRIENT CONTENT OF ZESPRI KIWIFRUIT

Sources:
 USDA National Nutrient Database for Standard Reference Legacy Release, April 2018.
 The Concise New Zealand Food Composition Tables 13th Edition, 2018.
 Zespri International Limited.
 Nutrient adequacy and Nutrient Density Calculations based on US Daily Values and Calculations in Darmon N. A Nutrient Density Standard for Vegetables and Fruits. *J Am Diet Assoc.* 2005;105:1861-87.
 Lesperance L, et al. Nutritional assessment of ZESPRI® GREEN Kiwifruit ('Hayward') and ZESPRI® GOLD Kiwifruit ('Hort16A'). Palmerston North: Plant & Food Research; 2010. 42/SPTS No. 3199.
 Sivakumaran S, et al. The nutritional composition of Zespri® SunGold Kiwifruit (Gold3) and Zespri® Sweet Green Kiwifruit (Green14). Palmerston North: Plant & Food Research; 2013. 107/SPTS No. 8606.

Since 2008, Zespri has worked to populate global data sources to include nutrition content for important kiwifruit varieties. Publicly available databases, such as The Concise New Zealand Food Composition Tables and the USDA National Nutrient Database for Standard Reference, ensure that robust nutrition information is available and that approved analytical methodology has been used to determine the nutrient content of foods.

Data populated in this booklet is sourced primarily from the Concise New Zealand Food Composition Tables 13th Edition, 2018; the USDA National Nutrient Database for Standard Reference Legacy Release, April 2018, where additional information was available; and data on file with Zespri.

NUTRIENT	UNIT/100 G EDIBLE FLESH	KIWIFRUIT, ZESPRI GREEN	KIWIFRUIT, ZESPRI SUNGOLD
PROXIMATES			
WATER	g	83.5	82.4
ENERGY	kcal	61.0	63.0
ENERGY (NIP)	kJ	250.0	280.0
PROTEIN	g	1.2	1.0
FAT	g	0.7	0.3
CARBOHYDRATE	g	9.1	12.4
DIETARY FIBRE	g	3.0	1.4
SUGARS	g	8.8	12.3
MINERALS			
CALCIUM (CA)	mg	27.0	17.3
COPPER (CU)	mg	0.12	0.15
IRON (FE)	mg	0.2	0.2
MAGNESIUM (MG)	mg	14.4	12.3
MANGANESE (MN)	mg	0.08	0.05
SELENIUM (SE)	µg	0.6	0.4
SODIUM (NA)	mg	2.3	2.7
PHOSPHORUS (P)	mg	34.0	25.2
POTASSIUM (K)	mg	301.0	315.0
ZINC (ZN)	mg	0.1	0.1
VITAMINS			
B1 - THIAMIN	mg	0.0	0.0
B2 - RIBOFLAVIN	mg	0.05	0.07
B3 - NIACIN	mg	0.0	0.23
B5 - PANTOTHENIC ACID	mg	<1.0	0.12
B6 - PYRIDOXINE	mg	0.07	0.08
B9 - FOLATE	µg	38.2	31.0
CHOLINE	mg	<10.0	1.9
VITAMIN B12	µg	<0.2	0.08
VITAMIN A (RAE)	µg	9.0	2.3
VITAMIN A	IU	90.0	23.0
VITAMIN C	mg	85.1	161.3
VITAMIN E	mg	0.86	1.4
VITAMIN K	µg	11.0	6.1
OTHER			
BETA-CAROTENE	µg	54.0	14.0
LUTEIN + ZEAXANTHIN	µg	138.0	23.0
NUTRIENT ADEQUACY (NA)	Sum %DV	8.7	14.2
NUTRIENT DENSITY	NA per 100 kcal	14.3	22.5
GLYCAEMIC INDEX	GI	39	38

Nutrient Adequacy/ Nutrient Density

Zespri uses a published formula¹ to calculate the nutrient adequacy and the nutrient density of its kiwifruit varieties and other commonly eaten fruits.

The **nutrient adequacy** tells us how many nutrients it provides relative to its weight. The calculation we use factors the nutrient composition of each fruit as a percentage of the of the Recommended Daily Allowance (RDA) for 16 specific vitamins and minerals, including protein, fibre, calcium, iron, vitamin A, thiamin B1, riboflavin B2, niacin B3, vitamin B6, vitamin B12, folate, vitamin C, vitamin D, vitamin E, pantothenic acid B5, and magnesium.

The **nutrient density** tells us how many nutrients the food provides relative to the number of calories it contains. We divide the nutrient adequacy score by the number of calories it has.

As you can see in the table below, the high amount of vitamin C in kiwifruit is the primary driver of its **high nutrient adequacy** score. Other nutrients boosting this score include fibre, folate, and vitamin E. Kiwifruit's uniquely high nutrient density is one of the key advantages it has over other commonly eaten fruit.

A COMPARISON OF THE NUTRIENT ADEQUACY AND NUTRIENT DENSITY PROPERTIES OF ZESPRI KIWIFRUIT AND OTHER COMMONLY EATEN FRUIT

Notes:

Based on National Institutes of Health. Labeling Daily Values on the reference caloric intake of 2,000 calories for adults and children aged 4 years and older. <https://www.dslid.nlm.nih.gov/dslid/dailyvalue.jsp>

Calculations based on US Daily Values and Calculations. in Darmon N. A Nutrient Density Standard for Vegetables and Fruits. *J Am Diet Assoc.* 2005;105:1881-87.

Sources:

USDA National Nutrient Database for Standard Reference Legacy Release, April 2018.

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	NUTRIENT ADEQUACY
KIWIFRUIT, ZESPRI SUNGOLD	14.2
LONGAN	12.8
AVOCADO	10.8
KIWIFRUIT, ZESPRI GREEN	8.7
DURIAN	8.5
MELON (CANTALOUPE)	7.0
ORANGES	6.8
MANDARINS	6.7
POMEGRANATES	6.2
PEARS	4.1
MANGO	4.0
BANANAS	3.7
PINEAPPLE	3.7
CHERRIES	3.4
CRANBERRIES	3.1
STRAWBERRIES	3.1
TOMATO	2.7
WATERMELON	2.7
BLUEBERRIES	2.6
GRAPES	2.5
APPLES	1.9
PAPAYA	1.9

	NUTRIENT DENSITY
KIWIFRUIT, ZESPRI SUNGOLD	22.5
LONGAN	21.3
MELON (CANTALOUPE)	20.6
TOMATO	14.9
ORANGES	14.4
KIWIFRUIT, ZESPRI GREEN	14.3
MANDARINS	12.7
STRAWBERRIES	9.7
WATERMELON	8.9
POMEGRANATES	7.4
PINEAPPLE	7.3
PEARS	7.2
CRANBERRIES	6.8
MANGO	6.7
DURIAN	5.8
AVOCADO	5.4
CHERRIES	5.4
BLUEBERRIES	4.5
PAPAYA	4.4
BANANAS	4.2
APPLES	3.6
GRAPES	3.6



BOOST YOUR HEALTH WITH FRUIT

Eating healthily throughout your life helps to prevent malnutrition as well as noncommunicable diseases and conditions. Unfortunately, the increased production of processed foods and changing lifestyles means dietary patterns have shifted, and people are commonly consuming more foods high in energy, fats, free sugars, as opposed to nutrient-rich fresh fruit, vegetables and wholegrains.

The World Health Organisation recommends eating at least 400 grams, or five portions, of fruit and vegetables per day to reduce the risk of noncommunicable disease, and ensure a daily intake of dietary fibre^{2,3}.

Fruit and vegetable intake can be improved by:

- Always include vegetables in meals
- Snack on fresh fruit and vegetables
- Eat seasonally
- Eat a variety of fruit and vegetables