

OUR INNOVATIONS FOR A HEALTHIER FUTURE

**DELIVERING THE
CREDIBLE SCIENCE
THAT'S VALIDATING
THE 'HEALTH HALO'
OF KIWIFRUIT**



FRONTIER



▶ WHAT'S SO GREAT ABOUT KIWIFRUIT?

Kiwifruit is perhaps most widely known for containing high levels of vitamin C, and equally, for keeping the digestive system 'regular'. But as the growing body of research undertaken by the Riddet Institute is revealing, there is much more to this fruit.

WHAT THE SCIENCE SHOWS:

Kiwifruit can regulate blood sugar levels, even helping reduce the impact of high glycaemic foods when eaten together.

Kiwifruit stimulates mucous production in the intestinal tract, protecting the gut's mucous layer.

Kiwifruit fibre holds water and has high gelling and mixing capacities. These characteristics are behind the fruit's highly effective digestion aiding properties.

Kiwifruit delivers less available energy, which make it both highly nutritious and low calorie food choice.

LEGENDARY FOR PACKING A POWERFUL PUNCH OF VITAMIN C, NEW ZEALAND'S LOVE AFFAIR WITH KIWIFRUIT GOES BACK MORE THAN SEVEN DECADES. THE COUNTRY'S FIRST EXPORT SALES WERE MADE IN THE 1950S.

Since then, kiwifruit has grown to become New Zealand's leading fruit export earner with the country now producing 33% of globally traded fruit by volume and 67% by value. Today, kiwifruit is a \$1.9b success story. Zespri-branded kiwifruit attract a significant price premium over competitive brands. Work for Zespri by Riddet Institute is helping to build on the fruit's success story, through providing the scientific validation to satisfy consumers and experts alike of kiwifruit's many health benefits.

› It's all about health

There are a number of different, compositionally diverse cultivars of kiwifruit under the genera Actinidia. All cultivars though, are nutritionally dense fruit that are high in vitamin C and contain the proteolytic enzyme actinidin, fibre, and vitamin E. Put simply, kiwifruit pack a stellar health punch.

It's that health angle that New Zealand-based Zespri, the kiwifruit global category leader, is capitalising on in its endeavour to increase the volume and value of its exports.

Zespri-branded kiwifruit is recognised worldwide for its consistent taste and quality. The fruit's characteristics of flavour, appearance, and, particularly, its inherent 'healthiness', have seen a doubling of production over the last 20 years. Today, kiwifruit is New Zealand's leading fruit export, worth \$1.9b in export returns (in 2016).

Zespri's market intelligence suggests that the driving motivator for consumers buying kiwifruit is, in fact, based on the fruit's perceived health benefits. And it's the perception

of the fruit's health giving properties that provides the potential platform for kiwifruit to enjoy a genuine 'halo of health' for marketing the produce.

The health halo effect is the phenomena where a product with one or a few health benefits is considered by consumers to be virtuous in all regards. Often health halos are misleading, where the consumers' presumption isn't matched by the health benefits of the products. In the case of kiwifruit, the phenomena can be quite honestly applied – as is being increasingly discovered, kiwifruit genuinely is **that good**.

But to capitalise on the marketing opportunities the health halo positioning presents, Zespri recognised the need to invest in credible independent science to build its position.

Further Zespri recognised it needed to partner with an internationally renowned and relevant science entity to ensure the necessary rigour to its R&D investment in nutrition and health.





› The Riddet Institute, adding the scientific heft

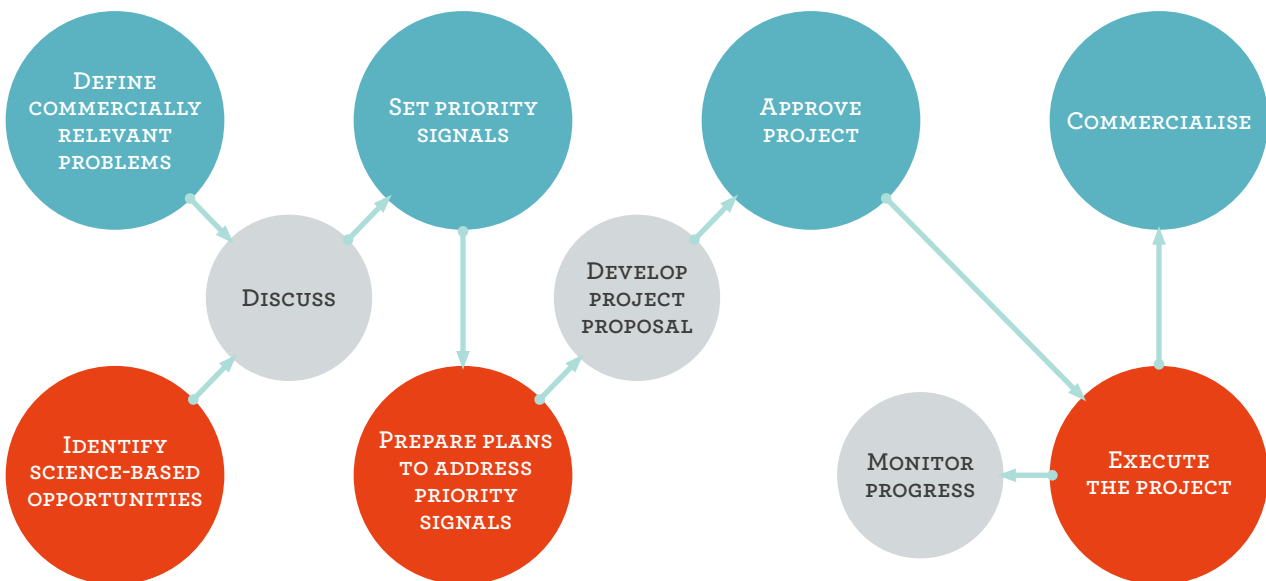
Zespri approached the Riddet Institute to explore the potential for a strategic partnership. As a Centre of Research Excellence, Riddet has built an international reputation for its independence and credible scientific research, specifically in the areas of food digestion and health. In forming the partnership, Zespri and the Riddet Institute together established The Strategic Research and Scientific Advisory Board (SRSA) in 2008. The board is contracted by the Zespri Health and Nutrition (investment) Portfolio to provide independent advice on the overall direction of research.

The SRSA partnership operates as a team. Zespri, with its product and market knowledge, defines the

problems and the Riddet Institute, with its science expertise, develops the research to solve those problems. The SRSA then oversees the research and monitors performance. Because of the Riddet Institute’s networks, the SRSA also connects Zespri with relevant experts both nationally and internationally.

Since the SRSA was established nine years ago, the research overseen by the Board has informed Zespri’s communication with consumers worldwide. Zespri has funded some of the research directly. Other research has been leveraged off Riddet’s Institute’s research programme. All the research has involved investigators from across the Institute’s research partners.

● INDUSTRY: DEFINES THE PROBLEMS



● R&D PROVIDERS: DEVELOPS THE SOLUTIONS



“Scientific health communications carry more weight with consumers if they are independent and backed by high-quality research. Therefore, our relationship with exceptional research providers, such as the Riddet Institute, are critical to our ongoing efforts to provide pertinent and trusted information for consumers.”

Dr Juliet Ansell

*Innovation Leader,
Health and Nutrition, Zespri*

› Establishing the benefits of kiwifruit’s unique fibre

The fibre of kiwifruit is unique, offering Zespri a point of difference in telling the kiwifruit health benefits story. Lending weight to that story, different strands of research conducted by the Riddet Institute have explored the benefits of the fibre.

Riddet Institute Affiliated Researcher Dr Carlos Montoya (Massey University) identified that kiwifruit fibre is digested higher up in the gastrointestinal tract than anticipated. This finding suggests potentially novel health benefits from the fermentation of fibre and delivery of short chain fatty acids to the small intestine. Dr Montoya’s research describes the physiological consequences of consuming kiwifruit fibre.

Riddet Institute Principal Investigator Dr John Munro (Plant and Food Research) has investigated the functionalities of kiwifruit fibre. His research has identified high water holding capacity and high gelling and mixing properties. Dr Munro proposes that these functionalities explain kiwifruit’s benefits in terms of adding bulk and softening stools, and in terms of glycaemic response, slowing the movement of small sugars through stomach contents. It’s in this way that kiwifruit helps regulate blood sugar levels. When consumed with other foods it can reduce the glycaemic impact of even the most highly glycaemic foods. The recent promotion of this health benefit of kiwifruit in Korea and Japan has resulted in significant PR and increased sales.



› Establishing kiwifruit as an aid to bowel health

A New Zealand trial was the first of three global trials arranged to provide the evidence to support Zespri's health claim being made to the European Food Safety Authority that two kiwifruit a day aided bowel health.

SRSA member Professor Richard Gearry of the University of Otago headed the clinical management team overseeing the development of research protocol which had to meet both regulatory and rigorous scientific requirements. The team was tasked with developing the research protocol for the trial in New Zealand and Italy and Japan.

To establish the validity of the claim, the research was designed to establish the 'mechanics' behind kiwifruit's effects on the ease of the movement and passing of stools.



› Establishing that kiwifruit improves gastrointestinal health

Riddet Institute Affiliated Researcher Dr Sharon Henare (Massey University) has been using Riddet's pig model of human digestion to better understand the mechanics of how kiwifruit improves gastrointestinal transit time and comfort. Kiwifruit's fibre content, presence of raphides, high water holding capacity and actinidin content suggest the fruit can stimulate mucin production and maintain the gut's mucous layer. Dr Henare's work is providing evidence to support Zespri's health claim to the European Food Safety Authority (EFSA).

Some data arising from this research is proprietary in status and will allow Zespri to have sole use of the EFSA health claim for kiwifruit for five years, a status of high commercial value to the company.



› Substantiating the benefits

The progress to date of the SRSA research programme has enabled Zespri to lodge the first self-substantiated health claim made to the Australia New Zealand Food Authority, under its nutrition labelling regulation 1.2.7. The value of the claim is that once achieved, Zespri can use it in its worldwide marketing.

To be accepted, the claim – that Zespri® Green Kiwifruit can contribute to normal bowel function – had to be supported with a comprehensive dossier of evidence.

A rigorous process was involved to build the dossier. Alongside its research work, Riddet convened a Peer Review Panel with the Ministry for Primary Industries (MPI) to provide independent scientific peer review. This was the first time such a claim was made in New Zealand, and the first time such a review process was established. MPI has now adopted the process for all future claims.

For Zespri, achieving the FSANZ claim was the first step towards seeking the European Food Standards Authority (EFSA) health claim.

› The health message pays off

A key strategy for building the kiwifruit halo of health is to target specialised food and health media and medical and health professionals with information about the health benefits of kiwifruit. Such a strategy, involving experts and opinion leaders, lends heavily on the robustness of credible independent science to validate any of the claims made by Zespri.

In support of this strategy, the Riddet Institute hosted the 1st International Symposium on Kiwifruit and Health in Tauranga in 2016. More than 200 people from around the world attended the event to learn of the latest research, much of which concerned the work of the Riddet/Zespri partnership. The Symposium generated articles in 450 publications, representing a consumer reach into the billions. This coverage equated to a PR value of approximately \$50m across Asia, Europe and the Americas.

Leveraging off the Symposium, Zespri implemented a communications campaign focussed on the health benefits of kiwifruit in Korea, an important export market to Zespri. This targeted effort increased market penetration by 150% and grew profit by 15% – from \$92m to \$102m from 2015 to 2016.



“In a world where increasingly trust and authenticity are in the minds of consumers, Zespri’s relationship with the Riddet Institute plays an important role. By maintaining independent and objective review of our research programme around the health benefits of kiwifruit, Zespri can take a position of integrity. The international academic reputation of the Riddet Institute and its partners is an important part of our own recognition with key opinion leaders who play a crucial role in advocating on our behalf with consumers about kiwifruit’s health benefits.”

Carol Ward

*General Manager Innovation
Zespri*

The Riddet Institute is a New Zealand government-funded Centre of Research Excellence.

The Institute brings together New Zealand's leading scientists in food and nutrition in a collaborative, multidisciplinary national network. Partners include Massey University (host partner), the University of Otago, The University of Auckland, AgResearch and Plant & Food Research. The Institute's research programme is focussed on the effect of food structure on digestion and health, and through its work, it aims to be a catalyst for innovation to create sustained competitive advantage for New Zealand's food industry.



› The Riddet Institute Partners



Riddet Institute, Massey University, Private Bag 11 222, Palmerston North 4442 / Phone:+64 6 951 7295 / info@riddet.ac.nz