



ZESPRI-RIDDET INSTITUTE MEDIA RELEASE: 13 April 2016

Growing scientific evidence demonstrates the health benefits of kiwifruit

From the digestive system to immunity and metabolic health, an increasing body of research demonstrates how beneficial kiwifruit is for human health. The latest research was presented in Tauranga, New Zealand this week by leading scientists at the first-ever International Symposium on Kiwifruit and Health.

The symposium brought together nearly 200 global health experts to consider the role of fruit, in particular kiwifruit, in a healthy diet. The event was initiated by the Riddet Institute of New Zealand and sponsored by Zespri, and presented the most recent studies and the research underway into the health benefits of kiwifruit within the areas of digestive health, health and vitamin C, and metabolic health.

Among key findings presented:

- Kiwifruit regulates sugar highs and lows in your blood stream.
- New results from human clinical trials reinforce that Zespri Green Kiwifruit improves digestive health function and comfort. This is due to its unique combination of actinidin (a kiwifruit enzyme), fibre and other components.
- Kiwifruit boosts your immunity. Eating kiwifruit daily is very effective at increasing blood levels of vitamin C as well as levels in other parts of the body.

The keynote speaker at the event, Professor Jacob Seidell from Vrije Universiteit in Amsterdam, is the Netherlands' foremost obesity specialist. He comments, "Today, there is general consensus that for much of the world, nutrient-poor food is a key driver in escalating rates of obesity and related chronic disease. Improved health outcomes are associated with diets high in nutrient-rich, low energy-dense fruit – such as kiwifruit."

Reflecting on the Symposium, Dr Juliet Ansell, Zespri's Innovation Leader for Health and Nutrition, says the findings are great news for Zespri consumers. "We know that the more people hear about the health benefits of kiwifruit the more they consume, and this week we have heard exciting research results from new scientific studies," says Dr Ansell.

Among the highlights of this symposium is the finding by Dr John Monro from Plant & Food Research on the glycaemic impact of kiwifruit, which shows that kiwifruit helps to regulate blood sugar levels. The delegates also were presented with results from Zespri's New Zealand arm of a new global clinical trial, which shows that eating two green kiwifruit a day significantly improves bowel function. "The body of scientific evidence for the health benefits of kiwifruit continues to grow," commented Dr Ansell.

Distinguished Professor Paul Moughan, Co-director of the Riddet Institute, says this is the first time anywhere in the world that so much expertise on kiwifruit and health science has been brought together in one place. "Continued investment in world-class research on the health benefits of kiwifruit has value both for Zespri, for health practitioners and for consumers around the world, as the importance of a healthy and balanced diet becomes ever-more important and understood," says Prof Moughan.



BACKGROUND INFORMATION

Kiwifruit and digestive health

Nearly 30 percent of the worldwide population is affected by at least one of the several functional gastrointestinal disorders with functional dyspepsia, irritable bowel syndrome (IBS)^[1] and chronic constipation (CC)^[2] being the most common. These conditions can negatively affect quality of life and represent a significant health burden. Fortunately, they can be easily prevented through diet and lifestyle changes. Green kiwifruit has been found to promote laxation in people with constipation. Another study has shown improvement of bowel function. *“These promising results suggest that the effect of kiwifruit on IBS-C and Chronic Constipation (CC) merits further investigation”*, said **Prof Giovanni Barbara**.

Building on the above conclusions, **Prof Richard Gearry** presented the New Zealand results of a multi-centre clinical trial on the effect of kiwifruit on digestive and gut health functions^[3]. The goal of this study was to demonstrate the efficacy of kiwifruit as a food intervention for the relief of constipation and associated symptoms in functionally constipated adults, and those with irritable bowel syndrome constipated type (IBS-C). The results have shown that eating two Zespri Green kiwifruit a day significantly improves bowel function and frequency in people with constipation but importantly does not lead to diarrhoea in healthy people. Even more exciting are the significant changes we have seen with respect to digestive comfort, which has a major impact on the quality of life constipated people.

Kiwifruit consumption has the potential to contribute greatly to gastrointestinal comfort, protein digestion and gut health, explained **Dr Carlene Starck**. The natural digestive enzyme actinidin improves digestive comfort by increasing the breakdown of proteins and facilitating gastric digestion (emptying of the stomach). Recently, investigations have also focused on kiwifruit fibre and its digestibility. It has been found that the fibre in green kiwifruit has a high capacity for retaining water and thus creating larger and softer stools, facilitating intestinal transit through our digestive system.

Kiwifruit and vitamin C

Vitamin C is an essential vitamin – contributing to the functioning of the immune system, reducing tiredness and fatigue and contributing to normal skin function. It cannot be synthesized by the human body. Therefore, it needs to be obtained on a daily basis through the diet. However, most people do not consume enough fresh fruit and vegetables to maintain saturating plasma levels of vitamin C. It has been demonstrated that eating kiwifruit daily is very effective at increasing blood levels of vitamin C as well as levels in other parts of the body, explained **Prof Margreet Vissers** and **Dr Anitra Carr**.

^[1] IBS is defined by the presence of abdominal pain or discomfort that is associated with altered bowel habit over a period of at least three months. IBS prevalence in Europe and USA is 10-15% with the constipation predominant IBS subgroup (IBS-C) accounting for approximately 5%.

^[2] Chronic Constipation (CC) is defined by multiple bowel symptoms that include difficult or infrequent passage of stool, hardness of stool or a feeling of incomplete evaluation. It is a common problem that affects approximately 20% of the world's population

^[3] The randomized, controlled cross-over clinical trial presented at the Symposium was carried out in New Zealand, but is currently also in progress in two other sites around the world- Italy and Japan- using the same protocol.



Kiwifruit and metabolic health

Poor blood sugar control is linked with chronic disease related to obesity such as diabetes and Chronic Cardiovascular Disease (CVD). Looking specifically at the glycaemic impact of kiwifruit, **Dr John Monro** presented results from in-vitro and human intervention studies. He concluded that equal carbohydrate inclusion of kiwifruit in the diet by partial substitution of cereal starch-based staples, such as potatoes and rice, is an effective dietary strategy to simultaneously reduce exposure to glycaemia while improving the overall nutrient profile of the diet.

Dr Paul Blatchford explained how kiwifruit impacts upon microbial composition and metabolism in the human large bowel using in vitro fermentation systems. Kiwifruit contains non-digestible polysaccharides (2-3%) as well as other compounds including polyphenols, fatty and organic acids, proteins, vitamins and minerals that may alter microbial ecology in the large bowel. *“We found that green and gold kiwifruit fermentation promoted a microbiota that was significantly enriched in Bacteroides spp., Parabacteroides spp. and Bifidobacterium spp. which are positively correlated with human health through various mechanisms including fortifying intestinal barrier integrity, producing antibacterial compounds and modulating the immune system”*, said Dr Blatchford.

New research underway was presented by **Renee Wilson**. A cross-sectional pilot study aims determine whether or not there are any differences between the gut microbiota of people with normal glucose tolerance, pre-diabetes and type 2 diabetes.

About Zespri Group Ltd

With sales revenues of \$1.57 billion in 2014/15, Zespri is one of the world's most successful horticulture marketing companies and the Zespri brand is recognised as the world leader in premium quality kiwifruit. Based in Mount Maunganui, New Zealand, we are 100 percent owned by current or past kiwifruit growers, and employ approximately 350 people in New Zealand, Asia, Europe and the Americas.

On behalf of our 2,500 growers in New Zealand and 1,200 growers based elsewhere, Zespri manages kiwifruit innovation and supply management, distribution management and marketing of Zespri Green, Zespri SunGold, Zespri Organic, Zespri Gold and Zespri Sweet Green Kiwifruit.

About the Riddet Institute

The Riddet Institute is a premier national centre for fundamental and strategic scientific research in food. Its area of expertise is at the intersection of food material science, gastrointestinal biology and human nutrition.

Established in 2003 and awarded Centre of Research Excellence (CoRE) status by the New Zealand Government in 2007, the Riddet Institute provides a unique intellectual environment using a multi-disciplinary scientific approach and integrating New Zealand's expertise across multiple organisations. The Institute is internationally acclaimed and led by scientists of international renown.