

NEW ZEALAND'S HEALTH INGREDIENTS
& FUNCTIONAL FOODS INDUSTRY

INVESTMENT
NEW ZEALAND 

A DIVISION OF NEW ZEALAND TRADE AND ENTERPRISE

NEW ZEALAND'S HEALTH INGREDIENTS & FUNCTIONAL FOODS INDUSTRY

In late 2005, Investment New Zealand (INZ) commissioned *New Nutrition Business Ltd* (www.new-nutrition.com) to undertake a comprehensive survey to investigate the strengths, trends and potential investment opportunities that exist within New Zealand's health ingredients and functional foods sector.

Led by Julian Mellentin, New Nutrition Business is the only international research and consultancy company specialising in the global nutrition business. It has established a 10-year track record working in the field, providing businesses worldwide with strategic consultancy on the commercialisation of nutrition science and the development of healthy brands.

The company works with large and small organisations, from multinationals to two-person companies and government agencies, in Ireland, Finland, Canada, Scotland, Australia and New Zealand. New Nutrition Business has offices in London, Finland, New Zealand and the United States as well as an affiliate company in Japan.



New Zealand has gained an international reputation for the freshness and unsurpassed flavours of its food and beverage products.



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OVERVIEW

New Zealand Food and Beverage Industry

New Zealand has gained an international reputation for the freshness and unsurpassed flavours of its food and beverage products. Produce from New Zealand's pristine waters, fertile plains and high-country pastures is sought after and sold in discerning markets around the world.

The world's most isolated large population land mass, New Zealand is a country of unique genetic and geological diversity that has developed, over thousands of years, its own mix of plants, animals and micro-organisms. This slow and natural evolution allowed the retention of genetic information and natural compounds that provide a fertile resource for foods and beverages and research into innovative new products.

Consumers can be confident that food and beverage products originating in New Zealand are of the highest quality. A combination of geographic isolation and strict quarantine laws means New Zealand is completely free from bovine spongiform encephalopathy (BSE), foot and mouth disease and scrapie. The European Union has assigned New Zealand the highest available Category 1 animal health status. This disease-free status is underpinned by extremely rigorous border controls, quality assurance schemes and constant surveillance both on the farm and in processing plants. In addition, New Zealand is a world leader in traceability, already having unique technology for identification at an individual animal level. Considerable research is taking place into the convergence of integrated communication and sensor technologies to provide even more sophisticated and detailed traceability.

Traditionally, the key strength of New Zealand's food and beverage sector has been the quality and supply of its primary produce. However, there is a growing emphasis on new and innovative ways to add value to primary products to satisfy consumer demand and ensure New Zealand competes globally. New Zealand's earnings from value-added food and beverage exports now account for 54%

of all food and food ingredient exports and the value-added foods sector has enjoyed growth of nearly 10% in the past five years. While still small, the health ingredients and functional foods industry is expanding rapidly, with companies experiencing growth rates of between 25% and 50% and some even higher.

This growth builds on New Zealand's competitive advantages in high-quality food production and food technology. New Zealand has an abundance of excellent product development skills and the capacity to carry out product development at much lower costs than in Europe or the United States. The advantages of doing business in New Zealand are illustrated by the economy being ranked first in the World Bank's report *Doing Business in 2006*, which measured the ease of doing business in 55 countries around the world.

New Zealand also has many years' experience in trading with Asian countries and the close relationships developed in this region, where consumer demand for functional foods is significant, are fuelling the rise of the health ingredients and functional foods industry in New Zealand.

The company case studies appended to this document provide examples of the recent successes of New Zealand's health ingredients and functional foods companies, including potential opportunities for investment.



NZ HEALTH INGREDIENTS & FUNCTIONAL FOODS SURVEY

The survey identified close to 130 companies currently working in the health ingredients and functional foods area. A further 15 companies indicated that they would be producing ingredients or functional foods in the near future. Some of the main findings of the survey are highlighted below:

Sales Figures

The survey reveals conservative estimates of sales figures including:

- Sales of health ingredients are conservatively estimated at **NZ\$53 Million** annually
- Sales of functional foods are conservatively estimated at **NZ\$270 Million** annually

Export Markets

- **58%** of health ingredients are exported
- **53%** of functional foods are exported

Importance of the Asian Market

Asia is the largest market for New Zealand health ingredients and functional foods, accounting for 56% of earnings from the sale of health ingredients and 64% of functional foods' sales. The main export destinations include China, Hong Kong, Japan, Korea, Malaysia, Singapore, Taiwan and Vietnam. New Zealand's geographic location, on the doorstep of Asia, makes the country a prime launch pad for this market and is a key strength for companies in New Zealand.

- Within Asia, Japan and Korea are the largest ingredients' markets
- Japan accounts for 20% of all New Zealand health ingredients' exports

BRANDING

A wealth of research activity in the country's universities and research institutes has led to the development of multiple, technology-based innovations.

As the case studies show, more and more companies are successfully marrying skills in branding, marketing and distribution with science, food technology and unique New Zealand materials to create competitive international businesses.

Product concepts developed and successfully marketed in New Zealand are being transferred to other markets with excellent results.

THE VALUE OF CONSUMER-BRANDED PRODUCTS

The 2005 survey found that a significant number of companies are marketing consumer-ready products under their own brands. A growing number of New Zealand companies making headway in adding value in the nutritional market are those that have created consumer-branded products.

Beverage innovator *Frucor* (www.frucor.com) is the best example. This company focuses on developing products that are optimised to the needs and opportunities of the consumer market. It created the energy drink market in Australasia and still leads it, with Red Bull in second place. *Frucor* uses



marketing, branding and distribution know-how to gain a leadership position. *Danone* – a global brand-owning company – has seen the value in *Frucor* and has successfully taken *Frucor's* V energy drink and Mizone vitamin water brands into China.

Many of the most interesting companies in the New Zealand health ingredients and functional foods sectors are those that focus on consumer markets:

- New Zealand's largest natural products company, *Healtheries* (www.healtheries.co.nz), has created scale by focusing strongly on branding, marketing and distribution as well as on science.
- *Func.nutrition* (www.sunlatte.co.nz) has created a successful nutritional milk brand (Sun Latte) through its focus on strong branding and marketing.
- *Functional Nutraceuticals* (www.purenzcolostrum.com) has added value to the science of colostrum through consumer branding and the marketing of consumer-ready products.
- *BLIS Technologies* (www.blis.co.nz) is demonstrating to the world the potential marketing strengths of its oral health products, which are underpinned by robust science and technology research. The company has created its own consumer products and consumer brand for the domestic market to demonstrate the proof-of-concept of its ingredients to potential international partners.
- *Vital Foods* (www.vitalfoods.co.nz) leverages New Zealand's unique position as a producer of kiwifruit together with extensive scientific research into the health benefits of kiwifruit, supplying its own ingredients solely for consumer-ready branded dietary supplements and drinks.
- Honey products company *Comvita* (www.comvita.com) has a growing business based on marketing and brand building and providing a channel to market. Its branded products use unique New Zealand manuka honey, which has a potent antibacterial compound and is supported by internationally recognised New Zealand scientific research.

35 health ingredients companies and 49 functional foods companies have plans to launch new products/ingredients in the next year.

INNOVATION

There are encouraging levels of innovation and new product development in the health ingredients and functional foods sector. For example:

- 45% of ingredient companies (35 companies) have plans to launch new health ingredients in the next 12 months
- Approximately 50% of functional foods companies (49 companies) have plans to launch new products/ingredients in the next year
- Just over half the health ingredients and functional foods companies (52%) conduct some in-house research
- Just under half (44%) conduct contract research

New Zealand health ingredients and functional food companies are small, yet highly competitive in international markets, with a strong focus on new product development. More and more companies are leveraging off New Zealand's unique natural materials, such as manuka honey, marine extracts from fish and shellfish and plants such as horopito, to create unique propositions.



NEW ZEALAND'S UNIQUE PRODUCTS

New Zealand has a wealth of natural materials and unique flora and fauna, which have developed slowly and naturally over many years due to its isolated position deep in the South Pacific. When combined with outstanding science and a sound branding strategy, these materials offer exciting potential in global markets. New Zealand company ZESPRI (www.zespri.com) illustrates the value that can be added through this strategy. ZESPRI is the global market leader for kiwifruit and typically commands a 20% price premium for its products in retail markets.

Manuka Honey

Comvita has already shown how New Zealand science can be successfully married to branding and unique New Zealand materials, with the New Zealand origin and the uniqueness of the material itself a part of the marketing story. Manuka honey, which is exported to China, throughout the rest of Asia and to Europe, has unique antibacterial properties that have been uncovered and quantified by researchers at the University of Waikato. Professor Peter Molan and colleagues have revealed a variety of properties in the honey including:

- o Anti-microbial
- o Anti-inflammatory
- o Immuno-stimulatory
- o Antioxidant
- o Stimulates growth cell and tissue repair

The Unique Manuka Factor (UMF) trademark (owned by the Active Manuka Honey Association) reassures consumers that manuka honey has been strictly tested for its bioactivity. Honey is tested and then given a UMF rating, similar to the system used with sunscreen. The UMF testing system has helped boost the profitability of the honey sector as trademarked products are able to command higher prices and differentiate themselves in the marketplace.

The efficacy of manuka honey in speeding wound repair, for example, has led to the use of UMF honey-impregnated wound dressings in hospital systems in the United Kingdom and Japan, as well as New Zealand.

Horopito

This is another example of a natural, bioactive material. Horopito (*Pseudowintera colorata*) is one of the earliest evolved flowering plants and is thought to have existed largely unchanged for 65 million years. Horopito has survived so well because the actives in its leaves discourage attack from fungi or predators. Traditionally used in Maori medicine, horopito has been shown by researchers in the United States and New Zealand to be extremely effective against yeasts such as *candida albicans*. Horopito also contains the powerful antioxidant flavanoids quercetin and taxifolin. Extracts of the plant are used in a unique patent-protected dietary supplement marketed in the United States and targeted at consumers seeking relief from *candida albicans*.

Green-Lipped Mussel Extract

Green-lipped mussel extract is a natural health product extracted from New Zealand's indigenous green-lipped mussels (*Perna Canaliculus*), which are grown on coastal marine farms in pollution-free waters. This extract is included in a number of dietary supplements sold worldwide for animal and human use, and has been shown to have significant anti-inflammatory properties. Green-lipped mussels are rich in proteins, amino acids, minerals, mucopolysaccharides and omega-3 fatty acids. More than 30 years of laboratory and clinical studies have shown that green-lipped mussel has gastro-protective and even free-radical-scavenging properties in addition to its well known anti-inflammatory properties.

Flax

Native flax grows in abundance in New Zealand and underpins a burgeoning industry in the production of flax seed oil, which is a particularly rich source of vegetable omega-3s. Free from trans-fatty acids and free radicals, the oil is rich in its own naturally occurring antioxidants, with 15mg of tocopherols and 1100mg of carotenoids per 100g.

Kumara (New Zealand sweet potato)

The kumara was brought to New Zealand by early Maori settlers and is available in red, gold and orange varieties. Kumara is one of the top three food sources of potassium as well as an excellent source of vitamin A and a good source of vitamin C. It also provides fibre and nutrients.

NEW ZEALAND FRUIT

Surging global interest in fruits such as pomegranate and blueberry, and rapidly increasing sales of fruit-based products, illustrate the particular appeal that fruit has as a naturally functional food. As a result fruit products are likely to play a significant role in the future development of functional foods.

Companies looking for fruits that have taste, consumer appeal and strong health benefits should put New Zealand at the top of their list for new fruit products and bioactives derived from fruit.

The potential in New Zealand fruit has been explored over many years by HortResearch (www.hortresearch.co.nz), a Government-backed research and development (R&D) institute with 500 scientists specialising in fruit research and technology. HortResearch has earned its place as the world's premier research centre on the health benefits of fruit, leading to many successful collaborations with multinational companies.

Examples of the potential of New Zealand's healthy and unique fruit include:

Avocado

New Zealand avocados have higher levels of the cholesterol-lowering phytosterol beta-sitosterol (around 95mg/100g) than avocados grown anywhere else in the world. On a weight-for-weight basis New Zealand avocados contain at least twice the amount of beta-sitosterol found in other sources such as soybeans, corn and olives. These intrinsic health-giving properties are a characteristic of New Zealand avocado oils that are sold internationally for gourmet use. Two case studies at the end of this report profile companies that already market New Zealand avocado oil worldwide – *Olivado* (www.olivado.com) and *Avocado Oil New Zealand Ltd* (www.avocadonz.com).

(see case studies)

Boysenberry

New Zealand is the world's number one producer of boysenberries, a berry that is relatively novel to consumers. Unlike other recent 'discoveries' such as pomegranate and blueberry, New Zealand's world-leading supply position offers exclusivity for companies that are first to market with foods and beverages made with this excellent-tasting fruit. An intensely flavoured and dark-coloured berry, the boysenberry has very high levels of antioxidants and anthocyanins and a high content of ellagic acid, which has been identified as a cancer-prevention agent.

Feijoa

New Zealand is one of the only countries in the world that grows this exciting fruit on a commercial scale. The feijoa is green, about the size of a kiwifruit and with an exotic, refreshing and intense flavour. Feijoa is already a staple of value-added products in the New Zealand smoothie market.

Gold Kiwifruit

With a novel flavour that is popular with consumers the world over, and a rich golden colour that is maintained even in juices and processed fruit, this nutrient-dense fruit is rich in vitamin C for immune support and has been shown to help maintain gut health.

Kiwiberry

Also known as the arguta, this is a modern, convenient version of the kiwifruit. Looking just like a large berry and about the same size, arguta has potential as a highly nutrient-dense snack-food for adults and children.

Tamarillo

A tree fruit with an intense red colour, the tamarillo has high levels of anthocyanins and antioxidants and can be used in beverages, salsas, sauces and other gourmet food items.



RESEARCH AND DEVELOPMENT

For a small country, New Zealand has a large number of internationally recognised research organisations and universities with a powerful reputation for academic and research excellence. The high-calibre R&D available has resulted in collaborative relationships between many multinationals and New Zealand-based R&D organisations and the filing of many patents.

New Zealand has more than 15 R&D organisations including Government- supported Crown Research Institutes, university-based science centres and clinical schools. These institutions are committed to providing specialist scientific expertise to assist the New Zealand food and beverage industry and international researchers. The top five specialist R&D organisations that collaborate with health ingredients and functional foods companies are:

1. *AgResearch* (www.agresearch.co.nz)
2. *Crop & Food Research* (www.crop.cri.nz) *
3. *HortResearch* (www.hortresearch.co.nz) *
4. *Industrial Research Ltd* (IRL) (www.irl.cri.nz) *
5. *Riddet Centre, Massey University* (www.riddetcentre.massey.ac.nz) *

Other R&D organisations involved in collaborative relationships with health ingredients and functional foods companies include:

6. *Agriquality* (www.agriquality.co.nz)
7. *Formula Foods Ltd* (www.formulafoods.co.nz)
8. *Meat Biologics*
9. *National Institute of Water and Atmospheric Research* (www.niwa.cri.nz)
10. *Biodiscovery Ltd* (www.biodiscovery.co.nz)
11. *BioActivity Investigation Group* (www.wnmeds.ac.nz/academic/Med/Big/) *
12. *Lincoln University* (www.lincoln.ac.nz).

*Those marked * are appended to this report*

AREAS OF FOCUS FOR NEW ZEALAND COMPANIES

Globally, the major consumer-focused food and beverage and ingredients companies are targeting long-term sales growth by identifying consumers' top health concerns and providing them with edible solutions. This health trend is driven by:

1. Growing consumer health consciousness
2. Declining public funding for healthcare
3. A changing focus to prevention rather than cure.

The New Zealand health ingredients and functional foods industry is focused on identifying the health benefits of greatest global importance, which therefore present the best opportunities, and those where it has competitive advantage.

This includes sourcing unique bioactive materials, applying appropriate R&D skills and encouraging innovation in product and process development.

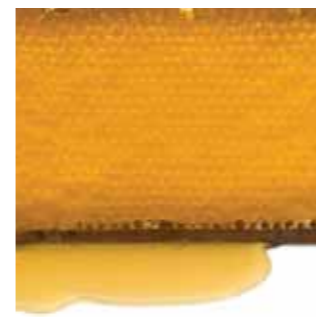
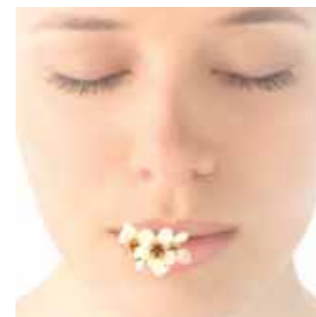
The survey found that the top five health focuses of ingredient companies in order of importance are:

1. Energy
2. Immunity
3. Skin
4. Intestinal
5. Joint health.

For functional foods companies the top five health focuses were similar, with slightly more focus on heart health and children's products.

1. Energy
2. Immunity
3. Intestinal
4. Heart health/children's products
5. Skin.

The breadth of health benefits under examination reflects the diversity of research and new product development taking place within the industry.



THE NEW ZEALAND ADVANTAGE

New Zealand offers many competitive advantages to companies and research institutes at the forefront of functional foods' and ingredients' development, including:

- o Quality primary produce and unique raw materials
- o Access to world-class R&D
- o Highly developed food technology and production systems
- o High-growth health ingredients and functional foods companies
- o Close proximity to the large Asia Pacific region
- o Proven innovation and success in food and beverage production.

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CONTACT US

As a government agency, Investment New Zealand (a division of New Zealand Trade and Enterprise) helps to promote and facilitate foreign direct investment into New Zealand.

We actively assist international corporate investors to:

- Establish greenfield operations in New Zealand
- Relocate their businesses to New Zealand
- Invest in and work with New Zealand companies in global ventures.

Investment New Zealand also matches high-growth New Zealand businesses to international investors and believes that New Zealand's health ingredients and functional foods sector has the potential to achieve significant growth over the next decade. Many New Zealand companies need access to capital and markets, where demand for these products is high.

For further assistance, please contact our Food & Beverage Investment Team on:

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