



CHAPTER FIVE BUSINESS

This chapter covers a range of topics that come underneath the commercial umbrella. Firstly, chapter 5.1 examines Zespri's marketing strategies and campaigns and includes information on the supply and demand of kiwifruit. Chapter 5.2 and 5.3 provides detail around Zespri's unique standards and practices and chapter 5.4 gives readers a lesson on orchard accounting 101.

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5.1 ZESPRI'S ROLE: MARKETING AND INNOVATION

Purpose
WHAT WE STRIVE TO BE KNOWN FOR...

Mission
WHY WE'RE IN BUSINESS...

Strategic Priorities
WHAT WE MUST FOCUS ON IN ORDER TO ACHIEVE OUR GOALS...

Values
WHAT WE BELIEVE IN...

ZESPRI HELPS PEOPLE, COMMUNITIES, AND THE ENVIRONMENT AROUND THE WORLD THRIVE THROUGH THE GOODNESS OF KIWIFRUIT

WE CREATE SUSTAINABLE LONG-TERM VALUE FOR KIWIFRUIT GROWERS, BY OFFERING CONSUMERS THE WORLD'S LEADING PORTFOLIO OF BRANDED KIWIFRUIT 12 MONTHS OF THE YEAR



<p>DELIGHT CUSTOMERS</p> <p>We will grow demand for our premium brand by building trust with our consumers and customers and placing them at the heart of everything we do.</p>	<p>OPTIMISE PERFORMANCE</p> <p>We will optimise productivity and performance right across our business to deliver the world's best kiwifruit every day in the most efficient way we can.</p>	<p>BETTER TOMORROW</p> <p>We will develop new sources of value, improve our business for the long-term, and lead sustainability in our industry.</p>	<p>THRIVE TOGETHER</p> <p>We will invest in our people, protect their safety and wellbeing, and leverage our diversity to unleash Zespri's full potential.</p>
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GUARDIANSHIP

It's about kaitiakitanga. Each one of us are custodians for future generations. We nurture our lands, enable our industry, and nourish people across the world.

RESULTS DRIVEN

We challenge ourselves to think big and deliver better, holding ourselves accountable for creating sustainable value for consumers, customers and growers.

PERSONAL CONNECTIONS

We are inclusive and caring – listening and talking to each other with compassion, acting with empathy and humility, and treating each other better for it.

Zespri is acknowledged as a category leader in kiwifruit, managing around 30 percent of globally traded volume. Zespri has built a strong reputation through:

- Delivering high-quality, healthy kiwifruit to consumers around the world.
- A focus on innovation to develop new varieties, increase productivity and introduce new, more sustainable growing techniques.

- Developing advanced supply chain systems to distribute premium quality kiwifruit around the world.
- Researching the health benefits of kiwifruit with credible research partners to better inform consumers and drive sales.
- Establishing strong brand awareness and in-market service.
- Working to understand what consumers want to make data-driven decisions to meet their needs.
- A commitment to helping people, communities and the environment to thrive through the goodness of kiwifruit.

Zespri's long-term strategy sits under four pillars that set out the company's enduring strategic priorities. The four priorities are described below:

1. Delight Customers

Zespri aims to grow demand for our premium brand by building trust with their consumers and customers and placing them at the heart of everything they do.

2. Optimise Performance

Zespri aims to optimise productivity and performance right across their business to deliver the world's best kiwifruit every day in the most efficient way they can.

3. Better Tomorrow

Zespri will develop new sources of value, improve their business for the long-term, and lead sustainability in their industry.

4. Thrive Together

Zespri will invest in their people, protect their safety and wellbeing, and leverage their diversity to unleash Zespri's full potential.

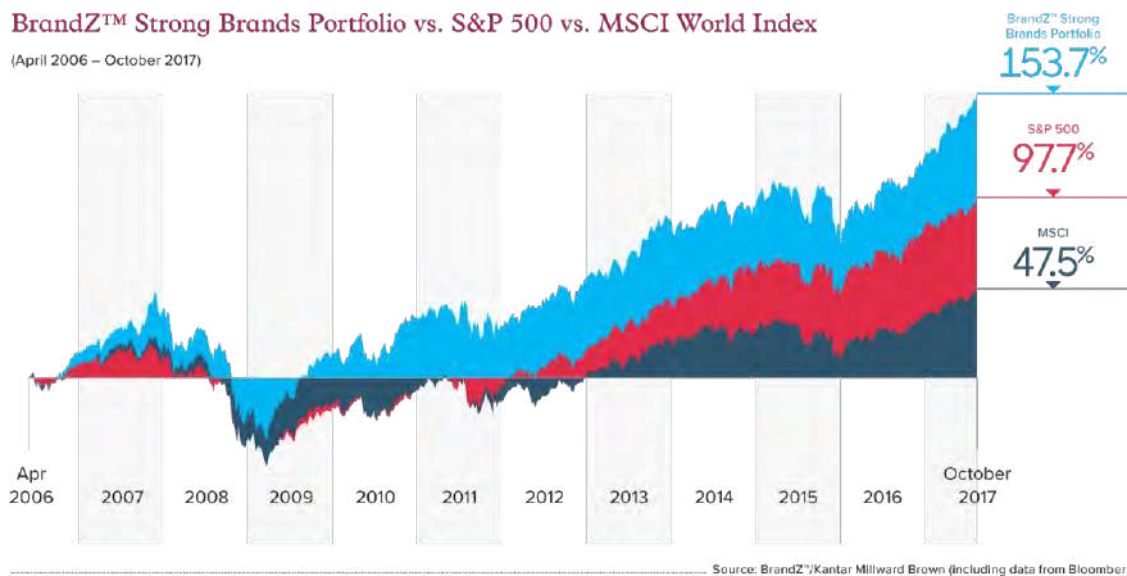
5.1.1 Brand and Marketing

In the 2018/19 financial year, growers through Zespri invested NZ\$161million in marketing, representing approximately 6.1 percent of sales revenue. Zespri's marketing strategy is focused on rapidly growing demand ahead of supply. It includes attracting new consumers to the category, building penetration among fruit eaters and increasing consumption among occasional users. Zespri has made strong progress in strengthening their marketing fundamentals globally, building a globally meaningful and different brand, understanding consumers and improving the efficiency of marketing spend.

5.1.1.1 Building A Globally Meaningful and Different Brand

Zespri is rapidly evolving from a product-centric organisation to a consumer-driven business in order to deliver on its ambition to reach \$4.5 billion in sales by 2025. Based on a research of 2,419 companies over a five year period, research company BrandZ has found that strong brands consistently generated higher stakeholder returns while brands that are perceived as meaningful and different by consumers tend to grow faster. A brand is meaningful to someone if it both meets their needs and is appealing to them. By differentiating the Zespri brand in a positive way, this allows consumers to justify paying a price premium for Zespri. Marketing plays an important role in creating a unique brand meaning and experience that is consistent across the world but also relevant to the needs of local consumers and market conditions, based on deep consumer understanding.

Below:
Research completed by BrandZ illustrates how much impact a strong brand can have on a company's performance.

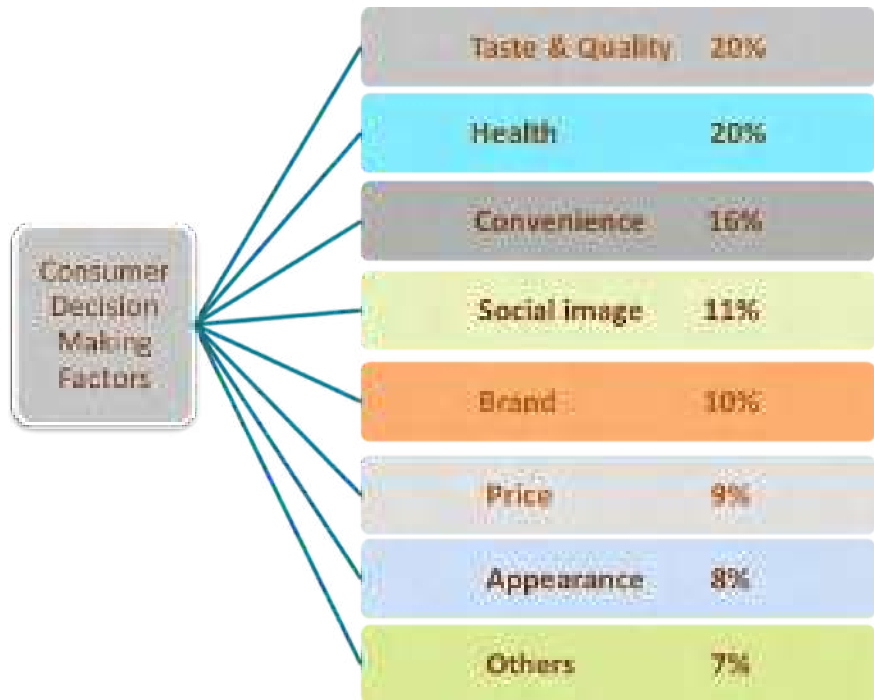


5.1.1.2 Understanding Consumers and Health Communications

To build a brand that is meaningful and different to its consumers, Zespri is focused on better understanding consumers to ensure it has data on which to base important decisions and to increase its probability of success. In 2018/19, Zespri strengthened its understanding of consumer motivations in the food space through insights research, and validated the success of its communications in key markets. This was done by leveraging well-established methodologies used by leading consumer-goods organisations globally.

Health is a key part of Zespri's brand strategy. Promoting the health qualities of kiwifruit is an increasingly important part of Zespri's strategy to increase sales and be top-of-mind for consumers. In an early study carried out by Zespri, health was identified as one of the top three factors for creating a differentiated brand in Zespri's top 13 markets, along with taste and quality.

Right:
Health is among the top 3 factors of why consumers buy Zespri Kiwifruit



Project Healthy 2007 – Consumer survey understanding why consumers buy Zespri Kiwifruit.

Below:
The three health communications pillars within the Zespri healthy strategy

Zespri has researched the health benefits of kiwifruit for many years, and recently, these findings were overlaid with what consumers felt is important. This determined Zespri's health marketing strategy. The diagram below summarises the health benefits of kiwifruit into three pillars. Each pillar represents a proposition that has scientific evidence of a health benefit, as well as being important in the minds of consumers, which in turn is a reason why they would purchase kiwifruit.

Product Attributes and Health Benefits of Kiwifruit

- The Three Health Communications Pillars within the Zespri® Health Strategy -

Proposition:	Digestive Health		Vitamin C Health	Nutrient Rich				
				Nutrient Rich				
Product Attributes of Kiwifruit:	Actinidin	Fibre	Vitamin C	Low GI	Anti-ox, vit C, E	Folate	Potassium	Phyto-Nutrients
Associated Health Benefits:	Digestive health benefits upper digestion comfort bowel comfort laxation		Vitality / Wellbeing Immunity Beauty	blood sugar mngmt / diabetes	contains	natural source pregnancy	contains muscle function	contains

5.1.1.3 Marketing Case Studies

Zespri sells its fruit into more than 50 markets globally. Every market is unique and has different requirements, but most are generally in the early stages of development with an opportunity to strengthen the Zespri brand name. Developing a globally consistent brand that is meaningful and different is a key enabler for Zespri to deliver value through increased penetration and premium pricing, while unlocking marketing synergy and spending efficiencies. This is guided by the progress Zespri has made on consumer understanding to allow data-driven decisions. In 2018/19, through the validation of consumer communications in key markets, Zespri has been able to identify successful marketing communications in these key markets with potential for use in other markets. Below are two case studies showing how Zespri leveraged consumer understanding to deliver fewer, bigger campaigns globally in 2018/19.

2017 Marketing Campaign Querámonos – *Improve the Engagement Between the Consumer and Zespri Brand – Spain*

In 2017 the campaign "Querámonos" ("Let's love ourselves"), was launched in the Spanish market, aligned with Zespri's Brand Vision; Making life delicious. It works on three levels, by encouraging consumers to love themselves, love others and love this brand that's talking to you.

"Let's love ourselves" is saying to people: Let's make life delicious together.

The overall objective was to develop a campaign that drives a greater connection between Zespri and its consumers. In the past, European campaigns were mostly product driven and based on the functional benefits of Zespri Kiwifruit.

In 2018, the campaign has evolved, on the vitality territory (physically, emotionally and socially) that is strong in Spain. From their research we have seen that "Vitality" and "high quality of fruits" linked with a delicious taste, are the most important factors to influence consumer predisposition on the market so we have included this in our message. "When you take care of yourself with the vitamin C and fibre of the Zespri Kiwifruit you are loving yourself. And so, you have all the vitality to love others more. Why don't we try?"

The campaign has been executed across all different touchpoints ranging from above the line media (TV, print and digital), health and influencer campaigns to instore campaigns at the major Spanish retailers. One of the novelties was a Spotify campaign where we have recorded a slow and boring song that, after a few seconds, is interrupted by the Querámonos song and a locution talking about the vitality that Zespri kiwifruits bring.

Zespri has sold a record volume of 16,2 Mio TE during the 2018 season and has grown to be the number one fruit brand in Spain in unaided awareness.

The use of the campaign was extended to two other European markets - France and Italy.

While in Italy, with "Amiamoci" the campaign stays closer to the original concept, in France the claim and message were adjusted to resonate better with the French consumer; "Faites-vous Plaisir" puts more focus on pleasure and enjoyment.

The campaign continues in 2019 in all three markets.

2018 Marketing Campaign: Zespri Japan Challenge – Focus on Taste Appeal to Occasional Users

In Japan, the biggest barrier to purchase for kiwifruit is the misconception that it is sour. Zespri's idea was to focus on ripened kiwifruit, highlighting the surprising element of its unexpected sweetness. This was launched as an integrated campaign encompassing all major touchpoints from TV commercials to in-store activities. It unfolded in two phases. First, focusing on sweetness; second, sharing the key to its delicious taste.

In the first phase, the goal was to communicate the concept that kiwifruit are sweet, not sour. This was led by the popular Kiwi Brothers eliminating the misconception that kiwis are sour via impactful TV commercials. In the second phase, Zespri educated consumers that ripening is the key to a kiwifruit's delicious taste. On digital, daily YouTube ads targeting peak shopping times reminded purchase decision makers to look for ripe kiwifruit. When they shopped in-store, Zespri's displays reinforced this message accompanied with a special guide on how to detect fully ripe kiwifruit. This was displayed across all the supermarkets in Japan. Zespri also allowed consumers to taste for themselves the sweetness of kiwifruit, sampling 9.6 million ripe kiwifruits at 4,000 locations nationwide.

To attract new consumers belonging to a younger age group, Zespri launched a summer activation featuring the popular comedic duo Banana Man. In the story, Banana Man steals one million boxes of delicious ripe kiwifruit after learning they are scarce, and even hijacks Zespri TV commercials and train ads. The Kiwi Brothers come in as heroes, calling for consumers to fight back. This adventure unfolded across all youth-dominated touchpoints like comic leaflets, engaging digital content, and game-filled summer time events. Zespri took this opportunity to educate young people about Zespri Kiwifruit, linking it to kiwifruit sampling and promos. For the events, consumers were able to enjoy the delicious kiwifruit while at the same time getting a chance to win limited-design Kiwi Brothers mascots through fun games. This campaign reached 1.2 million consumers in a period of only two months.

As a result, Zespri delivered the record high volume of 28 million trays-equivalent with strong growth on Brand Metrics of Brand Power (0.9%) and Brand Premium (+2).



5.1.2 Market Development Strategy

To maximise the results and efficiency of investments across the markets, Zespri created the Market Development Framework. The framework segregates its key markets by their stage of development. The four stages of development are:

Explore, Launch, Establish and Enhance. This helps the business to determine the appropriate level of investment based on the market's stage of development. In 2018/19, the top 13 markets across Launch, Establish and Enhance stages accounted for over 90% of total advertising and promotion investment.

At the **Explore** stage, every market is unique and has different requirements but is generally in the early stages of development. The primary focus is on building distribution and penetration (bringing new users into the category). Zespri selects the most promising markets to promote into the Launch stage and these markets become a priority for the business in terms of supply volume, portfolio split and marketing investment. Currently USA is the only market in the launch stage, with Vietnam set to move up in the future. As markets continue to grow and develop, the focus shifts to increasing penetration and usage (**Establish**) and emphasising consumer benefits to enable a greater premium and increase consumption frequency (**Enhance**).

5.1.3 Supply and Demand of Kiwifruit

Zespri's sales and marketing investment works to create demand ahead of forecast supply. Keeping demand ahead of supply enables Zespri to sustain value at all stages of their value chain. Zespri builds strong 'win-win' relationships with its customers to ensure Zespri product is available in market, with great instore visibility for our consumers to buy. In addition, strong and sustained market returns are essential for growers, post-harvest operators, and Zespri in order to support and encourage the collective supply investment required.

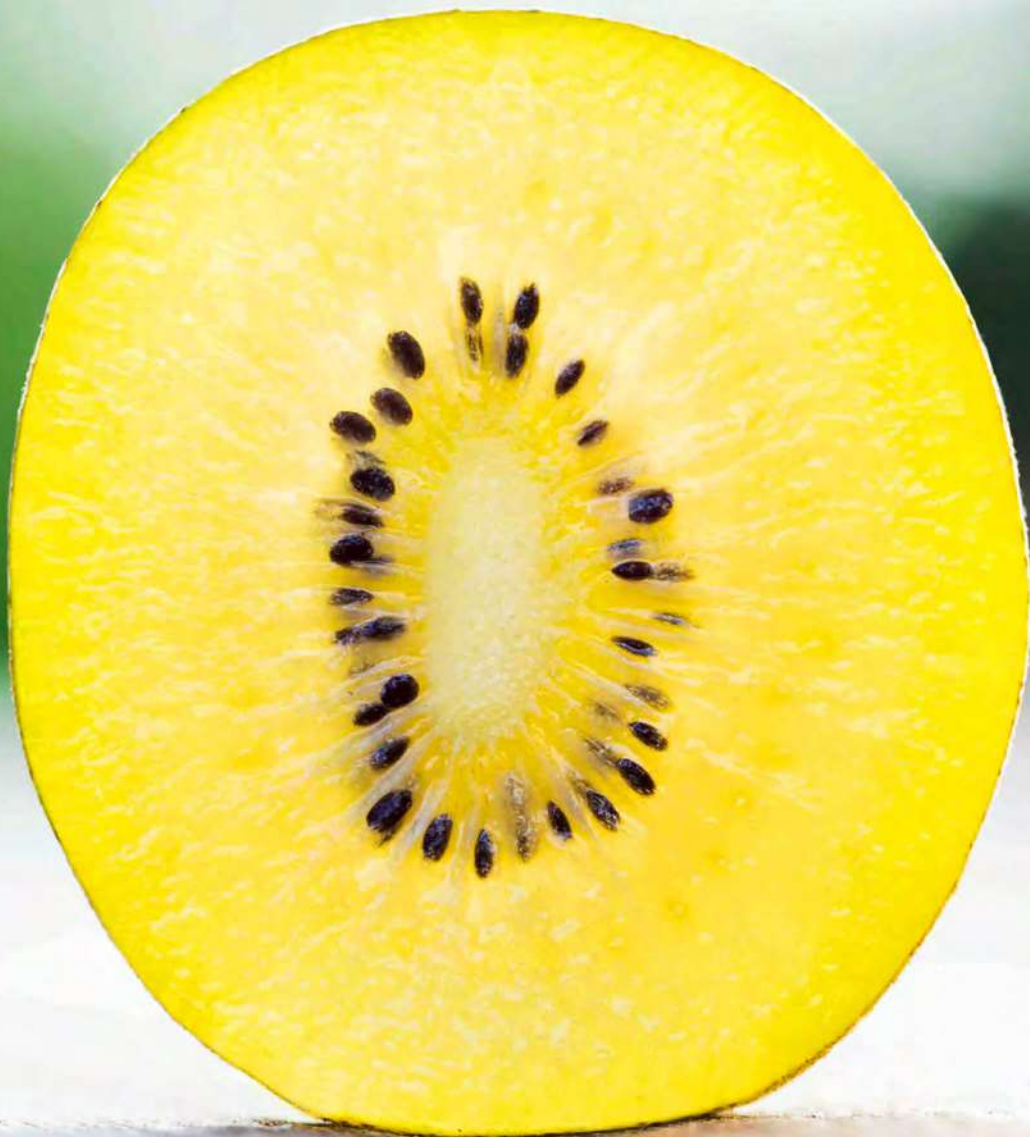
Kiwifruit is still an underdeveloped category within the fruit bowl, making up around 1.5 per cent of total fruit sold, but with huge growth potential. This means there are opportunities for growth and advantage to be gained through scale. However, with growth and success also comes competitor risk. Below are some other factors that may affect or impact the supply and demand of kiwifruit:

Supply

- Production of kiwifruit in New Zealand is seasonal, therefore to maintain market share in an increasingly competitive market Zespri works to ensure 12 month supply by growing fruit in offshore regions such as Italy, France, Japan and Korea.
- Adverse weather such as frost, cyclone, drought, etc which affect crops and in particular can impact the yield of Class 1 product and the size profile of each season's crop.
- Biosecurity incursions. For more information on biosecurity see page 68.
- Regulatory changes which restrict the industry's ability to grow.
- Food safety/contamination risks.
- Labour constraints. For more information on labour see page 125.

Demand

- Zespri invests to create demand ahead of supply in line with its longer-term growth strategy. In some years growers produce a year on year crop increase in excess of market demand. Markets can absorb some increase above plan but at times, especially if the additional fruit is being sold later in the season at higher cost some fruit may be crop managed to ensure an optimal return to growers.
- Markets cannot develop at the expected rates, lowering return on investment for growers and potentially delivering growers with lower profitability than planned.
- Market access is lost to a significant market due to political changes.
- A significant new competitive gold variety emerges to compete with Zespri's Gold varieties.
- A new competitive fruit takes market share from all other fruits.
- Zespri loses its category leadership position through decline in quality, service, reputation, or no longer having a leading portfolio of kiwifruit varieties or product offerings such as organic supply.
- Growers are unable to meet the quality specifications and delivery requirements of markets. This especially includes taste standards and a larger size profile that provides points of differentiation.



In 2018/19 Zespri sold 167.2 million trays of kiwifruit, up from 151.7 million trays (3.6 kilograms per tray) the year before. As the graph below shows, Zespri has a confident view of demand and aims to produce 263 million trays by 2025, which would help Zespri to achieve their goal of \$4.5 billion in sales by 2025. Zespri's challenge is to develop demand ahead of supply to maximise returns to growers. Notably, the dip in production in the graph below during 2011-2013 shows how crop volumes were impacted by the bacterial disease Psa. This shows the importance of crop protection, innovation and biosecurity to the industry.

Below:
Forecast volume growth by category, forecast supply volumes to 2025



Around 90 percent of Zespri Kiwifruit is grown in New Zealand, and about 10 percent offshore. It is expected that the production in both hemispheres will increase, though New Zealand supply will remain by far the largest. To maintain value, as production increases so must demand. Long term demand forecasts are developed to inform production requirements to help ensure supply does not outpace demand.

Looking Ahead - Opportunities to Increase Demand

Market development - Identifying and developing new markets, in a way that allows Zespri to activate them strongly, while continuing to grow existing markets.

Strengthening relationships within existing markets - Strengthening relationships with key customers and focusing on performance in prioritised markets. For example, from a position of strong overall demand creation and strong consumer acceptance of SunGold, Zespri is looking to continue to develop its position in China - a vitally important market. Further, Zespri is investing to build its position in the USA as another major market.

Strong go to market strategies - To ensure all appropriate channels and opportunities can be reached and serviced. This is supported by win-win relationships with our distribution partners as well as effective joint business planning.

An increase of organic production - Organics are an opportunity for all varieties, with potential to grow in many markets as consumers demonstrate a need and a willingness to pay more.

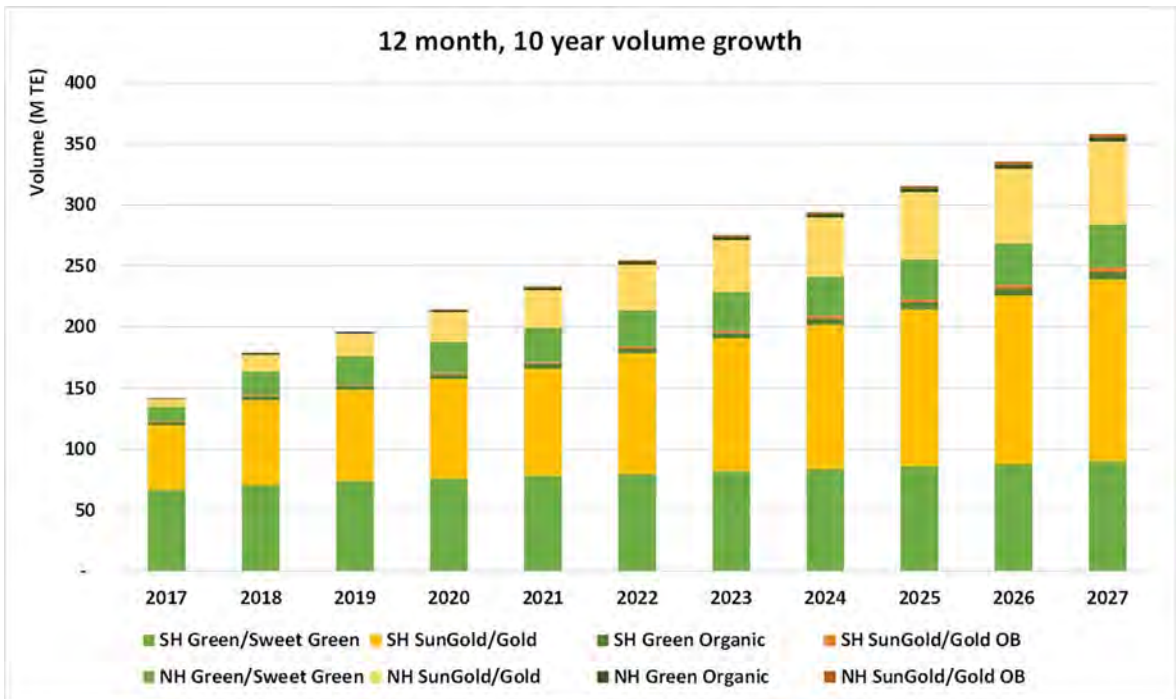
Strong marketing campaigns - Zespri's sales and marketing strategy is focused on ensuring consumers are at the heart of their campaigns and through using a 'think global, act local' approach, Zespri ensures that all communication and activities are relevant for local consumers.

Innovation - Through developing new cultivars, protecting fruit from pest and diseases, sustainable orchard productivity and optimising how to deliver customers with high-quality fruit.

Zespri's 10-year Overview of Supply and Demand

Zespri has been developing a 10-year view of supply and demand. The purpose is to set out an optimal view of sustainable growth over the very long term, with an aim of balancing volume growth with preserving value.

Below is a graph demonstrating the level of volume Zespri believes it may achieve over the next 10 years. The graph shows that growth over the next 10 years is likely to be driven by SunGold, with an increase in supply from New Zealand sustainable at around 10 million trays per year. It is important to note that this graph is not a forecast, and the volume growth is subject to change, and the ranges are wide, recognising a number of factors. For example, returns for SunGold in the short-term are expected to remain strong as demand outstrips supply but expected to moderate in the longer term as volumes come on. Further, Green in the short term is still potentially subject to swings in volume which will impact returns.





5.2 ZESPRI'S ROLE IN THE INDUSTRY - STANDARDS

Zespri focusses on being able to supply optimal quality throughout the season and continues to lead the category of commitment to food safety and sustainability. A huge amount of effort, across the supply chain, goes into ensuring Zespri kiwifruit that gets to the consumer is of the highest quality. The size, quality, appearance, and taste of the fruit is driven by what the consumer wants and then what growers are realistically able to achieve through modifying their orchard management practices and research undertaken by industry. The following quality requirements are described in this section:

- Fruit Size (Section 5.2.1)
- Taste/ (TZG) Taste Zespri Grade (Section 5.2.2)
- Internal Colour (Section 5.2.3)
- Appearance (Section 5.2.4)
- Traceability (Section 5.2.5)
- Chemical Residues (Section 5.2.6)

5.2.1 Fruit Size

Fruit sizes range from size 16 to size 46. 'Size' of fruit is relative to weight range which translates into how many fruit fit into a 3.6kg tray e.g. size 18 means that 18 fruit can fit into a tray. Gold3 fruit that is smaller than size 39 and Green fruit that is smaller than size 42 is considered to be non-standard supply (NSS). Zespri sources limited volumes of NSS fruit with the remainder of small fruit being sold on the local market, processed or used as animal feed.

It is important that fruit size matches consumer demand. Fruit is sized by weight. The size profile of each

cultivar is quite different. Gold3 tends to grow quite large while Green14 is much smaller. Different markets and different customers have different size preferences. It is important that growers produce a range of sizes to meet this demand. Market demand for very large and very small fruit is limited. The table to the left of the page shows the average size of fruit the market prefers for each cultivar:

Zespri continues to stress that for all varieties, especially Gold3, focus must be on taste over yield. In this variety larger fruit from an orchard usually have higher dry matter which means it tastes better. Growers need to be aware that some fruit sizing tools, such as biostimulants, can increase fruit size but tend to lower dry matter and may in fact be counter-productive in improving taste. Market signals are received by growers by the income they receive for their fruit. Growers will modify their orchard management practices to maximise the amount of fruit they produce of the preferred size profile and taste which in turn increases their fruit payments.

Right:
Market size preference for fruit by cultivar in 2019

Cultivar	Preferred average size
Green	31.8
Organic Green	33.5
Sweet Green (Green14)	33.0
Gold3 and Organic Gold3	29.3

“ One reason Zespri Kiwifruit achieve a significant premium in the market is superior taste. ”

5.2.2 Taste (Taste Zespri Grade TZG)

Taste is primarily driven by the amount of sugars and acids in the fruit. Both sugars and acids are detected by our tongues with sugars providing the 'sweetness' and acids giving the tangy, zesty taste associated with kiwifruit. Volatiles given off by the fruit contribute to the flavour and aroma when they are carried from the mouth onto the sensory receptor in the nose as we chew and swallow food. The volatiles are only present in minute amounts, at parts per million, but have a huge impact on the flavour of kiwifruit.

Sugars + Acids = Taste
Taste + Aroma = Flavour

One reason Zespri Kiwifruit achieve a significant premium in the market is superior taste. Zespri encourages growers to maximise taste by reflecting these market signals in grower payments. The level of sugar in ripe fruit is determined by the level of starch, or dry matter, in the fruit at harvest. A sample of fruit is collected from each orchard before harvest and the percentage dry matter measured. A significant part of the payment growers receive for their fruit depends on the level of dry matter. This is called the Zespri Taste Programme.

This programme was launched in 2001 in an effort to enhance the overall quality of Zespri Kiwifruit, by improving taste. Taste Zespri Grade (TZG) was

originally based on the premise that Japanese consumers preferred a sweeter tasting kiwifruit and were prepared to pay for it. TZG calculations are based on the dry matter measured for each maturity area in an orchard and the size profile of fruit in each area. Zespri's objective is for the Zespri-branded portfolio to represent the best-tasting kiwifruit in each segment (Green, Gold, and Red etc.) and for this superior taste experience to be consistently delivered to the consumer. To achieve this objective, Zespri has integrated 'Taste' as a commercial target for growers. Through consumer research, acceptance and preference thresholds for all commercial cultivars have been established. A maturity criteria programme and payment mechanism have been developed to incentivise growers to grow fruit that is aligned to market requirements.

Minimum Taste Standard (MTS)

More recent research has demonstrated that consumers liking for fruit decreases significantly if the taste drops below a certain level. This "Minimum Taste Standard" (MTS) has been determined for each variety. For Hayward, Hayward Organic and Gold3 cultivars 70% of the fruit in a maturity area must have a dry matter above the MTS. For Green14 the MTS is a minimum average dry matter. The MTS for each variety provides a benchmark that growers need to exceed for fruit to be accepted for export by Zespri. This minimum standard, and the payment premiums for higher TZG fruit, incentivises and rewards growers for producing the greater tasting fruit that the market requires. Fruit that does not meet the MTS, and is therefore not acceptable for export, is either processed or used as stock food.

In 2016, the Gold3 taste-by-size model was introduced where fruit weight is used to help predict dry matter for each size.

Fruit that does not meet the MTS is not accepted by Zespri for export. This fruit is

either processed or used as animal feed. Once dry matter has been calculated it is allocated to the relevant count size and depending upon the distribution of the dry matter a calculation is made to arrive at a TZG figure. Fruit that does meet the MTS will be further segregated into taste bands. There are three taste bands (Y, T, M), Y representing the highest Taste and M representing the lower or more variable Taste. This ensures that Zespri is able to target high taste fruit to Japan and potentially other markets where there is a strong consumer taste preference for sweeter fruit.

Growers are incentivised financially to grow the right taste band fruit. The higher the TZG the grower achieves the greater proportion of the maximum taste payment (MTP) the grower will receive. The MTP is calculated by Zespri and is reflective of higher value that consumers place on a superior taste experience. In the 2018/2019 season the MTP for Hayward was \$4.58 per tray whilst Gold3 had a MTP of \$9.19 per tray. The grower's TZG is multiplied by the MTP to calculate their taste payment.

As outlined in chapter 3, there are many practices growers can consider throughout the year to increase their dry matter. Including:

- Increasing the temperature of the orchard (artificial shelter)
- Monitoring crop loads to ensure they are not excessive (thinning)
- Opening up any dark areas of the canopy or areas that may become dark (vine management)
- Summer trunk girdling
- A close root prune on both sides of the vines. This has given, in both scientific and grower trials, a one percent increase in dry matter, on top of a trunk girdle effect
- Monitoring leaf health
- Harvesting later

Right:
Minimum Taste Standard by
Cultivar in 2019

Cultivar	Dry Matter average required
Hayward	70% of fruit at or above 15.5%
Gold3	70% of fruit at or above 16.1%
Green14	16.8% or more
Hayward Organic	70% of fruit at or above 15.5%

Delivering taste and consistency

At a high level, there are a number of key components that need to be understood and managed to optimise the delivery of taste and consistency, namely:

1. Cultivar
2. Growing environment, vine management and season
3. Maturity criteria and 'Ship-By' rules
4. Dry matter
5. Sugars, acids and volatiles (composition and change through temperature/time)
6. Physical appearance
7. Curing, storage and ripening regimes (temperature/time components)
8. Value chain and programmes like 'Ready to Retail/Ready to Eat'
9. Market and consumer preferences
10. Taste Zespri evolution and inventory segregation/management

The above list, while not exhaustive, demonstrates the number of variables impacting on the delivery of taste and consistency.

See the image below for more information.

Right:
Growing superior dry matter
in Zespri Kiwifruit (Zespri,
OPC)



5.2.3 Internal Colour

Internal colour must be fully developed and typical of the cultivar. Flesh colour is measured using a chromometer. The clearance criteria requires at least 87/90 fruit to meet the minimum colour standard. The 87th fruit is called the fractile.

Right:
Fruit sample cultivar in 2019

Cultivar in a 90 fruit sample	
Gold3 KiwiStart	Green fractile 112.9 ^o hue
Gold3 Mainpack	Green fractile 109.3 ^o hue
Green14	A Gold fractile of 109 ^o hue

5.2.4 Appearance

Consumers buy with their eyes so appearance is very important. Zespri sets high standards that must be met for fruit to be sold. Fruit that is regular in shape and free from blemish, stain, physical damage, pitting or dehydration will stand out. Consumers keep coming back for more quality Zespri Kiwifruit because they have to meet such high standards.

The following is an example of a Zespri standard:

Cosmetic blemishes such as marks or scars on the skin of the fruit may be caused by:

- Skin rub
- Healed physical damage
- Healed hail damage
- Healed insect damage/cosmetic pests
- Fungal damage
- Skin burn
- Chimera mark

There are allowances for some blemishes in the Zespri Grade Standards Manual as follows:

In all classes blemishes which merge with the colour of the skin are acceptable.

CLASS I - Acceptable blemishes are:

- Superficial
- Light in colour provided they do not affect the general appearance of the fruit.
- Total one square centimetre or less in area.

CLASS Family Kiwi™ - Acceptable blemishes are:

- Blemishes which contrast with the colour of the skin and total two cm squared or less in area are acceptable.

Unacceptable in all classes are:

- Black marks
- Significantly deep or raised blemishes.
- Cosmetic pests which are less than one mm in diameter but total one cm squared or greater in area.

“Consumers buy with their eyes so appearance is very important. Zespri sets high standards that must be met for fruit to be sold.”

5.2.5 Traceability

Our customers expect Zespri to be able to track the journey of kiwifruit from an orchard to the consumer. This includes what sprays have been applied, when fruit was picked, where and when it was packed, where it has been stored, when it is shipped and where it is stored in market. MPI also expect that fruit in each export consignment can be tracked back to a phytosanitary inspection record during packing. Traceability is maintained at both a consolidated level of a pallet and at the individual pack level and tracked through the supply chain by the use of a European Article Number (EAN) barcode. Each pack has an EAN barcode applied which, when scanned, links to a system where details of the fruits journey can be viewed. This allows Zespri to determine market suitability of any piece of fruit. This is used to prevent fruit being shipped to markets where it doesn't meet their access requirements e.g. a pest has been identified on an orchard so its fruit is banned from a certain country. Electronic capture also allows for rapid response, location and

segregation should it be required at any point. This is particularly critical should a food safety issue ever arise where accurate tracking is vital to minimise the volume of fruit that may need to be recalled and disposed of. Customer food safety programmes all require high levels of traceability: it is fundamental market requirement.

5.2.6 Chemical Residues

Growers need to use agrichemicals to manage pest and disease levels in their crops. However, markets and individual customers set very specific requirements for the level of agrichemical residues they will accept in fruit. The Zespri Crop Protection Standard (CPS) is actively managed to ensure only approved sprays are used and to minimise the presence of any residues. All lines of fruit are residue tested to ensure adherence to the crop protection standard and ensure that individual market access requirements are met. Most Zespri fruit has no detectable residues present at harvest.

“ Markets and individual customers set very specific requirements for the level of agrichemical residues they will accept in fruit. ”



5.3 ZESPRI'S ROLE IN THE INDUSTRY - PRACTICES

5.3.1 Consistency of Supply

Customers require a regular supply of consistent product to be able to provide consumers with a reliable source of high quality and high taste kiwifruit 12 months of the year. Capturing and keeping shelf space full is key to the customer relationship and maximises the value to all parties while reducing the New Zealand grower's risk of a competitor's fruit replacing Zespri fruit on the retail shelf. Market planning and shipping programmes all attempt to keep supply available for as long as possible. During the early part of the season when supply is limited, markets are only started when there is sufficient fruit to allow for continued supply.

Having a product with a long, reliable storage life greatly assists being able to provide consumers with a good eating experience over a long selling season. Sales to customers may continue 6-7 months from harvest and final retail sales can extend for another month after that. For both New Zealand growers and for in-market customers having practically all the volume consolidated through one seller in Zespri provides a mechanism to give a high level of assurance of consistent supply.

Zespri uses fruit sourced in the Northern Hemisphere to supply customers when New Zealand fruit is no longer available.

5.3.2 In-Market Distribution

Zespri sell into more than 50 different countries worldwide and work with distribution customers and partners, who buy fruit from Zespri and get the product into wholesale markets and onto the supermarket shelves. From the wharf, the fruit goes into dedicated coolstore distribution centres and on to thousands of wholesale and retail outlets. Zespri serve distribution and retail customers with the optimal balance of Green, Gold and Organic products.

Zespri is dedicated to its customers and is focused on consistently providing excellent product and excellent service. The Zespri System, the integrated production and distribution system used to deliver the world's best kiwifruit to consumers worldwide, is one of the foundation blocks of the Zespri brand. It is the culmination of many years of scientific, technical and practical developments and an uncompromised commitment to continual improvement.

The Zespri System recognises that quality has many components, but they all rely on a combination of best practice, excellent product and documented assurance to provide customer confidence. It has been developed in recognition of customers' needs for a comprehensive assurance that fruit has been grown and handled safely with:

- A strong focus on good agricultural practice.
- Environmental and economic sustainability including the efficient use of natural resources.
- Integrated pest management.
- Orchard to retail traceability.

- A socially responsible approach to workers and the communities it supports, practices that maximise fruit quality, taste and storage potential of the fruit.
- Leading edge good manufacturing practice throughout the postharvest and distribution sectors of the industry.
- An understanding of current and future market and customer needs.
- World class quality management systems.
- Certified food safety and Good Agricultural Practice (GAP) systems.
- Quality specification and measurement throughout the supply chain.
- Comprehensive feedback systems to ensure that customer feedback drives continual improvement.

<https://www.youtube.com/watch?v=Utlwp6DsfXg>

<https://www.youtube.com/watch?v=Tmfb0VgjN1U>

https://www.youtube.com/watch?v=hKOj_Wikq_A

Visit www.freshfacts.co.nz for the latest industry statistics and find out how kiwifruit compares with other horticultural exports such as pipfruit. Also refer to the 2018/19 Zespri Annual Report and Review available on their website www.zespri.com.

5.3.3 Integrated Supply System

The development of Zespri's supply chain and service offering is a key focus. Supply chain efficiency is expected to unlock significant value for the industry in future years; many opportunities exist in the supply chain design space with the application of new supply chain management processes and technologies for improving product quality attributes.

The Zespri System is an Integrated System Underpinned by Continuous Improvement



Above:
The Zespri System

Zespri Global Supply (ZGS) business is a source of Zespri's competitive advantage and a key part of Zespri's "category management" work stream. Non-New Zealand supply is poised for strong growth in the five year planning horizon, driven predominately by Gold3 development in Italy, and ability to procure Zespri Green from Italy to meet rising global demand.

READ MORE HERE: <http://www.zespri.com/companyinformation/newsroom/increaseitaliansungold>

The strategic focus of ZGS is to consolidate non-New Zealand supply as a fundamental pillar of Zespri's competitive strength, underpinning its position as a leader in the global fruit industry. Zespri's aim is to unlock value in the business by leveraging the brand, intellectual property and supply chain expertise.

12 Month Supply

12 month supply refers to the procurement and marketing of Northern Hemisphere kiwifruit (when New Zealand fruit is not available in market) to complement the sale of New Zealand kiwifruit. 12 month supply is an important part of Zespri's business strategy and a key source of Zespri's competitive advantage. Specifically it strengthens Zespri's New Zealand kiwifruit business by continually building the brand and strengthening global relationships.

Zespri has partnered with Northern Hemisphere growers in Italy, France, Japan and South Korea for nearly two decades to provide its customers with premium Zespri Kiwifruit in the three-to-four months a year where New Zealand kiwifruit is not available.

The Benefits of Zespri Offering 12 Month Supply in a Market are:

1. To partner with our distributors in kiwifruit 12 months of the year and demonstrate consistent quality and standards, irrespective of origin, to support their strategic objectives and add value to their businesses.
2. To maintain shelf space 12 months of the year – ideally to be the kiwifruit category manager, by offering confirmed volumes and quality for the full year, as opposed to seasonal competitors from other countries who cannot provide such reliability. This allows more flexibility for volumes of New Zealand kiwifruit to be placed in the best position to maximise returns.
3. To maintain brand presence 12 months of the year such that when New Zealand kiwifruit comes into markets, it is not fighting for shelf space with earlier seasonal produce or seeking to displace other produce that is available 12 months of the year.
4. To grow branded products over 12 months rather than just in the New Zealand supply window. This is critical from a category growth perspective, i.e. apples, tomatoes, and bananas are all available 12 months of the year.
5. In growing regions, having a local presence enables Zespri to better manage the pressures placed on distributors and retailers to support local product, by supporting the domestic kiwifruit community, which in most cases are not competitive to Zespri's New Zealand supply windows; further this enables Zespri to maintain the quality standards for the category as a whole in that market.

In Addition, There are Other Benefits to the New Zealand Grower as well Outside of the Market Benefits, such as:

1. Growing in both the Southern and Northern Hemisphere locations allows the New Zealand industry to learn and innovate at twice the pace. This benefit was very evident during the height of Psa where time was against the industry and the learning's needed to be adopted as quickly as possible.
2. ZGS is a "stand alone" business unit that is allocated a portion of overhead costs from other business units, thus allowing for better utilisation of corporate overhead spend.
3. By having activity across 12 months of the year creates a platform to retain core staff; seasonal roles can create staff turnover and an associated loss of experience within the organisation.
4. Developing strong relationships with kiwifruit growers in a range of other countries.

As other kiwifruit brands begin to build momentum and aim for 12 month supply, Zespri needs to maintain a continuous supply strategy and build brand awareness or risk losing future market share to emerging brands. With the plethora of new cultivars grown globally by competitors, it is imperative Zespri retains a strong presence in the market place 12 months of the year to position New Zealand kiwifruit strongly and retain strong customer and distribution relationships. Zespri 12 month supply enhances consumer loyalty and strengthens the position of key distribution partners, when increasingly competitive alternatives are emerging. Therefore, as Zespri Northern Hemisphere supply volumes grow the benefit to New Zealand growers is also increasing.

5.3.4 Leaders in Innovation

Zespri's innovation investment aims to create value across the supply chain from breeding to consumer. To do this Zespri invests across five innovation platforms:

- New cultivar development (breeding and advanced selections)
- Sustainable production systems (on-orchard productivity, crop protection and biosecurity)
- Sustainable delivery of fruit (food safety and market access, fruit physiology, taste and quality, engineered supply chain)
- Value addition and creation (health and nutrition, convenience, consumer understanding)
- Research investment in Psa management tools and techniques continues, integrated across the

on-orchard productivity and crop protection portfolios.

New Cultivar Development

Kiwifruit come from the Genus *Actinidia* and the New Zealand commercialised cultivars from both the *Deliciosa* and *Chinensis* species. All *Actinidia* species are perennial climbing plants (vines) and almost all species are deciduous (some are only partially so). There is greater genetic diversity in kiwifruit than there is for apples. New Zealand researchers have been collecting kiwifruit genetic material over several decades and now have the largest selection of kiwifruit genetic material outside of China. New Zealand has a kiwifruit vine library planted in Te Puke, New Zealand that is used to breed different cultivars based on research into what future consumers will demand.



Above:
An example of different types of kiwifruit cultivars planted in Te Puke

“There is greater genetic diversity in kiwifruit than there is for apples.”

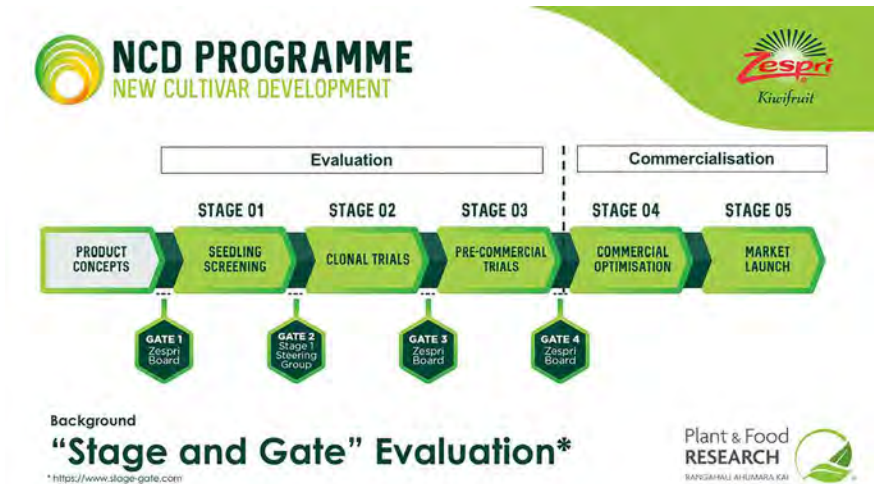
In 1997, the first Gold kiwifruit cultivar was launched and it was a very successful alternative variety to Hayward. Zespri Gold was bred by Plant & Food Research and commercialised and marketed by Zespri in 2000. Zespri Gold was the first gold fleshed kiwifruit available in the market in the world. In economic terms Zespri had ‘first mover advantage’ which led to price premiums in the market that have been extremely profitable. Since Zespri Gold was commercialised, it has led to an economic benefit to New Zealand of over \$4 billion. Prior to the bacterial disease Psa incursion Zespri Gold also generated more than \$525 million in annual global revenue.

Right:
Zespri Gold



Zespri has an operating agreement with NZ's Crown Research Institute (CRI) for Plant & Food Research. Plant & Food Research is responsible for the parental development of kiwifruit cultivars, and supplying the tools associated to speed up the Breeding Pipeline.

Right:
Zespri and Plant & Food
Research 'Breeding Pipeline'



For a new cultivar to progress through the new cultivar pipeline it needs to exceed product attribute thresholds. The product attributes include taste, nutritional composition, fruit size, shape and skin type, pest and disease resistance, harvest timing and storage keeping ability.

Zespri is responsible for new cultivar development including commercialisation of new cultivars. In June 2010, three more cultivars were commercialised, known as Gold3, Gold9, and Green14. Gold3 and Gold9 were developed to extend the Zespri Gold market window. Green14 has green flesh with higher sugar content than 'Hayward' and was bred to establish a new market segment.

Right:
Picture displaying Zespri's
current commercial cultivars.
From left to right: Organic
Green, Organic SunGold
Green, SunGold, and
Sweet Green



The key commercial cultivars for New Zealand are Hayward (Green), Gold3 (SunGold), Green14 (Sweet Green), and Organic (both Green and SunGold). For more information, visit www.zespri.com/varieties. The combination of a single marketing desk and commercialised cultivars has led to the kiwifruit industry becoming a billion-dollar fresh kiwifruit exporter. Further extensive plant breeding continues to be undertaken.

The De-commercialisation of G9

In 2010, Charm (G9) joined the Gold variety mix as a high taste fruit with expected long storage characteristics. The variety was relatively easy to grow and had high yields. In early production it became clear there were issues with the fruit shrivelling which was deterring buyers from purchasing the fruit because they believed the fruit was deteriorating. This shrivel issue did not disappear as the vines got more mature so a decision was made to de-commercialise the variety. Growers were able to transfer across to the other Gold variety SunGold (Gold3) which had shown strong resilience to Psa.

5.3.5 Variety Licences

Since the commercialisation of Gold3, Gold9 and Green14 in June 2010, a total of 7,400 hectares of licensed varieties have been allocated to New Zealand kiwifruit growers. This total includes 7,400 hectares of Gold3 and 350 hectares of Green14 although planted hectares of Green14 has declined and is currently less than 100 hectares. Approximately 60% (1,500 growers) of New Zealand growers grow at least one or more of Zespri's licensed varieties on a kiwifruit property that they own, totalling 2,100 orchards that grow a licensed variety. All growers that grow a Zespri licensed variety are bound by a Zespri Kiwifruit Variety Licence which gives growers the right to acquire plant material for growing a variety within the licensed area.

Zespri Variety Licences – SunGold Licence Release

Significant investment is made by Zespri into a breeding programme that focusses on increasing returns to growers through the development of profitable new cultivars. Showing early signs of tolerance to Psa, there have been numerous licence release rounds for the SunGold Variety since commercialisation in 2010. Of the total licensed Gold3 area of 7,400 hectares, approximately 3,200 relate to a straight swap out of Hort16A or Gold9 when Psa hit. The remaining licensed area relates to earlier Fixed Price Bid licence releases (1,300 hectares) and the remainder is due to Closed Tender Bid allocations and entitlements owing to Pre-Commercial Trial growers. The Zespri Board has signalled that an additional 750 hectares of Gold3 will be released per year from 2019 to 2022 provided sufficient demand continues to exist and the variety performs in terms of taste requirements. This allocation is reviewed by the Zespri Board at the completion of each selling season.

5.4 ORCHARD ACCOUNTING 101

Monitoring of Kiwifruit Orchard Profitability

The reporting of profitability is an important task when monitoring the performance of an orchard. Growers give much time and thought into delivering quality crops ready for international markets. There are numerous orcharding activities that give rise to both income and costs on an orchard. The net position of income less costs equates to orchard profitability. Growers regularly review this equation to ensure their efforts are being rewarded financially.

In this section, there are four key areas that will be covered:

- Seasonal Timing of Orchard Income and Costs (Section 5.4.1)
- The Concept of Orchard Gate Return (Section 5.4.2)
- Orchard Financial Reporting (Section 5.4.3)
- Collection of Financial Data (Section 5.4.4)

5.4.1 Seasonal Timing of Orchard Income and Costs

The orcharding cash cycle of setting an orchard crop in preparation for harvest and receiving the final income for that same harvest is spread over twenty-four months. The kiwifruit orcharding year begins with winter pruning around July and continues through to harvest. Harvest is typically conducted during the months of April and May. Throughout this growing period numerous orcharding costs are incurred as the new crop is setup and tendered (such as pruning, pollination, fertiliser etc.) Following harvest and the successful submit of fruit into Zespri inventory; Net Income is returned to the grower via a series of functions and intermediaries. Final Net Income is not received by the grower until June of the year following harvest.

5.4.2 The Concept of Orchard Gate Return

Net Income received by a grower is referred to as Orchard Gate Return or OGR. In simple terms, Zespri receive money (gross income) from export customers. This is then distributed through to Registered Suppliers, and onto growers. The reason Orchard Gate Return is referred to as a Net Income is because the gross income received by Zespri is offset by various costs and incentives along the way such as freight charges, commissions, certain taxes, packing, coolstorage etc.

These costs and incentives are outlined in the contractual arrangement a grower has with their postharvest partner and in the Supply Agreement signed by Registered Suppliers and Zespri. The preferred format for growers reporting Orchard Gate Return for a full year is below. It is noteworthy to mention that Orchard Gate Return is not the complete measurement of orchard profitability, as it does not take into consideration orcharding costs such as pruning, pollination, fertiliser etc.

Orchard Gate Return

	2019 Harvest (\$ are for example only)
Income from Zespri	
Zespri Fruit Return	63,500
Plus Taste Income	3,000
Plus Early Start Income	14,400
Plus Loyalty Income	3,000
Total Income from Zespri	83,900
Cost of Post-Harvest	
Time Incentive Income	18,480
Less Fruit Loss Costs	(3,480)
Less Time Costs	(6,300)
Plus/Less Intercheck	(360)
Net Time Incentive	8,340
Less Packing & Harvest Costs	(21,900)
Less Coolstore Costs	(8,900)
Less Logistics Costs	(1,560)
Less Other	(500)
Total Cost of Post-Harvest	24,520
Total Net Income (Orchard Gate Return)	\$59,380

Right:
Table showing Orchard Gate
Return for a full year

5.4.3 Orchard Financial Reporting

The preparation of an orchard profitability report is a tool a kiwifruit grower can use to measure the financial performance of an orchard. It also forms part of the analysis in which to measure the financial viability of that orchard against an expectation or financial objective. The table on the following page provides an example of a simple orchard net profit and cash-flow report. The format works through:

- Net Income (OGR)
- Less Orchard costs
- Net Profit from Orchard
- Less Capital expenditure
- Net Cash Inflow/Outflow

Net Profit from Orchard shows the profitability of all income derived from each harvest less all direct costs that are incurred in delivering that same harvest. Net Cash Inflow/Outflow provides useful analysis of the net cash proceeds received from the orchard by considering capital expenditure, such as the set up a new overhead artificial canopy. Typically, such a report is reviewed on a monthly and annual basis.

The table on the following page includes columns for each month that Net Income (OGR) is received. The final column is a conversion of the income or cost into a Per Canopy Hectare basis. This Per Canopy Hectare calculation is the most common and important metric used by a grower to benchmark the financial performance of their orchard against industry averages and prior historical information. As the orcharding year progresses a grower will find it necessary to understand the costs they incur on a 'per hectare basis'. Often piecemeal rates charged by suppliers and contractors are also based on a 'per hectare basis', such as winter pruning and girdling.

5.4.4 Collection of Financial Data

Collating this data into a user-friendly format should be kept simple and made readily available. There are a variety of means available to a grower to prepare such a report and it is often prepared with support from the growers Chartered Accountant. Financial reporting has come a long way in recent years and apart from simple spreadsheets, there are a number of web based financial software tools available to growers to draw financial information from, such as Xero.

KIWIBOP ORCHARD
KIWIFRUIT ORCHARD PROFITABILITY

KPIN: 2176
 LOCATION: PLUMMERS POINT ROAD
 HARVEST YEAR: 2016
 VARIETY: HAYWARD

Key inputs

CAN/HA	F/VINES	M/VINES
1.20		

[NUMBERS ARE FOR EXAMPLE ONLY]

Diagram 1

Net Income	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Total	Per CAN/HA
Net fruit payments (Orchard Gate Return)	592	4,425	5,210	2,509	4,310	5,680	7,020	11,411	3,169	1,027	4,554	2,369	2,961	2,369	1,776	59,380	49,483
ORCHARD COSTS																	
Harvesting costs		2,500	1,500													4,000	3,333
Orchard Production				6,360												6,360	5,300
Winter pruning									2,200							2,200	1,833
Male pruning								750		1,200	1,500					3,450	2,875
Summer pruning										500		4,500				5,000	4,167
Thinning									250		250					500	417
Girdling																-	-
Spraying (materials & application)																-	-
Fertiliser (materials & application)					2,800			3,200								6,000	5,000
Weed control (materials & application)								500		500						1,000	833
Pest monitoring										250						250	208
Soil tests/leaf samples			750					750								1,500	1,250
Pollination								2,150								2,150	1,792
Mowing & Mulching																-	-
Shelter trimming						3,500										3,500	2,917
Global gap/compliance										250						250	208
Repairs & maintenance																-	-
Management																-	-
Total orchard production	-	-	750	6,360	6,300	-	-	7,350	2,450	2,700	1,750	4,500	-	-	-	32,160	26,800
Net Profit from Orcharding	592	1,925	2,960	-3,851	-1,990	5,680	7,020	4,061	719	-1,673	2,804	-2,131	2,961	2,369	1,776	23,220	19,350
Capital expenditure					5,500											5,500	
NET CASH INFLOW/(OUTFLOW)	\$592	\$1,925	\$2,960	-\$3,851	-\$7,490	\$5,680	\$7,020	\$4,061	\$719	-\$1,673	\$2,804	-\$2,131	\$2,961	\$2,369	\$1,776	\$17,720	
YTD NET CASH INFLOW/(OUTFLOW)	\$592	\$2,517	\$5,477	\$1,625	-\$5,865	-\$185	\$6,834	\$10,896	\$11,615	\$9,941	\$12,746	\$10,614	\$13,575	\$15,944	\$17,720	\$17,720	

