

Learnings from the Kiwifruit Industry – a research to market perspective

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Structure



- A personal perspective over 30 years
- A kiwifruit world market
- Integration with R and D
- Critical success factors
- An “outsiders” perspective on NZ forest product development



A personal history

Kiwifruit researcher for 23 years

Scion 3½ years

Scion

Drivers market research market research market research

1983 1990 2000 2005 2009

Kiwifruit

Postharvest applied

Postharvest applied

Consumer sensory

Consumer sensory/genetics

Carbohydrate

Cell walls

Flavour and fragrance (terpenes)

Plant physiology

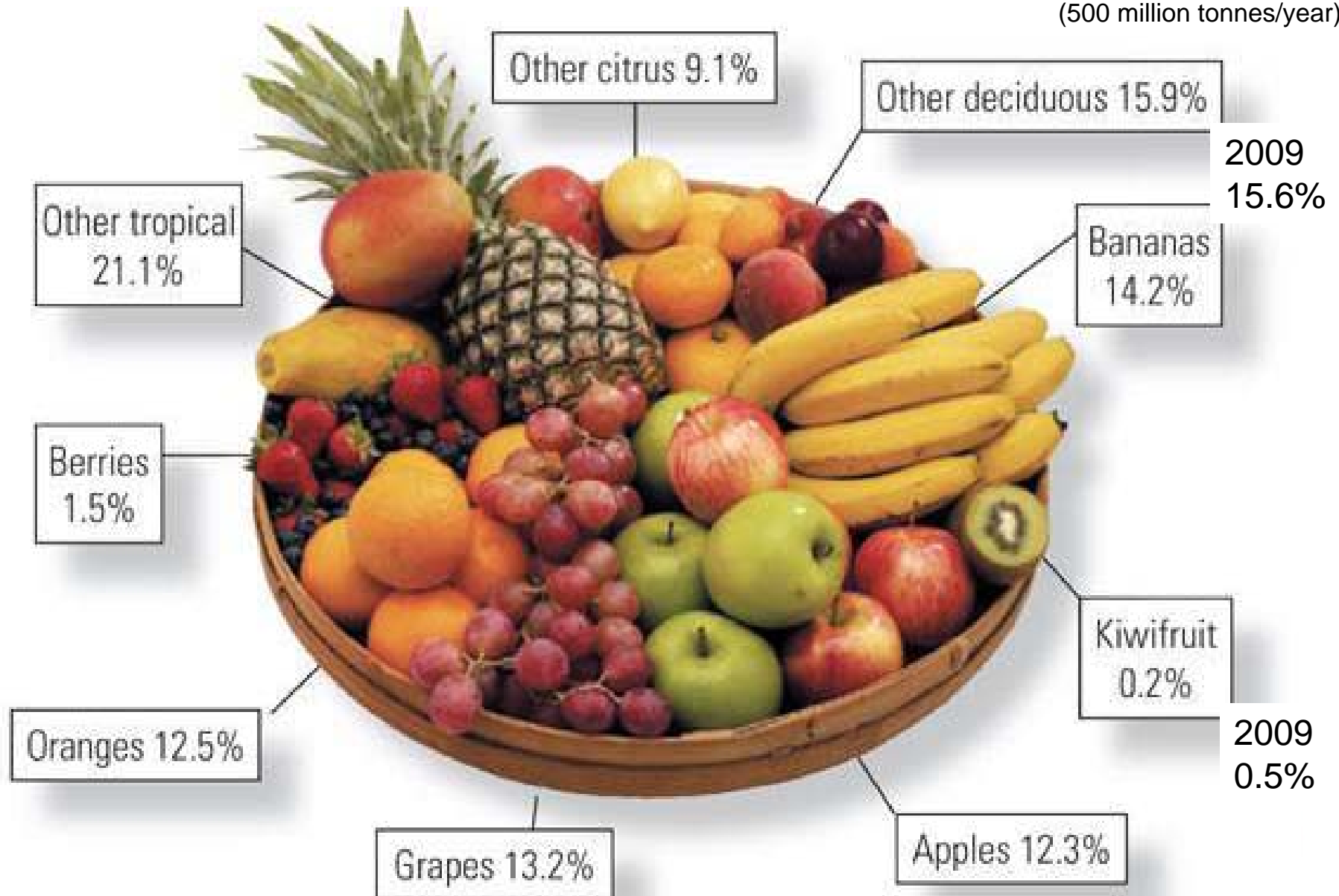
Biochemistry/molecular biology/genomics/genetics

allergens

allergens

The world's fruit bowl

(500 million tonnes/year)





World production 1,800,000

2008/2009 (metric tonnes), 1970 NZ = 95%, 1983 = 60%, 91 = 30%, 2009 = 20%;
3 of top 4 predominantly exporters

Northern Hemisphere

China	450,000
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France	70,000
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Greece	60,000
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Iran	*90,000
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Italy	460,000
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Japan	30,000
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Others	60,000
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Total	1,220,000
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Southern Hemisphere

Chile	**160,000
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New Zealand	380,000
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Others	40,000
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Total	580,000
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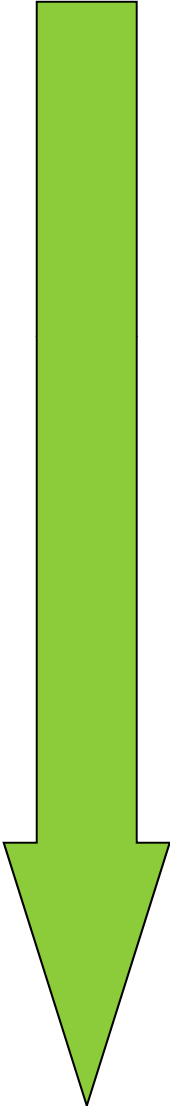
* possibly overestimate, ** growing rapidly

NZ the innovator



- 95% NZ crop is exported, >\$1B sales
- 0.7% revenue invested in R and D
- Zespri world's largest kiwifruit marketer (13x more than next)
- External to NZ sourcing of product to complement NZ product
- Corporate branding delinked from NZ origin
- ~2,500 shareholders predominantly in BoP
- Corporate branding for all products (ZESPRI® Green, ZESPRI® Gold, ZESPRI® System)
- High level of education at all stages in industry - Roadshow, market tours, study options and journal industry communications
- Strategy of growth and maintenance of premium – tangible to intangibles – market led, single point of entry to markets

Kiwifruit market development

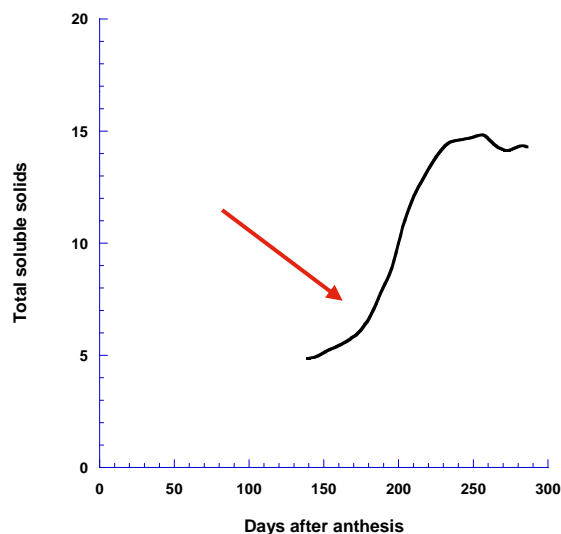


1930 - 1975	Mix of species and genotypes
1975 - 1997	Dominance of NZ and “Hayward” (now ZESPRI®Green) genotype
1980s	Competitive exporters, growers, packhouses and processors
1952	First exports
1956	Turners & Growers named kiwifruit
1981	NZKA obligatory harvest clearance 6.2%SS for export
1988	Exports single market seller, except Australia; harvest standards mandatory.
1992	National body for growers (following debt)
1995	KiwiGreen established
1997	Zespri formed (following commodity poor returns)
1998 - 2000	First export trials followed by sales ZESPRI®Gold
2001	Global supplier year round sourcing
2006	Introduce Taste ZESPRI®
2007	Introduce sustainability initiative
2007 - 8	Manage 30% of traded kiwifruit, ~7% sourced outside NZ, premium over other kiwifruit

Research – Harvest Standards (market feedback)



Problem: Difficulty with green fruit decision when to harvest highlighted because of poor feedback on product in EU markets



Result: Minimum Harvest standard in place as 6.2% Soluble solids across 10 fruit samples sampled across the orchard in a predetermined pattern.

Novel in fruit world

Research – Getting the export numbers up (profit driver - payment by number and size)

Mid 70s - mid 80s – boom years

Mid 80s - mid 90s – 45% decline in area but 20% increase in production

Mid 90s – mid 00s – 40% increase in production, 14% increase in area

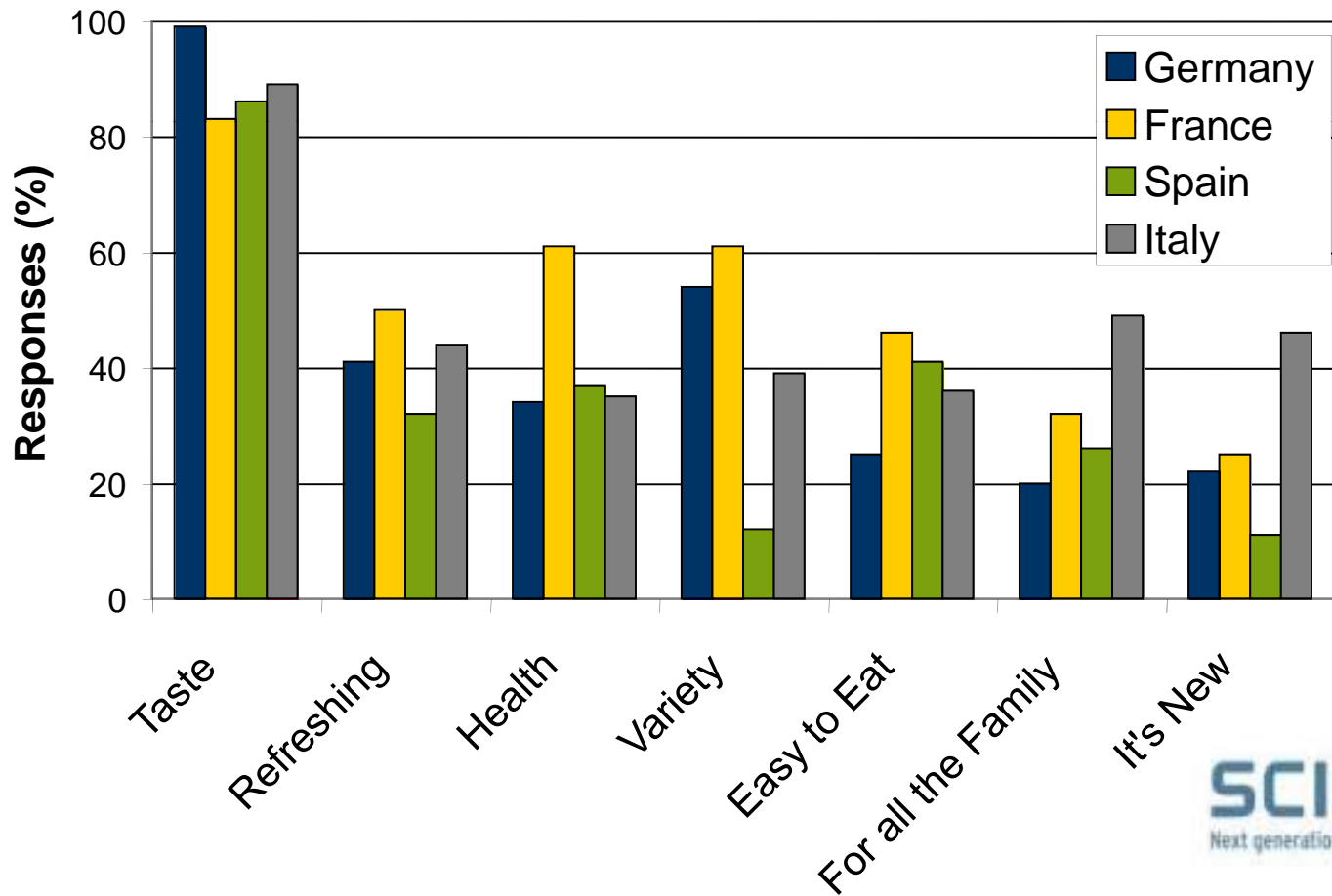
Yields now 50 - 55% higher than Chile and Italy

Year	~Yield export trays average/ha	Yield weight fruit kg/ha
1983	1,000	3,300
1993	4,500	14,900
2003	6,000	19,800
2009*	8,800	29,000

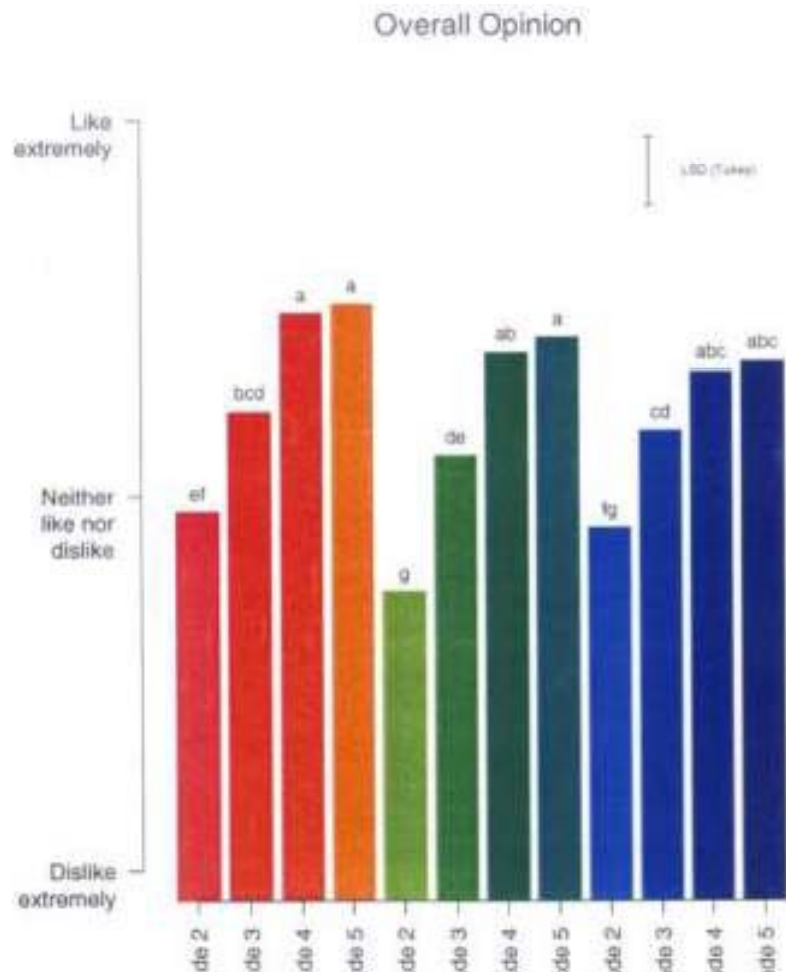
*2009 Best performers = 18,000 trays/ha,
yield av carbon/ha = 14,742kg

BUT.....

Market need for a top taste experience endangered by decline in carbohydrate content and flavours



Research – Taste ZESPRI® (market response)

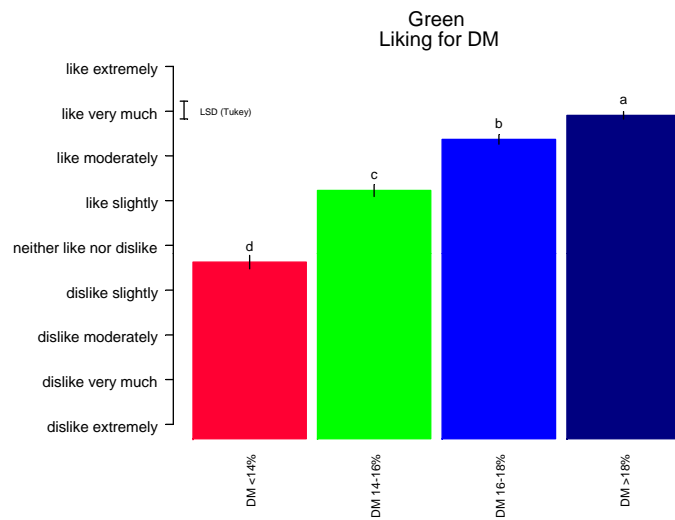


15+ years to grasp opportunity

- mid 1980s: First consumer studies alongside DM* - evidence of need for high DM
- 1990 – 1992: Association of flavour with DM
- 1998: Industry realisation of issue – review
- 2000 – 2005: Consumer trials comparing preferences – taste, size, price

*DM equivalent to density

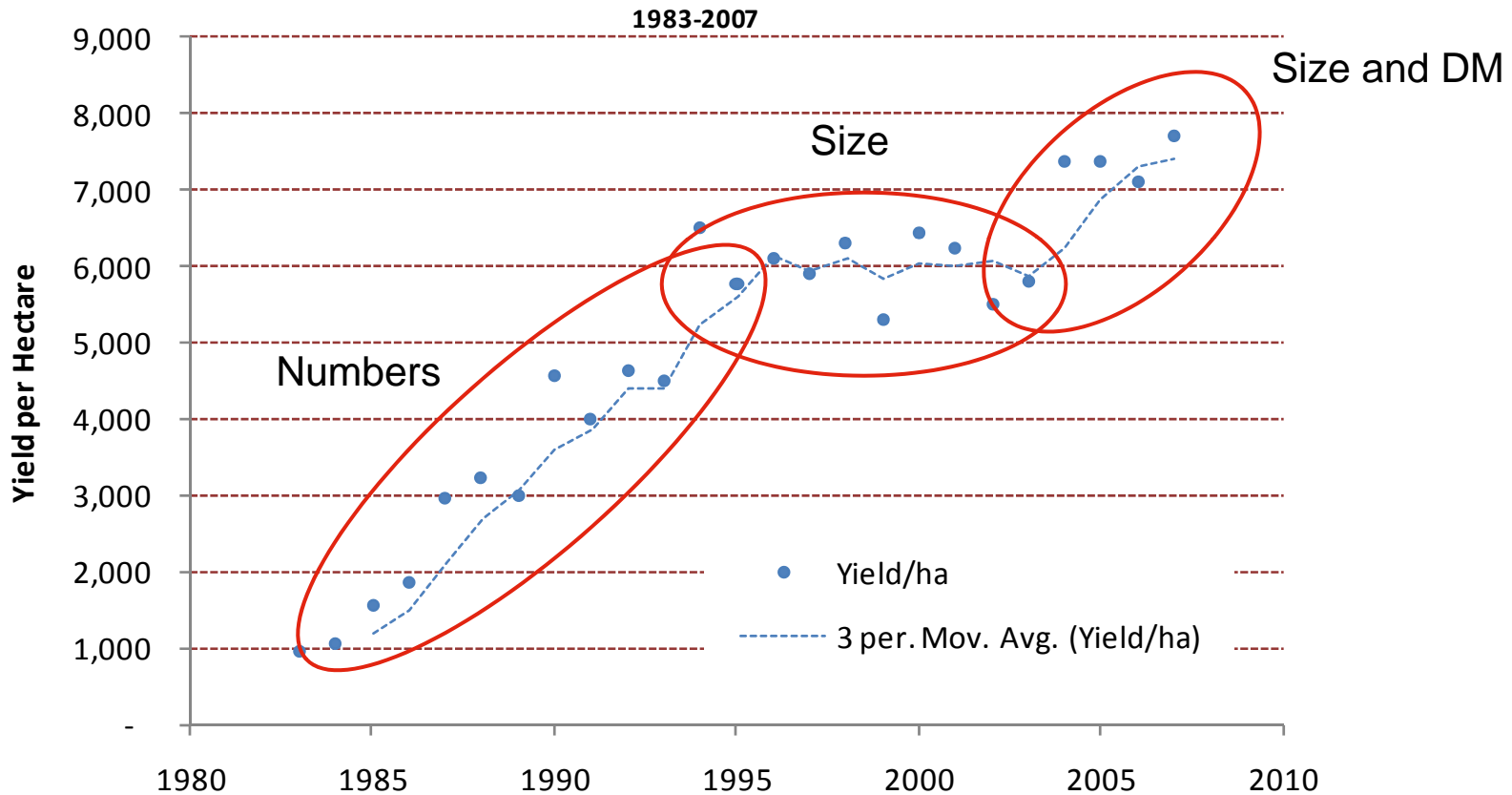
Research – underpinning Taste ZESPRI®



Variate	Influence
DM	63.5%
price	31.4%
size	4.6%
DM.price	0.5%

A history of both taste and productivity in one "clone"

NZ GREEN Yield per Hectare

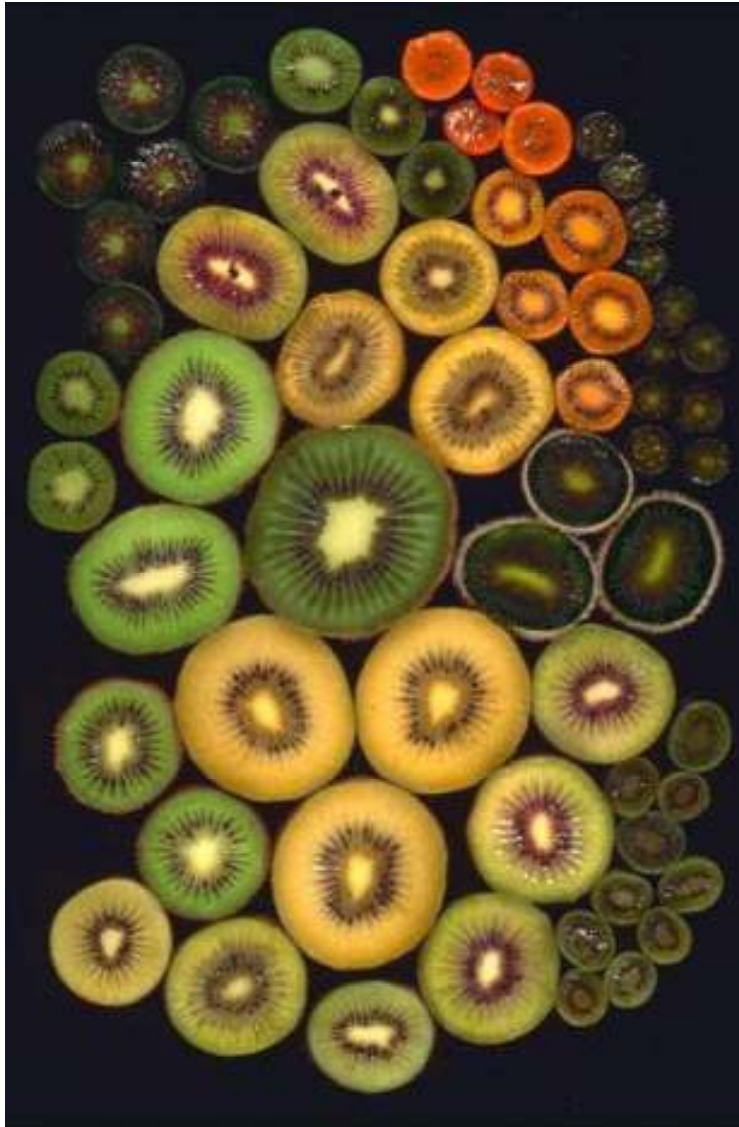


GREEN Yield has grown at 9.1% per year since 1983.

Acknowledgement: Mark Roxborough of Zespri



Challenge – finding a significantly new kiwifruit



Research - ZESPRI®Gold (market diversification)



Pre 1987 germplasm collections

1988 605 seedlings established

1991 first fruit produced

1993 clonal trial

**1995 PVR protection and grower trials,
consumer evaluation, new handling systems**

1998/9 test marketing

2000 first significant exports

**2005 nearly 28% by value of total
New Zealand kiwifruit crop**

2009 second greatest export fruit after ZESPRI®Green



**Cost >70M to develop,
~400M revenue 2008**

ZESPRI®Gold – why did it succeed

- Timeliness and speed (competition)
- Whole of industry approach to development
- Market (customer and consumer) knowledge
- Education at all levels
- Leaders taking risks
- No cannibalisation



What Next?

**New Green and Gold
must be BETTER than
Current**

**New colours, flavours,
health, convenience,
Eco**

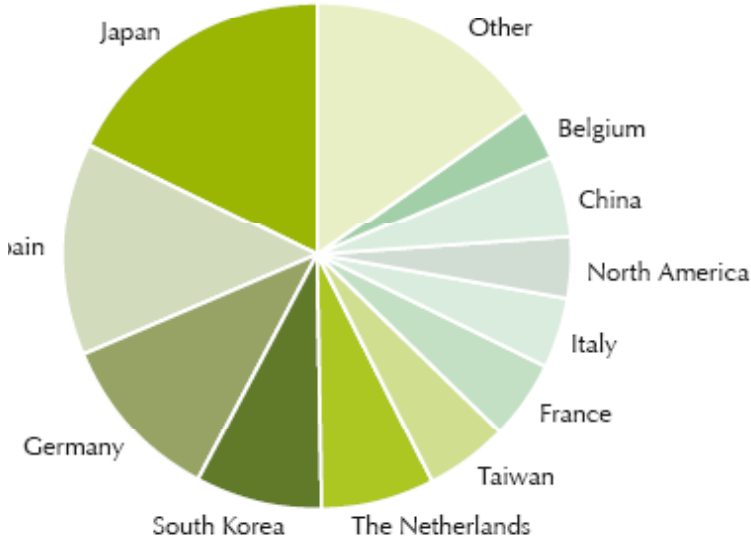
Critical Success Factors – a personal perspective

- Single point of exit from NZ – strength and integrity, single negotiation, leadership
- Identifiable brand – standards, price premium, long term objectives
- Industry unity – consistency of product, performance at all points in chain
- Growing to consumer – intimate understanding by all, sticks and carrots, differentiation
- Research well ahead of market need, but aligned, R and D internalised
- Risk taking and speed



Kiwifruit market development – A changing world

New Zealand-sourced ZESPRI™ Kiwifruit Sales Volumes



EU/Japan top end

“China could buy it all”



An “OUTSIDER” looking in with an export focus

Radiata pine is a dirty word - success because average and mixed genotypes?

Reliance on processing modifications for product diversity

Lack of cohesion in export – undercutting, no sense of a NZ industry/unity/research, growers separated from processors and sellers

Short term thinking, focus on cost, Govt responsibility

No broad understanding of export drivers in value chain

Reliance on history and comfort-zones, focus on NZ = declines with NZ decline





Does a NZ Forest Industry exist?

A new opportunity: Biorefineries

Speed matters – lead or follow?

Risk-taking needed (science and commercial)

Diversification – radical?

Unity in value chain for export value \$\$\$\$

Is it too late?

Is the path a different one?