



30

years of reaching  
new heights

MARLBOROUGH  
RESEARCH  
CENTRE  
Te Rito Hiranga o Wairau



MARLBOROUGH  
RESEARCH  
CENTRE  
Te Rito Hiranga o Wairau

annual report  
2013/2014

Our lives are continually gauged by milestones.

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Landmark events and the inexorable passing of time give us reason to pause and reflect on what we have achieved and, more importantly, the people we have had the privilege to meet along the way.

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As the Marlborough Research Centre celebrates its 30th anniversary, the Centre has experienced the loss of one its pioneers in John Marris, while simultaneously honouring John with the inaugural presentation of a new legacy, the Marlborough Research Centre Award. This annual award has been established to recognise achievement and commitment of individuals within the wine industry in this most progressive province.



2

Personnel

4

Organisational Structure

5

Marlborough Research Centre Trust  
Overview

9

Marlborough Man a Visionary:  
John Marris

11

Reflections on John Marris

13

Marlborough's VineFacts™  
Newsletter goes Nationwide

15

Recognising Excellence:  
The Marlborough Research Centre Award

17

Food and Beverage Innovation Cluster

21

Summary of Research

37

NZDFI Annual Report

43

Financial Reports

# contents

# personnel as at 30 June 2014

## MRC Trustees

Bernie Rowe	LL.B	Trustee - Chair June 2014
Edwin Pitts	Trustee	
Ivan Sutherland	VFM, ANZIV	Trustee - appointed June 2014
John Marris		Resigned December 2013

## MRC Board Members

Ivan Sutherland	VFM, ANZIV	Chairman
Edwin Pitts		Deputy Chairman
Brian Jordan	BSc(Hons), PhD, MRSNZ	Lincoln University
Warwick Lissaman	BCom, PG Dip Com	Pastoral Representative
Andrew Naylor	MAppSc (Vit)	Pernod Ricard Winemakers
Simon Hooker	BSc, MSc, PhD, Grad. Dip, Bus. Admin.	NZ Winegrowers
John Leggett	LL.B	Marlborough District Councillor
Roger Williams	BSc (Hons), PhD, PG Dip Leadership	Plant & Food Research

## MRC Group

Gerald Hope		Chief Executive
Maree Way		Executive Administrator
John Patterson	BCA	Associate MRC

## Rowley Vineyard

Trevor Skilton  
Bruce West

## New Faces

### John Leggett

Marlborough District Councillor John Leggett is currently chairman of the Marlborough District Council's Community and Finance Committee and, since late 2013, has been the Council's representative on the Marlborough Research Centre Board.



With a Bachelor of Laws from Canterbury University, John has been a partner in the Blenheim law firm Wisheart, Macnab & Partners since 1989. After almost 30 years practicing law in Marlborough, John has a broad client base including many involved in business and rural ventures in the region.

He is also a member of Council's Regional Planning and Development Committee which has responsibility for the implementation of Council's "Smart and Connected" Economic Development strategy.

Since his election as a District Councillor in 2010, John has become a strong advocate for the Centre in its role as a key driver in the district's economic growth.

### Roger Williams

Dr Roger Williams joins the Board of the MRC as a representative of Plant & Food Research, where he has been the General Manager of Science – Sustainable Production since early 2014.



Roger studied applied biological sciences at graduate and postgraduate level in the UK, gaining a PhD from the University of Sheffield. He has worked as a plant pathologist in a range of crops in the UK, at Horticulture Research International and Rothamsted Research, the world's longest-established agricultural research station. He subsequently held senior science management positions at the UK's Home-Grown Cereals Authority and later at the Royal Horticultural Society in Surrey.

Roger moved to New Zealand in 2012 to join the Foundation for Arable Research (FAR) as Director of Research Development. While at FAR, he developed a keen interest in sustainability issues, particularly in the impacts of central and regional government freshwater policy on primary production. Throughout his career Roger has focused on the application of plant sciences to practical problems facing the plant-based primary sectors. He is the company secretary for the British Society for Plant Pathology and a member of the governance committee of the Precision Agriculture Association of New Zealand.

**BUDGE STREET CAMPUS****Plant & Food Research**

Damian Martin	BSc, DEA, PhD	Science Group Leader
Mike Trought	BSc (Hons), PhD	Principal Scientist - Adj. Ass. Prof Lincoln Uni.
Rob Agnew	BAgrSc	Scientist
Jeff Bennett	BSc (Hons), PhD	Scientist - Adj. Lecturer Lincoln University
Marc Greven	BAGSc (Hons), PhD	Scientist - Adj. Lecturer Lincoln University
Dion Mundy	BSc, MSc (Hons)	Scientist
Claire Grose	BSc Viticulture & Oenology	Research Winemaker
Sue Neal	DipHort, DipFieldTech	Research Associate
Victoria Raw	BSc (Hons Agri), GDip(Vit)	Research Associate
Abby Albright	BSc, PhD	Research Associate
Sharlene Haycock	BSc Viticulture & Oenology	Laboratory Technician - Viticulture
Lily Stuart	BAG	Winery Technician
Cherryl Fitzgerald	BBus (Mgt)	Site Administrator
Richard Hunter	Dip Ag, JP	Maori Relationship Advisor
Rafidah Horner	MSc	Permanent Seasonal Technician
Rachel Bishell	BA(Hons), MA	Permanent Seasonal Technician
Margaret Roberts	BHSc	Permanent Seasonal Technician
Sybil Robertson	BSc(Hons), Dip. Vit & Oenology	Permanent Seasonal Technician
Trevor Skilton		Permanent Seasonal Technician
Bruce West		Permanent Seasonal Technician

**Marlborough Winegrowers Assn Inc (Wine Marlborough Limited)**

Marcus Pickens	BCom, Dip.Com	General Manager
Emily Hope	BScMSc	Marketing & Communications Coordinator
Meredith Elley	BCom	Events Manager
Nicolette Prendergast		Seasonal Labour Coordinator

**Sustainable Winegrowing NZ**

Sally van der Zijpp	MAppSc (Hons)	National Coordinator
Sandy McArthur		Membership Administrator
Hazel Thomson		Membership Administrator

**GROVETOWN PARK CAMPUS****John Patterson  
New Associate for MRC**

Marlborough financial analyst and project manager John Patterson is now based at the Marlborough Research Centre to continue his leading role in the facilitation and coordination of the Marlborough Food and Beverage Innovation Cluster.



The principal of Executive Finesse Limited, John has been working with the Cluster since it was established in 2013, relocating from the Blenheim central business district to the MRC Budge Street campus in May 2014.

John was previously part of the Marlborough District Council management team in the position of Corporate Planning and Finance manager. That included responsibility for economic development and John has played a leading part in many economic development initiatives in Marlborough including the Wine Research Centre of Excellence, Aviation Heritage Centre, Southern Valleys' Irrigation Scheme and the proposed Flaxbourne Irrigation Scheme. He was also involved in the negotiations leading up to the Te Tau Ihu Iwi Treaty of Waitangi settlement.

John established his own company in 2008. He has a keen interest in Marlborough and the economic development of this region. He takes a hands-on role assisting his clients and has strong working relationships with Council, government agencies, industry groups and businesses. John has a broad range of skills and knowledge which he is using to assist the Marlborough Research Centre Trust to strategically position itself alongside the food and beverage sector.

**AsureQuality Limited**

Peter Brunnsden

**Hill Laboratories**

Hugh Richards

**Nelson/Marlborough Fish and Game Limited**

Vaughan Lynn

**Marlborough Travel**

Chris and Sue Godsiff

**Ministry for Primary Industries**

Compliance and Resources (Fisheries)

- Chris Beal

Maori Primary Sector Partnerships

- Judith MacDonald

Verification Services

- Brian Roughan / Shirley Morrison

**Ngati Toa Wairau**

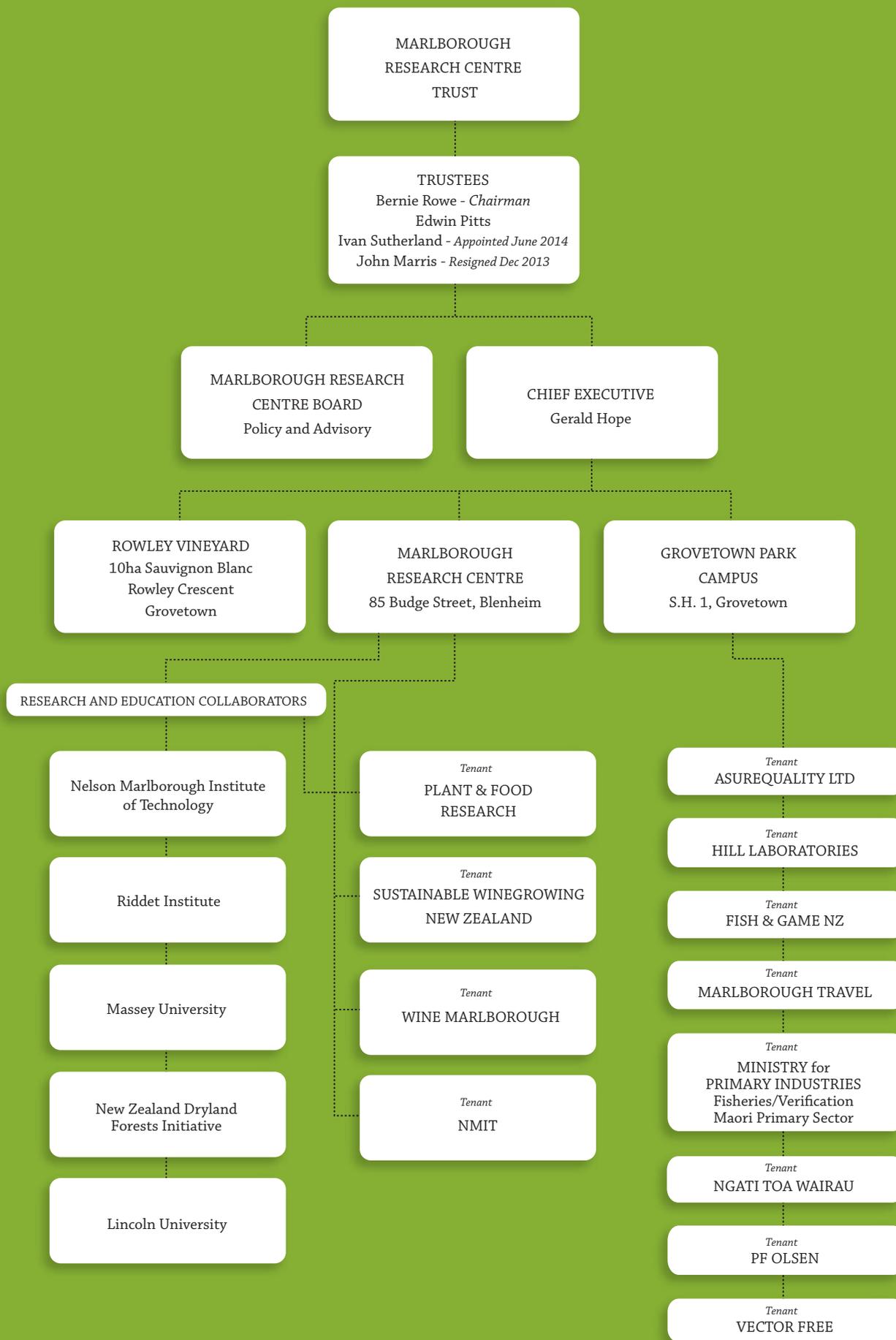
Johnny Joseph

**P F Olsen and Company Limited**

Mark Wybourne

**Vector Free**

Barry Polson



# organisational structure

# trust overview

MRC reached a milestone on 12 July 2014; the date marked 30 years since the deed was signed to formally establish the Marlborough Research Centre in a three-way partnership between MRC Trust, local and central government.

Interestingly, the three signatures on the original Trust document were those of John Marris, Edwin Pitts and local chartered accountant Philip Collins. The first two of those founding Trustees remained actively engaged for the three decades and it is fitting that the contribution made by John Marris and Edwin Pitts is recognised at this anniversary.

Part of this year's report pays tribute to the late Mr Marris, a leading viticulturist, property developer and keen innovator, who died on 26 January 2014. Many tributes were paid recognising his wide service to the district, his role in the development of a local research facility and his contribution as the long-serving chairman of the Trust. It is due, in no small part, to his sustained interest and active support that the Centre has survived and thrived to become a regional resource of great value.

**To mark the 30 year anniversary of the MRC and to recognise its contribution to Marlborough, it was decided to establish an Award to recognise exemplary service to this region, to be conferred from time to time where a recipient is found to meet the demanding criteria. The Award is also an opportunity to acknowledge the contribution made by Mr Marris and it will be known as the MRC-John E. Marris Award.**

## MRC Financial Report 2013 -2014

The Trust is pleased with the financial result for the year. A net surplus of \$421,255 has been achieved while completing a series of capital development projects resulting in new buildings and improvements at the Budge Street Campus and Grovetown Park.

The large surplus is due to the timing of wine sales from 2013 vintage and grape sales from 2014 (2013 year of \$387,180 as well as sale of grapes from the 2014 vintage of \$249,780). This will be the final year for this to occur and explains the very healthy surplus of \$314,469.

It should be noted that the main reason for the healthy surplus is that the income from two seasons falls within the one financial year due to the timing of wine sales from the 2013 vintage and grape sales from 2014.

Another significant outcome has been the relationship secured with Marisco Vineyards. It is important that grapes produced at Rowley Vineyard can be placed with certainty in future vintages. The relationship between MRC and Marisco provides certainty and association with a strongly performing winemaker and international brand. It also continues the links with Marlborough's Marris family.

Across both campuses tenancies have remained stable providing a strong cashflow which has underpinned much of the MRC Trust activity through the year. The Trust places great emphasis on retaining existing tenants and ensures that both campuses are well supported and serviced.

Over many years core tenants have remained loyal, even during difficult economic times. With greater economic activity now evident those businesses and organisations are well positioned to gain further commercial benefit or to build organisational capability through their alliance with the MRC Trust.

Surplus funds held by the Trust are channeled annually into locally-based research projects.

MRC maintains ongoing funding support for the Plant & Food Research projects listed overleaf and the New Zealand Dryland Forests Initiative.

For the duration of the MRC operations Marlborough District Council has been a co-funder with an annual grant of \$110,000 cash and additional support through the Rowley Vineyard land lease.

Another priority area for funding in the past year has been the implementation of the Food and Beverage Innovation Cluster project. Members of that group are also making a financial contribution as are several sponsors including national sponsor, ANZ. Total income from the FBI project was \$153,167 with costs of \$163,462, resulting in a net loss

of \$10,295. The next financial year is expected to incur additional costs in building greater momentum for the project. That cost, projected to be more than \$200,000, is expected to be fully funded by members, sponsors and supporting grants. Further detail is contained in the FBI report.

#### Research & project funding allocation includes MDC grant

Industry Seminars	14,000
Phenological Monitoring	27,000
SFF project Dryland Forests Initiative	10,000
NZDFI project	168,788
Meteorological Services	25,000
Food & Beverage Innovation	140,962
Riddet contract	22,500
Vinefacts Information	30,000
Grape Marc Ltd	12,386
<b>TOTAL</b>	<b>\$450,636</b>

The Trust's statement of financial position confirms a cash reserve of \$196,605 at balance date after completion of all the major building projects. Over the next three to five years reserves will be rebuilt to provide for further development and growth.

Trust assets have not been valued since June 2011 therefore this report brings valuations up to date by providing current fair values for all property and land where applicable. (Refer Note 4)

This is the second year of a major capital development programme that is now complete. This period of investment is the most substantial since the Budge Street Campus was constructed in 1984.

This year a total of \$621,914 was expended on new buildings and improvements. As previously reported, capital expenditure of \$900,000 has been fully funded from cash reserves over the past two financial years.

#### Implementation of Food & Beverage Innovation

Last year's report signalled the plan to launch a Marlborough Food & Beverage Innovation Cluster.

The Cluster concept was based on a report prepared by the Palmerston North-based Riddet Institute General Manager Mark Ward, entitled 'Food & Beverage Innovation – A vision and strategy for Marlborough'. This game-changing strategic report focussed on the potential for growth within some of Marlborough's top resource-based producers, particularly those in the viticulture and aquaculture sectors, by linking them to companies capable of extracting or deriving higher returns from their products.

The formal launch of the MF&BI Cluster took place on 24 September 2013 at the Marlborough Convention Centre before an audience of 200 guests.

The MRC-Cluster relationship aims to deliver innovation in the food and beverage sectors, focussing particularly in the areas of natural marine and seafood-based extracts and nutrients promoting human health and wellbeing.

MRC's relationship with Massey University through Vice Chancellor Steve Maharey remains strong and is well supported by Riddet Institute General Manager Mark Ward. The MRC Trust board endorses the direction of this relationship and is committed to working closely with Massey University in the years ahead.

By year's end, the Cluster was generating interest within the primary sector across the Top of the South with expressions of interest from future potential members.

#### Marlborough District Council

For the past three decades the Marlborough District Council, or its local government predecessors, have made an annual grant of \$110,000, as well as offsetting land lease costs for the Rowley Vineyard taking the value of total annual support to just over \$135,000. The initial grant was not CPI-indexed and has never been adjusted.

In this financial year Council funded an additional \$90,000 to support the implementation of the MF&BI strategy. For the 2014-2015 financial year, Council has again supported the project to the level of \$75,000 from its economic development 'Smart and Connected' budget. We acknowledge Council's support and interest in this work stream and appreciate Council's recognition of the importance to the region of the innovation strategy succeeding.

#### New buildings completed

The building and investment programme of the last 18 months is the single largest investment made by the Board since establishing Rowley vineyard in 2002 and completing the Budge Street campus in 2003.

Grovetown Park campus on State Highway 1 has had major extensions to accommodate the Ministry for Primary Industries staff, doubling their office area. The staff cafeteria, boardroom, ablution facilities and reception were significantly upgraded as well. Hill Laboratories, an anchor tenant, required approximately double the existing laboratory area plus additional offices. The expanded laboratories have enabled Hill's to grow its wine testing and analytical services for seafood and general testing on this site.

MRC's board is committed to investing in infrastructure to support tenant businesses to grow and maximise their full commercial potential under the MRC umbrella.

Grovetown Park is currently nearing maximum tenancy. With the increasing activity at the campus, the car parking area has been expanded to the east of the site, adjoining Hill Laboratories.

Other infrastructure investments made by the Board include installation of fibre optic cabling from the main highway to

provide high speed broadband to meet the connectivity requirements of several tenants.

The Marlborough Research Centre campus at Budge Street completed a two storey office block in December 2013. This long overdue suite of additional offices had been designed and tendered in 2008 before the economic downturn but postponed due to economic uncertainty. The project was revisited in 2012 and re-tendered, resulting in a very competitive tender being awarded to Haack Construction. Building began mid-2013 with MRC Trust and Wine Marlborough taking up occupancy in early 2014. The original upper floor plan was reconfigured to create two offices, a meeting room and a common area which can be used for as a reception area, for meetings and with access to kitchen facilities.

MRC Budge Street is now in a position to offer limited additional office space to existing tenants such as Plant & Food Research or other groups as required. The need for additional laboratory, wine making and storage is also being considered in consultation with existing tenants.

#### Rowley Vineyard

The 2014 vintage has been widely reported as being an exceptional year for grape volumes and quality. Crop load at Rowley was high compared to previous vintages and required thinning to maintain quality. A total of 165 tonnes of grapes was sold to Marisco Vineyards which has made a long term commitment to taking Rowley grapes.

#### Marisco Vineyard & MRC

Brent Marris is owner of Marisco Vineyards and son of John Marris. Over the past few years a strong relationship has been built between the two organisations, providing MRC with certainty for its grape sales. Equally importantly, the Trust is pleased to see the continued linkage between MRC and the Marris family. MRC values the relationship and looks forward to working with the Marisco Viticulture team and winemakers.

Trevor Skilton was appointed Vineyard Supervisor in October, replacing Bruce West who stood down from the position for health reasons.

#### F&BI report - collaborate / innovate / create

The Marlborough Food & Beverage Innovation Cluster was formally launched by the Marlborough Research Centre on 24 September 2013. The role of MRC, supported by the Riddet Institute and Massey University, is to:

- Assist to scope ideas and opportunities.
- Enable access to government and investor funding.
- Provide links to researchers and monitor of research programmes.
- Provide access to education opportunities and skilled labour.
- Enable access to intellectual property developed outside Marlborough. Supporting New Zealand Incorporated”

#### Existing and New Sponsors

Our national sponsor ANZ has keenly supported the cluster develop with Rob Simcic (regional manager) and Nick Kole becoming key team members and champions. As sponsors their enthusiasm and commitment is the sort of infectious energy that all businesses need.

Our regional sponsors, Crombie Lockwood, AJ Park, Radich Law, Leslie O'Donnell and Gascoigne Wicks are a key part of our success they providing the leverage required to service the cluster to achieve strategic growth.

The newest sponsor is Harcourt's Marlborough, Mark Davis and his team, to our regional supporters group. Harcourt's have had a long and proud history in Marlborough.

#### Change of Trustee

Respected Marlborough viticulturist and winemaker Ivan Sutherland was appointed to the Trust Board in June 2014 bringing the membership up to the quota of three. Mr Sutherland fills the vacancy left by the late John Marris.

An election for Trust Chairman took place in July 2014 and trustee Bernie Rowe was elected.



**Bernie Rowe**  
*Chairman*

## Marlborough Research Centre Board

As the Marlborough Research Centre marks its 30th year it is inspiring to see how much has been achieved - and exciting to contemplate the challenges ahead - as the Centre continues in its important role as a key contributor to Marlborough's economic development.

Since its early days, the Centre has gradually grown its capacity to meet the changes that have occurred in Marlborough. The diversity and complexity of the projects with which the Centre is associated today reflects the growing energy and enthusiasm for finding ways to fully realise the potential of the region's primary sector. The Research Centre is playing a pivotal role as that work expands.

Looking back to the words of the late John Marris five years ago, when the Centre reached its quarter century, I note that John Marris generously paid tribute to others for their role in bringing the Centre into being. His own role should not be underplayed. An early convert to the value of research, he fundraised tirelessly and remained devoted to the careful husbanding of the Centre's finances over its first three decades.

It is pleasing to see how the financial standing of the Centre has given confidence to our funders, including the Marlborough District Council, who can see that our work programme is well-aligned with the district's aspirations for regional development. We noted in particular the Council's 2013 Innovation Stock-take Report's comments that "the Marlborough Research Centre could become a research and business acceleration centre, supporting industry groups and export-focussed businesses".

As Trust chairman, John Marris maintained a careful and conservative approach to the Trust's resources; his strongly-held view was that research should be spread across horticultural and pastoral projects in Marlborough in keeping with the thinking behind the establishment of the Research Centre. Today, about 60% of the Centre's work programme is centred on viticulture but that is a reflection of the land use of Marlborough today. The Trust also maintains John's view that it should be open to new ideas, such as the huge potential of the NZ Dryland Forests eucalypt research project, but also to new ways of delivering results.

Increasingly, the Research Centre is becoming an umbrella organisation offering resources and infrastructure, providing opportunity for collaborative research and relationships to flourish. The Centre's role in bringing visiting scientists into the region and the fostering of links with university hubs outside the region provide valuable expertise to Marlborough.

From humble beginnings, our twin campus with its expanded facilities is regularly playing the role of catalyst; connecting organisations and individuals, linking local research with national and international experts and projects, providing channels and capacity where it is lacking in primary sector businesses. It is rapidly becoming a facilitator rather than simply a provider of primary sector research.

The official launch of the Food and Beverage Innovation Cluster illustrates that change. The launch ceremony, in September 2013, was a proud moment for the Centre and a significant step up in our role as catalyst for the future prosperity of this region. We have been very aware of the government's growth agenda and its interest in innovation and, by providing vital strategic support to businesses which are developing new processes and products from our primary sector, the Centre is again showing how it is able to encourage

and stimulate production from this region, albeit in a different manner to a directly funded research project.

The Centre does have a stake in the future of Marlborough so its programme will continue to look favourably at projects that help underpin the sustainability of winegrowing. Environmental sustainability is one of the fundamentals of the district's economic development strategy and it is vital for the future of the landscape of Marlborough.

The Centre will continue to deliver the kind of work on which it has built its reputation. Its contribution to the sustainability of the industry is well illustrated by one of its longest running projects; known today as VineFacts and delivered now by Plant & Food staff. This has provided Marlborough with 30 years of detailed climatic data, collated as part of a vine disease monitoring programme; an invaluable resource for the region's winegrowers. The worth of this kind of data has not escaped growers in other regions and it is satisfying to see NZ Winegrowers' enthusiasm to see our Marlborough model adapted and rolled out across other winegrowing districts.

We are moving into the last year of the Centre's current three-year strategy ending in 2015 having effectively dealt with all key areas targeted at connecting research and business in Marlborough.

It has been very satisfying to see the completion of our new office block at the Budge Street campus; the space is already being well used.

Once again I want to acknowledge the work of the executive team during the many changes of the last 12 months. I am confident that the Trust will stay true to the sound principles on which the Marlborough Research Centre was launched.



**Ivan Sutherland**  
*Marlborough Research  
Centre Board  
Chairman*

# marlborough man a visionary

Originally published in the Marlborough Express, January 22, 2014

John Marris has had a varied career in Marlborough, starting off as a shepherd at the Picton freezing works, and ending up as a property developer who has changed the shape of the region. Now seriously ill, he talks to Cathie Bell about his life.

From his bedroom window, John Marris can see across a sea of grape vines to the blue of the Richmond Ranges.

It's a daily reminder of the change of land use in Marlborough, one of the ways he helped change the province from being reliant on sheep farming and cropping to a horticultural hotspot, growing grapes for New Zealand's largest horticultural export.

The former stock agent was responsible for buying the pastoral farmland that Montana turned into the first commercial production of grapes in Marlborough in 1973. From that, the Marlborough wine industry has grown, producing 85% of all New Zealand wine, totalling \$1.2 billion in export earnings last year.

Mr Marris moved into property development, grew apples as well as grapes, set up a winery with a son and then sold it to Lion Nathan, and financed an electronic road user charges monitor company with two other sons, based in New Zealand and the United States.

His most recent success was the Westwood retail centre in Middle Renwick Rd. Home to big box stores Bunnings and Pak 'n Save, Westwood has changed the way Marlborough people shop, and now the Marlborough District Council is moving the development of town out to the northwest to match Mr Marris' and business partner Phil Robinson's vision.

John Marris came to Marlborough from Springfield when his mother and stepfather moved the family to Ngakuta Bay in the Marlborough Sounds. His first job was as a shepherd at the freezing works in Picton, aged 16, eventually becoming a stock agent in the mid-1960s, starting work in the Awatere Valley.

After that, he moved on to Montana and grapes, growing his own, and grew apples as well, at one stage being one of the biggest apple growers in Marlborough. He later turned that orchard into the Wither Hills winery with son Brent, which was later sold to Lion Nathan.



The Marlborough Research Centre, which was formally set up in 1984, came about because Mr Marris and others saw a huge need for research - particularly on grape vines, but also across the board, in forestry and pastoral agriculture as well, in recognition of the farmers that financially supported the centre when it was set up.

Montana's venture into Marlborough continually ran into problems because no-one knew anything about growing grapes in Marlborough for wine. Mr Marris tells of a series of problems that are hilarious to someone not personally involved in it.

The grapes were planted on a tight six-week timeframe, in what was one of the driest years in Marlborough. A million cardboard cones were bought to protect the young vines, which then either blew away in the wind or acted to concentrate the cold of the spring frosts on the vines rather than protect them. Hardwood stakes imported from Malaysia at vast cost turned out to suffer from brittleness and snapped,

having to be individually tested and replaced. And there was a long- running effort by Mr Marris and others to convince Montana to irrigate its vineyards.

"I thought, well, you know . . . they're all experts, they know all about grapes. I had to button up and go do my job and let them do their job . . .

"The more I looked at it, the more I thought, geez, do these guys know what they're doing?"

He insisted water was essential for the vineyards and if the vines didn't get water they wouldn't survive. "The two viticulturists were in unison saying they didn't need water. They don't have water in France, or Italy. I said you're not in France. When the nor'wester blows here, it's as hot as in Australia."

The only way he could win the argument over water with Montana was to do it himself. He and another grower put their own land into grapes, and installed irrigation.

"The vines just went whoosh. They flourished, grew, and within 18 months, we had our first crop. Montana was still looking for a crop at five years.

"At the end of the day, they said, well, you put your money where your mouth is, you put water in and proved it - put it in our vineyards."

Contrary to the general view, John Marris sees Marlborough as one of the most "water-rich" provinces in New Zealand, with the Wairau River fed from the West Coast.

Much of it flows underground, and out of sight, he said. "What I've seen has convinced me of the need to build in storage. I say that from the point of view that the run of river water is not good water. It can be blue one day and murky by the next. We're frequently pulling eels and trout out of the system.

"We need a more reliable system. Even though there's plenty here, it's belt and braces. We don't want to push it to the limit."

While high-profile retail development Westwood and housing developments, such as the Morven Lane and Fairbourne subdivisions, seem highly successful in hindsight, Mr Marris emphasises it was not easy.

"I've had several disasters on my hands.

"The real estate game, I can honestly say its hard work, disillusioning work. The RMA is just a killer. You just chomp through capital. Where it should go into the project, it goes to consultants, it goes to the council, and you end up with nothing in the case of Maxwell Heights. It just costs hundreds of thousands."

The Marlborough District Council has a reputation for being soft on businesses, but it puts developers through the wringer, with the system meaning the developer ends up funding council consultants to criticise their own projects.

Mr Marris feels particularly aggrieved about the proposed Maxwell Heights subdivision in the hills off the Taylor Pass Rd, a project that was declined by council and that Mr Marris is probably not well enough to take to the Environment Court.

He also finds upsetting the failure of council staff and consultants to include developers in town growth strategy planning.

"The problem is the lack of consultation . . . At the end of the day, who's going to do the development if the developer doesn't?"

The council had done a good job of developing its own Taylor Pass land, but they would run out of land, Mr Marris said. "Developers have got to think long-term. You need five, eight, 10 years. People like Phil and I are thinking 25 years out. "It's about seeing an opportunity, and is it worth it?"

Mr Marris is now seriously ill, and looking back on his life and what he's achieved, along with the family raised with wife Alison, he thinks it was all worth it. "I wouldn't change it. I wouldn't change any of it."

# reflections on john marris

Friends and colleagues of John offer their memories of this remarkable Marlburian.

## Sir Douglas Kidd

John Marris and I had both been active in the Marlborough community since we first met in the mid-1960s. He first came to me as a young stock agent based at Seddon in need of a solicitor on his purchase of a small holding. From those modest traditional Marlborough pastoral industry beginnings John caught the wave of innovation that reached Marlborough from the early 1970s - others were into marine farming and plantation forestry. Until then, diversification meant growing lucerne for the meal factory, garlic, and modest areas of cherries, apples and berryfruit. The total acreage was a fraction of that now in grapes.

John was the agent who brought Montana Wines as the 'mystery' buyer of several farms on the Wairau Plain. He played the role superbly. As in so many activities which followed, John was an agent of change challenging accepted ways of doing things, be it in orcharding or in where vineyards (or for that matter wineries) might be established.

Anyone who thinks outside the square, as John did so often, provokes resistance and opposition from those of a more conservative disposition. Never one to be discouraged, he pressed on to achieve so much despite, in later years, living in the shadow of the illness which eventually caused his death.

He gave generously of his time, talents, ideas and enthusiasm to the community as well as to advance the business interests of his family. His work as a trustee of the Marlborough Research Centre is typical of that community service. At the outset, when I was particularly involved, John was one of those, (another was the late R. K. (Bob) de Castro) who first saw the potential of the Research Centre in the early 1980s. It was only the rapid translation of the idea into action which saw the Centre established. In that, securing the old Redwood-town School block for a song, was a crucial step on the way.

The Marlborough Research Centre was to be one of several around the country but, unless my recollection fails me, it was the only one established. For that we can, in significant part, thank the late John Marris.

## Bernie Rowe

John Marris was a practical, down-to-earth man with a real drive to achieve whatever he set out to do and the Marlborough Research Centre was fortunate to benefit from a share of that energy.

He was a self-sufficient character, a self-starter who built up a huge amount of knowledge and expertise over the course of his lifetime. When an issue captured his interest he would become completely absorbed by it; his interest in water and irrigation for example led him to become extremely well-versed in the science of hydrology.

As a Trustee he was very interested in research and always open to new ideas. But he was also very strong on the need for clear objectives and good governance.

John was always extremely determined to achieve the outcomes he was seeking. He genuinely deserved his nickname "Rust" as his energy levels were remarkable; he was always on the go and he had the ability to really stick at something once he knew what he wanted to achieve. That said, he also had a rare quality; the capacity to deal with a setback, not blame others and to press ahead with the next challenge.

John was very much a hands-on Trustee, good at making his position clear and good at making decisions. He could be very particular and we always knew where he stood on issues; we also knew that he would be very determined on anything on which he felt strongly.

## Edwin Pitts

I first became aware of John's skills and integrity, when he was a stock agent for Pyne Gould Guinness Ltd in the 1960s, after he left the Picton freezing works where he had been a shepherd. We were farming in the Awatere Valley and relied heavily on John's hard work to continue our stock business beyond the farm gate.

I watched his move to real estate and marvelled at the alacrity with which the wine industry was established on former farming land, assisted by John's negotiating skills and good standing with the farmers.

At that time Marlborough relied on traditional agriculture but there was no tertiary facility here and no scientists on the ground. However John was already engaged in his own grape research with Montana and local horticulturist Bob De Castro had just returned from a research trip to Israel with new ideas about irrigation – and that needed local research. John, with

Bob, worked hard to get support from the local bodies of the time and, after knocking together the heads of the Department of Agriculture and the DSIR to get agreement, they also found local donors to help make the Research Centre a reality.

Horticulturalists were early beneficiaries of the Centre but John always reminded us that agriculture had provided the big donors and should receive due recognition.

John always impressed me as a person who gave priority to our regional environment and its future prosperity. His personal successes and frustrations reflected his ability to think quickly and act accordingly; other people and entities could not always match his foresight and enthusiasm.

As a Trustee for MRC he was quick to see opportunity even in unusual proposals and able to make quick decisions especially where seed funding could be applied and leveraged. Some of the Centre's unique successes are due to that special ability to see opportunity where others could not.

## Ivan Sutherland

John Marris played an integral part in the establishment of the wine industry in Marlborough.

He had an important role with Montana, not just responsible for its first vineyards but also as initial property manager overseeing the huge amount of land during Marlborough's transition to grapes. Montana bought a lot of land and the conversion from pastoral to viticultural use did not happen overnight so, in the early stages, John was looking after, not only Montana's first vineyards, but a massive amount of pastoral farming land as well.

As a contract grape grower he led the way for the small group of us who had joined him by the early 1980s growing grapes. He was always keen to extend our joint knowledge and understanding; he was part of a small group instrumental in

organising workshops and seminars, he ran pruning workshops and supported bringing knowledgeable industry people into the area and he was passionate about research. John had an unsurpassed enthusiasm and drive for his projects; he was deeply committed to Marlborough and a keen advocate for the district. He was a firm believer in managing the use of its natural resources and developing more understanding of the soils, climates and planting conditions, a strong believer in research at the coalface - the purpose of the Marlborough Research Centre. The fact that he was such an enthusiast with a determined approach meant not everyone agreed with him, but his approach was to just get on with it, regardless.

As well as having such a big hand in the introduction of a new crop and a new industry to this district, John was very supportive of the formation of the Marlborough Grape Growers' Association and an associated voluntary levy, with part of those funds directed to assisting research projects.

## Mike Trought

The Marlborough Research Centre is almost unique in New Zealand, being established by and for the local community. The Marlborough Primary Production report in the early 1980's, clearly identified the potential benefits of a regionally based research centre to provide a base for research and assist in the development of primary production. The establishment of the Centre required commitment, enthusiasm and funding by the local community. This was driven by a number of people and John Marris was central in guiding the development of the Centre from its inception.

I arrived in Marlborough in 1984 as the first scientist to be based at the yet incomplete building at Grovetown. I well remember my early interactions with John. He encouraged me and the other new staff to start to develop a research

programme, which could demonstrate to the community the rewards for their investment. Despite a strong commercial focus, John recognised the value of and need for a long-term research vision. His understanding of the Marlborough region provided a valuable "sounding board" when developing the direction of our programme. Much of the early viticulture projects undertaken at the Centre reflected his own involvement in the establishment of the Montana vineyards and his hunger for information and innovation.

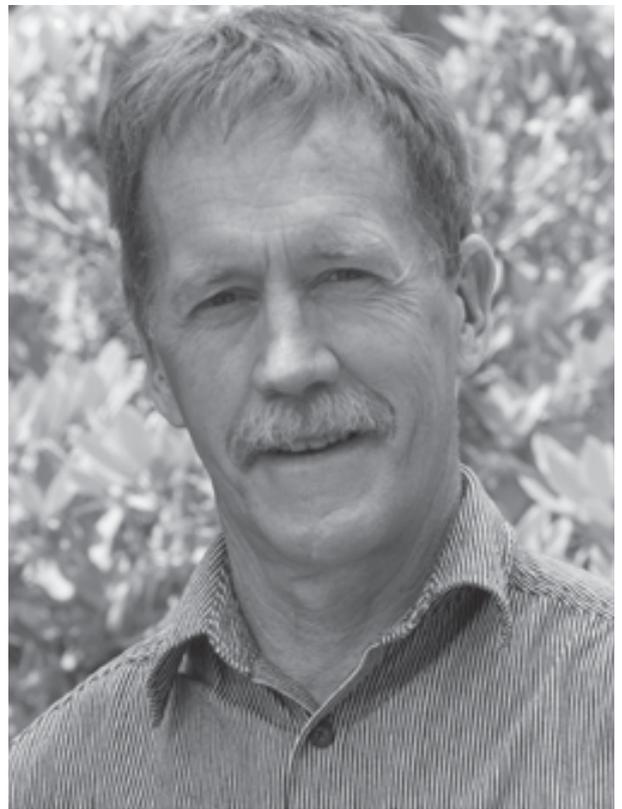
Despite his key role in the Marlborough Research Centre, John always worked quietly encouraging the community to see the value of the research. Under his stewardship, the Centre has continued to grow and innovate and today is internationally recognised in viticulture and wine science and is rapidly expanding into other areas of research. This legacy is in no small part a reflection of John's contribution over more than 30 years.

# marlborough's vinefacts™ newsletter goes nationwide

A Marlborough initiative that helped turn its wine industry down the path of environmental sustainability is to be extended to other wine regions.

The Marlborough-based VineFacts™ Newsletter has been supplying vital data to Marlborough grape growers since January 1997. Originating as part of the supporting infrastructure to a research programme to reduce pesticide use amongst grape growers, it has contributed significant economic benefit to the Marlborough industry. The research project was one of the Marlborough Research Centre's earliest success stories, changing standard vineyard practice of the time, slashing the use of pesticides and setting some benchmarks for the movement toward sustainable grape growing. The service continues to provide management advice on how to minimise problems from the main grape diseases.

Initially operating as a faxed information supply – VineFax – the bulletin relayed meteorological summaries from a small group of weather stations on vineyards from supportive grape growers. By 2009 about 130 Marlborough growers had become subscribers, and the service was communicating grapevine growth stage information from five sub-regional Sauvignon blanc vineyards to subscribers. This information helps subscribers to understand how the current season's climate compares with the long-term average. The consequential effects on the timing of vine development and yield potential enable vineyard and winery managers to adjust their management decisions throughout the growing season.



*Plant & Food Research scientist, Rob Agnew, who has been responsible for this project since its inception.*

Data collected from the reference blocks showed how seasonal weather conditions were the major driver of year-to-year variation in the quality, cost and volume of wine produced. Data helped growers understand how seasonal weather strongly influenced yield potential, the timing of the key grapevine phenological stages: bud-burst, flowering, véraison and harvest, as well as the timing and severity of pest and disease pressure. With accumulating experience it could be seen how the date of harvest of Sauvignon blanc could vary by up to five weeks between seasons and the

optimal window to harvest the region's crop could range from three to six weeks. That knowledge helped vineyards deal with the logistical challenges of such things as the timing of spraying to meet required withholding periods, timing of hiring of seasonal labour, understanding when the winery needed to be ready and its peak daily intake. The information is crucial, given that harvest date decisions determine wine quality and style with a tolerance of only one or two days in fine weather and as little as one day in wet seasons.



Today, still operated by the Plant & Food Research team based at the Marlborough Research Centre, the VineFacts™ Newsletter service is supported by about 250 subscribers, most within the Marlborough wine industry. However some also work for wine companies with interests in other wine regions and, in mid- 2013, a group of viticulturists from Hawke's Bay expressed an interest in receiving a similar service.

New Zealand Winegrowers submitted an application to the Sustainable Farming Fund for a national project entitled "Grapevine growth stage monitoring for prediction of key phenological events".

The application was successful and a three-year project is to run from July 2014 until June 2017.

The project will involve monitoring grapevine phenology in Gisborne, Hawke's Bay, Waipara, Central Otago – and Marlborough. It means that a network of reference blocks for phenological monitoring will be established spanning 90% of New Zealand's vineyard area and 90% of its varietal mix. All subscribers in each region will then be receiving the expanded national VineFacts™ Newsletter.

The project will transform the successful Marlborough VineFacts™ Newsletter from a regional to a national service while also extending its focus from Sauvignon blanc to other major grape varieties.

***The expansion of the VineFacts™ Newsletter is a New Zealand Winegrowers, Marlborough Research Centre and Plant & Food Research initiative supported by funding from the Ministry for Primary Industries Sustainable Farming Fund.***



# recognising excellence

The Marlborough Research Centre Award

# the mrc award

To mark the 30 years of the MRC and to recognise its contribution to Marlborough, an award has been established to recognise exemplary service to the region. The award will be conferred from time to time where a recipient is found to meet the demanding criteria.

The award is acknowledgement of the contribution to the Marlborough Research Centre made by the late John Marris and it will be known as the MRC-John E. Marris Award.

The award is in the shape of a beautifully mounted bronze of a NZ Falcon/Karearea, created by Christchurch sculptor Anneke Bester.

The Karearea was chosen to represent the award as our native falcon is known for being adaptable and versatile, a fast mover with great vision, a fierce defender of territory and one of the bravest and most aggressive of the falcon species – commendable attributes in those who take a leadership role to advance this region.

It is the Board's wish that this award comes to be seen as honourable recognition of the most meritorious contributors to this region, based on the following criteria:



*Pictured at the inaugural MRC Award ceremony, from left: Brent Marris, Alison Marris, Rt Hon Sir Douglas Kidd, Jane Marris, Donna Marris and Mayor Alistair Sowman.*

- The award is intended to recognise significant and exemplary service to Marlborough and the regional economy by any person, group or organisation.
- It is intended to recognise success in the fields of research and innovation or show vision for the development of regional strategies, or technology development and overall achievement in any given field.
- The award is predominantly focused on achievement in the primary and business sectors in general. Consideration will also be given to significant beneficial changes brought about in a social, cultural or environmental area.
- The successful recipient must have shown outstanding service and achievement in their chosen activity over a period of time that has contributed significantly to regional growth and development.
- The award will be given solely on merit and is seen to be a distinctive and prestigious award amongst peers as deemed appropriate by the trustees.
- The award will not necessarily be presented annually or even regularly if the criteria are not met.
- The Trust will seek nominations annually, prior to 31 July each year.

The inaugural award ceremony was held on 30 July 2014 to coincide with the 30th birthday celebration.

# Marlborough Food + Beverage Innovation Cluster /

Supporting NZInc.



collaborate  
innovate create

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The Marlborough Food & Beverage Innovation Cluster was formally launched by the Marlborough Research Centre on 24 September 2013. The role of MRC, supported by the Riddet Institute and Massey University, is to:

- Assist to scope ideas and opportunities.
- Enable access to government and investor funding.
- Provide links to researchers and monitor of research programmes.
- Provide access to education opportunities and skilled labour.
- Enable access to intellectual property developed outside Marlborough supporting “New Zealand Incorporated”.

#### Cluster Members:

- New Zealand King Salmon
- Marlborough Garlic
- Cuddon Ltd
- Renaissance Brewing
- Hill Laboratories
- Sanford Limited
- New Zealand Extracts Limited
- Dryfood New Zealand Limited
- Marlborough Grape Marc Limited

#### Significant Highlights 2013/14

- The Nuffield Scholarship awarded to John Murphy, General Manager of Marlborough Garlic, was a significant event for Marlborough Garlic and for John.
- National recognition of MF&BI in the New Zealand Institute of Food Science and Technology Awards 2014.
- Announcement of Tarac Technologies Limited as solution provider for Marlborough wine industry solid and residual liquid waste streams.
- Commercial arrangements developed between Sanford, NZKS and K9 Natural for new export products for the pet food market.
- Location and placement of food technologist in a Marlborough food company.
- Technology and production innovation initiatives progressed with the visits by heads of Massey University, Professor Don J. Cleland (Head of School of Engineering and Advanced Technology), Professor Richard Archer (Head of Institute of Food, Nutrition & Human Health) and Professor Simon Hall (Head of Institute of Fundamental Sciences) all engaging directly with companies during a visit in November 2013.

#### New Cluster Members

- Cloudy Bay Clams – the pioneer in the industry of harvesting surf clams along the coast of New Zealand. [www.cloudybayclams.com](http://www.cloudybayclams.com)
- VinWizard – internationally recognised as the proven leader in winery automation, monitoring and control. [www.vinwizard.us](http://www.vinwizard.us)



- National Craft Beer Cluster - five craft beer companies in the development stage of a new cluster, leveraging off the success of Cluster member Renaissance Brewing. Judged champion brewer for two years in a row, Renaissance has made a high-profile foray into crowd funding. [www.renaissancebrewing.co.nz](http://www.renaissancebrewing.co.nz)
- Marlborough Grape Marc initiative, supported by Wine Marlborough – this cluster has expanded during the year to include Delegats, Matua, NZ Wineries and Constellation, and has engaged Tarac Technologies Limited (Australia) to develop new product from vineyard waste. Tarac Technologies Limited established in 1930, the company provides environmental solutions and products and services to the Australian Wine Industry. It is an integral part of the Marlborough wine industry’s sustainability programme. A processing plant in Marlborough is due to be completed in 2016. [www.tarac.com.au](http://www.tarac.com.au)
- Chia Limited – producing a nutrient dense drink using Chia seeds, known to the Aztecs and Tarahumara people of Mexico for assisting in the endurance of long periods of physical exertion. [www.chia.co.nz](http://www.chia.co.nz)

#### Sponsors

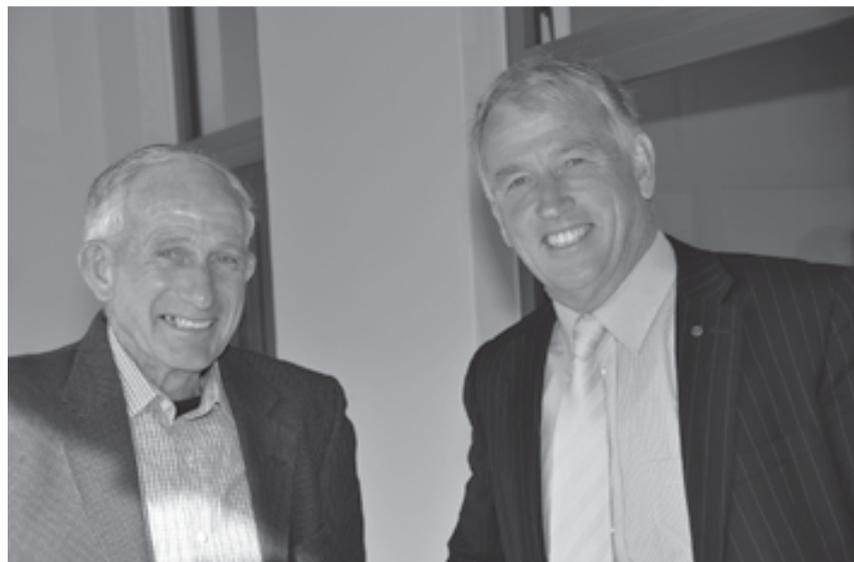
National sponsor of the Cluster - ANZ.

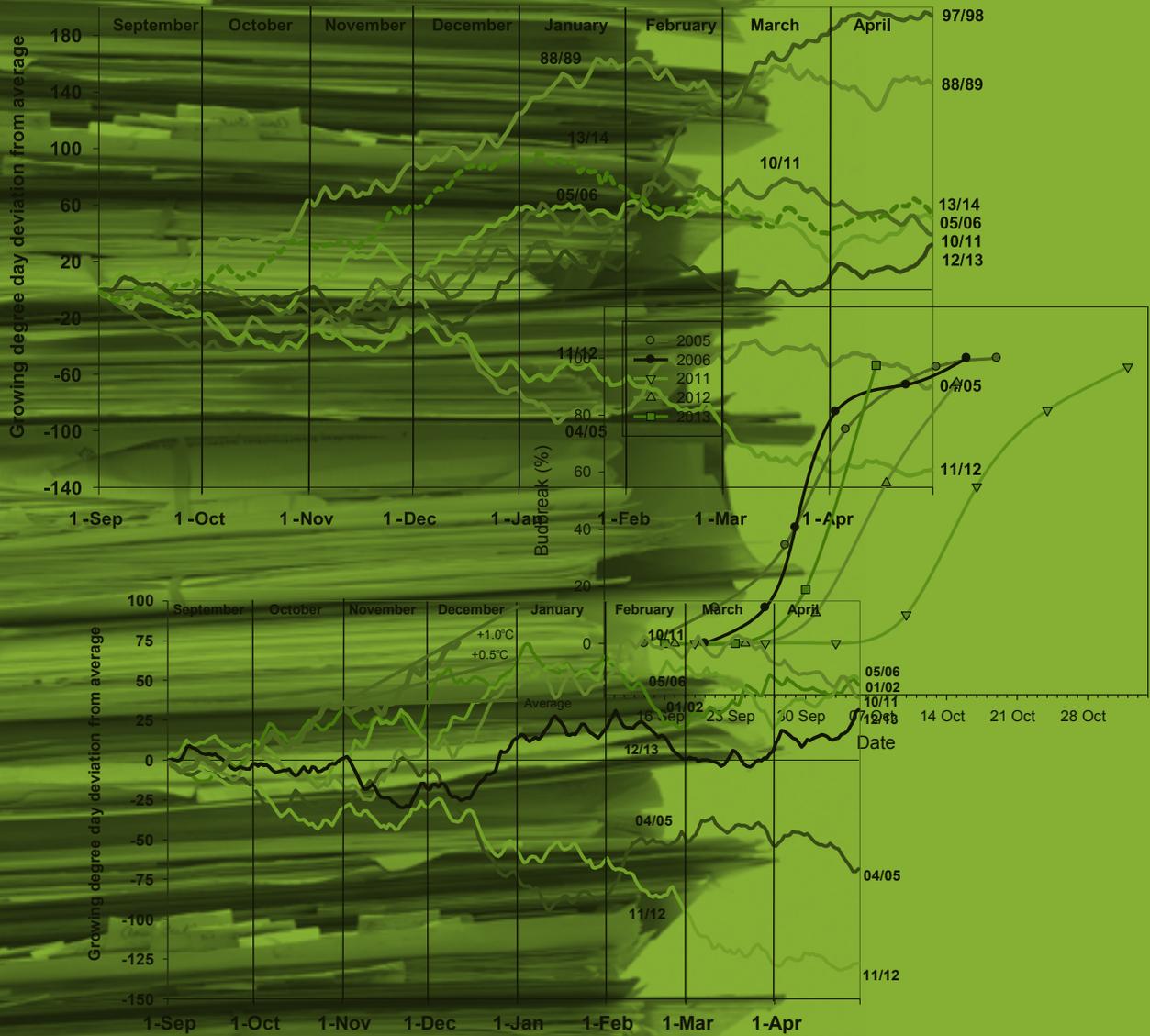
Regional sponsors - Leslie O’Donnell, Radich Law, AJ Park, Crombie Lockwood, Gascoigne Wicks and Harcourts Marlborough.

Our national sponsor ANZ has keenly supported the Cluster’s development with Rob Simcic (ANZ regional manager) and Nick Kole (ANZ agri-commercial relationship manager) becoming key team members and champions. Their enthusiasm and commitment has been invaluable to Cluster members.

The newest sponsor is Harcourts Marlborough. Principal Mark Davis and his team have had a long and proud history in Marlborough and we are confident the Cluster will benefit from their commitment to the region.







# summary of research

# marlborough meteorological services

Rob Agnew, Victoria Raw  
July 2014



## 1. Introduction

The Marlborough Research Centre Trust has funded the dissemination of weather information to the Marlborough community over the past two decades. This is a unique regional service in New Zealand that makes weather data summaries for the Blenheim weather station readily accessible to the people of Marlborough. The monthly press releases are used for radio and newspaper reports and are also provided to Marlborough District Council staff. These press releases along with monthly data summaries are posted to the Marlborough Research Centre website [www.mrc.org.nz](http://www.mrc.org.nz). The monthly

weather summaries form the basis of Met Report, an article that is written for Winepress, the Marlborough Winegrowers monthly magazine. Approximately 225 monthly Met Report articles have been written for Winepress over the past 20 years. Weather data are also used extensively as part of The New Zealand Institute for Plant & Food Research Limited's research programmes within the wine industry.

## 2.1 Temperature and growing-degree days

**Warmest year on record** – The average temperature for July 2013 to June 2014 was 13.9°C, which is 0.8°C above the long-term average (LTA) (Table 1). This is the warmest July to June year that Blenheim has experienced since records began in 1932. July to December 2013 were exceptionally warm. Each of these months were amongst the warmest on record: July 5th warmest, August 2nd warmest, September 9th warmest, October 8th warmest, November 5th warmest, December 12th warmest. June 2013 was also very warm. June, July and August 2013 were the warmest winter months ever recorded for Blenheim. January and March 2014 were cooler than average, followed by April, May and June 2014 all well above average. June 2014 was the second warmest on record. The warmest growing season (September to April) was 1998–99, with an average temperature of 15.7°C. The average temperature for September 2013 to April 2014 was 15.6°C, 0.5°C above the LTA. However, with regard to temperature, 2013–14 was essentially a season of two halves. This is

## 2. Weather Data Summary for the 12 months July 2013 to June 2014

The data in Table 1 present a summary of the main weather parameters for the 2013–14 year, for the Blenheim weather station located at the Grovetown Park campus of the Marlborough Research Centre.

Table 1. Blenheim weather summary for 2013/14

	LTA Rain mm	13/14 Rain mm	LTA Mean Max °C	13/14 Mean Max °C	LTA Mean Min °C	13/14 Mean Min °C	LTA Mean °C	13/14 Mean °C	LTA GDD	13/14 GDD	LTA PET mm	13/14 PET mm	LTA Sun hours	13/14 Sun hours
Jul	65.3	34.8	13.1	14.9	2.6	3.4	7.9	9.1	22.1	43.4	35.0	51.9	160.2	181.4
Aug	65.1	65.4	14.2	15.4	3.9	6.1	9.1	10.8	34.5	49.8	48.6	51	183.3	150.2
Sep	54.1	67.2	16.2	16.8	5.9	7.0	11.1	11.9	70.2	75.2	72.3	72.7	191.4	169.4
Oct	63.7	56.0	18.2	19.6	7.8	8.7	13.0	14.1	107.5	138	99.7	109.9	225.2	222.3
Nov	52.2	48.8	19.8	20.6	9.4	11.2	14.6	15.9	142.0	166.9	121.2	109.7	237.9	217.2
Dec	49.9	16.8	21.9	23.3	11.7	12.9	16.8	18.1	208.4	243.3	139.2	142.8	248.0	233.9
Jan	44.6	79.2	23.4	22.4	12.7	12.0	18.0	17.2	238.4	215.4	140.0	140.4	261.6	261.2
Feb	47.1	18.0	23.1	23.1	12.3	12.2	17.7	17.7	214.1	207.5	108.8	119.4	222.9	241.4
Mar	39.4	26.6	21.5	21.0	10.4	9.9	16.0	15.5	193.2	167.7	100.5	93.6	230.4	232.8
Apr	45.3	149.8	18.8	18.6	7.9	10.3	13.4	14.5	111.5	126.2	62.5	66.9	192.2	123.7
May	58.8	16.0	16.4	17.3	5.7	6.2	11.1	11.8	70.1	84.6	43.2	61.8	172.1	199.1
Jun	66.8	98.3	13.7	15.5	3.4	6.1	8.6	10.8	33.0	52.7	32.0	42.3	150.7	133.4
Total	652.4	672.4							1445	1570.7	1003	1062.4	2475.9	2366.0
Mean	July to June		18.4	19.0	7.8	8.8	13.1	13.9						
LTA comparison	103%		+0.6		+1.0		+0.8		109%		106%		96%	
Sept to April	Mean		9.7	10.5	20.3	20.7	15.1	15.6						
Sept to April	Total								1285.4	1340.2	844.2	855.4	1809.6	1701.9

LTA – long-term average Rainfall, Temperature, Sunshine (1986–2013), GDD – growing degree-days (1996–2013), PET – potential evapotranspiration (1996–2013)

indicated by the growing degree-day line for the 2013–14 season in Figure 1 (dashed green line). The first 4 months of the 2013–14 season (September to December 2013) were very warm, with a mean temperature of 15.0°C, which is 1.1°C above the LTA (1986–2013). September to December 1988 had a mean temperature of 15.3°C. Figure 1 describes the pattern of growing degree day (GDD) accumulation for eight seasons. The warm early start to the 2013/14 season led to an early bud burst and early flowering of grapes. At the end of December 2013 it appeared that the grape harvest in 2014 would be very early. However, in early January 2014 the period of sustained above average temperatures ceased and the second 4 months of the 2013/14 season (January to April) recorded a mean temperature of 16.2°C, 0.1°C below average. There were only a couple of short periods with well above average temperatures during the ripening period in 2014, as indicated by the upward blips of the red line in the middle of February and March.

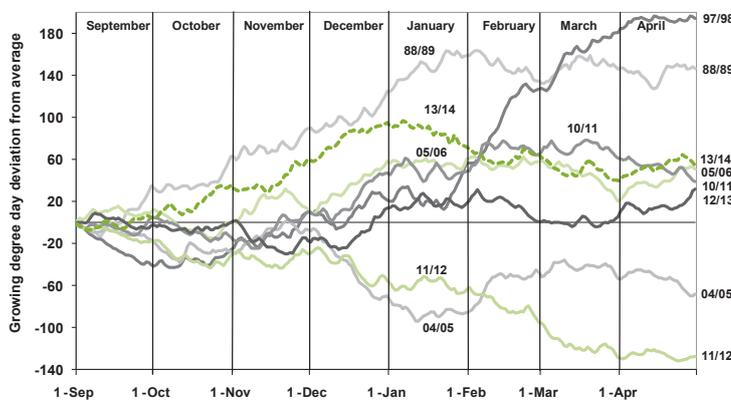


Figure 1: Growing degree days for Blenheim: days ahead (+) or behind (-) average: growing degree-day summation from 1 September to 30 April

**2.2 Rainfall**

Total rainfall for the 12 months July 2013 to June 2014 was 672.4 mm, only 20 mm higher than the LTA. However, total rainfall for the 12 months hides the fact that monthly rainfall was either well below or well above average in eight of the 12 months (Figure 2). Four months recorded well below average rainfall (December, February, March and May) and 3 months recorded well above average rainfall (January, April and June). April's total of 149.8 mm was 288% of the long-term average and the 4th highest April rainfall total on record for Blenheim for the 85 years 1930–2014. April's rainfall total was recorded

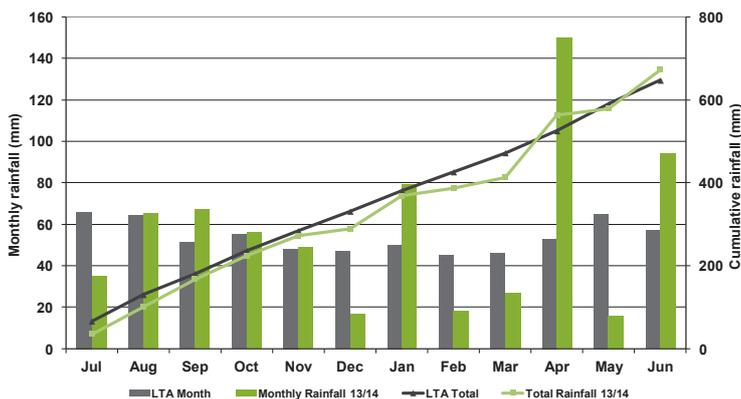


Figure 2: Monthly and cumulative rainfall for Blenheim from July 2013 to June 2014

over 23 days from 8 to 30 April and it was equivalent to the total rain over the preceding 131 days from 28 November 2013 to 7 April 2014.

**3 Dissemination of Information from this project**

The monthly press releases are emailed to the two Blenheim newspapers, two radio stations, the Marlborough District Council and an agricultural consultant. These press releases form the basis of articles in both newspapers at least once a month and news reports on the radio stations. The weather data summaries are posted to the MRC website each month and these are accessed by many people in the rural community, especially viticulturists and winemakers in the Marlborough wine industry. The summaries posted to the website are very comprehensive and save the enduser a large amount of time that they would otherwise have to spend sourcing the data from other sources. The data are often used by wine company staff for inclusion in seasonal reports. As a season progresses trends begin to emerge with regard to the temperature or rainfall profile that is developing. Those in the rural industries are able to adjust management decisions based on the climate data provided. The weather data are also used extensively by research scientists and students. The weather data forms the basis of the monthly Met Report article included in Winepress, the monthly magazine of Marlborough Winegrowers This magazine is circulated to approximately 1000 recipients in the local and national wine industry.

**4 Key Funding Sources**

- Marlborough Research Centre Trust*
- The New Zealand Institute for Plant & Food Research Ltd*
- Marlborough Winegrowers*
- National Institute of Water & Atmospheric Research (NIWA)*  
*(annual calibration and maintenance of the Blenheim weather station)*



**2 Key results from 2014 and dissemination to industry**

**2.1 Monitoring of key phenological stages of Sauvignon blanc grapevines**

Phenological monitoring of grapevines in the 2013-2014 season included:

Weekly budburst assessments over the six weeks from 16 September until 14 October 2013

Twice weekly flowering assessments over two weeks from 26 November until 10 December 2013

Weekly berry samples over 11 weeks from pre-véraison through until harvest, from 22 January until 9 April 2014, to measure berry maturity (soluble solids content, titratable acidity and pH).

The budburst, flowering and berry maturity data were collated and tables summarizing the data across nine seasons, from the six sub-regional vineyards, were included in VineFacts™ Newsletter in the week following data collection. A limited amount of data from the Squire Estate vineyard in central Rapaura are included in this report as examples of the comprehensive tables and graphs that were presented in the VineFacts™ Newsletter.

**2.2 Budburst**

The following summary information and graph with regard to budburst in 2013 were included in VineFacts™ Newsletter Issue 2, 10 October 2013:

With the very warm weather over the first week of October 2013 the progression of budburst on the Sauvignon blanc was very rapid, more so than in any of the previous year's 2005–12. As a result of the rapid progression in budburst over the period 1–7 October 2013, budburst in 2013 has largely been completed ahead of a number of recent years

Figure 2 presents six years of budburst data at the Squire Estate regional vineyard. The lines chosen provide a contrast between years with early and late budburst and also the speed with which budburst progressed

Earliest 50% budburst was on 27 September 2006 (black line) and latest was on 14 October 2011 (pink line), a difference of 17 days

The budburst assessment on 30 September 2013 (green line-19%) was similar to 1 October 2012 (blue line; 11%). However, the green line for 2013 is steeper than in most other seasons, indicating the rapid progress of budburst this year on the Sauvignon blanc over the past week. 100% on 7 October 2013 compared with 56% on 8 October 2012.

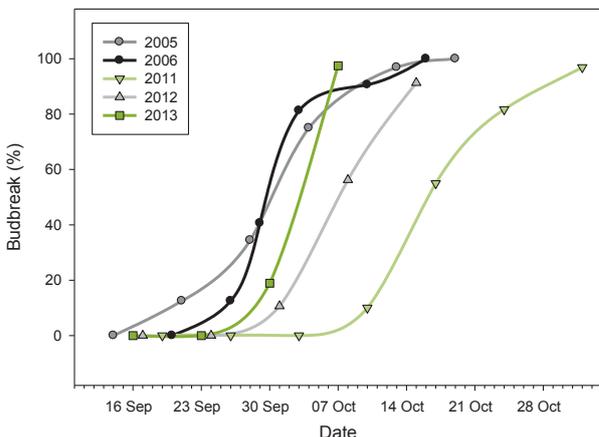


Figure 2: Budburst progression of 2-cane pruned Sauvignon blanc vines at Squire Estate regional vineyard in selected years

**2.2.1 Flowering**

The following summary information (text and Table 2) with regard to flowering in 2013 was included in VineFacts™ Newsletter Issue 10, 5 December 2013:

Assessment	Mid Rapaura - Squire								
Dates: 2013 in bold	05	06	07	08	09	10	11	12	13
22 - 25 Nov		1							.04
26-28 Nov		5							4.6
29 - 30 Nov	2.7	27							11.8
1 - 3 Dec	20		2	NA		1.2	0		66.5
4 - 6 Dec	86	56	11	30		54	0.3	0.1	
7 - 10 Dec	100	72	59	62	3	66	0.8	2	
11 - 13 Dec		78	90	92	13	90	9.9	42	
14-18 Dec		95	98	96 99	50 77	97	35	80	
19-21 Dec		98			93		70	96	
22-25 Dec					95		90	100	
26-28 Dec							98		

Table 2: Comparison of flowering progression for Sauvignon blanc at the Squire Estate vineyard in 2013 compared with previous seasons.

**Flowering Progress in 2013**

Current indications are that capfall is progressing quite rapidly in 2013 on the monitored Sauvignon blanc vineyards and it appears as if it should be largely completed at the five vineyards on the Wairau plains by Tuesday 10th December. Last week I mentioned that the start of flowering in 2013 was on a par with 2006. As expected, flowering is progressing more rapidly in 2013, with temperatures a lot warmer than in 2006. On Tuesday 3 December flowering also appears to have been slightly ahead of 2005.

**Note the following as a guide:**

50% flowering at Squire Estate vineyard on 2 December 2013. Average duration from flowering to véraison (2005-2012) is 68 days; 2 Dec 2013 + 68 days = 8 Feb 2014

Average duration from flowering to harvest (2005-2012) is 109 days; 2 Dec 2013 + 109 days = 21 March 2014 (21.5 Brix was on 30 March 2013 at the Squire vineyard)

In the warm 2005–06 season, the duration from flowering on 4 December 2005 to 21.5 Brix on 9 March 2006 was only 95 days (Harvest was slightly later at a higher Brix on 13 March). At this relatively early stage in the season we were able to signal that the harvest in 2014 was going to be early.

**2.2.2 Grape maturity**

On a weekly basis over the ripening period, berry samples were collected at each of the six sub-regional vineyards. Berry maturity indices (soluble solids, titratable acidity and berry weight) were presented in VineFacts™ Newsletter each week and the maturity progress in 2014 was compared with previous seasons. Figure 3 (for each individual vineyard) was repeated in VineFacts™ Newsletter during February and March 2014 to indicate the progress of soluble solids on a weekly basis.

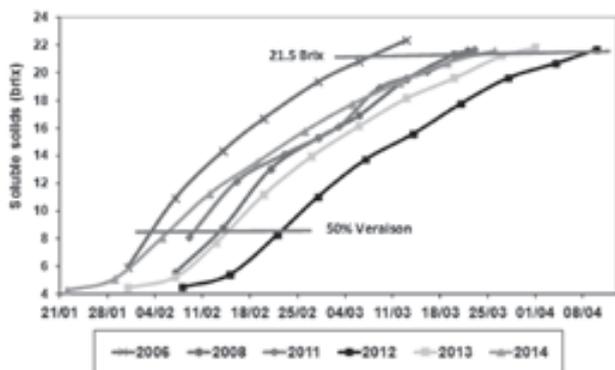


Figure 3: Berry soluble solids progression of 2-cane pruned Sauvignon blanc vines at Squire Estate regional vineyard in selected years.

On 20 February we commented as follows:

*It is interesting to note that the soluble solids (Brix) at the end of January 2006 (purple line) and January 2014 (green line) were the same; both early seasons. However, the Brix progression in 2006 was more rapid in early February than has been the case in 2014. Is this a yield effect? Yield at Squire Estate in 2006 was one of the lowest of the 10 years for which we have data. Ripening at Squire Estate over the past week, 2014 (+3.15 Brix) was slower than in the corresponding week last season, 2013 (+3.4); and 2006 +5.0 Brix.*

Then on 13 March we commented:

*The soluble solids (Brix) at Squire Estate were about the same at the beginning of February 2006 and 2014. However, at 12 March 2014 (6 weeks later) the Brix is now about 12 days behind 2006, similar to where it was on the same date in 2007, 2008 and 2011.*

### 2.3 Prediction of key phenological events

With phenology data having been collected from 2005 onwards, we now have summaries of the average dates of budburst, flowering, véraison and harvest over ten seasons. Using the dates of budburst and flowering and growing degree-day totals between those two phenological stages, Dr Alistair Hall of Plant & Food Research, Palmerston North, developed a flowering prediction model. This model has been used in VineFacts™ Newsletter over the past two years. This model was described in the 2013 Phenological Monitoring report and is also described in the 2014 VineFacts Information Services report.

Using the average dates of budburst, flowering, véraison and harvest across 10 years we are able to derive the average number of days between each of these phenological stages for each of the sub-regional vineyards. Using these data early in the new growing season in association with the growing degree-day progression we are able to estimate the dates of véraison and harvest with reasonable accuracy. Columns 1 to 3 in Table 3 appeared in VineFacts Newsletter Issue 12, 19 December 2013 with predictions for the dates of véraison and harvest in 2014. At this stage in mid-December we were able to indicate that as budburst and flowering in 2013 had been very early that véraison and harvest in 2014 would also be early. Providing approximate dates for véraison and 21.5° Brix seven and eleven weeks, respectively, prior to their occurrence allowed viticulturists and wine companies to adjust management in anticipation of an early harvest.

Phenological stage/ Duration	Average nine years 04/05 - 12/13	Predictions on 19 Dec	13/14 Actual Dates
50% Budburst	5-Oct		3-Oct
50% Flowering	9-Dec		2-Dec
50% Veraison	16-Feb	4-Feb	5-Feb
Yield per vine (kg)	4.7		6.8
Calc. Date 21.5 Brix	27-Mar	18-Mar	25-Mar
BB to FI - Days	64.9		60
FI to V - Days	68.9	65	65
V to 21.5 Brix-Days	39.7	42	48
FI to 21.5 Brix-Days	108.7	107	114
BB to 21.5 Brix-Days	173.4	167	174

Table 3: Phenology summary for Squire Estate vineyard for nine seasons (2004-2005 to 2012-2013) in comparison to the 2013-2014 season. Predicted dates of véraison and 21.5° Brix compared with actual dates.

Table 3 was presented in VineFacts™ Newsletter Issue 28 on 10 April 2014 after the regional vineyards had been harvested. Actual dates of véraison and harvest were included in order to indicate how accurate our predictions had been back in mid-December. The following summary accompanied Table 3 on 10 April.

#### 2014 season at Squire Estate

*Budburst to flowering interval was 60 days, 5 days shorter than average  
Flowering to véraison interval was 65 days, 3.8 days shorter than average, and exactly what we predicted  
Véraison to 21.5 Brix interval was 48 days, 8.3 days longer than average, and six days longer than we predicted*

*It is interesting to note that the total duration of the 2014 season from budburst to 21.5 Brix was 174 days, right on the average duration of 173.4 days. The fact that the duration from véraison to 21.5 Brix was 8.3 days longer than average was predominantly due to the very high crop load in 2014. 6.8 kg/vine from the 2-cane pruned vines is the highest yield per vine of any of the 10 seasons 2005-2014 and 145% of the average yield of 4.7 kg/vine.*

### 2.4 Yield components

The final aspect of the phenological monitoring that occurs each season is the measurement of the yield components at harvest (yield per vine, bunch number per vine, average bunch weight, berry number per bunch, average berry weight). Prior to the commercial harvest in each of the vineyards we hand harvested eight 2-cane and eight 4-cane bays. The monitored bays within the vineyards are excluded from any yield reduction that may have taken place on the rest of the vineyard. We are endeavouring to measure the yield components that are determined by the climate without any vineyard management intervention. With ten years of data we now have a comprehensive record of the variation in the yield components from season to season within each of the six sub-regional vineyards.

Yield component summaries for each of the vineyards were included in VineFacts Newsletter Issue 29, 17 April 2014. Table 4 presents the data from the Squire Estate vineyard.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean 05-13	2014	2014 % of mean
Yield per vine (kg)	8	4.9	5.6	7.4	8.4	7.4	8.1	7.3	6.9	7.1	9.4	132%
Bunch number per vine	76	56	75	59	70	59	57	74	60	65.1	64.9	100%
Average bunch weight (g)	105	86	75	125	120	125	143	99	115	110.3	144.7	131%
Berry number per bunch	59	47	40	60	61	63	70	52	59	56.8	65.7	116%
Average berry weight (g)	1.8	1.83	1.9	2.1	2	2	2.03	1.91	1.96	1.95	2.2	113%

Table 4: Yield components for 4-cane pruned Sauvignon blanc at Squire vineyard over ten seasons.

Squire Estate 2014 - Yield per vine, average bunch weight and average berry weight are the highest of the ten years. Berry number per bunch 2nd highest of 10 years

### 3 Future work

In mid 2013 viticulturists from Hawke's Bay expressed an interest in seeing the collection and communication of phenological information take place in their region. With this in mind, New Zealand Winegrowers submitted an application to the Sustainable Farming Fund for a national project entitled "Grapevine growth stage monitoring for prediction of key phenological events". This project was successful in obtaining funding and will run for three years from July 2014 until June 2017. The project will involve monitoring grapevine phenology in Gisborne, Hawke's Bay, Marlborough, Waipara and Central Otago. The aim is to establish a network of reference blocks for phenological monitoring that spans 90% of New Zealand's vineyard area and 90% of its varietal mix. The information will be communicated back to subscribers in each region through a national VineFacts™ Newsletter. The Marlborough Research Centre Trust funding for phenological monitoring is an essential cash contribution to this new Sustainable Farming Fund project.

### 4 Summary

#### *2013-2014 growing season in summary*

The 2013-2014 growing season began early due to very warm growing temperatures from July to December 2013. The duration of budburst was the shortest of the ten years and as a result budburst was completed early. Flowering began early and on a similar date as in December 2005. In early December 2013 the VineFacts™ Newsletter indicated that an early flowering in 2013 was likely to lead to a very early harvest in 2014. The date of véraison in February was also very early but the period from véraison to harvest in 2014 was considerably longer than normal due to very high crop loads on the vines.

The 2013-2014 season was divided into two halves. The first half was much shorter than normal due to warm weather, the second half was longer than normal due to slightly below average temperatures and high crop loads.

#### *Value of the phenology data to the Marlborough wine industry and other research projects*

The Phenological Monitoring project funded by the Marlborough Research Centre Trust is proving to be of great value to the Marlborough wine industry. The ten years of data that has been collected from the Sauvignon blanc sub-regional vineyards is being communicated to VineFacts™ Newsletter subscribers on a weekly basis throughout the growing season. By informing viticulturists and winemakers with regard to how early or late a season is they are then able to adjust management decisions. The data are also now being extensively used in the development of phenological models by Dr Amber Parker, who is based with Plant & Food Research at Lincoln. Having the phenological and climate data from the Marlborough vineyards available has also enabled a joint climate modelling project between Canterbury University and Plant & Food Research to proceed. It is also leading to the establishment of a nation-wide grapevine phenology monitoring network.

### 5 Key funding sources and collaborating companies

*Marlborough Research Centre Trust  
The New Zealand Institute for Plant & Food Research Ltd.  
Pernod Ricard New Zealand Limited  
Villa Maria Estate Ltd  
Oyster Bay Wines New Zealand Ltd  
New Zealand Winegrowers*

# VineFacts™ information services

Rob Agnew, Victoria Raw  
July 2014



## 1 Introduction

The commercial name by which the VineFacts Information Services contract is delivered to clients has undergone a couple of name changes over the past two years. Up until 2012 the service was known as VINEFAX, a reflection of the fact that the service was for many years delivered to clients by fax. At the beginning of the 2012-2013 season the name was changed to VineFacts. With the service having gained widespread recognition within the New Zealand wine industry, the decision was made in the 2013-2014 season to incorporate the Trade Mark symbol (™) into the name in order to provide a measure of protection to the name. The service became known as VineFacts™ Newsletter. As in previous years, the VineFacts™ Newsletter was sent out on a weekly basis from October until the end of April. The financial management of subscriptions is handled by the Marlborough Research Centre (MRC) Trust. The provision of the weekly newsletter is written and delivered by The New Zealand Institute for Plant & Food Research Limited, under contract to the MRC Trust.

The 2013-14 season was the 18th year of publication. The primary focus of the content relates to reporting the phenology of Marlborough Sauvignon blanc in relation to the seasonal temperature profile. Other content includes; a flowering prediction model, Botrytis Decision Support (BDS) model, vineyard soil moisture updates, seasonal climate outlooks, Marlborough-based viticultural research updates and notification of MRC seminars.

## 2 Key results for 2013-2014

### 2.1 Growing Degree Days

Thirty weekly issues were distributed during the season to 282 recipients. Nearly all the recipients were Marlborough based. However, as many of the subscribing wine companies have vineyards in other New Zealand wine regions, they are also interested in how the season is progressing in these regions. The weekly Weather Watch table included rainfall and growing degree day (GDD) summaries from 14 Marlborough weather stations as well as summaries from another seven New Zealand wine regions (Table 1).

Figure 1 was included in VineFacts™ Newsletter Issue 7 on 14 November 2013. The graph indicates the deviation in GDD for a number of seasons in comparison to the long-term average (LTA). Due to popular demand from VineFacts subscribers, this graph was updated and included on a fortnightly basis

From VineFacts™ Newsletter, Issue 28 – 10 April 2014

Location	Weekly GDD	Total GDD	Weekly Rainfall (mm)	Total Rainfall (mm)
Awatere – Redwood Pass Rd	30.1	1309.7	16.2	487.3
Awatere – Delegats Dashwood	29.6	1275.8	20.2	556.2
Awatere – Seaview	29.6	1245.4	16.2	512.6
Awatere – Tohu	27.8	1144.5	36.1	744.6
Rarangi	30.1	1341.5	22.2	640.6
Blenheim	32.9	1351.5	17.8	430.7
Brancott	31.5	1313.9	24.0	443.6
Woodbourne	28.8	1291.2	28.0	594.4
Matthews Lane	31.0	1315.2	23.1	548.8
Stoneleigh	31.6	1331.1	26.2	598.0
Pauls Road	31.9	1314.2	25.4	642.7
Oyster Bay	31.0	1293.1	26.8	639.8
Waihopai Valley	30.4	1275.9	22.6	468.0
Upper Wairau Valley	28.7	1148.7	23.9	745.0
Cromwell – Central Otago	27.3	1095.9	8.3	285.3
Lincoln – Canterbury	27.3	1059.2	44.1	509.0
Richmond – Nelson	39.6	1337.8	16.0	586.8
Martinborough – Wairarapa	33.7	1288.6	40.6	552.3
Havelock North - Hawkes Bay	51.1	1504.1	52.3	731.8
Matawhero – Gisborne	53.8	1657.9	89.8	951.8
Pukekohe – Auckland	49.6	1480.4	11.5	783.3

Table 1: Weather Watch (for the week 17/04/14 to 23/04/14)

Note: GDD = Growing Degree Days; are calculated from average hourly temperatures - Total Rain and Total GDD are taken from 1 July 2013.

throughout the season. The red line in Figure 1 indicated how warm the season had been from mid-September until the end of October 2013.

Temperature projections for November and December 2013 (red straight lines) were included on the graph to indicate where the GDD line may progress given average or above average temperature scenarios and these were compared with similar temperature scenarios for the previous season (black straight lines). Figure 2, included on 12 December 2013, updated how the GDD line had progressed over the previous month, indicating that the temperature had been approximately 1°C above the long-term average. By observing the progression of the GDD line throughout the season, subscribers were able to observe the prevailing temperatures during important grapevine growth stages. One of the main things that VineFacts communicates to subscribers is the interaction between temperature (GDD) and grapevine phenology.

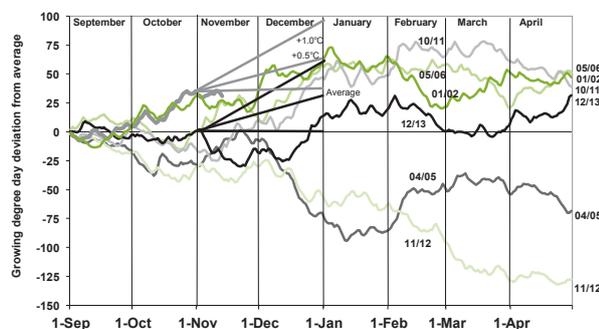


Figure 1: Growing degree days for Blenheim: days ahead (+) or behind (-) average.

Growing Degree Day summation starting from 1 September  
As included in VineFacts™ Newsletter Issue 7, 14 November 2013.

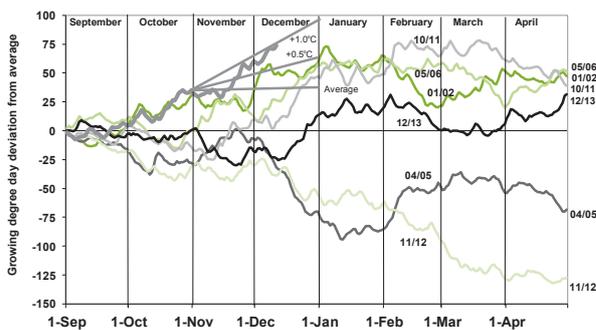


Figure 2: Growing degree days for Blenheim: days ahead (+) or behind (-) average Growing Degree Day summation starting from 1 September

As included in VineFacts™ Newsletter Issue 11, 12 December 2013.

### 2.2 Phenological monitoring and maturity development of Sauvignon blanc

As has been the case in previous seasons, VineFacts™ Newsletter reported on the field observations of Sauvignon blanc grapevine phenology (budburst, flowering and maturity from pre-*véraison* to harvest) as measured on the six sub-regional vineyards. The 2013-2014 phenological observations were able to be compared with nine previous years' data. Having so many seasons with which to compare the current season quickly highlights whether the current season is earlier or later than average; e.g. the flowering summary tables included in VineFacts™ Newsletter in early December indicated that flowering on the sub-regional vineyards began very early in comparison with previous seasons and that the duration of flowering was fast due to the warm temperatures over flowering. Data were also shown that indicated that the length of time from budburst to flowering was five days less than average across the five sub-regional vineyards.

### 2.3 The Flowering Prediction Model

The flowering prediction model was included in VineFacts™ Newsletter for the second season. This model was run immediately after 50% budburst had been observed at the six sub-regional vineyards. In VineFacts™ Newsletter Issue 2 on 10 October 2013 the following information was reported: *The prediction model has calculated 50% bud burst at Squire Estate this year as occurring on 1 October 2013. The flowering prediction model (Figure 3) uses the current season's temperature data from the date of 50% bud burst up until the current point in time. In Figure 3 the solid black line is the 2013 GDD data from 1 to 9 October 2013. If you look carefully at the solid black line you can see that it rises quite sharply from 2-7 October, then it flattens off on the 8-9 October, reflecting the warm, then cool weather over that time period.*

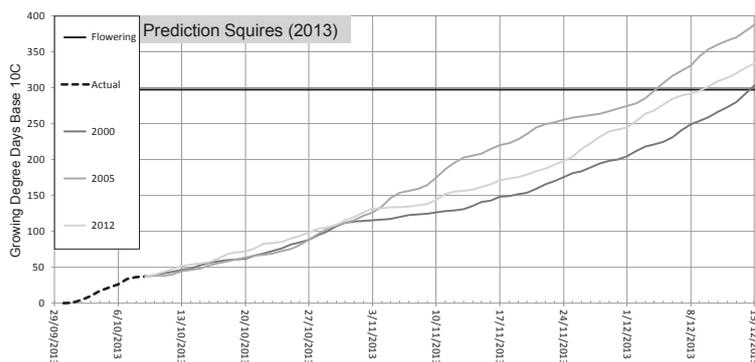


Figure 3: Prediction of 50% Flowering dates for Sauvignon blanc at Squire Estate using 2013 temperature data from 50% budburst on 1 Oct 2013 until 9 Oct 2013, and data from three previous seasons from 10 October onwards.

Looking forward from the current point in time (9 October), the model is able to predict flowering date using temperature data from previous years. This then gives different scenarios of the possible date of 50% flowering for the current year. In Figure 3 GDDs from three different years from 9 October are 'added onto' the end of the actual GDDs for this season to date.

The predicted date for 50% flowering at Squire Estate in 2013 varies from:

- 4 December - earliest prediction based on the 2005 GDD data from 10 October onwards
- 14 December - latest prediction based on the 2000 GDD data from 10 October onwards
- 9 December based on the 2012 GDD data from 10 October onwards

In VineFacts™ Newsletter Issue 11 on 12 December 2013 Table 2 summarised the predicted date of 50% flowering and the actual date of flowering. This was intended to retrospectively inform subscribers as to the accuracy of the flowering prediction model.

	2005 data Predicted flowering date on 10 Oct 2013	Actual 50% flowering date 2013
Squire	4 Dec	2 Dec
Oyster Bay	5 Dec	4 Dec
Booker	8 Dec	4 Dec
Fairhall	7 Dec	4 Dec
Seaview	9 Dec	6 Dec

Table 2: Predicted dates of 50% flowering in 2013 for the five regional vineyards based on 2013 GDD data up to 9 October and the 2005 temperature data from 9 October onwards.

Text accompanying Table 2 stated “using the temperature data from October, November and early December 2005, gave the earliest predicted flowering dates for 2013.

*In retrospect there were no years from 2005-2012 when both October and November temperatures were well above average. Some years had one of the two months well above average. Both months with warm temperatures would obviously have allowed the model to make an earlier prediction.*

*October (+1.1°C) and November 2013 (+1.3°C) were both well above average. So we would expect that 50% flowering in 2013 would have occurred slightly earlier than we predicted for the earliest year. Was this the case? Yes, the actual date of 50% flowering was 2-4 days earlier than predicted”.*

### 2.4 Botrytis Decision Support

A regular feature in the VineFacts™ Newsletter in the 2013-2014 season was the inclusion of the Early- and Late-sea-

son Botrytis Decision Support (BDS) model output to make subscribers aware of the potential botrytis bunch rot risk in Marlborough. The BDS models were developed by Plant & Food Research (PFR) and implemented jointly by PFR and HortPlus™ Ltd through projects funded by New Zealand Winegrowers. New Zealand Winegrowers has made the models freely available for wine industry access online.

[www.botrytis.co.nz/](http://www.botrytis.co.nz/)

The following was included in Issue 14 on 2 January 2014.

**Potential early season botrytis risk for a block of Chardonnay in central Rapaura without Pre Bunch Closure spray.**

Since the E-BDSM was included in VineFacts two weeks ago there have been a couple of Bacchus botrytis infection periods on 25th and 26th December and again on 29th and 30th December. There was not a lot of rainfall in association with these two wetness events. Remember that it is the amount of time that the grape canopy (bunches) stays wet that determines the potential botrytis risk, not the amount of rain that has been received. A higher rainfall total was recorded on 1 January than in the two previous events, however the wetness period associated with the rain on 1 January was fairly brief. The following picture shows the potential botrytis risk without any pre bunch closure spray having been applied. I have assumed that the crop load on the block is Heavy. Increased crop load substantially increases the botrytis risk in the Early Season Model. The two wetness events have caused the accumulating Bacchus risk to jump up above the Bacchus Threshold line. The result for this Chardonnay block would be that the Potential Days above the threshold line at Véraison would be 25. The result is that the model predicts that there is the potential for a major botrytis epidemic by the time of harvest.



The ongoing support of the Botrytis Decision Support Model is being provided through your New Zealand Winegrowers levies so please make use of it. You can access the model for the current season at the following address: <http://www.botrytis.co.nz/>

## 2.5 Research publications and seminar updates

VineFacts™ Newsletter published a number of brief research reports during the season and highlighted upcoming seminars being held at the Marlborough Research Centre as follows:

- Climate seminar reminder – Issue 1, 2 October
- Powdery Mildew early season management – Issue 2, 10 October

- Natural Disasters and Global Climate Change seminar reminder – Issue 4, 24 October
- Targeting yield for the coming harvest. Mark Allen and Mike Trought. Issue 9, 28 November
- Mechanical Thinning workshop reminder – Issue 10, 5 December
- Annual weather summary – Issue 14, 2 January
- Seasonal differences in Sauvignon blanc bunch weight. Mike Trought – Issue 16, 16 January
- Virus workshop reminder – Issue 18, 30 January
- Trunk disease survey. Dion Mundy. Issue 20, 13 February
- Mechanical thinning field day reminder – Issue 22, 27 February
- Harvest date prediction. Damian Martin. Issue 23, 6 March

## 3 Future directions

Over recent years a number of VineFacts™ Newsletter subscribers who also have responsibilities for vineyards in wine regions outside Marlborough have expressed an interest in having the VineFacts email extended to other regions. In late 2013 a project proposal titled “Grapevine growth stage monitoring for prediction of key phenological events” was submitted to the Sustainable Farming Fund (SFF) through New Zealand Winegrowers. This application was successful and has been granted SFF funding for the three years July 2014 to June 2017. The intention of this project is to take the current phenology collection on Sauvignon blanc and the VineFacts™ Newsletter in Marlborough and turn it into a national service. Phenological monitoring will be undertaken in Gisborne, Hawkes Bay, Marlborough, Waipara and Central Otago with the aim of establishing a network of reference blocks that covers 90% of New Zealand’s vineyard area and 90% of its varietal mix.

## 4 Key funding sources and collaborators

VineFacts is a subscriber-based publication. The cost of a subscription for the 2013-2014 season were as follows: \$400 for up to two recipients, \$750 for up to four recipients, and \$1000 for five or more (all these prices excluded GST).

## 5 Conclusion

VineFacts™ Newsletter is a service provided by Plant & Food Research, on behalf of the Marlborough Research Centre Trust, for the Marlborough wine industry. The service has grown and matured over the past 18 years to the extent that it is now poised to become a national service. VineFacts™ Newsletter is a vehicle whereby Plant & Food Research is able to communicate information from a wide range of different areas, directly with those working in the Marlborough wine industry, on a weekly basis during the growing season.

## 6 Acknowledgments

The information included in the phenological, maturity development and yield summary tables was collected as part of the Marlborough Research Centre Trust’s “Phenological Monitoring” project. Thanks to the MRC Trust, Pernod Ricard New Zealand, Villa Maria Estate and Delegats Wine Estate for allowing collection of this information to take place on their properties in the 2013-14 season. The information included in the Botrytis Decision Support model is funded by New Zealand Winegrowers.

# industry seminars and workshops



## Seminars delivered at the Marlborough Research Centre between July 2013 and June 2014

Seminars delivered at the Marlborough Research Centre between July 2013 and June 2014

In the year from 1 July 2013 to 30 June 2014, four seminars were held at the Marlborough Research Centre as part of the contract between The New Zealand Institute for Plant & Food Research Limited and the Marlborough Research Centre Trust. Seminars were advertised through Plant & Food Research's email distribution list and also through Winepress, the Wine Marlborough monthly magazine. The final seminar in June 2014 was also advertised by Wine Marlborough via Twitter and Facebook.

PDF copies of all the Microsoft® PowerPoint talks presented at the seminars can be downloaded from the Marlborough Research Centre website <http://www.mrc.org.nz/>

### 1 Grapevine Trunk Diseases – 6 August 2013

#### 1.1 Biology and control of pathogenic fungi associated with declining mature grapevine in Spain. Speaker – Georgina Jimenez

Georgina Elena Jiménez is from Barcelona (Catalonia, Spain). After graduating with a Bachelor of Biology from the University of Barcelona (UB) in 2009 she did two masters in Experimental Biology and Environmental Agrobiolology also at UB. In September 2011, Georgina started a PhD with UB and the Institut de Recerca i Tecnologia Agroalimentàries (IRTA) in Barcelona under the supervision of the Dr. Jordi Luque i Font. The PhD is examining the pathogenic fungi associated with trunk diseases in mature grapevine plants, their epidemiology (dispersion, infection and pathogenesis) and will evaluate potential antagonistic microorganisms and fungicides to develop methods of control.

At the time of this presentation Georgina was at the South Australian Research and Development Institute (SARDI) working for 3 months under the supervision of Dr Mark Sosnowski. She was undertaking a number of greenhouse experiments and field trials related to her thesis, expanding her studies related to pathogenic infection and colonization of pruning wounds by the fungus *Eutypa lata*.

#### 1.2 Epidemiology of botryosphaeriaceous species associated with grapevine plants in New Zealand. Speaker – Nicholas Tabi Amponsah

Nicholas was a Nematology research scientist at the Savannah Agricultural Research Institute, Ghana, before migrating to New Zealand to pursue a PhD in plant pathology, while employed by Lincoln University as a teaching assistant.

In his doctoral research, Nicholas investigated the disease cycle and management of a group of fungal pathogens, the Botryosphaeriaceae species, which cause very damaging disease symptoms such as trunk cankers, dieback and death of grapevines.

After completing his PhD, Nicholas was employed by the Ministry for Primary Industry (MPI) as a Biosecurity adviser. During his time with MPI, Nicholas provided biosecurity risks assessments associated with various pathways on imported commodities or specific pests. He helped with the revision of the import health standards, which set out requirements to be met by those bringing risk goods across New Zealand's border and also provided risk advice to other business groups within MPI Biosecurity.

Nicholas is currently pursuing post doctoral research at Plant & Food Research in Motueka with sponsorship from AGMARDT, researching the etiology of *Neonectria ditissima* (European Canker) under New Zealand conditions.

### 2 Measurement and modelling of climate variability at the vineyard scale: a New Zealand case study – 8 October 2013

This was the second seminar held at the Marlborough Research Centre with regard to the 2-year Ministry for Primary Industries (MPI) funded project titled "Development of advanced weather and climate modelling tools to help vineyard regions adapt to climate change". The first seminar to introduce this project was held on 16 October 2012. The project is investigating the variability in local climate and grapevine response, using high-resolution models and measurements. In addition the project is also evaluating the sensitivity of major grape varieties to climate variability and potential adaptation strategies. The three speakers outlined how the project was progressing after the first year of funding with topic titles as detailed below.

#### 2.1 Development of advanced weather and climate modelling tools to help vineyard regions adapt to climate change.

Speaker – Professor Andrew Sturman, Head of Department of Geography, University of Canterbury

Andy Sturman is Programme Leader of the MPI project. He heads a research group in the area of regional and local scale weather and climate, focusing on improving knowledge of atmospheric processes in regions of complex terrain through the application of a combination of field, analytical and numerical modelling techniques. Much of his research has involved application of atmospheric modelling and analytical techniques to problems in such areas as wind energy, air pollution and agriculture.

**Abstract**

The objectives of the research programme were reviewed and a summary provided of the results achieved to date. These included interpretation of recent trends in weather and climate and their impact on temperatures and bioclimatic indices in the Marlborough region, as well as a comparison with vineyard regions in the rest of the country. The rationale behind the current data collection and climate modelling programmes was discussed, and the time frame for future work outlined.

**2.2 High-Resolution Meteorological Model.**

**Speaker** – Peyman Zawar-Reza, Senior Lecturer, University of Canterbury

Peyman Zawar-Reza is a Senior Lecturer in physical geography (atmospheric science) at the University of Canterbury and has a PhD in Atmospheric Science from the Department of Geography, University of Canterbury, Christchurch (NZ); and a Diploma in Meteorology and BSc in Biochemistry from the University of British Columbia, Vancouver, Canada. He is a specialist in the application of atmospheric models to the solution of applied problems in a wide range of different environments, from snow and ice to desert dust.

**Abstract**

Research involving the application of numerical weather and climate models at high resolution to the Marlborough region was described, including the key aims of the modelling work and methods used.

Some initial results from the first model simulations were presented, while the use of data from the region's climate station network to validate and fine tune the models was also be outlined. Plans for the integration of model output with grape vine phenological and crop models in collaboration with the Plant & Food Research group were briefly discussed.

**2.3 Awatere Valley and Wairau Valley weather station network.** Speakers – Marwan Katurji, Lecturer and Eila Gendig, Research Associate, University of Canterbury

Marwan Katurji is a lecturer in physical geography (atmospheric science) at the University of Canterbury and has a PhD in Atmospheric Science from the Department of Geography, University of Canterbury, Christchurch (NZ); an MSc in Thermal and Fluid Sciences from the Department of Mechanical Engineering, American University of Beirut, Beirut, Lebanon; and a BE in Mechanical Engineering, Beirut Arab University, Beirut, Lebanon. His research includes a range of microclimate problems.

Eila Gendig is a Research Associate at the University of Canterbury and has an MSc in Natural Resources Management and Ecological Engineering from the University of Life Sciences Vienna, Vienna, Austria & Czech University of Life Sciences Prague, Prague, Czech Republic; and a BSc in Biology, University of Muenster, Muenster, Germany.

**Abstract**

The University of Canterbury's automatic weather station network within the Awatere and Wairau Valleys was described, and how it aims to complement the existing meteorological network. An overview of data acquisition, quality control,

analysis and some initial results was presented, with a focus on the micro-climate variability within the valleys. The collected meteorological data will also be used in upcoming research for validating the numerical and statistical weather modelling that will be utilized to downscale the micro-climate variability to high spatial resolutions within the Marlborough area.

**3 Natural Disasters & Global Climate Change. 14 November 2013.**

**3.1 Speaker – John McAneney, Risk Frontiers, Macquarie University, NSW, Australia**

Professor John McAneney is the Director of Risk Frontiers and a Professorial Fellow in the Division of Environment & Geography at Macquarie University, Sydney. His research background is in environmental physics, boundary-layer meteorology and quantitative risk analysis. He is a graduate of the Universities of Auckland and Madison-Wisconsin. Risk Frontiers is an independent research centre whose goal is to better understand and price natural catastrophic exposure to earthquakes, hailstorms, floods, tropical cyclones, bushfire and volcanoes in the Asia-Pacific region. It also undertakes research on policy issues pertaining to natural perils, global climate change and risk communication, all with the aim of contributing towards the building of safer communities and encouraging the responsible management of natural hazard risks.

John is the author of some 100 scientific articles and two books: *Where Wine Flows like Water – A Gastronomic Pilgrimage through Spain* and a novel *Shifting Sands* both now available on Amazon.

**Abstract**

It is wrong to conflate global climate change and recent experience of large natural disasters as various commentators in Australia at least and especially politicians are wont to do. This talk summarised recent published work by Risk Frontiers and others showing that the rising cost of natural disasters can be firmly sheeted home to the fact that there are now more of us living in vulnerable places with more to lose. At least in the case of US hurricanes the most recent projections of basin wide activity under a warmer climate suggest that it could be centuries before a climate change signal can be identified within the loss history with any statistical confidence. Decarbonising the economy may well have many important benefits but it will not stem the tide of natural disasters.

It is the author's view that emergency management and government risk management in relation to natural disasters should focus on large event scenarios, whatever their cause. If we as a society genuinely wish to reduce disaster losses or even arrest their increase, land-use planning has to become more risk-informed; building codes need to consider the potential economic impacts (rather than just life safety) and insurers can play an indirect role by pricing risk correctly and sending clear signals to homeowners and governments to stimulate risk-reducing behaviours. The tools to achieve this are increasingly available. The success of the regulated use of the building code in tropical cyclone-prone regions in Australia and the performance of modern seismic building codes in Christchurch shows what can be achieved when there is a demonstrated need and political will.

#### 4 Understanding and manipulating Pinot noir phenolic profiles. 17 June 2014

##### 4.1 Speaker – Dr Bob Dambergs, Research Associate, Tasmanian Institute of Agriculture

Bob Dambergs has an Honours degree in Microbiology from the University of Adelaide and a PhD in Biochemistry from the University of Queensland. Bob worked in the wine industry for 16 years, as Technical Services Manager for BRL Hardy and was responsible for gaining NATA and ISO9001 accreditation for their largest winery. As an extension of a collaborative project conducted with AWRI while with BRL Hardy, Bob joined AWRI in 2001 as a Senior Research Scientist. In 2008, Bob became the manager of the first external research node of AWRI based at the Tasmanian Institute of Agriculture at the University of Tasmania, a position he held until 2013. Bob is an Honorary Associate of The University of Tasmania and supervises many post-graduate students, working on practical viticulture and oenology research projects. Bob has also been a member of the Australian Society of Viticulture and Oenology for 20 years and is currently a Board member and Secretary. In addition to industry and research experience, Bob has been managing a commercial vineyard since 1985.

##### Abstract

Some of the world's greatest wines are produced from Pinot noir, but it remains a difficult variety to work with, both in

terms of viticulture and winemaking. A large part of the problems result from the unusual phenolic profiles of Pinot, which has low anthocyanin concentrations, unstable anthocyanins and a low skin to seed tannin ratio. The winemaking step is the last opportunity to correct the phenolic profiles – this presentation will focus on research related to manipulating colour and tannin through the winemaking process. The work described began as small-scale experimental winemaking, but has been validated through winemaking on a larger scale with industry collaborators in Tasmania and Victoria and has been adopted commercially. Wine tannin and colour can be manipulated with some very simple steps such as the choice of yeast and changes to the maceration process. The work has demonstrated that skin tannin is most important for wine colour stability and methods have been developed to enhance skin tannin extraction over seed tannin. Some of the winemaking methods developed represent a paradigm shift, not only for Pinot noir, but also red winemaking in general. These methods have advantages in terms of enhancing wine quality and also increasing efficiency of production. Part of this work has involved the development of simple, practical analytical methods for red wine phenolics that can be applied in winery laboratories. These methods will also be discussed in detail and will be put into context with red wine quality.

## summary of research outputs July 2013 to June 2014



### PLANT AND FOOD RESEARCH – VITICULTURE & OENOLOGY GROUP

#### Activity Funded by the MRC: Reports

Agnew R, 2013. Industry seminars and workshops. Marlborough Research Centre Trust.  
Agnew R, Raw V 2013. Marlborough Meteorological Services. Marlborough Research Centre Trust.  
Agnew R, Raw V 2014. VineFacts™ Newsletter; 30 Weekly Issues completed 24 April 2014. Email Newsletter.  
Agnew R, Skilton T, Raw V, 2013. Phenological Monitoring. Marlborough Research Centre Trust.  
Amponsah N. 2013. Epidemiology of the Botryosphaeriaceae species associated with grapevines in New Zealand. Marlborough Research Centre Trust.  
Jimenez G. 2013. Biology and control of pathogenic fungi associated with declining mature grapevines. Marlborough Research Centre Trust.  
Raw V, Agnew R, 2013. VineFacts information services. Marlborough Research Centre Trust.

#### Popular Articles and Press Releases

Agnew R, 2013. Met Report. Winepress, July 2013. V Issue Number 227. pp. 4-5.  
Agnew R, 2013. Met Report. Winepress, August 2013.  
Agnew R, 2013. Met Report. Winepress, September 2013.  
Agnew R, 2013. Met Report. Winepress, October 2013.  
Agnew R, 2013. Met Report. Winepress, November 2013.  
Agnew R, 2013. Met Report. Winepress, December 2013.  
Agnew R, 2014. Met Report. Winepress, February 2014.  
Agnew R, 2014. Met Report. Winepress, March 2014.  
Agnew R, 2014. Met Report. Winepress, April 2014.  
Agnew R, 2014. Met Report. Winepress, May 2014.  
Agnew R, 2014. Met Report. Winepress, June 2014.  
Agnew R, Raw V 2014. Monthly Meteorological Summaries. Press Release, January 2014.  
Agnew R, Raw V 2014. Monthly Meteorological Summaries. Press Release, February 2014.  
Agnew R, Raw V 2014. Monthly Meteorological Summaries. Press Release, March 2014.  
Agnew R, Raw V 2014. Monthly Meteorological Summaries. Press Release, April 2014.  
Agnew R, Raw V 2014. Monthly Meteorological Summaries. Press Release, May 2014.  
Agnew R, Raw V 2014. Monthly Meteorological Summaries. Press Release, June 2014.

**Activity Funded by Plant and Food<sup>1</sup>:****Refereed Publications**

Amber K PARKER, Tobias SCHULMANN, Andrew STURMAN, Robert AGNEW, Peyman ZAWAR\_REZA, Marwan KATURJI, Eila GENDIG, Michael TROUGHT 2014. Grapevine Phenology of the Marlborough region, New Zealand. Terroir conference, Hungary 2014.

Bennett J, Gregan S, Jordan B, 2013. The influence of vineyard and fruit exposure on the accumulation of methoxypyrazines in Marlborough Sauvignon blanc grapes. Australian Wine Industry Technical Conference.

"Calvo-Garrido C, P.A.G. Elmer, F.J. Parry, I. Vinas, J. Usall, R. Torres, R.H. Agnew and N. Teixido 2013. Mode of action of a fatty acid-based natural product to control Botrytis cinerea in grapes. Journal of Applied Microbiology 116, 967-979, 2014. "

Eltom M, Trought MCT, Winefield C 2014. The effect of pre-budbreak cane girdling on the physical and phenological development of the inner and outer arm in *Vitis vinifera* L. 'Sauvignon blanc' inflorescence structures. *Vitis*.

Garcia de Cortazar-Atauri I, Neethling E, de Resseguier L, Parker AK, Barbeau G, Quenol H, Trought M, van Leeuwen C 2014. Assessing prediction quality of several phenological process based models using various types of databases. A case study using *Vitis vinifera* data. European Geosciences Union General Assembly 2014.

Greven M, Bennett J, Neal S. 2013. The influence of retained node number on Sauvignon blanc grapevine vegetative growth and yield. *The Australian Journal of Grape and Wine Research*.

Hung WF, Harrison R, Morton JD, Trought MCT, Frost A 2013. Protein concentration and bentonite requirement in Marlborough Sauvignon Blanc wines. *Australian Journal of Grape and Wine Research*. V 20. pp. 41-50.

**1Funding was exclusively from PFR in the year reported but co-funding may have come from other sources, in particular NZ Winegrowers, in previous years.**

Parker AK, Trought MCT, Hofmann RW, McLachlan ARG, van Leeuwen C 2014. The influence of two methods of crop removal at different leaf areas on maturation of Sauvignon blanc (*Vitis vinifera* L.). *J. Int. Sci. Vigne Vin*.

Sturman A, Trought M, Quenol H, Zavar-Reza P, Tait A, Agenw R, Soltanzadey I, Powell S, Parker A, Katurji M, Gendig E. 2013. Measurement and modelling of climate variability at the vineyard scale: a New Zealand case study. *Changement Climatique et Terroirs Viticoles*, Hermes Press.

**Conference Presentations**

Agnew R, Trought M, Knappstein D, Forrest J, Alexander T. 2013. Putting theory into practice - Experience in Marlborough. Workshop W14. How to make wine with lower alcohol concentration. Australian Wine Industry Technical Conference. PFR Contract 26232

Bennett J, 2013. Carbohydrate reserves and their influence on yield. Crop Estimation and Yield Management Workshop. Romeo Bragato Conference, Marlborough.

Greven M, Neal S, Tustin S, Bolding H, Vasconcelos C, 2013. The effect of postharvest defoliation on carbon balance of Sauvignon blanc vine. Bragato Conference Blenheim.

Greven M, Neal S, Tustin S, Bolding H, Vasconcelos C, 2013. The effect of postharvest defoliation on carbon balance of Sauvignon blanc vine. GiESCO, Porto, Portugal.

Grose C, Martin D, Stuart, L 2013. Grape harvest time and processing method can manipulate Sauvignon blanc wine style. IHC Conference Abstract, Brisbane 2014.

Grose C, Martin D, Trought M, Agnew R, Stuart L, Haycock S, 2013. Effects of Harvest and Processing Technologies on Sauvignon blanc Wine Style. Australian Wine Industry Technical Conference. PFR Contract 27915

Grose C, Martin D, Trought M, Agnew R, Stuart L, Pineau B, and Haycock S 2013. Harvesting and Processing Technologies can Manipulate Sauvignon blanc Wine Style. Romeo Bragato Conference.

Martin D and Grose C. 2013. Grape cluster microclimate and skin contact duration influence the aroma composition of Sauvignon blanc wine. IHC Conference Abstract, Brisbane 2014.

Neal S, Friend A, Trought M, McLachlan A. 2013. The Performance of 'Sauvignon Blanc' on five of Grapevine Rootstocks in a Marlborough Vineyard. IHC Conference Abstract, Brisbane 2014.

Trought M, 2013. Yield prediction model – using the numbers to work for you. Crop Estimation and Yield Management Workshop. Romeo Bragato Conference, Marlborough

Trought M, 2013. Panelist in "Learning's from the past driving our future" session. Romeo Bragato Conference, Marlborough

Trought M, 2013. Chair of the "Hot off the Press" Student Presentations Workshop. Romeo Bragato Conference, Marlborough

Trought M, 2013. "Vine nutrition". Main Programme. Romeo Bragato Conference, Marlborough

Trought M, 2013. Using precision viticulture to extract value from the vineyard: keynote paper. Australian Wine Industry Technical Conference.

Trought M 2014. Using precision viticulture to extract value. Proceedings Fifteenth Australian Wine Industry Technical Conference. pp. 107-111.

**PFR Internal Presentations and Reports**

Agnew R, 2013. Advanced climate mapping in Marlborough for Vineyards - Canterbury University. PFR Marlborough Team Annual Workshop.

Agnew R, 2013. Calcium Application Trial. PFR Marlborough Team Annual Workshop.

Agnew R, 2013. Vinefacts and related activity (phenology, met services, weather stations). PFR Marlborough Team Annual Workshop.

Albright A, 2013. Chromatographic Methods Developments: Matching Need to Capacity. PFR Marlborough Team Annual Workshop.

Albright A, 2013. Defining Routine Lab Analyses: Scope and Applicability. PFR Marlborough Team Annual Workshop.

Albright A, 2013. HPLC Phenolic profiling using Berry Pops samples. PFR Marlborough Team Annual Workshop.

- Bennett J, 2013. Methoxypyrazine experimentation 2013. PFR Marlborough Team Annual Workshop.
- Bennett J, 2013. Pilot Pinot Noir heating experiment. PFR Marlborough Team Annual Workshop.
- Greven M, 2013. Blue Skies - Carbon 14 Experiment. PFR Marlborough Team Annual Workshop.
- Greven M, 2013. Juice Index - Juice Production History. PFR Marlborough Team Annual Workshop.
- Greven M, 2013. Manipulating berry size through shaking. PFR Marlborough Team Annual Workshop.
- Greven M, 2013. Off site chemistry review. PFR Marlborough Team Annual Workshop.
- Grose C, 2013. Cfine Trials. PFR Marlborough Team Annual Workshop.
- Grose C, 2013. Harvest Technologies - SO<sub>2</sub> additions. PFR Marlborough Team Annual Workshop.
- Grose C, 2013. NZW Harvest Processes. PFR Marlborough Team Annual Workshop.
- Grose C, 2013. Small scale winemaking protocols. PFR Marlborough Team Annual Workshop.
- Martin D and Grose C. 2013. Latest from NZW Juice pH, Methoxy Manipulations and Harvest Technologie. The New Zealand Grape and Wine Research Programme Annual Review. Matakana.
- Martin D, 2013. Berry Populations - Berry size effects at constant brix. PFR Marlborough Team Annual Workshop.
- Martin D, 2013. Berry Populations - Deconstructing terroir. PFR Marlborough Team Annual Workshop.
- Martin D, 2013. Harvest Technologies - Fruit Exposure. PFR Marlborough Team Annual Workshop.
- Martin D, 2013. NZ Winegrowers Methoxypyrazine Manipulation. PFR Marlborough Team Annual Workshop.
- Martin D, 2013. NZW Juice pH Experiments. PFR Marlborough Team Annual Workshop.
- Martin D, 2014. The New Zealand Grape and Wine Research Programme. Presentation to Bruce Campbell and Greg Gent.
- Martin D. 2013. Overview of Protect Premium Position Focus Area. The New Zealand Grape and Wine Research Programme Annual Review. Matakana.
- Mundy D, 2013. Trunk disease detection. PFR Marlborough Team Annual Workshop.
- Mundy D, 2013. Trunk disease management. PFR Marlborough Team Annual Workshop.
- Mundy D, 2013. Virus and mealy bugs. PFR Marlborough Team Annual Workshop.
- Mundy D, 2014. Grapevine trunk disease research and communication with the industry. Plant and Food research Seminar.
- Neal S, Friend A, Trought M, McLachlan A. 2013. Rootstock Evaluation for Premium Wine on Pinot noir in Waipara. PFR Marlborough Team Annual Workshop.
- Parker A, Trought M, Agnew R 2014. Phenology of Marlborough Sauvignon blanc. Report to Canterbury University.
- Sansom C, Mundy D, Perry N 2014. Volatiles of grapevine inoculated with *Eutypa lata*. Plant and Food.
- Stuart L, 2013. Harvest Technologies - Time of Day. PFR Marlborough Team Annual Workshop.
- Trought M 2014. Grape and wine research in Marlborough. Lincoln University student tour.
- Trought M, Agnew R, Knappstein D, Forrest J, Alexander T. 2013. Desynchronising sugar and flavour accumulation in grapes for reduced alcohol wine production. Workshop W14. How to make wine with lower alcohol concentration. Australian Wine Industry Technical Conference.
- Trought M, 2013. Berry Populations - Rosedale Leaf Area and Secondary Metabolites. PFR Marlborough Team Annual Workshop.
- Trought M, 2013. Determination of diurnal pattern of transcription of genes and precursor production Sauvignon blanc. PFR Marlborough Team Annual Workshop.
- Trought M, 2013. Evaluation of Sauvignon blanc clones for premium wine. PFR Marlborough Team Annual Workshop.
- Trought M, 2013. Nitrogen Nutrition of Sauvignon blanc. PFR Marlborough Team Annual Workshop.
- Trought M, 2013. Research and the adoption of technologies by the wine industry. Lincoln University Students.
- Trought M, 2013. Sustainable Grape Thinning. PFR Marlborough Team Annual Workshop.
- Trought M, Agnew R, Parker A 2014. Phenology of Marlborough Sauvignon blanc. Report to Andy Sturman University of Canterbury .
- Trought M. 2013. Advanced weather and climate models for Marlborough vineyards. The New Zealand Grape and Wine Research Programme Annual Review. Matakana.
- Trought M. 2013. Effect of leaf area: fruit weight ratio on variability of Pinot noir fruit development. The New Zealand Grape and Wine Research Programme Annual Review. Matakana.
- Trought M. 2013. Introduction and objectives of the Cost Efficient Delivery Focus Area. The New Zealand Grape and Wine Research Programme Annual Review. Matakana.
- Trought M. 2013. Soils and Sunshine: Sauvignon blanc in Marlborough. Harper Adams University staff and students.

#### Popular Articles

Eltom M, Winefield CS, Trought MCT 2014. Effect of cane girdling on Sauvignon Blanc inflorescence structures. Australian and New Zealand Grapegrower & Winemaker. I 604. pp. 36-39.

Trought M, 2014. Using precision viticulture to extract value. Australian & New Zealand Grapegrower & Winemaker.

#### Activity Funded by NZ Winegrowers NZW Client Reports

Beresford RM, Agnew RH, Barley MJ, Heffer MD, Manktelow DWL 2013. Botrytis decision support (BDS) industry training & botrytis sampling protocols (NZW 11-120):. NZW Supplementary report.

- Grose C, Martin D, Bennett J, Stuart L, 2013. Manipulation of methoxy-pyrazine concentrations in Sauvignon blanc wine through leaf and rachis additions. NZW Progress Report.
- Grose C, Martin D, Bennett J, Stuart L, Albright A 2014. Manipulation of Methoxy-pyrazine concentrations in Sauvignon blanc wine through leaf and rachis additions - NZW 12-107. NZW Final report.
- Grose C, Martin D, Stuart L, Albright A, Haycock S 2014. Influence of juice pH on thiol production – NZW12-108. NZW Annual Report.
- Grose C, Martin D, Stuart L, Albright A, Haycock S 2014. Influence of juice pH on thiol production – NZW12-108. NZW Progress Report.
- Grose C, Martin D, Stuart L, Albright A, Haycock S, 2013. Influence of Juice pH on thiol production. NZW Progress Report.
- Grose C, Martin D, Trought M, Agnew R, Stuart L, Pineau B, Beresford M and Haycock S 2013. Tools for manipulating Sauvignon blanc wine flavour and aroma: Harvest and Processing of grapes. NZW Final report.
- Mundy D, Trought M, Neal S, McLachlan, A. 2013. New opportunities for sustainable grape thinning (NZW11-101): disease technical report 2013. NZW Progress Report.
- Pineau B, Beresford MK, Jin D, Wohlers MK, Yia Y, Jaeger SR, Albright A, Grose C, Neal S, Haycock S, McLachlan A, Trought M, 2014. New opportunities for sustainable grape thinning (NZW11-101): Sensory and wine aging results 2011-12 and 2012-13. Report to New Zealand Winegrowers.
- Trought M, Greven M, Neal S, Mundy D, Raw V, McLachlan A 2013. Reduced berry size and botrytis tolerance through trauma to the vine. Report for New Zealand Winegrowers.
- Trought M, Neal S, Allen M, 2014. Guidelines and experience in the use of machine harvesters to thin grapevines. Report to New Zealand Winegrowers.
- Trought M, Neal S, Mundy D, Grose C, Pineau B, Beresford M, McLachlan A, Albright A, Allen M 2014. New opportunities for sustainable grape thinning (NZW11-101): Final report June 2014. Report to New Zealand Winegrowers.
- Trought M, Neal S, Mundy D, Grose C, Pineau B, Beresford M, McLachlan A, Allen M 2014. New opportunities for sustainable grape thinning (NZW11-101): What have we learnt after five years of research?. Report to New Zealand Winegrowers.
- Trought M, Neal S, Mundy D, McLachlan A, 2014. Reduced berry size and botrytis tolerance through trauma to the vine (NZW12-106) Progress report June 2014. Report to New Zealand Winegrowers.
- NZW Seminars and Workshops**
- Agnew R, 2014. Sauvignon blanc phenology and yield components: Marlborough sub-regions and seasons in VineFacts™ Newsletter. NZ Winegrower Grapeday.
- Agnew R, 2014. Sauvignon blanc phenology and yield components: Marlborough sub-regions and seasons in VineFacts™ Newsletter. NZ Winegrower Grapeday.
- Martin D, 2014. Yield Estimation: Vine physiology, management and environmental factors. NZ Winegrower Grapeday Marlborough.
- Martin D, 2014. Yield Estimation: Vine physiology, management and environmental factors. NZ Winegrower Grapeday, Hawke's Bay.
- Mundy D, 2013. Guide to trunk disease survey. New Zealand Grapevine Trunk Disease Workshops.
- Mundy D, 2013. Guide to trunk disease survey. New Zealand Grapevine Trunk Disease Workshops.
- Parr W, Ballester J, Valentin D, Peyron D, Grose C 2014. The evocative notion of minerality in wine: Sensorial reality or smart marketing?. International Conference Wine Active Compounds 2014.
- Trought M, 2014. Using machine harvesters to thin grapevines and manage Botrytis. NZ Winegrower Grapeday, Marlborough.
- Trought M, 2014. Using machine harvesters to thin grapevines and manage Botrytis. NZ Winegrower Grapeday, Hawke's Bay.
- Trought M, Neal S, Mundy D 2014. Mechanical thinning field day (Rarangi and Rapaura). Field Day.
- Wood P, Agnew R 2014. Grape Powdery Mildew - Biology update and management implications. NZ Winegrower Grapeday, Marlborough.
- Wood P, Agnew R 2014. Grape Powdery Mildew - Biology update and management implications. NZ Winegrower Grapeday, Hawke's Bay.
- NZW Popular Articles**
- Grose C, Martin D, Albright A, Stuart L and Haycock S 2013. Influence of juice pH on thiol production – NZW12-108. NZ Winegrower.
- Grose C, Martin D, Bennett J, Stuart L, Albright A, Gunson A 2014. Manipulation of methoxy-pyrazine concentrations in Sauvignon blanc wine using leaf and rachis additions (NZW12-107). NZW Popular Article.
- Grose C, Martin D, Stuart L, Albright A, Haycock S, Gunson A 2014. Influence of juice pH on thiol production – NZW12-108. NZW Popular Article.
- Grose C, Martin D, Trought M, Agnew R, Stuart L, Pineau B, Beresford M and Haycock S 2013. Tools for manipulating Sauvignon blanc wine flavour and aroma: Harvest and processing of grapes NZW11-118. NZ Winegrower.
- Mundy D, Neal S, Trought M, 2013. New opportunities for sustainable grape thinning, relative trash content of bunches post machine thinning. NZ Winegrower.
- Sosnowski M, Mundy D 2013. Sustaining vineyards through practical management of grapevine trunk diseases. New Zealand Winegrower. I 83. pp. 71-72.
- Sosnowski M, Mundy D 2014. Progressing management of grapevine trunk diseases. New Zealand Winegrower. I 85. pp. 64-66.



# NZDFI annual report

## 1 Introduction

This is the sixth annual report of the New Zealand Dryland Forests Initiative (NZDFI). This report covers the financial year 1st July 2013 to 30th June 2014. The long-term goal of the NZDFI is to develop a sustainable hardwood industry based on ground-durable eucalypts by 2050.

NZDFI was advised by MPI in April last year that our application to the Sustainable Farming Fund for a second three-year grant of \$213,000 was successful, backed by a further \$84,000 of cash plus in-kind contributions over the three years guaranteed by NZDFI founders and sponsors. As a result NZDFI's team have continued to make steady progress over the past twelve months.

The knowledge and interest created by NZDFI since 2008 has seen NZDFI's multi regional extension activities successfully continue with pruning workshops being held in five regions and the establishment of new trials by landowners including the NZ Redwood Company planting a new eucalypt trial in the Horizons Region. 102 permanent sample plots have been measured and a data register established.

There's also been some number of exciting new developments that have bought a very positive close to this past financial year and will contribute significantly to the next phase of NZDFI's R&D programme.

## 2 Chairman's Comments

There's been some careful planning this past year and a big effort made to win new financial support so that NZDFI's R&D programme can continue with the excellent progress already made since we established in 2008.

So I'm very pleased to report on three significant developments for NZDFI in recent months.

Firstly, Proseed has a new propagation facility under construction at our site in Amberley, Canterbury. This new facility requires a substantial investment by Ngai Tahu (our parent company) and reflects our commitment to NZDFI's durable eucalypt programme. It will enhance NZDFI's potential to:

- graft elite scion wood for NZDFI's first seed orchards,
- investigate techniques for promoting early flowering and creating hybrids,
- undertake controlled pollination of selected parent trees,
- develop techniques for the propagation of cuttings.



Figure 1: Shaf van Ballekom and Paul Schroeder inspect progress with construction of Proseed's new propagation facility at Amberley

Secondly, the University of Canterbury's School of Forestry has secured 'forest growers commodity levy' funding of \$50,000 per annum to support its postgraduate programmes. Both the University and NZDFI appreciate that their durable eucalypt research has won this support. The funding has been committed to three new PhD scholarships that will focus on NZDFI work. The School of Forestry is a founding partner of the NZDFI, and a number of academics and students are already contributing to the rigorous science which underpins our R&D work programme. There are a broad spectrum of opportunities for innovative research of the durable eucalypt species within NZDFI's programme with three post graduate students already selected to start work on projects looking at breeding for heartwood properties and inter-site variation in tree growth. Further projects will come on stream soon.

Thirdly, NZDFI has received an unsolicited and extremely generous donation of \$50,000 from a Marlborough beekeeper, James Jenkins, of Marlborough Gold Honey. James's interest in ground-durable eucalypts is two-fold. As a land-owner and tree grower he is excited about having a high-value alternative to radiata pine, while as a beekeeper he also sees great potential in the use of eucalypts as part of a strategy to provide bees with pollen and nectar in the autumn and winter seasons.

Finally I'd also like to acknowledge the work being done by Clive Paton and the members of NZDFI's Extension Team that first met in November last year and again this July. This group includes some of the landowners hosting our trials, staff from supporting regional councils as well as farm forestry reps. This team demonstrates the increasing commitment there is by others to NZDFI's long term vision of establishing a durable hardwood industry in NZ.

So, thanks to all who have contributed to this year's successful outcomes and I'm looking forward to another successful year working with our executive and consultant team based at Marlborough Research Centre, as well as the science team at the University of Canterbury. Also thanks the continuing support given by all the landowners hosting eucalypt trials and all of NZDFI's sponsors and supporters.

**Shaf van Ballekom**  
*Chairman - NZDFI*

### 3. Forest Operational Research and Extension Programme - SFF 13-024 project: Enabling growers to maximise value from planting durable eucalypts

#### 3.1. Four new trials planted in 2013

NZDFI have four new landowners involved with durable eucalypt trial sites that were planted this spring. These new landowners include:

- NZ Redwood Company, Okota forest, Manawatu.
- Greater Wellington Regional Council, Ngaiapu, Wairarapa.
- Warwick Lissaman, Breach Oak, Marlborough.
- Tim Chamberlain, Mt Cass, Canterbury.

It's been an excellent growing season with the landowners reporting that most of these new trials have had a good start. Thanks to these landowners for enabling NZDFI to increase the range and diversity of trial sites.



Figure 2: Simon Rapley of NZ Redwood Company admires 9 month old *E. bosistoana* seedling in new trial at Okota forest near Hunterville, Rangitikei.

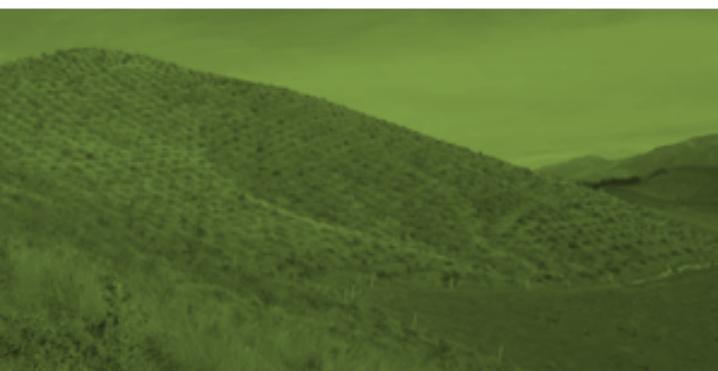


Figure 3: View over Warwick Lissaman's new durable eucalypt trials planted at his Breach Oak property in Awatere, south Marlborough.

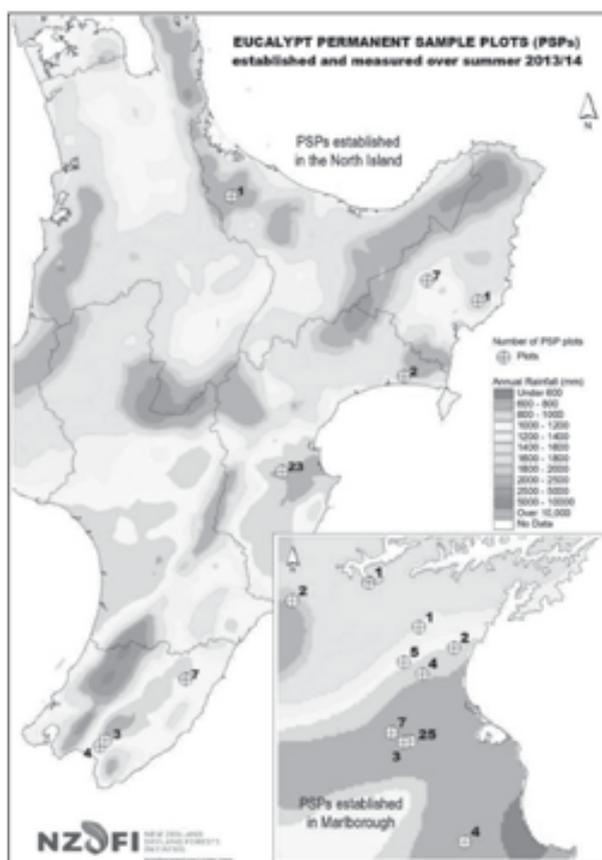
#### 3.2 Silvicultural management regimes developed

Silvicultural management regimes have been developed by the Science team which NZDFI are using to work alongside landowners with durable eucalypt trials to implement. These regimes aim to guide landowners in successfully growing eucalypt posts, poles and sawlogs for processing into a range of durable wood products.

#### 3.3 Forest productivity measurement programme underway

A key part of NZDFI's R&D work is the network of trials and the landowners hosting them. A total of 20 sites are now established with trials. Some sites have multiple trial types while others only have one. In total 18 'demonstration trials' have been planted, where a range of the species selected for development that are being tested under different environmental conditions, and 16 'breeding populations' have been planted, the purpose of which is to find the best families within individual species for future breeding work. Over the past six months 102 permanent sample plots (PSPs) have been established within these trials that are widely distributed across sites in different rainfall zones (see map below). While PSPs in the demonstration trials will measure the 'best bet' species on different site types, PSPs in the breeding trials will measure the best-performing families within a species – a key objective of the project, as the best-performing families are planned for inclusion in NZDFI's first seed orchards.

University of Canterbury (UC), Proseed NZ Ltd and NZDFI collectively funded two undergraduate summer scholarships. Bridget Armstrong and Anna O'Grady worked in Marlborough with consultant Tree Breeder Ruth McConnochie and Paul Millen to assist in NZDFI's permanent sample plot (PSP) establishment and measurement programme. In total, 102 PSP's were established and measured (see map) with the data from around 6,500 individual trees being archived in NZDFI's new PSP Register by Kevan Buck who is an expert in forest data capture and analysis. The data within this register is the base for NZDFI's growth and productivity modelling work. The PSP plots are all mapped by GIS specialist Roger May and highlight the amount of intra-site variation within and between species.



More PSP's will be established next summer if additional funding is forthcoming through a new AGMARDT application that has been made by UC (see section 6.4). Otherwise, SFF funding ensures that the PSPs now established can be re-measured in two year's time. Collaboration with SCION is also under discussion in regard to a separate MPI funded hardwood productivity research project that includes two of NZDFI's key species.

### 3.4 Extension Team meetings in Wairarapa

NZDFI's new extension team met for the first time on 6th November 2013 at the Greater Wellington Regional Council (GWRC) offices in Masterton and then again on 11th June. This team will help with the transfer of the results from the NZDFI trials and related work to people interested in growing ground-durable eucalypts. There are reps from all of NZDFI's main regions. Despite the wet weather on both days there were afternoon field trips to a durable eucalypt trials at Rewanui Farm Park hosted by Trimble Foundation in November with a visit in June to view the *E. globoidea* breeding populations at Atkinson's property and to a look at Clive Paton's eucalypt plantings and trials at his.



Figure 4: Members of the extension team admire one of the top trees within the 3 year old *E. globoidea* breeding population at Atkinsons, Wairarapa.

### 3.5 Communication consultant joins team

Harriet Palmer joined the NZDFI team as our Communications consultant to support the delivery of the SFF 13-024 project. She is well known within NZFFA having worked on several farm forestry SFF related projects in recent years. She has completed the first stage of upgrading the NZDFI website and developed a new information leaflet about NZDFI. This new information leaflet can be downloaded from the web site. Harriet is also secretary to NZDFI's Extension team. [www.nzdfi.org.nz/documents/NZDFIIntroductorybrochure\\_Nov2013.pdf](http://www.nzdfi.org.nz/documents/NZDFIIntroductorybrochure_Nov2013.pdf)

### 3.6 Successful pruning workshops held

As part of NZDFI's on-going Sustainable Farming Fund project, Paul Millen recently held five pruning workshops in the Wairarapa, Bay of Plenty, Gisborne, Hawkes Bay and in

Marlborough as an adjunct to the NZFFA annual conference. These were popular and focused on transferring form-pruning knowledge and practical skills to core groups of growers, advisers and contractors. Paul was supported at all the workshops by Ken Scott, of Lakewood Products, whose company produces a range of high-quality pruning tools including the Pro Pruner and is sponsoring NZDFI's pruning workshops and videos. [www.lakewoodproducts.co.nz/](http://www.lakewoodproducts.co.nz/)

At the Marlborough workshop Ruth McConnochie, NZDFI's Tree Breeding consultant and Dean Satchell of Sustainable Forest Solutions also gave presentations at MRC and led discussion on the field trip.



Figure 5: Dean Satchell explains form pruning on the field trip held for the NZFFA national conference NZDFI workshop, Marlborough.



Figure 6: Ken Scott speaking about using pruning equipment during the Hawkes Bay pruning workshop at Rick Alexander's property.

A set of practical guidelines on form pruning is now available on the NZDFI website [HYPERLINK "http://www.nzdfi.org.nz"](http://www.nzdfi.org.nz) [www.nzdfi.org.nz](http://www.nzdfi.org.nz). A further output from the project will be a short video demonstrating form pruning techniques which will also be freely available on-line, and more workshops are planned for 2015. A second video describing best-practice establishment techniques is also scheduled into the 2015 work programme. A big thank you to all those that hosted and helped organise the pruning workshops as well as to those that attended. Your support, interest and enthusiasm for growing eucalypts made all these workshops successful.

## 4 NZDFI Tree Improvement Programme

### 4.1 Breeding populations assessment and management

This year has seen a start made on the significant task of assessing, thinning and pruning our breeding populations that include about 100,000 individual trees in 16 breeding populations across ten sites. This work is led by Ruth McConnochie, NZDFI's Tree Breeding consultant.

The *E. bosistoana* breeding population planted 2009 at the Lawson's property had twenty plots assessed, pruned, thinned with wood quality samples collected and delivered to UC for analysis in December 2013. The remaining 130 plots were assessed in January 2014 and are planned for thinning and pruning this spring.

Both the *E. bosistoana* breeding population planted 2009 at MDC Cravens road reserve and the *E. quadrangulata* breeding population planted 2011 at the Cuddon's property were assessed, pruned and thinned with wood quality samples collected and delivered to UC for analysis in December 2013.

Some exceptional family growth rates were recorded in the *E. globoidea* breeding population planted 2011 at the Atkinson's property in southern Wairarapa. About fifty percent of this site was assessed in January 2014 and within this 20 month old trial the maximum height recorded was 4.45 m with the mean family height ranging 180.2 – 288.2cm. Due to the fast growth rates this area of the trial is planned for early thinning and pruning later this year.



Figure 7: Ruth McConnochie working in *E. bosistoana* planted in 2009 at MDC's Cravens Road site with wood samples lying alongside a fallen stem.



Figure 8: Bridget Armstrong measures a 20 month old *E. globoidea* with a height of 4.45 m in the breeding population at Atkinsons. This area is planned for pruning and thinning this spring.

### 4.2 Early selections for seed orchard development

Early scion selections from our best performing families based on growth and form have been made from within our 2009 *E. bosistoana* breeding populations. This is an exciting development as these are being used by Proseed to test grafting and if successful, the grafted stock will be used to plant the first seed orchard in 2015.

### 4.3 UC summer student wood durability research project completed

UC/NZDFI's science team are committed to the development of novel R&D methods to select and deploy elite trees to growers that produce abundant durable heartwood with low growth-strain (no end-splitting of logs) as well as have rapid growth and good form.

Therefore, last year NZDFI were able to support funding another UC summer scholarship so that an under graduate student in Chemical & Process Engineering, Tobias McLaughlin could work under supervision of Clemens Altaner, Wood scientist at the School of Forestry, on a heartwood/durability research.

Tobias used the scholarship to study 'Methodology for the Analysis of Variations in the Natural Durability of *Eucalyptus bosistoana* Wood'. This honours project focused on developing and testing novel methodologies including UV/Visible spectrophotometry as a suitable method for the rapid non-destructive analysis of durability within the best families in our breeding populations. An efficient method for accurate analysis is critical to getting reliable results from the 1000's of heartwood samples we plan to collect over the next 10 years. The results from Tobias's work are promising with further testing of the methodology planned by one of UC/NZDFI's new PhD scholarship students.

## 5 Project Management & Governance

Meetings were held of NZDFI's executive management team on 9th September 2013, 14th November 2013 and 21st March 2014 and 25th June 2014. The first two milestone reports were submitted to MPI for the SFF 13-024 project and two project updates were circulated by e mail to all those on the NZDFI contact list.

The annual Project Management Committee meeting was held in the Marlborough Research Centre on 25th June 2014.

## 6 Ongoing Funding Opportunities

### 6.1 Possible SCION/UC partnership with MBIE

In late August 2013 we learnt that MBIE had declined to support the collaborative bid by SCION and UC for diverse species research including significant support for NZDFI's R&D programme. Therefore, NZDFI's Executive Management team continued discussion on collaborating with Scion including the possibility of a R&D partnership with MBIE based on 1:1 funding.

However, there was feedback that winning MBIE funding for tree breeding was difficult. A proposal needed to be widely supported by the forestry industry and that at least \$200,000 per annum was required of other funding. Also that increasing exports by 2030 was still the main criteria. At the time of writing this report there was no firm partnership proposal under consideration.

NZDFI's executive team members kept other parties informed that we are open to discussions regarding potential partnerships for funding within criteria that allow NZDFI's R&D programme to be considered.

### 6.2 UC 'Smart Ideas' proposal to MBIE

In January 2014 UC submitted a proposal to MBIE's Biological Industries Research Fund for high-value food and industrial biological products, processes and technologies. Criteria for proposals included

'Encompasses research underpinning the development of food and industrial bio products, processes and technologies'. However, UC's proposal for 'Rapid tree population improvement delivering eucalypt timber for high value products' was considered illegible as it was "within forest/farm R&D strategies" and so was not reviewed by the MBIE advisory panel.

### 6.3 Forest Growers Commodity Levy fund supports UC post graduate scholarship programme

Following a presentation to NZFOA's interim Research Committee last year a proposal was agreed that \$50,000 per annum be granted from the new 'Forest Growers Commodity Levy' to support postgraduate scholarships within UC's School of Forestry. This decision was endorsed by the newly elected levy board earlier this year. The grant started from 1st January 2014 and Bruce Manley, the school's Head of Department agreed to commit this funding, and matching funding from within the university, to postgraduate scholarships that will focus on NZDFI work.

There are a broad spectrum of exciting opportunities for innovative research of the durable eucalypt species within NZDFI's programme with three post graduate students having been selected to start work later this year on projects looking at characterizing heartwood properties and inter-site variation in tree growth (the latter postgraduate will, hopefully work on the AGMARDT proposal – see later). However, additional funding to support these students with field sampling and collection as well as for lab costs still needs to be secured.

### 6.4 New AGMARDT proposal

In June, UC submitted a request to AGMARDT for an 'Agribusiness Innovation Grant' for a project that is planned 'To enable growers to maximise early growth by matching durable eucalypt species and genotypes to the full variety of dryland sites in Marlborough'. This project will include a PhD student working under the supervision of Euan Mason and Justin Morgenroth to model survival and growth of NZDFI durable eucalypts to the full diversity of sites/micro-sites within trials established in NZ drylands and presenting the results within a web-based decision-support system.

A total grant of \$98,000 is requested of AGMARDT for the three year period of the project with UC contributing \$60,000 from the NZ Forest Growers Levy and NZDFI \$30,000 giving a total of \$188,000.

### 6.5 Eucalypts for bees – a new research opportunity?

Eucalypts have huge potential to be part of the solution to maintaining healthy bee populations in New Zealand. Many species are precocious flowerers, and may also flower in

autumn and winter - times of year when other species, including manuka, are not flowering. However, there is a dearth of knowledge about the flowering behaviour of different eucalypt species in different parts of the country, and also the quantity and quality of pollen and nectar produced by different species. NZDFI have already started researching flowering timing with some information on our web site.

[www.nzdfi.org.nz/treesforbees\\_research.php](http://www.nzdfi.org.nz/treesforbees_research.php)

Given this potential, NZDFI is collaborating with the Trees for Bees group to plan a new SFF proposal for a research project to investigate the timing of flowering of eucalypts nationwide, and then develop guidelines for landowners, beekeepers, regional councils and nursery growers. The guidelines will enable ground durable eucalypts to be incorporated into plantings that will enhance bee health and viability without threatening manuka honey production.

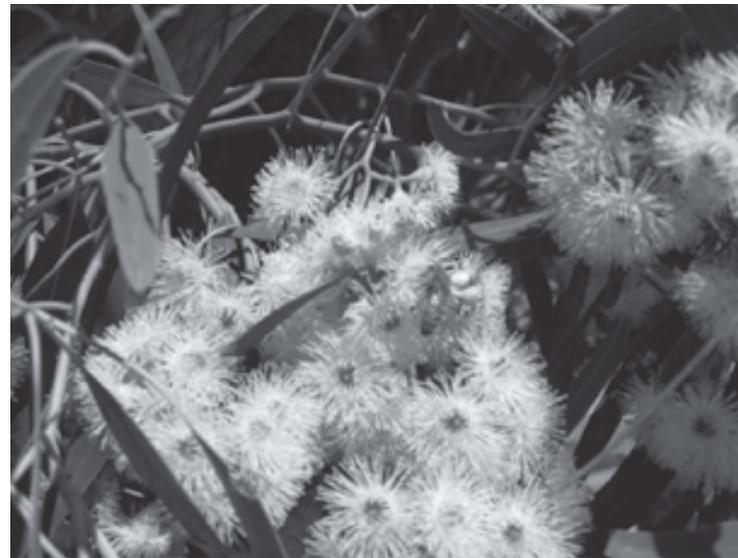


Figure 9: Bees foraging in *E. bosistoana* flowers.

### 6.6 Additional Funding needed for Wood Quality research

Our wood quality improvement programme is led by the team at UC's Wood Technology Centre who have planned a novel large-scale sampling and selection strategy to enhance early heartwood formation, durability and intensity of colour as well as reduce or eliminate growth strain that leads to end-splitting of logs.

The two post graduate students that have won UC/NZDFI scholarships will work on two separate but related research projects under the supervision of Clemens Altaner. These two projects are:

#### • Selecting superior trees with abundant heartwood rich in extractives

Individual trees within NZDFI's breeding population will be assessed for 1) the amount of heartwood and 2) the quantity of extractives in the heartwood by NIR (as an indicator of natural durability) so as to identify those individuals with abundant heartwood rich in extractives which will be chosen for production of improved seed.

• **Heartwood formation and the chemical basis of natural durability**

The biological process of heartwood formation will be investigated by microscopy and chemical analysis so as to identify the major compounds in the heartwood of naturally durable eucalyptus which provide natural durability (using chromatography and fungal assays).

Another key area of wood quality research is to investigate 'growth-strain' so as to select individuals that have little or no occurrence of the end splitting of logs. UC's science team have a plan to work with 10,000 plants per species in a nursery setting so that by age 2, seedlings displaying low growth-strain can be selected by cutting and analyzing all those individuals to find all those with low growth-strain (possibly 1 in 50): with elite selections able to be regenerated as the stumps will coppice and coppice shoots can then be grafted for seed orchards.

Options for funding this critical phase of our R&D programme are continuing to be sought with further information on new opportunities under review.

However, it is the continuing commitment that we have from our current founding partners, financial supporters and landowners that underpins NZDFI.

A **big thank you** to you all as it's your support that has ensured that we are now within sight of reaching our goal of selecting and deploying elite trees to growers that have rapid growth and good form, and produce abundant durable heartwood with low growth-strain.

Annual report prepared by

**Paul Millen**

*NZDFI Project Manager – 7th July 2014*



44	Directory
45	Vineyard Trading Account
46	Rental Account
47	Statement of Financial Performance
48	Statement of Movements in Equity
49	Statement of Financial Position
51	Schedule of Fixed Assets and Depreciation
52	Disposal Schedule
53	Notes to the Financial Statements
55	Auditor's Report

# financial reports

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**Trustees** Ivan Sutherland  
Edwin Pitts  
Bernie Rowe

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**Chief Executive** Gerald Hope

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**Nature of Business** Administration of research projects

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**Location** 85 Budge Street  
Blenheim

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**Auditors** Angela Wood  
Chartered Accountant  
PO Box 777  
Blenheim 7240

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**Chartered Accountants** Winstanley Kerridge  
Chartered Accountants Limited  
P O Box 349  
Blenheim 7240  
Contact - Vaughan Harris

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**Legal Counsel** Gascoigne Wicks  
PO Box 2  
Blenheim 7240

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**Bankers** Bank of New Zealand  
92-94 Market Street  
Blenheim 7201

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## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

## Vineyard Trading Account

For the year ended 30 June 2014

	2014	2013
	\$	\$
<b>Rowley Vineyard Operations</b>		
<b>REVENUE</b>		
Grape Sales	249,780	-
Wine Sales	387,180	385,289
<b>Total Sales</b>	<b>636,960</b>	<b>385,289</b>
<b>COST OF GOODS SOLD</b>		
Cost of Goods Sold - Wine	185,999	235,906
Cost of Goods Sold - Grapes	136,493	-
<b>Total</b>	<b>322,492</b>	<b>235,906</b>
<b>DIRECT COSTS</b>		
Vineyard Personnel Costs	73,521	57,613
Vineyard Operating Costs	40,023	29,361
Harvesting	12,787	286
Vineyard Administration	3,639	1,606
Vineyard Rent, Rates and Insurance	5,303	5,018
Winemaking	-	94,644
Transfer of Vineyard WIP	(135,273)	(188,528)
<b>Total</b>	<b>-</b>	<b>-</b>
<b>GROSS SURPLUS FROM TRADING</b>	<b>\$314,469</b>	<b>\$149,382</b>

## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

**Rental Account**

For the year ended 30 June 2014

	<b>2014</b>	<b>2013</b>
	\$	\$
<b>Budge Street Property Account</b>		
<b>REVENUE</b>		
Tenant Rentals	108,148	104,142
Group Charges	96,918	87,408
Theatre Charges	4,616	2,070
<b>Total Sales</b>	<b>209,682</b>	<b>193,620</b>
<b>DIRECT COSTS</b>		
Repairs and Maintenance	4,474	7,169
Group Costs	88,460	79,936
Depreciation	12,973	7,738
<b>Total</b>	<b>105,907</b>	<b>94,843</b>
<b>GROSS SURPLUS FROM TRADING</b>	<b>\$103,775</b>	<b>\$98,777</b>
<b>Grovetown Park Property Account</b>		
<b>REVENUE</b>		
Tenant Rentals	145,668	122,156
Group Charges	86,023	84,678
<b>Total Sales</b>	<b>231,691</b>	<b>206,834</b>
<b>DIRECT COSTS</b>		
Repairs and Maintenance	11,456	13,382
Group Costs	79,041	72,737
Depreciation	17,226	10,756
<b>Total</b>	<b>107,723</b>	<b>96,875</b>
<b>GROSS SURPLUS FROM TRADING</b>	<b>\$123,968</b>	<b>\$109,959</b>

NOTE: This Statement is to be read in conjunction with the Notes to the Financial Statements and Auditor's Report



## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

## Statement of Financial Performance

For the year ended 30 June 2014

	2014 \$	2013 \$
<b>OPERATING SURPLUSES TRANSFERRED</b>		
Rowley Vineyard Operations	314,469	149,382
Budge Street Property Account	103,775	98,777
Grovetown Park Property Account	123,968	109,959
<b>TOTAL</b>	<b>542,212</b>	<b>358,118</b>
<b>OTHER INCOME</b>		
Marlborough Food & Beverage Innovation	153,167	-
Marlborough District Council	110,000	110,000
Reserve Funds	8,000	15,568
Drylands Forestry Projects Grants	165,744	201,752
Drylands - Sponsorship	53,000	-
Drylands - Sundry Income	6,640	-
SFF Project Funding	-	12,535
VineFacts Subscriptions Received	42,675	37,125
MSI NZ Delegation	-	69,000
Interest Received	8,203	29,596
Capital Gain on Disposal of Assets	285	-
Sundry Income	-	77
<b>Total Income</b>	<b>1,089,926</b>	<b>833,771</b>
<b>Operating Expenses</b>		
Audit Fees	3,725	3,650
Administration Costs	18,910	17,426
Office Expenses	16,163	12,215
Operating Costs	14,487	28,068
Personnel	142,228	141,595
Insurances	6,376	4,467
<b>Total Operating Expenses</b>	<b>201,889</b>	<b>207,421</b>
<b>Operating Surplus</b>	<b>888,037</b>	<b>626,350</b>
<b>Grants</b>		
Industry Seminars & Workshops	14,000	14,000
Grants - Plant Foods Research	27,000	27,000
SFF Funded Projects	10,000	35,465
Grant - Drylands Forestry Project	168,788	262,197
Strategy Development	-	41,099
P&F Research - Met Information Grant	25,000	24,000
Sponsored Projects	-	65,397
Food & Beverage Innovation	140,962	26,702
FBI - Riddet Contract	22,500	11,203
VineFacts	30,000	30,000
Branding	-	16,330
Grape Marc Ltd	12,386	-
<b>Total Grants</b>	<b>450,636</b>	<b>553,393</b>
<b>Net Surplus Before Depreciation</b>	<b>437,401</b>	<b>72,957</b>
<b>Less Depreciation Adjustments</b>		
Depreciation as per Schedule	18,444	18,814
Depreciation - Loss on Sale	269	-
Depreciation Recovered	(2,567)	-
Net Depreciation Adjustment	16,146	18,814
<b>NET SURPLUS</b>	<b>\$421,255</b>	<b>\$54,143</b>

NOTE: This Statement is to be read in conjunction with the Notes to the Financial Statements and Auditor's Report

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## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

## Statement of Movements in Equity

For the year ended 30 June 2014

	2014	2013
	\$	\$
<b>EQUITY AT START OF PERIOD</b>	5,436,876	5,382,733
<b>SURPLUS &amp; REVALUATIONS</b>		
Net Surplus After Tax	421,255	54,143
Movements in Revaluation Reserves	(1,559,534)	-
Movements in Research Reserves	(8,000)	-
<b>Total recognised revenues &amp; expenses</b>	(1,146,279)	54,143
<b>EQUITY AT END OF PERIOD</b>	<b>\$4,290,597</b>	<b>\$5,436,876</b>

NOTE: This Statement is to be read in conjunction with the Notes to the Financial Statements and Auditor's Report



## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

## Statement of Financial Position

For the year ended 30 June 2014

	2014	2013
	\$	\$
<b>CURRENT ASSETS</b>		
BNZ - Ready Money Account	7,959	-
BNZ Current Account	3,527	-
BNZ On Call	875	68
GST Refund Due	-	32,847
Accounts Receivable	398,965	119,612
Income Accruals	4,885	15,221
New Office Costs - Budge St	-	2,970
Vineyard WIP	6,983	194,202
<b>Total Current Assets</b>	<b>423,194</b>	<b>364,920</b>
<b>NON-CURRENT ASSETS</b>		
Fixed Assets as per Schedule	3,810,710	4,794,390
Investments		
Kiwibank Term Deposits	44	44
BNZ Term Deposits	184,200	531,693
Total Investments	184,244	531,737
Total Non-Current Assets	3,994,594	5,326,127
<b>TOTAL ASSETS</b>	<b>4,418,148</b>	<b>5,691,047</b>
<b>CURRENT LIABILITIES</b>		
BNZ - Ready Money Account	-	56,010
BNZ Current Account	-	6,434
GST Due for payment	29,682	-
Accounts Payable	92,910	143,570
Accrued Expenses	4,959	48,157
Total Current Liabilities	127,551	254,171
<b>TOTAL LIABILITIES</b>	<b>127,551</b>	<b>254,171</b>
<b>NET ASSETS</b>	<b>\$4,290,597</b>	<b>\$5,436,876</b>

MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

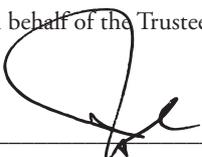
**Statement of Financial Position**

For the year ended 30 June 2014

	2014	2013
	\$	\$
Represented by;		
<b>EQUITY</b>		
<b>Reserves</b>		
Research Reserve	-	8,000
Revaluation Reserve	168,812	1,728,346
<b>Total Reserves</b>	<u>168,812</u>	<u>1,736,346</u>
<b>Retained Earnings</b>		
Opening Balance	3,700,530	3,646,387
Surplus transferred	421,255	54,143
<b>Total Retained Earnings</b>	<u>4,121,785</u>	<u>3,700,530</u>
<b>TOTAL EQUITY</b>	<u>\$4,290,597</u>	<u>\$5,436,876</u>

The accompanying notes form part of these Financial Statements and should be read in conjunction with the reports contained herein.

For and on behalf of the Trustees;

Trustee 

Trustee 

Date: 11 September, 2014

## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

## Schedule of Fixed Assets and Depreciation

For the year ended 30 June 2014

Asset	Purchase Date	Cost Price	Book		Depreciation			Accum	Book
			Value 01/07/2013	Additions Disposals	Mth	Rate	\$	Deprec 30/06/2014	Value 30/06/2014
<b>LAND &amp; BUILDINGS</b>									
Grovetown Park SH1		975,703	850,796	92,645			8,419	133,326	935,022
Grovetown Park - Revaluation	Jun 2014	502,198	502,198	82,780	1	0.0%	DV	584,978	
Research Centre - Budge Street		2,508,093	1,942,634	468,533			467	565,383	2,411,166
Research Centre - Revaluation	Jun 2014	1,226,148	1,226,148	(1,642,314)	1	0.0%	DV		(416,166)
<b>TOTAL LAND &amp; BUILDINGS</b>		<b>5,212,142</b>	<b>4,521,776</b>	<b>(998,356)</b>			<b>8,886</b>	<b>698,709</b>	<b>3,515,000</b>
<b>PLANT &amp; EQUIPMENT</b>									
Research Centre - Budge Street		121,448	46,664	19,711			10,016	84,582	56,090
Rowley Vineyard		19,529	5,118	5,224			2,118	15,598	9,440
<b>TOTAL PLANT &amp; EQUIPMENT</b>		<b>140,977</b>	<b>51,782</b>	<b>24,935</b>			<b>12,134</b>	<b>100,180</b>	<b>65,530</b>
<b>MOTOR VEHICLES</b>									
Rowley Vineyard		32,826	17,353	7,779			3,430	11,714	22,872
<b>TOTAL MOTOR VEHICLES</b>		<b>32,826</b>	<b>17,353</b>	<b>7,779</b>			<b>3,430</b>	<b>11,714</b>	<b>22,872</b>
<b>FURNITURE &amp; FITTINGS</b>									
Grovetown Park - SH1		63,843	33,839			12	8,807	38,811	25,032
Research Centre - Budge Street		29,081	10,628	14,892			2,490	20,943	23,030
<b>TOTAL FURNITURE &amp; FITTINGS</b>		<b>92,924</b>	<b>44,467</b>	<b>14,892</b>			<b>11,297</b>	<b>59,754</b>	<b>48,062</b>
<b>VINEYARD</b>									
Development expenditure		301,334	155,911			12	12,435	157,858	143,476
Irrigation	Nov 2002	12,073	2,305			12	14.4% DV	332	10,100
Netting		9,128	796			12		129	8,461
Staff Room & Ablution Block	Jan 2014	13,130				6	0.0% DV		13,130
<b>TOTAL VINEYARD</b>		<b>322,535</b>	<b>159,012</b>	<b>13,130</b>			<b>12,896</b>	<b>176,419</b>	<b>159,246</b>
<b>TOTAL</b>		<b>5,801,404</b>	<b>4,794,390</b>	<b>(937,620)</b>			<b>48,643</b>	<b>1,046,776</b>	<b>3,810,710</b>

NOTE: This Statement is to be read in conjunction with the Notes to the Financial Statements and Auditor's Report



## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

**Disposal Schedule**

For the year ended 30 June 2014

Asset	Purchase Date	Cost Price	Book		Dep'n Recovered	Loss on Sale	Capital Profit	Sale Date
			Value 01/07/2013	Sale Price				
Blinds for Sensory Room	Aug 2005	577	34	500	466			Aug 2013
Office desk	Jul 2010	637	419	150		269		Aug 2013
Rotary Hoe	Jun 1996	932	1	1,217	931		285	Dec 2013
Farm Bike	Oct 1991	6,201	46	304	258			Feb 2014
Massey Ferguson 35	Jun 1996	1,165	131	1,043	912			Jan 2014
		<b>9,512</b>	<b>631</b>	<b>3,214</b>	<b>2,567</b>	<b>269</b>	<b>285</b>	

NOTE: This Statement is to be read in conjunction with the Notes to the Financial Statements and Auditor's Report 

## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

**Notes to the Financial Statements**

For the year ended 30 June 2014

**1. STATEMENT OF ACCOUNTING POLICIES**

The financial statements here presented are for the entity Marlborough Research Centre of Excellence Trust, a charitable trust registered under the Charitable Trusts Act 1957. These Financial Statements have been prepared in accordance with generally accepted accounting practice.

The accounting principles recognised as appropriate for the measurement and reporting of earnings and financial position on an historical cost basis have been used, with the exception of certain items for which specific accounting policies have been identified.

**(a) Changes in Accounting Policies**

There have been no changes in accounting policies. The method of valuing the land and improvements has changed as described in Note 4. All other policies have been applied on bases consistent with the prior year.

**(b) Differential Reporting**

Marlborough Research Centre of Excellence Trust qualifies for Differential Reporting because:

- it is not publicly accountable, and  
- it is deemed to be 'not large' due to the following criteria –

- \* the gross turnover is less than \$20 million, and
- \* total assets are less than \$10 million, and
- \* there are less than 50 fulltime employees.

Marlborough Research Centre of Excellence Trust has taken advantage of all available differential reporting exemptions.

**(c) Income Tax**

The trust is not subject to income tax as it is a charity registered with the Charities Commission.

**(d) Receivables**

Receivables are stated at their estimated realisable value. Bad debts are written off in the year in which they are identified.

**(e) Fixed Assets**

Fixed Assets have been included at cost less accumulated depreciation, with the exception of land and buildings, which have been revalued as at June 2014. Details of fixed assets are set out in the attached Fixed Asset Register.

**(f) Depreciation**

Depreciation has been charged on a cost price or diminishing value basis, in accordance with the method and rates currently approved by the Inland Revenue Department.

**(g) Work In Progress**

Work in progress is recorded at cost.

**(h) Goods & Services Tax**

The Statement of Financial Performance has been prepared so that all components are stated exclusive of GST. All items in the Statement of Financial Position are stated exclusive of GST, with the exception of account receivables and payables.

## MARLBOROUGH RESEARCH CENTRE of EXCELLENCE TRUST

**Notes to the Financial Statements**

For the year ended 30 June 2014

**2. AUDIT**

These financial statements have been subject to audit, please refer to Auditor's Report.

**3. INVESTMENTS**

Interest has been accrued at balance date. Investments are as follows:

Account #	Interest Rate	Maturity Date	Balance 30.6.14	Balance 30.6.13
<b>Bank of New Zealand</b>				
3130	4.00%	01/11/2014	\$184,200	\$271,524
3131	4.30%	30/10/2013	\$0	\$260,169
162599-025	3.10%	On Call	\$875	\$68
<b>Kiwibank</b>				
00	0.00%	Current	\$44	\$44
			\$185,119	\$531,805

**4. FIXED ASSETS**

The land and improvements were revalued by Alexander Hayward, independent registered valuer (F.N.Z.I.V, F.P.I.N.Z.) in June 2014. The methodology employed reflects fair value incorporating the lease conditions and remaining term in respect of land at Budge Street. The revaluation has resulted in an increase in the value of Grovetown Park of \$82,780 and a decrease in the value of the property at Budge Street of \$1,642,314. For the previous revaluation (June 2011) the methodology employed was based on depreciated replacement cost which is a different methodology than that used in 2014.

Depreciation rates used are:

Buildings - 0%

Grovetown Park building fitout and amenities - 2% to 3% cost price, or 8% to 25% diminishing value.

Budge Street building fitout and amenities - 14.4% diminishing value.

Plant and equipment - 12% to 50% diminishing value.

Motor vehicles - 12% to 30% diminishing value.

Furniture and Fittings - 8% to 40% diminishing value.

Vineyard - 6% to 39.6% diminishing value.

**5. EVENTS SUBSEQUENT TO BALANCE DATE**

There have been no events subsequent to balance date which impact on the results disclosed in these financial statements sufficiently to warrant inclusion in these notes.

**6. CONTINGENT LIABILITIES**

At balance date there are no known contingent liabilities. Marlborough Research Centre of Excellence Trust has not granted any securities in respect of liabilities payable by any other party whatsoever.

**7. CAPITAL COMMITMENTS**

As at balance date there are no known capital commitments (2013: \$400,000 committed to the redevelopment of the Budget Street offices).

**8. RELATED PARTIES**

Brent Marris (Director of Marisco Vineyards Limited) is the son of John Marris, who served as Trustee of the Trust during the year. Marisco purchased grapes and wine from the Trust, totalling \$636,960 during the year. The transactions were on standard commercial bases.

Bernie Rowe, Trustee, was a Partner in Gascoigne Wicks who provided legal counsel for the Trust.



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## INDEPENDENT AUDITOR'S REPORT

### To the Members of Marlborough Research Centre of Excellence Trust

#### Report on the Financial Statements

I have audited the financial statements of Marlborough Research Centre of Excellence Trust on pages 41 to 50 which comprise the Statement of Financial Position as at 30 June 2014, and Trading Accounts, the Statement of Financial Performance and Statement of Movements in Equity for the year then ended, and a summary of significant accounting policies and other explanatory information.

#### Trustees' Responsibility for the Financial Statements

The Trustees are responsible for the preparation and fair presentation of these financial statements in accordance with generally accepted accounting practice in New Zealand and for such internal control as the Trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

#### Auditor's Responsibilities

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with International Standards on Auditing (New Zealand). Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Other than in my capacity as auditor I have no relationship with, or interests in, the Marlborough Research Centre of Excellence Trust.

#### Opinion

In my opinion the financial statements on pages 41 to 50 present fairly, in all material respects, the financial position of the Marlborough Research Centre of Excellence Trust as at 30 June 2014 and its financial performance for the year then ended in accordance with generally accepted accounting practices in New Zealand.

A handwritten signature in black ink that reads 'Angela Wood'.

Angela Wood  
 Chartered Accountant  
 Blenheim

11 September 2014





MARLBOROUGH  
RESEARCH  
CENTRE  
Te Rito Hiranga o Wairau



**MARLBOROUGH  
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Only Marlborough