



JULY 1999

Growth challenges

by Geoff Thorpe

It's been a long time since our last Riversun newsletter but we certainly haven't been relaxing in our extended autumn. A huge amount has happened in the space of six months while we dealt with the growing pains of our ever-expanding business, outlined in this new-look, bumper issue.

It's been a busy growing season with grafting levels treble that of three years ago and the rate of recoveries significantly lifted. Of the 1.3 million grafts made in the last season, our rate of recoveries of saleable vines has hit 80 percent for the second year running, compared to the international average of 60 percent.

On the production side of Riversun, the last season saw an extra half million vines grafted including 125,000 potted vines.

New soil types at our two new nursery sites have exceeded our expectations not only in the successful strike rate but also in the growth and the quality of roots.

We met our year-end target by finishing grafting in the first week of December and having all plants in the ground by Christmas. But just as that settled down and we all looked forward to a well-earned break, we were inundated with orders for the next two years.

Since then we have been grappling with the "problem" of how to physically increase volumes by a further half million without compromising quality. This included



Grape vines ready for dispatch.

gaining a secure supply of high-quality budwood and rootstock, still more land and shed space plus introducing new management and quality control systems.

Riversun's No. 1 priority is always to produce the best quality vines that it possibly can.

Growing grapevines is challenging in itself (I've been doing it for 18 years now) but growing a business so

rapidly is even more demanding.

With new skills required, Riversun developed a new level of management. But even with management and financial systems

"Riversun's No. 1 priority is always to produce the best quality vines."

in place, we couldn't grow the business without the raw materials.

A shortage of rootstock meant we had to look closely at security of supply if we were to guarantee large volumes of materials within our quality parameters.

By late February we had contracts in place and had built up an additional four hectares of our own rootstock source blocks. **Continued on page 2**

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FROM THE TOP

by Geoff Thorpe

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We then approached the New Zealand Grape Vine Improvement Group to negotiate a long-term supply for budwood material.

However, although Riversun accounted for over 50 percent of VIG's total throughput in 1998, our rapid growth meant VIG was unable to supply the volumes we required, and within our quality parameters. We needed long-term contracts with increased quality standards and we needed to satisfy our customers and the New Zealand wine industry's demand for superior quality material.

As part of our untiring pursuit of excellence we have since formed Linnaeus, with the express purpose of developing a grapevine certification system of international repute.

Our long-term vision is for Linnaeus to be a fully-commercial, certified plant material service for the New Zealand horticultural industry, concentrating for the first three years on the viticultural industry.

This will enable us to achieve our stated aim of having the highest quality grafted vines in the world in five years. It will involve the establishment of a Level 3 Quarantine greenhouse facility with an attached Level 3 Quarantine Diagnostic Laboratory with fully-qualified diagnostic scientists on staff.

The vision is long-term and involves carrying out extensive research and development into issues affecting the New Zealand viticultural industry. One of the most important lessons I have learnt in 18 years in business is the incredible value of developing a seven-year vision for a new company before laying the first brick. We spent a lot of time developing the vision of what Linnaeus would look like in seven years time and built it from there. To that end, our first appointment was Linnaeus general manager Craig Sinclair.

We now have a powerful team which will collectively work to guarantee the success of both Linnaeus and Riversun.

As the saying goes, overnight success usually takes 10 years' hard work.

Until next time,

Geoff



New nursery site at Puhā, January 1999.

Order now or miss out

Want to be supplied with a large number of vines in 2002? Then place your order now.

Riversun vineyard consultant Nick Hoskins says even if growers are unsure about what type of rootstock or clone they will require, they should still get their orders in as soon as possible.

Each year Riversun grows vines surplus to those ordered. Although 200,000 surplus vines were grafted this year, requests totalled 800,000.

"We're all booked up for this year's grafting for supply in 2000 and we are almost booked up for grafting in 2000 to supply in 2001.

"If growers want large amounts, they will be looking at 2002 for supply."

With regard to storing vines, Nick says it is better for the vines to be kept under Riversun control until growers are ready to plant. When the word is given, they can supply them immediately.

Potted vines now bullet-proof

Riversun's potted vines will soon be winging their way to growers in a new format.

The 5x5cm Monarch plant bands they once called home will now be upgraded in a bid to reduce the problems experienced last season by some growers. The main benefits of potted grafted vines are that they shorten the grafting to planting time from 12 to three months (allowing clients to establish vineyards one year earlier), and, from a nursery perspective, reduce exposure to field operation risk.

Vineyard consultant Nick Hoskins says that generally those growers who were fussy with the care of their potted vines – using vine guards and staking and providing water and nutrients – did well with them.

"Those who did well got at least a metre or more of cane growth from 80 percent of their vines."

While Riversun was happy with the results from the nursery (90

percent first-grade plants), it was less than happy with the vine establishment and performance for some clients. The senior team travelled to California to check out the nursery production systems and vineyard establishment techniques operating there to determine why the problems were occurring.

In California, potted vines account for 90 percent of the industry and production totals 30 million a year. The production of dormant vines is almost non-existent. One nursery alone grew 14 million potted vines compared to Riversun's 120,000 last season.

"We discovered that this season a lot of the Californian nurseries had moved away from plant bands because they can wick water away from the vine and create a barrier to the roots. They can perform well but are not as robust as other products.

"From that we have fine-tuned our production system to give what we're sure is a far more bullet-proof product. Our confidence in this small modification

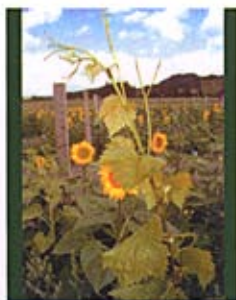


Nursery manager Athol Campbell checking on the progress of potted vines, October 1998.

means we are lifting production to 300,000 vines this year. However, this means a doubling of greenhouse space to cater for the larger plastic pots."

After their trip to California, the team is confident that potted vines which made less than satisfactory top growth last season will bolt away this spring.

This coming season, Riversun is insisting that clients using potted vines also commit to using vine protection, a bamboo stake and irrigation management. Combined with the larger removable pot, this should guarantee strong growth in year 1.



New era of discovery

Linnaeus was established to offer a gene pool management service to the New Zealand grape growing industry with the long-term vision of being a plant material certification service for the horticultural industry.

Such a service was seen as critical to addressing the ongoing vine health issues facing the industry. The aim is to develop accreditation procedures that guarantee clients receive certified, true-to-type, disease-free stock of the highest possible health. Its mission is to be a world-class source of superior quality, high health viticultural genetic plant material within three years.

Linnaeus is currently sourcing and selling budwood and rootstock plant materials that are 100% Elisa-tested for GVLR 1 and 3.

An ELISA laboratory has been established and over the next year the aim is to establish clonal selection and improvement services for wine companies, nurseries and other interested parties.

This will involve the establishment of a Level 3 Quarantine greenhouse facility with an attached Level 3 Quarantine diagnostic laboratory with diagnostic scientists on staff.

General manager Craig Sinclair says these facilities will enable Linnaeus to provide its clients, including Riversun, with premium certified high health source plants. Linnaeus will also offer a range of associated services including disease testing and virus elimination, importation through a Level 3 quarantine facility, rapid propagation, research and development plus certification and accreditation.

The vision is long-term and involves carrying out extensive research and development into issues affecting the New Zealand viticultural industry.

New Zealand's trump card in wine production is quality, he says. To stay at the top of the quality scale, it's important to source and supply superior quality vine material. That's what Linnaeus is all about.

What's in a name?

Little more than a stone's throw from Riversun's Awapuni Road complex in Gisborne, Captain James Cook made his first foray on to New Zealand soil. The scientific team that accompanied him on his Endeavour voyage in 1769 included Banks, Solander and Parkinson plus Tahitian navigator and interpreter Tupaea. Riversun is sited on the corner of Banks Street. At its rear are Solander, Parkinson and Tupaea streets.

As Cook journeyed into uncharted territories, Banks and Solander were classifying plants and animals into groups using a system developed by Swedish naturalist Carolus Linnaeus (1707-1778), who produced the binomial system of classification.

Linnaeus' system gave a straightforward means of sorting plant and animal life into species and genera. Although much modified, his hierarchical classification and binomial nomenclature have remained standard for over 200 years.

During the Endeavour voyage from 1768 to 1771, Banks and Solander collected 3607 different

species of which 1400 were new to science. When they returned to Europe, Linnaeus described the collection as "a matchless and truly astonishing collection such as has never been seen before, nor may never be seen again."

As his concepts were modified and as more and more plant and animal specimens were sent to him from every corner of the globe, Linnaeus continued to revise his *Systema Naturae*, which grew from a slim pamphlet to a multivolume work.

One of the 7700 plant species he classified was *Vitis vinifera* L., the fruiting grape vine and mother vine of sub-species including chardonnay, sauvignon and cabernet.

Just as Linnaeus sought to construct a natural classification system that would reveal the divine order of God's creation in the universe, so too does Linnaeus seek to accurately quantify the existing NZ grapevine gene pool.

The Linnaeus name is in a sense carrying on the tradition — order out of chaos.

TENDRILS

with vineyard consultant
Nick Hoskins

Methods vary for training young vines in their first and second years in the ground. In the north, it is more common for a vine to be supported by a string to the top of the post (at about 1.8m) and grown straight up, with laterals taken out during the year. In the second year this is untied and 10 to 20 buds laid along the fruiting wire, usually between 800mm and 1.2m above the ground.

In southern regions, where growth is not as extensive, it is common for the first year's growth, usually about 1 metre of cane, to be trained up a stake. It is then cut back to a hand-span under the fruiting wire. As it comes away in the spring, two shoots are selected and trained each way along the wire, 10 to 20 buds laid at the second pruning.

I'm not saying one method is better than another. Soil, geography and climate all influence the decision on what is the best method. However, I constantly see people laying too much wood in the second and third year with the result that the vines are put under too much stress at a time when they're still trying to expand their root systems. The vines will really suffer the following year and be more likely to have either the same amount of fruit or less.

Vines need to be developed in a systematic way. Limit the fruiting in the first cropping year to about 1.5 to 2kg per vine and manage them with fruit and shoot thinning. We don't want the vines to shut down and stop growing. We need to keep them growing with green foliage so that the roots can continue to expand. This yield can be increased the following year by another 1.5 to 2kg until they reach their target yield. This is a better method than "going for broke". You may get 10 tonnes the first fruiting year but only five the following year because the vines are under stress and more susceptible to disease. It's better to have five tonnes the first fruiting year and 10 tonnes the second.

Make sure you've planned the yield for your vines and stick to it.

Look at what other growers have done and talk to a consultant. Whatever you do, don't overstress the vines in their first few years. It will only cause problems.

A vineyard should be there for 50 years. Why take the risk?



New spraying rig in action on the Cameron Road property.

Re-establishing collection

Linnaeus has recently won the contract to recollect the total collection of the New Zealand Foundation Vineyard.

This means that cuttings will be taken from all plant material at the Te Kauwhata and Blands collections for re-establishing next year in Marlborough. Linnaeus has suggested the material be ELISA-tested initially with the clean material then PCR-tested to determine its true status and the "dirty" material labelled as such.

The Government originally contracted MAF and then HortResearch to care for and develop the New Zealand Foundation Vineyard before it fell into private hands and ultimate disarray.

In 1996 the New Zealand Grape Vine Improvement Group and its Certification Working Group identified

the vital importance of this genetic material to the future of the New Zealand wine industry.

As part of a national certification scheme, it re-established the high health material from the Hamilton Blands and Te Kauwhata centres to the Marlborough Research Centre.



But a lack of funding and human resources brought this to a halt.

Last year NZ Winegrowers identified this national archive as a high priority and subsequently committed funding to it.

The awarding of the contract to collect and propagate this valuable archive is a vote of confidence for Linnaeus.

Unified approach to vine improvement

The future for vine improvement can only be positive. Particularly since some of the big names in the vine improvement scene are now all working together under the Riversun/Linnaeus banner.

Geoff Thorpe, Mart Verstappen and Nick Hoskins are all committed to vine improvement, as is reflected in their collective years of experience in the field.

Mart chaired the Marlborough Grape Vine Improvement Group for two years while Nick chaired the Wairarapa group for seven years, representing the district on the national executive. He remains a member. Geoff was involved with the group for 12 years, chairing the Gisborne group plus, for the past seven years, the national body's certification working group.

Plants thrive in new soils

A 5000-year-old Gisborne beach frontage has provided spectacular results for newly-grafted vines.

The now-inland Cameron Road site, formed at a time of significant volcanic activity, is one of two new sites where soils have exceeded expectations. Not only did the soils achieve the best strike rate, they also provided the best growth and quality of vine roots ever seen by Riversun.

Geoff Thorpe says the free-draining site with a sandy ash base provided almost hydroponic growing conditions for the plants, so essential when they are shifted from the "intensive care" callus room to extreme conditions in the field.

The second site at Puha is also volcanic ash over silt and gravel.

The new soil types were identified as part of Riversun's risk management strategy to try to guarantee a high level of recoveries. Last year two thirds of its production went into this unique virgin ground.

"Because there are some risks involved in going



Lifting plants from this free-draining soil at Puha is easy, even after rain.

into unproven sites, we did a lot of work last season quantifying the whole grapevine production system. We did weekly leaf samples, fertigation and twice-weekly digital readings of soil moisture to allow us to best manage the soil types and build up a valuable database of information to help in future seasons." Artificial shelter and irrigation was set up on 15 ha of new ground.

A specialised over-row trimming machine (known as The Alien) was developed to handle large areas and a new sprayer bought to enable the spraying of a 20m bay in one pass.

This year Riversun is looking at the feasibility of establishing a nursery in the Bay of Plenty as part of its risk management strategy.



More to goo than meets the eye

Phaeoacremonium, Black Goo, Young Vine Decline ... call it what you will. The fact is that much remains unknown about this fungus and how it reacts in combination with other fungi and viruses. Whether Phaeo is a causal agent, a result of environmental or viticultural production stress (overcropping) or some other combination of disease, it is the subject of much worldwide debate. As-yet unpublished American research indicates there's more to the problem than meets the eye.

While many growers are having samples tested positive for Phaeo, much evidence shows it is endemic in all grafted, even healthy, vines. It's only in the past 12 months that New Zealand laboratories have even been able to isolate Phaeo.

Linnaeus technical manager Mart Verstappen says the presence of Phaeo does not mean it's the cause of their decline. It is yet to be established whether vine decline is caused by Phaeo on its own, whether it's a combination of fungi or whether it's a combination of Phaeo and certain viruses.

Many have touted hot water dipping as the cure-all but Riversun's experiments over the past two seasons gave a diverse range of results from outstanding to highly unsatisfactory.

During his 10 years at Marlborough's Cloudy Bay Vineyards, Mart carried out extensive hot water dipping treatment. This season he is complementing Riversun's combined knowledge in a research and development programme aimed at determining the rightful place of hot water dipping in the NZ industry. "Hot water treatment has shown you can eliminate a number of fungi within a plant. Certain fungi will be killed by treating them at 50 degrees C for 30 minutes. But we're not 100 percent sure it will kill Phaeoacremonium. Certain grape varieties will withstand 50 degrees at half an hour but others won't."



This year Riversun is offering its clients the option of having their vines hot water dipped to 50 degree C for 30 minutes at a small surcharge. However, clients will need to sign a release of liability for damage with Riversun. The treatment will not be offered as a standard procedure until such time as Riversun has the highest level of confidence in the process.

Phaeoacremonium is the name of the particular pathogen whereas black goo, a black tarry substance, is the result of Phaeo being present. In the United States, the name has been changed to Young Vine Decline in recognition of the fact that Phaeo is part but not necessarily the cause of the decline.

"We see a lot of Phaeo around the country. We have established that neither first or second year growth gives an indication of it but in third year growth, black goo can be seen oozing out."

The focus for Riversun now is on developing commercially-sustainable protocols which will be effective in the control of fungal disease in stock without causing severe damage in vineyards at planting time.

Shed operations manager Reece Needham attended a two-day hot water dipping conference in Australia which provided full training in the world-class protocols followed across the Tasman where the jury is also still out on the issue. In the U.S., hot water dipping is not part of their hygiene practice because as yet the science doesn't back the need for it. Geoff Thorpe says:

"We want to see the science and are committed to carrying it out. We are putting in an application to carry out that research to follow on from the \$20,000 we spent in that area last year. We need a high level of confidence that not only are we not damaging the young vine but that the treatment is going to be effective."

Dispatch

With processing under way, Riversun is now starting to dispatch vines. Two options are available for growers. The wax cardboard box system introduced three years ago is still available for smaller orders but larger clients are able to take their products in recyclable bins for delivery in lots of 5000 vines. Over the next two months, 900,000 vines will be dispatched to their new homes throughout New Zealand.

Third is chardonnay

Chardonnay vines comprise the bulk of grafted and potted vines grown by Riversun. This season chardonnay accounts for 33 percent of the vines grown, sauvignon blanc 28 percent, pinot noir 16 percent, merlot 7.4 percent and semillon 3 percent. And the smallest number of grapes grown? That goes to petite verdot which, with just 10 vines grown, accounts for 0.001 percent of the total.

Processing machine

Much energy has gone into the tight tracking of materials both through the grafting shed and into the nursery. The development of a robust data-tracking system enables every callus-block unit of 200 vines to be tracked from grafting to lifting and processing. Throughout the grafting season it is possible to locate every unit, and identify where the budwood and rootstock came from – both the clone and the source.

While the tracking by source at the processing end had been lost, the new processing machine and extensive modifications made to the grapevine lifting machine imported from Germany last year sees callus-block lots now able to be tracked through to dispatch.

Geoff Thorpe says that while it's been a huge undertaking to track that information through to ultimate planting in the vineyard, it is a key ingredient of the certification system Riversun and Linnaeus are developing for release to the industry in three years' time.

Documentation

As part of last year's programme, Riversun began the process of documenting all its operations to help take the mystique out of its grape vine production. This is the vital first step to gaining IANZ (formerly Telarc) accreditation and all part of Riversun's risk management strategy and aim of developing world-class grape vines. Once this documentation is complete and IANZ accreditation is gained, Riversun hopes to market the system internationally. Nicole West, ex-AFFCO, has taken on this task.



New processing line in action (left and below).

New machinery helps ease logistics of plant volumes

With names ranging from The Alien to The More-Betta, new machinery is making its mark at Riversun... all in the name of easing the sheer logistics of handling large volumes of grafted and potted grape vine products.

The Alien is a specialised over-row trimming/cultivation machine developed to handle large areas, particularly useful in the newly established blocks at Cameron Road and Matawhero.

A Swiss disbudding machine will be put into operation this season to enable 6000 cuttings to be handled each hour.

While initial trials on the machine last year gave Riversun the confidence to proceed, the system required fine-tuning. Reece Needham spent a

successful two weeks in Germany during autumn looking at new technologies in mechanisation systems and post-harvesting equipment. And while Riversun was one of only about seven companies trialling the machine last year, 70 of these units are now operating around the world.

Riversun has also been busy developing a specialised piece of equipment to root-trim, top-prune, wash and count the vines. After initial teething problems, it is now fully operational. After searching the world for such a machine, Riversun finally contracted a Gisborne engineering firm to build one

to its specifications.

Three other projects are in the pipeline, all with a view to developing specialised equipment for the world grapevine production market.



New skills employed

The growth of Riversun and this year's birth and rapid growth of Linnaeus has resulted in the development of a whole new level of management, requiring new levels of skills.

Last December Riversun had 20 permanent staff, 100 seasonal staff and 20 hectares of nursery. Now, together with Linnaeus, permanent staff total 28 and nursery area covers 25 hectares.

The change in management structure began in January 1998 with the appointment of former Cedenco senior manager **Kent McGregor** as Riversun general manager. This was followed by the appointment of shed operations manager **Reece Needham**, who had many years of experience in food processing production management at Heinz Wattie.

The addition of vineyard consultant **Nick Hoskins** last September (see also page 7) and technical manager **Mart Verstappen** in late March brought in further expertise. Both are known in the viticultural industry and for their work in the Vine Improvement Group. Mart has been in New Zealand for 17 years and spent the past 10 as a nurseryman at Cloudy Bay. He has a strong background in research, plant propagation and horticulture.

The formation of Linnaeus saw **Craig Sinclair**

appointed as general manager. Craig joins Linnaeus from over 20 years in the international film industry as a producer of high repute. While many may ask



Craig Sinclair (left) and Mart Verstappen.

what use this experience will be in the world of Linnaeus, Geoff Thorpe quickly identified Craig's ability to "make things happen".

Within two months from late February, seven top-level staff were employed.

After a short sabbatical to The Millton Vineyard, Riversun's former sales and marketing manager **Martha Kelly** has joined Linnaeus as operations co-ordinator.

As part of the long-term vision for Linnaeus to be a fully-commercial, certified plant material service for the New Zealand horticultural industry, **Leanne**

Harrison will help track down funding sources for research and development work. **Leanne**, who has a degree in applied science, takes on the role of business development officer.

Linnaeus' new shed operations manager **Mike Alexander** handles the receipt of all budwood and rootstock. Mike had 25 years' experience at senior management level with both the food processing and meat industries.

Huge data tracking and data entry are involved as raw materials enter the grafting process. Each of the 50 movements involved in grafting must be tracked. Considering the need to track 100 cultivars of scionwood grafted on to 14 different rootstocks for over 200 clients, all multiplied by

1.8 million grafts, it is obvious that developing the computer system alone was a massive undertaking. This required a fulltime IT consultant for the past six months.

Nicole West, ex-AFFCO, has taken over the role of documentation co-ordinator. This involves documenting all the operations involved in Riversun's grape vine production and is part of the aim to achieve IANZ accreditation.

With 25 years' laboratory experience behind her, **Fran Edwards** has taken on the role of manager at Riversun's new ELISA laboratory after a long career at Gisborne Hospital Laboratory.

Grape wins the battle

It didn't take long for Riversun vineyard consultant Nick Hoskins to come under the sway of the grape. He got his start in the rural sector at the Wellington City Council where he completed an apprenticeship in amenity horticulture. A shift to Martinborough saw him take up farm work and, at the same time, gain a National Diploma in Fruit Production by correspondence through the Royal New Zealand Institute of Horticulture.

But with the Martinborough wine industry buzzing with excitement, it's no surprise his allegiance quickly switched to viticulture. He helped set up vineyards for Palliser Vineyard in the mid-80s and a few years later moved to the Martinborough Vineyard where he became vineyard manager. During his 10 years there, plantings more than doubled to nearly 25 ha with products also sourced from five contract growers.

His role meant a close association with the winemaking process and a developing interest in the "finicky" Pinot Noir.

"Martinborough Vineyard is one of the most well-known Pinot Noir producers and it is fair to say that the growing of that variety is reasonably difficult. A lot of growers struggle to get it right."



Nick Hoskins

Nick also played a large part in Martinborough Vineyard and four other vineyards gaining ISO14001 certification two years ago. This was the first group certification in New Zealand and the first for wineries. ISO14001, an environmental version of ISO9000, requires those involved to identify, measure and improve their performance with regard to the environment.

But his interest in the grape doesn't stop there. He chaired the Wairarapa Grapevine Improvement Group for seven years, representing the district on the national executive, and remains a member.

Now living in Masterton, Nick joined Riversun nine months ago to provide clients with vineyard support for planting and propagation plus consultancy services. It's a job that takes him all over the country from Waiheke Island to Queenstown.

"The original reason for my position was an attempt to prevent problems in the vineyard before it led to vine loss and requests for replacements. I try to help clients get the best out of their vines."

Although it is difficult to catch up with hobbyist growers in isolated regions, Nick is making every effort to reach as many clients as possible to give advice on the planting and care of new vines.

His consultancy role includes giving professional advice on the set-up and management of new and existing vineyards. Nick is sharing his expertise through a regular column and can be contacted through Riversun, 0800 11 37 47.

ELISA-testing

You've heard about it. But do you know what the initials stand for?

The Enzyme-Linked, Immuno-Sorbent Assay test is the same test used for HIV.

Essentially a sample of cambium tissue is collected from a vine. A special extract solution is added to allow specific antibodies to attach to specific virus particles present in the sample. Then a readable colour change to the sample is facilitated where the target virus is present.

From May to July, Linnaeus' laboratory staff will carry out 35,000 ELISA tests of plant material for leaf roll virus.

PCR-testing

Linnaeus is looking to fast-track PCR virus testing technology. The new technology is still in the prototyping phase for grapevines but this will form the foundation of its quest for certification. Although the diagnostic work is currently being carried out overseas, Linnaeus is committed to bringing that technology into New Zealand. Staff are working with Dr Rod Bonfigliolo from Australia.

PCR is a far more sensitive diagnostic test than ELISA-testing.

Recoveries

Of the 1.3 million grafts made in the last season, Riversun's rate of recoveries of saleable vines will hit 80 percent compared to the international average of 60 percent.

Staff

Permanent staff at the combined Riversun and Linnaeus facilities now total 28 with seasonal staff at 100 and nurseries occupying 25 hectares.

Total plants

The number of grafts expected to be made this year total 1.7 million. Of these 350,000 will be potted vines and 1.35 million will be field-grown vines. This is an increase of 500,000 on last year's production totals.

No compromise

While demand continues to outstrip our ability to supply by 2 to 1, Riversun is only prepared to grow at a rate which does not compromise quality.



Establishing top ELISA-testing facility

The strong growth in orders over the past six months meant one thing. Riversun had to further increase its volumes of grafted and potted vines to try to meet customer needs within an acceptable timeframe.

That meant ensuring land, shed space and management systems were all available. And most importantly it meant having a long-term supply of large volumes of high-health budwood and rootstock.

Over the first two months of the year, Riversun built up an extra four hectares of its own rootstock source blocks and put long-term rootstock contracts in place around the country.

But when the New Zealand Vine Improvement Group was unable to provide a guaranteed long-term supply of large volumes of quality budwood material, Riversun formed Linnaeus. (It's still looking to source half a million buds from VIG). Linnaeus, it decided,



MATRAVINA

MATRAVINA, incorporating news from Riversun Nursery Ltd and Linnaeus Ltd, is distributed to clients throughout New Zealand from hobbyists to commercial growers.

It is published bi-monthly by Riversun Nursery Ltd
PO Box 1199, Gisborne
Phone: 06 867 1120
Fax: 06 867 8800
E-mail: riversun@riversun.co.nz.

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was the vehicle to deliver its requirements for large volumes of high health material into the future. It was also the vehicle to establish a world-class ELISA-testing facility. Linnaeus seconded vineyard consultant Nick Hoskins to find high-quality source blocks likely to meet

Riversun's diverse requirements. This involved him walking 75 hectares of potential blocks collecting 3 percent probe samples for ELISA-testing to decide whether the blocks were likely to meet testing protocols.

From those results the best candidates for new source blocks were short-listed.

Geoff Thorpe says Riversun's strategy from the start was for Riversun to be able to supply 100 percent ELISA-tested grafted vines for delivery in 2000 (or potted vines in November/December 1999).

"For us to achieve that objective, it meant establishing a world-class ELISA-testing facility. Negotiations with HortResearch showed they couldn't handle that volume.

"The sheer logistics of sampling each mother vine is a huge undertaking. It means 35,000 ELISA tests this season compared to last year's total for the whole industry of 6000."

On the basis of Riversun's first foray into ELISA-testing last year, when it took on the lease of Cedenco's lab, the feasibility of developing its own laboratory was considered. **Fran Edwards** (ex-Gisborne Hospital) was appointed laboratory manager and given the task of establishing it within four weeks. The laboratory quickly developed from scratch to include assistant **Sue McGregor** (ex-Gisborne Hospital) and eight seasonal staff. From May to July, the team will make about 35,000 ELISA tests.

In conjunction with much research and development, staff worked closely with international scientists to



It's all go at the laboratory to complete 35,000 ELISA tests.

develop protocols.

Geoff says: "This is now a world-class ELISA-testing facility – the only one of its size in New Zealand and the envy of many in the industry both locally and internationally.

"We've had to build it from the ground up and move it to a large-scale commercial operation."

So how does the system work? If there are 4000 vines in a vineyard, the vineyard first has to be mapped and labels pre-printed for each vine to identify each vine, row, bay and vine number. A bar coding system was developed to give high levels of data control. Data entry alone is a vast area. Each vine is tested and analysed before any positive results are matched up with the physical vines in the vineyard.

"We have to collect this material from source blocks from Auckland to Marlborough before collecting a single bud for grafting.

"After the initial mapping, collection, testing and marking back out in the vineyard, the cost of ELISA-testing equates to about \$15 per vine. It's a half million dollar project that's part of our commitment to quality. For an extra 10 cents, clients can have scionwood that has been 100 percent virus tested."

Handling the logistics of budwood and rootstock collection for Linnaeus is **Cath Mitchell** who worked for five years as an agronomist for Watties and, prior to that, spent four years in research in Marlborough. She is assisted by **Chris Wright** who worked at Riversun for six years and recently rejoined after three years' travelling overseas.