In This Issue

- Presidents Report
- WEA Membership
- WEA 2020 Conferences
- WEA Website
- Get to know your committee – Blair Hanel – WEA Committee Member
- Dr Richard Smart – “Carbon will be the concern Post Covid”
- Programmed Property Services – “Operating in COVID – 19: What’s Changed & What’s Not”
- The Academic Wino Publication – Environmental Impact Assessment of Four Common Wine Barrel Cleaning Techniques
- Pall Food & Beverage – “Wineries Recover Higher Value Wine & Juice from Lees

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In this edition of ‘WineLines’ we unfortunately have to confirm the cancellation of our planned 2020 conferences due to the COVID pandemic however we are pleased to be able to advise of an exciting alternative that will take place.

This edition’s ‘Get to Know Your Committee’ segment profiles committee member Blair Hanel who has been a member of the WEA for 20 years and has a broad knowledge of the wine industry.

In addition to a couple of supplier based articles provided by two of our sponsors you will also find a very interesting and thought provoking opinion piece from Dr Richard Smart in which he addresses what he considers to be the greatest challenge for the wine industry and humanity once the Corona virus threat has been brought under some form of control.

Also, in this edition we have included a report produced in the USA covering an environmental impact assessment of four common wine barrel cleaning techniques used over there that makes for informative reading.

To say the last first half of the year has been interesting would be an understatement. We have had droughts, fires and COVID. Seems like a perfect storm, but as usual, the industry that we are all involved with persists and like always will prevail.

As a consequence of social distancing and travel restrictions, the WEA have made the decision to cancel the 2020 Australian and New Zealand conferences. We will be back. With challenges like this, comes opportunities and as such, the WEA is working with Winetitles to develop forums to continue the tradition of knowledge sharing through various forms of media – watch this space. The face to face fellowship and fundraising may have to be put ice for the short term.

I hope all our members and associate members, their colleagues and families have remained safe during this unusual period and we all return to normality as soon as it is clear to do so. If you are working at home, avoid the fridge and watch your daylight wine consumption. If you are still at work, stay safe and practice social distancing and good hygiene.

Whilst we can longer catch up at the conference, we will find other ways to keep our members connected and educated and will advise in due course.

Cheers, Ben

Ben McDonald – WEA President
If you are not already a member of the WEA we would strongly recommend that you join as soon as possible in order to ensure that you are kept up to date with WEA events and news plus continued access to the download section of the WEA website therefore allowing you to access presentation materials from previous WEA conferences.

Membership renewals are now handled separately from the conference registrations with the objective being to try and ensure that your membership does not lapse and that in turn you are kept fully informed of all WEA events well in advance of them taking place and just a reminder that membership renewal was due in April.

Those of you who are already existing members, If you know of any colleagues who you believe would benefit by becoming a member of the WEA, please encourage them to apply for membership by either going to our website www.wea.org.au or contacting Trevor Leighton on 0417 597 956 / trevorleighton@wea.org.au

The annual cost of being a member is currently only $65 which not only entitles members to receive the newsletter and other updates but also entitles you to reduced registration fees to our conferences which can result in savings of at least $50 / year

What We’re About

Winery Engineering encompasses the peripheral activities (eg. design, supply, construction and process realisation) that make winemaking possible from grape to glass.

The Winery Engineering Association provides a forum for those who engineer the winemaking process and is intended to complement the existing forums for Winemakers.

The Winery Engineering Association represents the hundreds of people who provide engineering, maintenance and wine production services within and to the Australian and New Zealand Wine Industry. In the early 1980s a small group of people responsible for winery maintenance and engineering got together annually, in conjunction with Programmed Property Services, and discussed items of common interest and helped each other.

That annual gathering grew into the National Conference of the Winery Engineering Association. The two day conferences have been held in most of the major wine regions of Australia, and now we also hold a conference in New Zealand every second year.

Important parts of the conference are the impressive range of presenters who cover a cross section of topics of current interest to all involved in wine production and also the supporting suppliers and consultants to the industry who exhibit their products and whose expertise is available for all attending the conference.

Apart from the conferences the Winery Engineering Association is also fostering discussion groups and presentations in a range of wine areas each year according to demand and availability of expertise. The intention here is to encourage local collegiate support and information sharing.

The association has a regular newsletter “Winelines” which is emailed to members quarterly and we also have a website to provide further information and support for members. Our website also has a section where copies of presentations from past conferences are available for reference.
Unfortunately, due to the COVID-19 pandemic the WEA 2020 conferences that were planned to take place both in Australia and New Zealand have had to be cancelled in order to comply with government regulations and protect the health and well being of our members, exhibitors and other conference delegates.

We are however pleased to be able to advise that the WEA has arranged to partner with Winetitles Media to hold a virtual event titled “WINENG/Grapegrower & Winemaker 2020 Forum & Trade Review” the date of which will be advised shortly.

With the above event only having been agreed to in recent days planning is currently in its early stages and the following media release will be placed in a number of Winetitles Media publications:

Winetitles Media and WEA partner to hold virtual event – WINENG/Grapegrower & Winemaker 2020 Forum and Trade Review

With the COVID-19 crisis resulting in the Winery Engineering Association (WEA) cancelling this year’s WINEENG Conference and Trade Display, a one-off virtual event will now ‘fill the vacuum’ for 2020.

Winetitles Media is proud to partner with WEA to present a ‘published 2020 WINEENG’ in leading wine industry journal Australian and New Zealand Grapegrower and Winemaker (G&W) and in other Winetitles print and online publications in September.

Each year, WINEENG brings together wine makers, winery production operators, suppliers and other industry professionals to share the latest innovations, technology and trends – and this year’s virtual event promises to be no different.

President Ben McDonald said WEA was pleased to be working with Winetitles Media to fill the gap caused by the cancellation of the physical event this year due to the COVID-19 pandemic.

“Winetitles presented a novel concept and WEA is pleased to be jointly working with them to publish a WINEENG 2020 Forum and Trade Review, with digital and podcast options, and webinar broadcast options,” McDonald said.

“We believe this virtual event provides a great opportunity to share valuable information on winery management with wine makers and to support suppliers in these challenging times’, he said

Winetitles Media General Manager Robyn Haworth said the WINEENG/G&W 2020 Forum and Trade Review will comprise Forum papers/presentations as well as a comprehensive Trade Review, providing an opportunity for sponsors and exhibitors to display their ‘latest and greatest’ products and services.

“Bringing the industry together for this virtual event is essential when social distancing is preventing speakers and exhibitors from attending a live event,” Haworth said.

“It’s vital that the new ideas and innovations presented each year at the WINEENG event still reach the industry, albeit on a different platform.”

Further advice and updates will be forwarded and placed on the WEA website www.wea.org.au as planning progresses.
Wine Engineering Association and Winetitles Media announce their jointly published Forum & Trade Review in the September issue of the Grapegrower & Winemaker.

The event will also be broadcast via webinar, podcast and digital platforms, including social media.

The Forum & Trade Review will present to winemakers, engineering and maintenance operators, winery suppliers, researchers and more, a ‘virtual’ forum to share the latest innovations, technology and best practices – ensuring wine businesses across Australia and New Zealand remain competitive and quality driven with leading edge advancements.

THE INDUSTRY’S ‘VIRTUAL’ FORUM AND NETWORKING OPPORTUNITY
Published in the September Grapegrower & Winemaker

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Just a reminder that our new and improved WEA website is now up and running and is a vast improvement and far more user friendly than our original website with the new site having both iPad and iPhone connectivity.
We encourage you to logon www.wea.org.au and we are keen to receive your feedback on how we can further improve the site, as with most sites it will be under constant review and further development.

- Get to know your WEA committee -

Blair Hanel
Committee Member
Employment Profile – General Manager – Separator Technology Solutions

Variety of Job Experience
I’m in my 35th year in the wine industry and have been a member of the WEA for 20 of those years and also a committee member for 10. I have had many roles within the Industry – 15 years + with Southcorp in winemaking and engineering roles and then representing many of the larger wine industry machinery manufacturers – A&G Engineering and Della Toffola Pacific to name a few.

I grew up in Coonawarra and learnt my traits within the Rouge Homme and Wynns Coonawarra Estates Wineries, studied remotely at the University of South Australia and then moved to the Barossa Valley in 1996 within Southcorp Wines.

Current Employer & Location
I am currently employed as the General Manager of Separator Technology Solutions based in Melbourne.

Best thing about the job
In my current role I get to be involved with projects from “concept to commissioning” always a satisfying result when the project is delivered to the customer’s expectations.

I also get to travel and see the developments of many wineries (new and old) from not only Australia and New Zealand but also from around the world – this has been pretty special to be a part of an Industry that is so steeped in history and one thing I will never take for granted.

Current and Future Challenges
The biggest challenge right now – COVID 19, has definitely come out from nowhere and as an industry we have many hurdles to overcome and try and get back on track. I see many of us working quite differently in the coming years to combat future outbreaks.

Pet hates in the winery
Wastage – water and energy! I still see so many wineries wasting precious resources that can be eliminated and/or put back into the wineries process stream.
Outside Interests
My family (and Football, all Sports, Gardening .... ) I was lucky enough to receive two new “titanium” knees in 2019 which I hope will get me back into some more competitive sports like Tennis and Golf in the coming years.
Collecting wines and more recently collecting Single malts – has come in handy during Isolation.

Amusing Industry related photo
I took this pic of a “key station” in New Zealand – What could possibly go wrong? 😁
The following opinion piece has been written by Dr Richard Smart who is a viticulturist with over 50 year’s experience in the wine sector. He has been a researcher, academic and international consultant.

In this thought provoking letter Dr Smart puts forward his thoughts and views regarding what he considers to be the greatest challenge for the wine industry and the world in general once the Corona virus threat has been brought under some form of control.

**An unpopular suggestion:**

For most of us the last few months have been a significantly traumatic period in our lives. Our lives have been to a greater or lesser extent turned upside down by the Corona virus, part of a global phenomenon. It is rather bizarre to think that one of the most simple life forms on earth can cause such mayhem in the elaborate society of mankind, nominally the most developed life form!

Hopefully within months this may end, as such disease impacts always have in the past. My unpopular suggestion is that we will probably not however see a return to the “normal” life which we experienced pre-Covid. My prediction is rather that the “new normal” will be a much less severe disruption, as our society transforms into a “climate change mitigation mode”.

I base this prediction on the idea that the world has little option but to reduce atmospheric pollution with carbon dioxide CO2 and other “greenhouse gases” over the next two decades. Australia had a foretaste of a climate change future with the “black summer” bushfires, as was emphasized recently during the Royal Commission; and predictions are for this situation to get worse. The chaos of a hotter globe which will occur in a few decades (unless we avoid it) is set out for example in “Uninhabitable Earth”, by David Wallace-Wells (Penguin, 2019), a far greater impact than that of Covid-19

**What has this to do with Wine Industry Suppliers?**

The readers may wonder if this is an environmentally inspired political rant by myself. I very much regret that the climate issue has become politicised, and that some readers may be offended by my words. However, I equally believe that main stream Australia supports stronger action for climate change mitigation, and that this sentiment will apply to producers in the Australian wine industry. And, importantly, that there will be impact on wine industry suppliers, and might I say new opportunities.

**A carbon mitigating Australian Wine Industry?**

You may wonder is this likely, since the wine industry is not one normally considered with a heavy carbon footprint. However, while not a major carbon polluter, the footprint could be reduced substantially, as recent studies have shown, and to do so would meet with widespread public, consumer and employee approval.

The New Zealand Wine sector has recently announced a goal of carbon neutrality by 2050 or sooner (the first in the world so far as I know), and I suspect that peak Australian bodies will soon announce similar goals in their future planning.
Life Cycle Analysis studies at the Australian Wine Research Institute have identified particular contributors to wines’ carbon footprint (Abbott et al, 2019). These are especially the centuries-old but almost universal packaging, 750 ml glass bottles, energy intensive in terms of manufacture and recycling (if done at all), and for transport and distribution in general. Grid electricity derived from fossil fuels is another major carbon cost, particularly in the winery, but also in the vineyard, especially for irrigation.

Recent analyses by myself (Smart 2019, 2019a, 2020) have considered ways in which the grape growing and wine making sectors might reduce their carbon footprint. Substitution of grid electricity with renewables solar and wind is a natural for Australia, as will be the basis for Australia’s growing economy in the future (see Ross Garnaut’s SUPER-POWER, Australia’s low-carbon opportunity, La Trobe University Press, 2019). Alternate packaging, especially for ready to drink wines and with smaller carbon footprints should become more widely used. The author is involved with colleagues in an upcoming study of consumer acceptance of alternate packaging in a retail environment.

Another opportunity is with utilization of “waste” biomass, like prunings and pomace. These can be considerable, around half the weight of grapes, and presently may be a cost of disposal. They may be combusted after drying, or using pyrolysis, to produce heat, electricity or biochar.

Generally ignored is the CO2 produced by fermentation, now vented to the atmosphere, adding to problems of climate change due to atmospheric CO2. Systems are available in Europe to capture, clean and compress this very pure form of CO2, for reuse in the winery, and perhaps subsequent sequestration as calcium carbonate.

**Opportunities for Wine Industry Suppliers**

These and other modifications to grape and wine production will produce opportunities for Australian suppliers. These may be in developing new processes, or in manufacture, or as acting as agents for overseas producers. Examples are for systems to collect, bundle and dry vine prunings, systems to handle pomace, and for collection and utilization of fermentation gases, as a few examples. And how about alternate packaging? And electric tractors?

Dr Richard Smart will be pleased to discuss these and other issues arising from this article, contact Richard Smart 04 80188269, richard@smartvit.com.au.

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**References**

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While COVID-19 has transformed many aspects of life, business and the operating environment, it is encouraging to note that amidst all of these, many important things still remain.

Business is as usual – just not as we know it. If so, what can we be certain of in these uncertain times?

When COVID-19 was first categorised as a pandemic, Programmed conveyed to customers the steps that would be implemented to manage on-site works and to keep staff and customers safe.

For many customers, this provided them strong reassurance given the nature of their business and sites. For wineries with production and manufacturing facilities as well as large grounds and gardens that needed on-going maintenance, these enhanced procedures would help ensure that any on-site work and on-site presence did not place customers or their staff at risk.

Yet for many others, safety is and has always been a priority at Programmed; and it was for them business as usual with Programmed, albeit with heightened protocols in accordance to official COVID-19 procedures.

As an anecdotal example of this, Programmed checked in with a customer soon after the communication on safety and on-site approach was sent. Programmed was informed that while the customer appreciated the email, it merely confirmed what they already knew of Programmed and so garnered only a quick read.

Continued customer care

At Programmed, the approach to COVID-19 requirements involve a commitment to keep on working alongside customers and certainty of the pandemic’s eventual passing.

Until that happens says Terri Hosking, Executive General Manager, Programmed Property Services, “Retaining a key focus on people – ours as well as those within the communities we live and work – is the best means we have of navigating our way to the other side because we are indeed in this together.”

Through regular conversations with customers throughout this difficult period, a resolute understanding of changing customer needs has emerged, together with the ability to help customers urgently address these.

“Customers looking to reinforce and protect their sites with more stringent hygiene regimes are calling on Programmed. They’re relying on our knowledge, washing, painting and commercial cleaning services as well as our national supply arrangements to assist them with site protection, prevention and sanitisation strategies. The fact that we have a large readily deployable workforce local to each site, region or state is making it infinitely easier for customers to activate plans quickly.”

Adapting core capabilities in cleaning and washing has also enabled Programmed to modify key services to help customers achieve their site sanitisation requirements.

“Our experience in health and manufacturing sectors with strict hygiene environments requiring rigorous safety practices are proving extremely useful,” Terri said.
Flexible Maintenance
Terri reassures customers of active and continued collaboration. “We acknowledge our customers’ concerns in relation to continuing works. We make certain our Pandemic Management plans incorporate and align with individual customer safety requirements, needs, site plans and all official COVID-19 requirements.”

Programmed is working with winery owners and operators, providing them with options to maintain current works while still abiding by official social distancing, health and safety requirements. Using technology, the company is also facilitating electronic sign ins and making safety documentation available online, thus limiting the need for face-to-face interactions.

Additionally, Programmed is working with customers in a collaborative way to ensure rescheduling of works as and where required.

A third option, which is proving to be extremely beneficial, is to bring forward any future works so that they can be completed now using safe work methods aligned specifically to COVID-19 requirements.

“Conducting future works now is an effective use of downtime and shut downs. Organisations and businesses undertaking works now prepare themselves for an efficient post-pandemic return that will free them to focus on key priorities: sales, revenue and growth.”

Additionally, works that would otherwise affect daily operations can be done now with little or no impact at all.

Terri encourages people to talk to Programmed if they’d like to discuss what options they have for their properties.

Meanwhile, customers are assured of Programmed’s well-prepared guidelines for any on-site works including:

- Compulsory flu shots for any staff attending a customer site
- Social distancing rules with minimal face to face and physical contact
- Restriction to business-critical only customer visits e.g. Supervisory needs, project oversight, incident investigations etc.
- Using phone/electronic means to conduct communications, pre-start or other site meetings where possible
- Strict adherence to all COVID-19 requirements as it relates to the works, sites and communities Programmed operates in
- Complete cessation of works where requested by the customer or as instructed by the government

Staff
The same operational and social distancing approaches apply to staff to help keep them safe and minimise exposure or potential spread of the virus.

Support measures for staff at this time include:

- Facilitating work from home
- Office rotations for when personnel are required to be in the office for business-critical functions
- Limiting travel by suspending all cross-border travel and non-essential domestic travel
- Emotional and mental support via access to professional counselling programs
These, in turn, ensure Programmed continues to maintain business operations to support customer needs.

Where parts of the Programmed business utilise a casual workforce, Programmed is offering up to two weeks paid Isolation Support to anyone suspected or diagnosed with COVID-19, who is required or directed to self-isolate.

**Staying Connected**

“As the situation continues to evolve, Programmed will maintain continuous alignment with our customers, employees and communities while keeping everyone safe. This won’t change,” emphasises Terri.

“Despite the shifting landscape, Programmed continues to be here and here to help. It is times like these that care, empathy and compassion truly come into play. Our consistent practice of these values has made its conscientious demonstration easier and more natural in such a crisis.”

Terri invites the winery community to reach out: “Please, get in touch if we can be of assistance. Together, we’ll see this through, journeying along the path of continuous improvement and innovation to adapt to and shape the new norm that will form the future state of business.”

For more information, please contact Programmed, programmed.com.au | 1800 620 911
American Wine Industry Article as published in The Academic Wino publication

Demand for sustainable wines has been on the rise in recent years, and surveys have indicated that consumers – particularly Millennials and Gen Z — are willing to pay more for sustainably-produced wines. [for more on that read this 2019 Forbes article](https://www.forbes.com/sites/forbescontentstudio/2019/03/18/what-you-should-know-about-sustainable-wine/?sh=49a9f8503044).

While the wine industry’s contribution to the overall carbon footprint and impact on global climate change is relatively minor, it is still large enough that implementing climate change mitigation techniques would be helpful to the overall health of the environment.


There are many ways one can improve the sustainability of one’s winery, the decision on where to improve stemming from a variety of factors, including but not limited to resource availability and cost.

One small portion of the overall wine bottle carbon footprint that one may not immediately think about is the cleaning of barrels that are used for fermentation and aging. During fermentation and after aging, tartaric acid crystals, dead yeasts, and other solids accumulate inside of the barrel. This creates a layer between the wine and the wood, which prevents the wine from taking on the desired sensory characteristics of the wood. As a result of this, cleaning and disinfecting of the barrels must occur.

Water use is a big part of this process, as is various energy expenditures and sometimes chemical disinfectants. One of the more commonly used techniques for cleaning and disinfecting wine barrels is using pressurized hot water (90°C) and high-pressure water vapor (105°C-130°C). Other methods of cleaning/disinfecting wine barrels (some of which may or may not be used anymore) include: scraping, detergents, sulfur-dioxide, ozone, microwaves, dry ice/carbon dioxide, solid CO₂ pellets, and negative oxygen (this last one is in experimental stages).

A new study, available online since January 2020 in the journal *Innovative Food Science and Emerging Technologies*, aimed to examine and compare the environmental impact of four of the more commonly used barrel cleaning/disinfecting techniques using LCA analysis.

**Brief Methods**

The four barrel cleaning/disinfecting techniques compared in this LCA analysis were:

1. Pressurized water + Sulfur dioxide (SO₂) wick
2. Water vapor + SO₂
3. Ozone
4. Carbon dioxide (CO₂) (using dry ice exposure)

The functional unit of study was the 225L oak barrel.

The system boundaries of study were everything needed to perform the cleaning/disinfecting process without transportation after the process was complete.
Factors included in LCA analysis were:

- Electricity consumption of machinery used
- Transportation of the barrels during the cleaning process
- Products used in the cleaning/disinfecting
- Emissions produced by labor
- Consumption of materials and resources during cleaning

Factors NOT included in LCA analysis were: transportation of barrels, set-up of the machines used for cleaning, maintenance of the machines used for cleaning, and storage of the barrels after cleaning was complete.

8 different LCA methodologies were run and compared.

**Selected Results**

- Water vapor + SO₂ cleaning technique had the greatest environmental impact in all categories analyzed, with the exception of the global warming category.
  - Water vapor + SO₂ had up to 5 times higher environmental impact in most of the categories analyzed (see below for some category examples).
  - This technique likely had the greatest environmental impact since it uses both cold and hot water, as well as using machinery that consumes energy to produce water vapor.
- CO₂ cleaning technique had the lowest environmental impact in all categories analyzed, with the exception of the global warming category (which is not surprising since CO₂ waste is released into the atmosphere with this technique).
  - Environmental impact of the CO₂ cleaning technique was between 2.6 and 3.5 times lower than the other treatments for the majority of the categories analyzed.
  - Global warming impact of the CO₂ cleaning technique was 2 times higher than the lowest impact in this category.
  - Other categories tested where CO₂ had the lowest environmental impact included:
    - Water resources
    - Water pollutants
    - Persistent organic pollutants (POP) in water
    - Heavy metals in water
    - Radioactive substances in water
  - Ozone and pressurized water + SO₂ techniques had moderate environmental impact (and were similar in impact to each other).
  - The pressurized water + SO₂ cleaning technique had the lowest environmental impact in the global warming category.

**Conclusions**

Overall, this study found that out of the four barrel cleaning/disinfecting techniques examined, the CO₂ technique was the most environmentally friendly (i.e. lowest environmental impact) based on LCA analysis. Of course, the CO₂ technique did not have the lowest environmental impact in the global warming category (it was 2 times higher than the lowest impact), it scored the lowest impact for all other categories studied by a factor of between 2.6 and 3.5.
The authors of the study concluded that this is the order of overall environmental impact, from lowest to highest:

\[ \text{CO}_2 > \text{Pressurized water + SO}_2 > \text{Ozone} > \text{Water vapor + SO}_2 \]

Though it is not clear how much of the overall production of a bottle of wine the barrel cleaning process affects carbon footprint, this study provides some information for those that might be dabbling with the idea of changing barrel cleaning methods to one that might be a little bit more environmentally friendly and sustainable.

Source:

*The Academic Wino*

Pall Food & Beverage – Australia & New Zealand Advertorial

Overview
Recovery of wine and juice from lees is a challenging yet unavoidable task for wineries around the world. The high concentration and variability of the solids makes filtration difficult, however, with the lees comprising up to 10% of a winery’s total production volume there is still a high percentage of recoverable wine and juice.

Traditionally lees filtration is performed with rotary vacuum drum (RVD) filters or chamber press filters. While these systems can handle the high solids, the open design allows for high oxygen pick up which can negatively impact the product quality. The recovered wine or juice is often downgraded in value and used in lower-tier blends instead of being added back to the original batch.

The existing technologies can also require high volumes of filter aids like diatomaceous earth (DE) or perlite which increase the wineries’ waste generation and disposal requirements, contributing to high operational costs.

The Challenge
With a decreasing global wine surplus, higher prices for bulk wine and increasing competition, wineries are under pressure to increase yield and improve quality. Additionally, with new legislation, they must also satisfy more stringent environmental and food safety requirements. Accordingly, Pall was challenged with finding an alternate solution to allow wineries to filter lees more efficiently and economically. The new technology needed to provide its users flexibility for treating both juice lees during the demanding harvest period and wine lees during normal cellar processing. The goal was to eliminate the use and disposal of filter aids while reducing oxygen pick up and hence improving the quality of the recovered product.

The Solution
To overcome the drawbacks of RVD and chamber press filters, Pall developed the Oenoflow™ HS system. The new system utilizes microporous membranes that are similar to the hollow fiber membranes that have become the standard in wine clarification applications. The difference with the new Oenoflow HS membranes is that the hollow fibers have a larger internal diameter so that they can process higher solids, up to about 80% by volume. Since filtration is achieved with membranes and without the need for filter aids, operation is more hygienic and does not create DE waste for environmental landfill.
One of the biggest benefits that wineries realize by implementing the Oenoflow HS system is improved filtrate quality, which results in a higher value of the recovered wine or juice. The recovered wine or juice can be blended back to the original batch instead of being used in lower-tier products. Oenoflow HS is a closed system with minimal oxygen pick up, typically in the range of 0.2 ppm. This is a big improvement when compared to RVD filters, which often have an oxygen pick up of 4-5 ppm or higher. In addition, the microfiltration membranes provide improved and more consistent filtrate clarity compared to an RVD filter or chamber press.

A winery in Australia achieved considerable improvement in filtrate quality after switching from using an RVD filter to the Oenoflow HS system. With the RVD filter, the turbidity of the recovered product was 10 to 15 NTU for white wines and much higher with reds. With the Oenoflow HS system, the filtrate turbidity is consistently less than 1 NTU. In a 5 month period, this winery recovered over 1,000 hectoliters of wine from lees at a value $168,000 higher than the value that would have been obtained with the RVD filter. This higher value of the recovered wine was the biggest factor in the return on investment for the system, resulting in a short system payback in the order of 1 year.

Flexibility has also proven to be a key attribute of Oenoflow HS system. The system can be used in three different applications. Firstly, the base Oenoflow HS system can be used to recover wine from fermentation and fining lees. Secondly, by adding the Oenoscreen rotary screen filter upstream of the base hollow fiber system, the unit can be used to process must lees during harvest. Finally, when the Oenoflow HS system is not processing lees, it can be used for standard wine clarification duty to increase cellar filtration capacity.

The system can be utilized in different ways to meet the specific needs of each winery. For example, a large global wine company uses a standard hollow fiber wine clarification (Oenoflow XL) system in combination with an Oenoflow HS system to process the complete tank contents of wines after stabilization and a short settling time. The customer uses the XL system to filter about three quarters of the volume in each tank (down to the door) and then uses the HS system for the remaining volume. Processing this way helped both performance of their standard XL clarification system and the overall yield. Their wine clarification system flow rate improved by 15%, and the frequency of chemical cleanings was reduced to once per week. Since the Oenoflow HS system installation, their total recovery has improved now that they can completely empty their tanks. On white wine, their yield improved from 97.1% to 99.15% and on red wine recovery is close to 97%, which is about a 2% improvement. At a winery in Chile, an Oenoflow HS system was purchased primarily for recovery of juice from must lees. The system is utilized as a pre-concentration step for the RVD filter to rapidly recover a portion of their total volume as high quality juice and reduce the volume of lower quality juice recovered using the RVD filter. The winemaker has commented that the juice recovered with the Oenoflow HS system is more aromatic. Finally, another large winery in Australia uses the system in yet another way. This winery uses the HS system to process wine lees in batches as tanks are racked. Then over the weekend the system is used for standard wine clarification duty to supplement their cellar filtration capacity and increase system utilization by about 35%.
The Benefits

By implementing the Oenoflow HS system, wineries can recover higher quality wine and juice from lees more efficiently and economically. When using the Oenoflow HS system to replace traditional filter aid based technologies like RVD and chamber press filters, wineries can realize the following benefits:

- Higher quality, higher value recovered wine and juice and consequently a fast return on investment
- No filter aid consumption, handling or disposal complimenting winery sustainability programs
- Higher yields, improved wine and juice recovery
- Flexibility to process fermentation and fining lees, juice lees and post fermentation wine for clarification
- Flexibility to be operated in many ways depending on the specific winery circumstances
- Reduced labor requirements

When coupled with other value added technologies like the Oenoflow XL, Oenofil or Pall Aria™ water treatment systems, Pall can help wineries produce the highest quality products at the lowest possible operating costs.

About Pall Corporation

Pall Corporation is a global filtration, separation and purification leader providing solutions to meet the critical fluid management needs of customers across the broad spectrum of life sciences and industry. We work with our customers to advance health, safety and environmentally responsible technologies. Pall Food and Beverage provides products and services to ensure product quality and maintain process reliability in beverage and food production. Our solutions also assist in consumer protection, the reduction of operating costs and waste minimization.

To secure your Oenoflow HS Filtration System for vintage 2021, please contact your local PALL Australia/New Zealand systems representative:

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Pall Corporation has offices and plants throughout the world. For Pall representatives in your area, please go to www.pall.com/contact
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From harvest to bottling, our wine filtration expertise helps you protect what matters.

Visit our website to learn more.

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