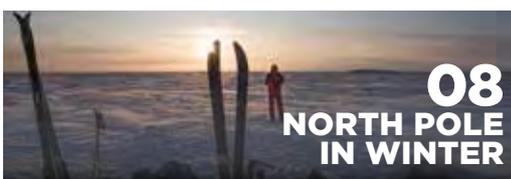


Beyond the bale

ISSUE 82 MARCH 2020
PROFIT FROM WOOL INNOVATION
www.wool.com



**WORKING
TOGETHER
FOR A
BRIGHTER
FUTURE**



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NORTH POLE
IN WINTER



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RHDV2 RABBIT
CALICIVIRUS



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SMART TAGS PUT
TO THE TEST

Beyond thebale

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FRONT COVER

A shearer training camp for young Ingenious Australians in the Mid-West region of Western Australia has made them job ready for shed work, thereby benefiting both the wool industry and local communities. **Read more on page 56.**



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GETTING ON WITH BUSINESS



Stuart McCullough
Chief Executive Officer
Australian Wool Innovation

We are continuing with initiatives to help increase the demand for wool through investments in marketing and R&D – from farm to fashion.

RECOVERING FROM DROUGHT AND BUSHFIRE

The past few months have seen some of the most dramatic climatic conditions that Australia has seen. I have been deeply concerned about the circumstances of the many woolgrowers and rural communities that have not only been experiencing the effects of ongoing drought conditions, but also those of you who have been affected by the unprecedented scale of the bushfires this season.

For a long time now, AWI has been proactive in providing support and information resources to woolgrowers in need. On the AWI website at www.wool.com/droughtresources, we make available a range of drought planning and management publications, webinar recordings and other resources for woolgrowers going into, enduring or recovering from drought. We also provide links to useful external resources and government agencies that provide drought assistance. As this fire season began, we also made available on the AWI website at www.wool.com/bushfires a range of resources for woolgrowers to prepare for and recover from bushfires.

Thankfully, many parts of the country have recently received some reasonable falls of rain and green grass is returning to paddocks. While not everyone has received the same amount of rain and it's probably too soon to say that the drought has broken, the conditions for a lot of woolgrowers has improved, which is a great relief. Many woolgrowers will be considering purchasing replacement sheep and restocking, or letting their stock out of containment yards. For those woolgrowers, AWI provides information resources for rebuilding in a considered way to maximise benefits and avoid potential problems.

Whether you are recovering from drought and/or bushfire, I urge you take advantage of AWI resources. This includes utilising the resources of the AWI-funded grower networks which run in each state: Sheep Connect in NSW, South Australia and Tasmania; Leading Sheep in Queensland, BestWool/BestLamb in Victoria and The Sheep's Back in WA. Their website and contact details are at www.wool.com/networks or call the AWI Helpline on 1800 070 099.

AWI REVENUE AND EXPENDITURE

In the past 6-12 months, AWI's revenue, which is largely dependent on wool levy income, has taken a hit. This is due to a combination of three things. Firstly, the reduction in the rate of wool levy from 2% to 1½%, which came into effect on 1 July last year. Secondly, the fall in Australia's wool production caused by the drought. Thirdly, the fall in the EMI that began about 10 months ago resulting in the EMI now being about 25% down on the record prices we had during 2018/19.

AWI operates in a lean, efficient and transparent manner, but just like any business with a reduced income, we have had to make cutbacks in staffing and projects. While we have had healthy reserves, some of which we are using, the reality is that with a reduced revenue we can't provide the level of R&D and marketing that we had done in previous years. Nevertheless, rest assured that we are making sure that what we do is done for the maximum benefit of Australian woolgrowers.

WOOL MARKET AND PRICES

During the past few months, prices have begun to recover from the fall in the EMI that happened in mid-2019. The current

1500-1600c EMI is good, but not great. I still firmly believe that Merino is a \$20-fibre, because cashmere is a \$120-fibre, and the fibre characteristics of cashmere and wool are precisely the same. While cashmere is slightly finer on average, Australia has Merino wools that are as fine as cashmere and have a better length. I am very confident that the EMI can reach heights of \$20+ again.

However, we are facing some tough global economic issues: international trade tensions such as those involving the US and China; weakened consumer demand for all goods (not just wool); and now there are the worries about the Coronavirus, although this thankfully hasn't had a significant effect on the wool market so far.

It's important we remain confident and show resilience during this period of market fluctuation. I strongly believe that the premium and natural qualities of our fibre and the relationships we have built along the supply chain during the past decade ensures a positive outlook for Australian wool. At AWI, while we work to defend traditional markets like suiting, we are very active in pursuing new and growing markets, especially in sports and athleisure apparel, and in regions like the USA, where there is great potential to grow the market for wool.

REVIEW OF PERFORMANCE

AWI is now 98% through implementing the recommendations of the company's independent Review of Performance (ROP). To aid transparency with woolgrowers, industry and Government, AWI's online Review of Performance Implementation Portal (ROPIP) has been available for all to view since we launched it in September 2018. It continues to provide detailed and up to date information about the progress that has been made by AWI in implementing the recommendations. See the next page and <http://rop.wool.com> for more details. 

REVIEW OF PERFORMANCE RECOMMENDATIONS

AWI'S PROGRESS OF IMPLEMENTATION

As part of AWI's three-year business cycle, an independent review of performance (ROP) of AWI is routinely undertaken to assess the company's performance. The latest ROP was undertaken by Ernst & Young (EY) for the period 2015-2018. EY's report, which was published in July 2018, included 82 recommendations.

In September 2018, AWI launched its ROP Implementation Portal at rop.wool.com to provide detailed and up to date information to woolgrowers about the progress made by AWI in implementing the 82 recommendations. Displayed right is a summary of the overall progress, and the progress across each of the seven themes of the recommendations.

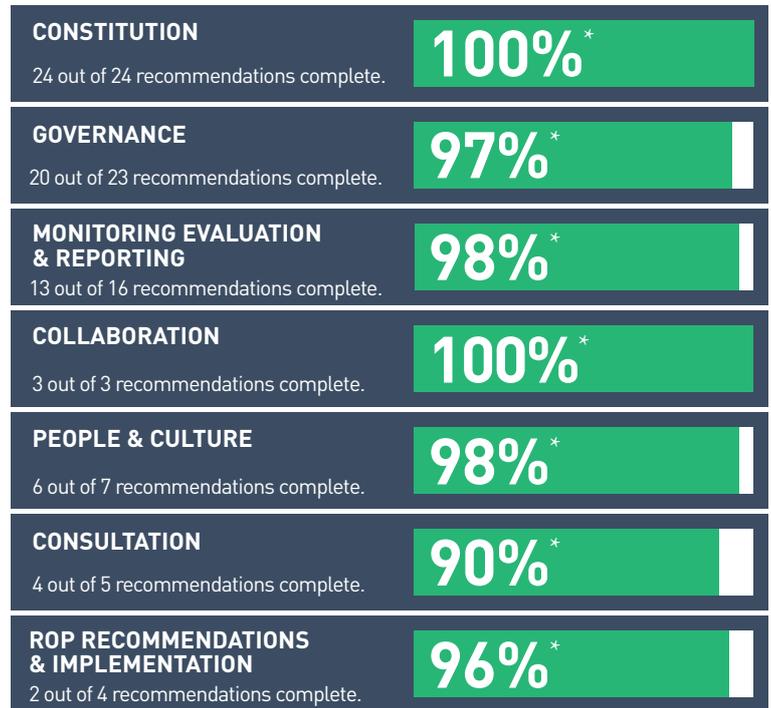
Further information is available at rop.wool.com

98%
OVERALL
IMPLEMENTATION
PROGRESS



(as at 11 February 2020)

THEME IMPLEMENTATION PROGRESS



* Percentage figure is calculated on the cumulative completion rate within each theme. Remaining recommendations at various completion stages. To view individual recommendation progress rates, visit rop.wool.com

WOOL INDUSTRY LONG-TERM PLAN

AWI's Woolgrower Consultation Group is to develop a 10-year strategic plan for the Australian wool industry, in consultation with woolgrowers and other industry stakeholders. AWI will resource the development of the plan.

The Woolgrower Consultation Group (WCG) held its first meeting on 15 November last year, which was attended by representatives from 26 woolgrower groups as well as the Department of Agriculture, together with AWI directors and managers.

One of the main purposes of the WCG meeting was to discuss the framework for a wool industry 10-year strategy (which will help guide AWI's three-year Strategic Plans). The development of a strategic long-term vision for the wool industry was one of the recommendations from the 2018 Review of Performance.

Members of the WCG were asked to supply to AWI their group's research and development (R&D) and marketing priorities prior to the

meeting, and these were grouped into the following nine main themes for discussion: Genetics; Animal welfare and biosecurity; Feral pests; Pastures, farming systems and drought; Shearer and wool handler training; Digital; Market intelligence and traceability; Grower engagement; and Marketing.

Consultation with wider industry stakeholders will be paramount throughout the plan's year-long development process. It is anticipated that this wider consultation process will include a combination of online and phone surveys, one-on-one meetings, workshops and regional meetings.

One of the strong messages arising from the WCG meeting was the importance of attracting and mentoring young entrants to the industry. This will mean ensuring gender and age equity is evident within the WCG and will be achieved by each WCG member nominating a suitable second representative to mentor and join them as part of the WCG.

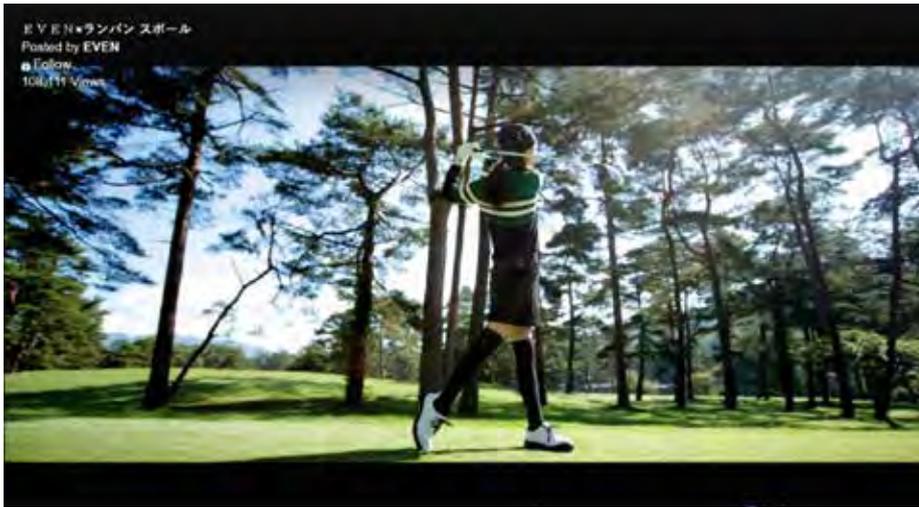
AWI is facilitating the development of the 10-year industry plan, while the WCG is the principal oversight body for the project and will be the ones ultimately to approve the plan. It is the intention that the plan will be launched before the next AWI Annual General Meeting (AGM) in November. **B**

WHAT IS THE WOOLGROWER CONSULTATION GROUP?

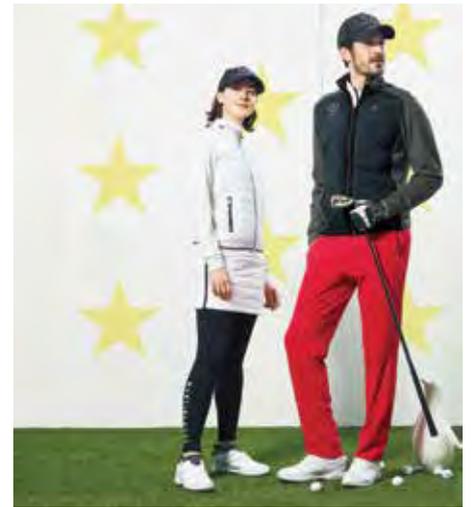
AWI's new consultation model was developed with industry endorsement and rolled out last year. It enables AWI to ascertain the key R&D and marketing priorities of woolgrowers and industry. It has two key forums through which AWI formally consults and engages with woolgrower representative groups.

Firstly, the **AWI Woolgrower Industry Consultation Panel (WICP)** which is made up of national woolgrower representative organisations, the Department of Agriculture, AWI and an independent chair. The second forum, the **AWI Woolgrower Consultation Group (WCG)** is a broader group comprising representatives of state and regional production-based woolgrower groups, as well as the members of the WICP. **B**

MORE INFORMATION
www.wool.com/consultation



A clip from a video by **Lanvin Sport** promoting its wool golfing apparel in Japan.



A promotion of **Munsingwear** wool golfing apparel in Japan.

WOOL TEES OFF IN JAPAN

The biggest sportswear group in Japan has expanded the number of its products containing wool, thanks to a marketing collaboration with The Woolmark Company during the past Autumn/Winter season as well as the upcoming Spring/Summer season.

The Descente Group is the largest Japanese sportswear group with annual sales of A\$1.87 billion and it operates several major sports and outdoor apparel brands including golfing brands Munsingwear and Lanvin Sport and outdoor brand Marmot.

The Woolmark Company is supporting the promotion of nearly 100,000 pieces of wool and wool blend products of these three brands during the Autumn/Winter season and upcoming Spring/Summer season.

Descente has in the past only used a small amount of wool. However, following an inspiring AWI-organised tour of several

Australian wool-growing properties in 2018, and close work with the various brand managers, it decided to expand its use of wool and convey the story of the fibre to consumers.

"Through this collaboration with three of Descente's brands, we are marketing Merino wool as the best fibre for sports and outdoor activities, but also promoting Merino wool as a natural and earth-friendly fibre of choice," said AWI Country Manager Japan Samuel Cockedey.

"We are encouraging these three brands to increase their use and marketing of wool whilst also creating a successful

business case so that we can extend our relationship with other brands of Descente Group in the future."

THE THREE BRANDS

Munsingwear is one of the famous golf wear brands in Japan for men and women. It is the third largest brand in the Descente Group with 150 stores and 500 wholesale partners. Wool apparel promoted during the recent campaign has included golfing jackets, jumpers, trousers and skirts.

Lanvin Sport is widely acknowledged as a high-end French golf wear brand in Japan and has 58 stores and 60 wholesale accounts. Wool jumpers and jackets have been promoted during the past winter season.

Marmot is a well-known outdoor wear brand for men and women in Japan, with sales mainly from 800 wholesale partners. It is the first brand in Japan to use the 100% Merino wool water and wind resistant Neulana Protect fabric made using Optim™ technology. Aside from wool jackets, other wool products promoted have included long-sleeve T-shirts.

MARKETING ACTIVITIES

The marketing of the brands' wool products includes print and digital channels as well as in-store promotion.

Print advertorials promoting the wool products and educating readers about the natural origin and benefits of wool have appeared in the most famous and major newspaper in Japan, *Nikkei*, golf magazines and brochures.

Digital promotion has included features on Descente's and the brands' own websites, the most famous outdoor/fashion website in Japan 'Go Out Web', as well as social media posts on Instagram and Facebook.

In-store promotion at all 208 of Munsingwear's and Lanvin Sport's stores across Japan has included window displays, brochures, wool care guides, special swing tickets and digital signage, plus wool key ring mementos. **B**



Marmot is the first brand in Japan to use the 100% Merino wool water and wind resistant Neulana Protect fabric made using Optim™ technology.



MERINO AT ISPO

Polar explorer **George Bullard** launching the **Dark Ice Project** on The Woolmark Company stand at the ISPO sports and outdoor trade show.

With the industry's continued focus on sustainability (sustainability is no longer a trend, it is an inherent aspect of the textile industry), the world's leading sports and outdoor trade show ISPO was this year again the perfect opportunity for brands to drive demand for Merino wool.

Merino wool's presence continues to increase in the rapidly growing sports and outdoor market. This was very much in evidence at the ISPO trade show in January in Munich which attracted more than 80,000 visitors from more than 120 countries.

Increased competition in the activewear market means a growing number of brands are looking to innovate with natural performance fibres, such as Australian Merino wool. This move not only allows for a point of difference, but also fulfils the demands of environmentally-aware consumers seeking a healthier lifestyle.

AWI's marketing arm The Woolmark Company once again exhibited at ISPO, displaying innovative wool products – for activities such as yoga, hiking and cycling – and championing Australian wool's natural benefits and technical properties.

In a major new initiative, The Woolmark Company along with adidas, BYBORRE and GORE-TEX were announced as official technical partners for the 'Dark Ice Project', an ambitious winter expedition to the Arctic, strategised by three of Britain's most accomplished polar explorers – see pages 6-7 overleaf. The four companies have been tasked to design and create a kit to meet the athletes' physiological and environmental needs. The explorers' fibre of choice,

Merino wool, provided the starting point for the kit's development. A selection of the garments was on show at The Woolmark Company's stand at ISPO before they go through the final round of testing.

Also on display on The Woolmark Company stand was a prototype yoga collection illustrating the full potential of Merino wool in technical seamless performance apparel (see page 7). Partnering with knitting machine manufacturer Santoni Shanghai and designed by innovative knitwear designers Studio Eva x Carola, the seamless yoga collection was created using Merino wool yarn from Südrolle Group.

The latest edition of AWI's The Wool Lab Sport sourcing guide was again available for viewing, providing visiting manufacturers and brands with direct access to the world's most innovative technical performance fabrics and yarns. The inaugural The Wool Lab Vision (see page 25) was also on show.

WOOL WINNERS OF ISPO AWARDS

Prestigious awards were won at ISPO by several companies for their wool innovations. German company Alpina Sports won Product of the Year in the Snowsports category for its ProLan Vest which is a back protector to help keep skiers or mountain bikers from injury. It consists of three layers of pressed 100%

wool and it won the award for its cushioning properties, comfort and sustainable approach.

A seamless running shoe that has a knitted Merino wool inner layer won Italian company UYN a Gold Award in the Fitness & Team Sports category. In the Outdoor category, Icebreaker won a Gold Award for its 100% Merino wool Nature Dye 200 Oasis Long Sleeve Crewe, while Italian company SALEWA won an award for its Fanes Wool Powertex Jacket for women.

A new award category at ISPO this year was the Brandnew category for newcomers to the sporting goods business. Founded in 2018, Berlin-based label mvdham uses only natural fibers, as is the case with its LAPALUE range that uses a padded two-layer fabric made from wool and silk, which won the company the ISPO Brandnew award in the Urban Outdoor category.

Zhejiang Xinao Textiles of China won the ISPO Textrends award for the Base Layer category for its Bundle yarn. The yarn is produced using Hybrid Spinning Technology where ultra-fine Merino wool together with polyamide is 'bundled' together during the yarn formation process. Circular knitted fabrics and garments made from the Bundle quality yarn exhibit a high degree of wear performance while maintaining a smooth surface appearance.

SEAMLESS MERINO KNITWEAR

DESIGNED FOR PERFORMANCE

A new prototype yoga collection that illustrates the full potential of Merino wool in seamless performance apparel is being showcased to the textile trade by AWI's subsidiary The Woolmark Company, with the aim to drive new growth opportunities for wool in sports and performance wear markets.

Merino wool is soft next to skin, breathable, naturally elastic and odour resistant, making it ideal for stretch related activities like yoga. In addition, the eco-credentials of the fibre – namely being 100% natural, renewable and biodegradable – align with yoga's connection with both nature and mindfulness.

Seeing a gap in the market for seamless yoga apparel made from Merino wool, The Woolmark Company's processing innovation team introduced Merino wool to the state-of-the-art circular seamless knitting machines of Santoni.

Through rigorous product development, a 12-piece collection was designed by innovative knitwear design studio Eva x Carola, using Merino yarn from Südwolle Group. Created in a vibrant colour palette, the collection includes leggings, crop tops and bras, racer-back tank top and a T-shirt, all designed with performance in mind.

The collection was launched at the sporting textiles trade show Performance Days in Munich in November and continues to be shown by The Woolmark Company at other leading trade shows, including ISPO (see opposite). International trade shows are the ideal place to showcase the collection, with the aim to inspire the attending manufacturers



A prototype seamless yoga collection made from Merino wool is being showcased by The Woolmark Company at trade shows across the world to inspire brands to use the fibre in similarly innovative ways in their own collections.

and brands to use Merino wool in their own seamless performance apparel, thereby building demand for the fibre.

“This innovative new concept yoga collection draws on the form and function of seamless construction whilst highlighting wool’s natural benefits and innate versatility.”

Julie Davies, AWI

“With the increasing rise of mindful consumption and the importance of health and wellbeing, The Woolmark Company brought together a collection of like-minded partners inspired by fitness and yoga's connection with all things natural,” explained AWI General Manager, Processing Innovation & Education Extension Julie Davies.

The Woolmark Company works closely with spinners to develop Merino wool and wool-rich yarns for specific categories, such as performance-wear, and in this way drives new growth opportunities for wool.

Choosing the perfect yarn was a major factor for the design of this collection, with Eva x Carola finding the right balance between pushing a next level three-dimensionality in seamless products with a certain level of performance, whilst also retaining the right touch and feel.

The collection's hero yarn is a superfine 15,5 micron Merino wool yarn from the Südwolle Group.

“For our next-to-skin yarns we use superfine Merino wool, ranging from 15.5 microns upwards to ensure next-to-skin softness and comfort,” said Michel Mastio, Director Circular Knitting and Hosiery Yarns, Südwolle Group.

“The persistent rumour that wool is itchy is outdated and clothing made from this Merino

wool has a wonderful soft touch. Choosing the right twist level is always a balancing act between the yarn's hairiness and softness. Next-to-skin clothing must be abrasion resistant and so a higher twist level is needed.”

“The beauty and sophistication of this natural fibre means we can create styles with an unparalleled level of fineness and softness, creating innovative patterns and structures on a single finished fabric.”

Leila Guo, Santoni

The collection was constructed using the latest seamless technology circular knitting machines from Santoni Shanghai. What started as a way to manufacture comfortable under garments, these machines are now opening new markets.

“Seamless technology from Santoni Shanghai is key to creating graphics within the textiles,” explained Santoni Shanghai Marketing Director, Leila Guo. “When seams are removed, fantastic results can be achieved; the garment attains a new level of comfort that is seldom found with conventional methods.

“Combining wool with Santoni Shanghai's technology means we can create a unique touch experience with fine gauges, no seams and mindful engineering. Clothing has that all-important second skin effect that feels soft and sensual against the skin.”

MORE INFORMATION

www.woolmark.com/yoga



The DARK ICE PROJECT

AN EXPEDITION ACROSS THE ARCTIC IN THE DARKNESS OF AN ICY WINTER

The three explorers taking part in the **Dark Ice Project** will trek across the **North Pole** in the total darkness of the Arctic winter, experiencing below -40° Celsius temperatures and hurricane-force winds. Luckily, they'll be wearing Merino wool!



FAST FACTS

- The Dark Ice Project involves three of Britain's most accomplished polar explorers embarking on a gruelling six-month expedition to collect vital scientific data from the Arctic Ocean and trek to the North Pole, all in the darkness of winter (hence the name 'Dark Ice Project'). This is the first expedition of its kind and a unique venture.
- The Woolmark Company is an official apparel partner of the Dark Ice Project and will bring together leading sports and technical apparel partners and manufacturers for the project. They are developing an innovative Merino wool apparel system for each of the explorers that will enable them to perform and ultimately, survive.
- The project will help promote the performance and eco benefits of Merino wool and drive product innovation that can be commercialised at the end of the expedition.

The Woolmark Company with its Dark Ice Project partners is creating the ultimate polar exploration garments for a trio of explorers who will travel across the Arctic to the North Pole in the dark of winter. The project provides a unique opportunity to showcase and ultimately commercialise innovative products made from Australian Merino wool.

Imagine the North Pole in winter. -40° Celsius, icy winds and complete darkness.

There are only a handful of polar expeditions in history that have ventured into the polar winter. However, in September this year, three Britons will venture into the darkness on an unassisted six-month journey, aiming to get all the way to the geographical North Pole before the sun begins to rise six months later in March 2021.

More is known about the surface of the moon than the Arctic Ocean in winter, yet it provides a key barometer to the health of our planet. So this first-ever winter expedition is not only about exploring new territory but also about making fresh discoveries in environmental science, such as finding out the behavior

of microplastics in the Arctic Ocean and measuring ice thickness to help understand climate change.

The three explorers – Alex Hibbert, George Bullard and James Wheeldon – will set off in September from northern Canada for the first phase of their expedition, a three-week sail northerly on the Arctic Ocean. They will then drift in their boat while they undertake their scientific research, until January next year when they will begin their ski/trek to the North Pole. If they arrive at the North Pole by 19 March 2021, they will be the first explorers to reach the North Pole without resupply in polar winter conditions, before the sun rises.

The ski/trek phase will take up to 70 days with the explorers usually trekking for 8-10



The **six-month expedition** will commence in September this year, but the team have already tried out the kit on a pre-expedition trip to Canada to test and refine the equipment and garments.

hours each day, in extreme cold reaching -40° Celsius and hurricane-force winds. Remember, the trek will also be in total darkness with no sunlight during the winter months!

The explorers' kit and equipment will be key to their success. Such extreme conditions mean there are specific and exacting requirements for their garments, such as wind and water resistance, durability, breathability, moisture management and maintaining thermal comfort.

The Dark Ice Project draws on the expertise of technical performance leaders The Woolmark Company, adidas Terrex, BYBORRE and GORE-TEX to design and create a kit to meet the athletes' physiological and environmental needs.

Merino wool is the original performance fibre and its technical benefits coupled with its eco-credentials – it is 100% natural, renewable and biodegradable – make it the fibre of choice for the explorers' kit.

“We are delighted to be able to build and create specialised base- and mid-layer garments that are not only sustainably sourced but also traceable from Australian farms to the finished products.”

George Bullard,
Dark Ice Project explorer

“Our clothing forms an essential part of this project; indeed, it allows us to survive in the harsh winter on the Arctic Ocean,” said Dark Ice Project explorer George Bullard.

“We are delighted to be able to build and create specialised base- and mid-layer garments that are not only sustainably sourced but also traceable from Australian farms to the finished products. This ethos aligns seamlessly with ours.”

The kit has currently undergone lab testing as well as two rounds of extreme wear testing to ensure ultimate performance; the first being a series of high-tech environmental chamber tests and the second during a one-month pre-expedition trip in northern Canada.

The wool single jersey base-layer developed has successfully outperformed the single jersey base-layer previously worn by the explorers, securing a reduction in total weight of 18%, an increase in thermal resistance of 26%, a 3% increase in breathability and the dry time and drying rate improved by 28% and 61% respectively. The base- and mid-layer fabrics have also undergone Woolmark quality assurance testing.

Feedback provided by the explorers based on their experience on the pre-expedition trip will be used to make any necessary changes to the final kit.

“The Dark Ice Project not only reinforces The Woolmark Company's commitment to championing innovation at the fibre, processing and garment stage, but also highlights our dedication to promoting best-practice to ensure minimal impact on the environment.”

AWI CEO Stuart McCullough

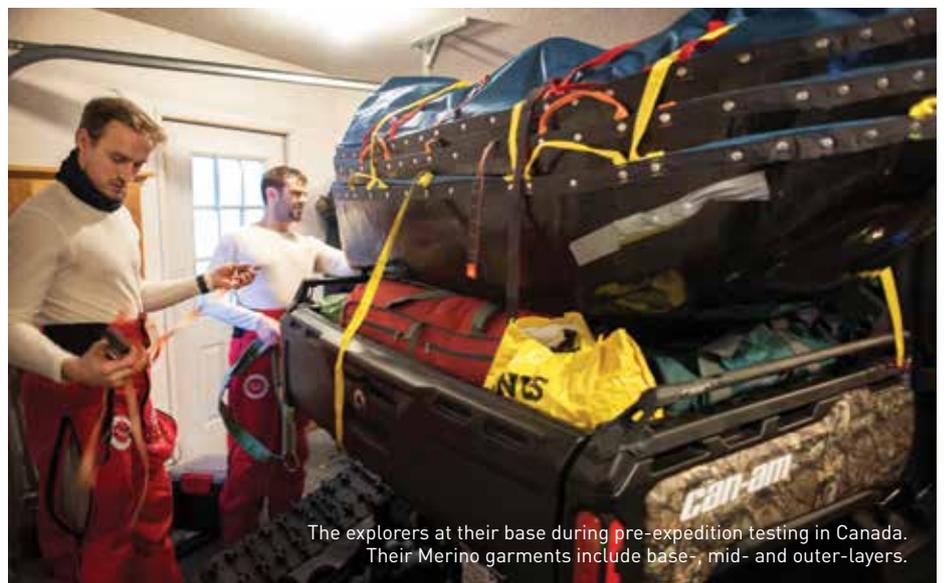
The Dark Ice Project will not only garner attention for the performance and eco benefits of Merino wool amongst sports and outdoor brands, the wider apparel trade and global media, but it will also present new and innovative wool fabrications to the trade that can be commercialised for wider adoption. The expedition team's scientific investigations will also highlight and reflect wool's eco-credentials.

“The Dark Ice Project not only reinforces The Woolmark Company's commitment to championing innovation at the fibre, processing and garment stage, but also highlights our dedication to promoting best-practice to ensure minimal impact on the environment,” said AWI CEO Stuart McCullough.

“We are proud to have partnered with this group of like-minded global leaders in performance and innovation, challenging and inspiring us in new and unique ways.”

The Woolmark Company and textile innovation studio BYBORRE have developed a wool-rich base- and mid-layer system from technical Merino yarns from the Südwole Group, providing next-to-skin comfort, superior breathability and enhanced protection from the elements. By utilising innovative Merino wool yarns and fabrics, the explorers are able to dress lighter, without losing protective benefits such as warmth.

Adidas Terrex has developed the outerwear in collaboration with BYBORRE, supported by The Woolmark Company and GORE-TEX. The outerwear includes weather protection technology from GORE-TEX, along with a wool fleece lining in the trousers and jackets for enhanced thermoregulation, to be worn during the ski phase of the expedition.



The explorers at their base during pre-expedition testing in Canada. Their Merino garments include base-, mid- and outer-layers.



Models displaying the Merino wool garments by the 10 finalists in front of the crowds at the **International Woolmark prize** event in London.

INTERNATIONAL WOOLMARK PRIZE

During last month's London Fashion Week, woolgrower Anthea Sutherland of 'Pooginook' presented this year's International Woolmark Prize, the illustrious fashion competition that generates long-term demand for Australian Merino wool by connecting emerging designers and consumers with our premium fibre.



Woolgrower **Anthea Sutherland** of 'Pooginook' with winning designer **Richard Malone**, to whom she presented this year's International Woolmark Prize.

On an exciting February evening in central London, more than 16,000km from the sheep paddocks of 'Pooginook' in the southern Riverina of NSW, woolgrower Anthea Sutherland had the distinction of announcing the winner of the 2020 International Wool Prize in front of an audience comprising global fashion celebrities, influencers and media.

"I am part of a fifth-generation wool-growing family, currently from Jerilderie in Australia, standing here in front of you at the International Woolmark Prize at London Fashion Week; what a privilege to represent Australian woolgrowers here tonight," Anthea told the audience.

"Many woolgrowers rarely have the opportunity to see the end products created by our precious fibre – especially at the stunning

level we see here tonight. Each and every designer here tonight has done Australia's wool industry proud. I am so looking forward to going home and sharing this unforgettable experience with other growers.

"I would like to congratulate AWI on the initiative of the International Woolmark Prize. The encouragement and opportunity they provide to young designers and countless people across the fashion industry to empower the use of our amazing, low impact, and traceable fibre is simply outstanding."

"Each and every designer here tonight has done Australia's wool industry proud."
Woolgrower Anthea Sutherland

Anthea reinforced to the audience the natural eco credentials of Australian Merino wool.

"From our unique and diverse landscape is produced this exquisite and sustainable fibre. Our passion and dedication to our sheep and to our land means we continue to work with Mother Nature, not against her, to ensure our industry thrives in the most sustainable way possible."

It was very fitting for an Aussie woolgrower to present the award, given that the International Woolmark Prize celebrates the beauty and versatility of Australian Merino wool, showcased in garments by outstanding emerging fashion designers.

Relaunched in 2012 by AWT's marketing arm,

The Woolmark Company, the International Woolmark Prize generates long-term demand for Australian Merino wool by increasing the knowledge of and lifetime loyalty to the fibre amongst the competition's designers and alumni around the globe.

Furthermore, the phenomenal interest in these awards from fashion communities and media globally has helped put wool back on the agendas of a broader range of fashion designers, manufacturers, brands and retailers, and consequently into retail stores for consumers to purchase.

THE 2019/20 COMPETITION

To reinforce the origin of the fibre and the integrity of the supply chain used in the creation of the collections, each finalist was this year required to present 'traceable' collections, using technology from platform partner Provenance. By focusing on transparency and sharing key product



Woolgrower **Anthea Sutherland** interviewed by Nine News' Europe Correspondent **Sophie Walsh** at the International Woolmark Prize finals in London.

information, each designer brings the supply chain to the shopper in a way that's accessible and trustworthy.

Also, for the first time this year, the 10 designers were supported by The Woolmark Company's Innovation Academy – a fast-track mentoring and education program helping brands implement best practices to address environmental and social issues along with sustainable business growth.

The 2020 International Woolmark Prize also saw the introduction of the inaugural Karl Lagerfeld Award for Innovation, in honour of the late icon and International Woolmark Prize alumnus who won the coat category in 1954.

The Merino wool designs from the 10 finalists in this year's competition – selected from more than 300 applicants from 47 countries across the world – were judged at the finals event in London by some of the most respected fashion industry experts.

"What I'm loving this year is the use of wool mixed with sustainability," explained judge Edward Enninful OBE. "The Woolmark Prize for me is a sign of excellence; it puts designers on an international level."

The competition also, once again, connected with leading industry taste-makers, such as actor Colin Firth and *Vogue Australia's* fashion director Christine Centenera, as ambassadors for the award.

Finalist collections will be available for commercialisation in September 2020 via the International Woolmark Prize retail network which includes David Jones, Mytheresa.com, Matchesfashion.com, Takashimaya and Lane Crawford.

WINNER OF THE INTERNATIONAL WOOLMARK PRIZE

The winner of this year's International Woolmark Prize is Ireland's Richard Malone who created a collection inspired by his

Designer **Richard Malone** (second from right) with models wearing three looks from his award-winning Merino wool collection.



upbringing in Wexford to create considered, functional and beautifully made garments that minimise harm to the environment and works towards creating a circular, sustainable fashion system.

Eliminating traditional chemicals to provide a natural, less intensive method of dyeing, the Irish designer worked with a society of incredibly skilled weavers in Tamil Nadu, India, using completely organic and plant-based dyes as well as more recent innovations using Merino wool.

"Winning the Woolmark Prize is completely unexpected," the designer said after the show. "It means we can continue working with this supply chain and share our learning with other brands and designers. It also opens up the dialogue of fashion so more people can be part of it."

"Thank you to Australia's woolgrowers for growing this incredible fibre."

Richard Malone

WINNER OF THE KARL LAGERFELD AWARD FOR INNOVATION

The USA's Emily Adams Bode of BODE was crowned the first winner of The Karl Lagerfeld Award for Innovation and was praised for outstanding creativity and innovation, the same characteristics which led to Lagerfeld's history-making success back in the 1954 awards.

Mixing left over fabrics found in abandoned factories, BODE beautifully marries the old with new to bring modern interpretations to traditions of the past. For the International Woolmark Prize, BODE featured overcoats and suits composed of reclaimed and remade equine show blankets, traceable and certified Merino wool jacquard knits inspired



Designer **Emily Adams Bode** (second from right) with models wearing three looks from her award-winning Merino wool collection.

by stitch samples from a retired 1930s knitting factory, and housecoats built from hundreds of individually crocheted Merino wool fleurettes.

"I'm really excited that this is the first Karl Lagerfeld Innovation Award," the designer said. "He's been such an idol and inspiration for me. I'm also really excited to build on all the relationships I have made during my Woolmark Prize journey."

MORE INFORMATION
www.woolmarkprize.com

INTERNATIONAL WOOLMARK PRIZE AT A GLANCE

- Connecting the world's leading fashion designers with Australian Merino wool is extremely important due to the **enormous influence these designers have in setting global textile trends** for mainstream retail brands.
- Every year, the designers develop and present the most innovative collection, made from at least 70% **Australian Merino wool**.
- Since its relaunch in 2012, more than 500 of the award's participating designers from across the world have received **an extensive wool education** from product development to sourcing.
- The competition's **alumni** (designers and judges) are imbued with a love of wool that often translates into their subsequent collections being wool-rich.
- The designs are judged by some of the most famous and **respected authorities on fashion**, and presented in front of the world's media.
- The winning collections are stocked by the program's **retail partners**, some of the world's most prestigious department stores and boutiques.

EDUCATION INITIATIVE INSPIRES A BESPOKE WOOL COLLABORATION

The two judges of last year's TexSelect graduate design prize, sponsored by The Woolmark Company, were so impressed with the winner's woven designs that they subsequently chose to use the fabrics in a unique collaboration.

AWI last year sponsored an award at the UK's leading graduate design prize to encourage the use of Merino wool by the UK's textile graduates. Entrants for The Woolmark Company TexSelect Award had to incorporate a minimum of 60% Merino wool into their collections and demonstrate a good understanding of the fibre's qualities and potential application in fabric.

The award was judged by the 2019 International Woolmark Prize menswear and Innovation Award winner Edward Crutchley and Creative Director of luxury brand Johnstons of Elgin, Alan Scott. Central Saint Martins' graduate Jaeyong Kim won the award, praised for the complexity and brilliance of his woven designs.

"You look closely at the work and see how different it is, how sophisticated," Alan Scott said at the award ceremony at September's Première Vision trade show in Paris. "Colour, proportion, technique. Stacks of stuff, beautifully designed, and with a modern edge.

"He could be employed in a second, but he's already a designer in his own right."

Alan's words were to prove more true than he realised, as the comments foreshadowed



September 2019: TexSelect judges **Edward Crutchley** and **Alan Scott** seeing the woven wool fabric designs of **Jaeyong Kim** for the first time, at the Première Vision trade show in Paris.

a bespoke collaboration between Jaeyong Kim, Johnstons of Elgin, Edward Crutchley and The Woolmark Company – that would result in several of Jaeyong's designs being incorporated into Edward's Autumn/Winter 2020/21 Ready to Wear collection showcased at London Fashion Week Men's in January.

WOVEN WOOL COLLABORATION

Three fabrics from Jaeyong's collection were industrialised by Johnstons of Elgin. Jaeyong had the opportunity to visit the company's historic mill in Scotland twice. Firstly, on 7 November to translate his designs into fabrics for the collection, and secondly on 10 December to see the fabrics in production.

On the first visit, Jaeyong worked with the Johnstons of Elgin design team to discuss colour, yarn and structure before moving to the computer-aided design (CAD) area where

they were able to adapt and simulate the chosen designs ready for production.

"During the visit it was a chance for us at Johnstons to share with Jaeyong the process of designing and creating in an industry setting," said Johnstons designer, Beth Wilson. "Collaborating with Jaeyong was great, with such creativity and a keen eye for detail, the process was seamless working on three design ideas for manufacture."

On the second visit to Johnstons, Jaeyong saw all three fabrics in production during a bespoke VIP mill tour. The collection consisted of:

- A tailoring fabric featuring a check design made from 100% wool.
- A Blazer weight jacquard fabric created using an interchanging double cloth structure made from 100% superfine Merino wool.
- A coating weight fabric in a stripe design constructed using 100% lambswool.



December 2019: Alan Scott with TexSelect Award winner **Jaeyong Kim**, seeing Jaeyong's woven wool designs brought to life on an industry scale at the Johnstons of Elgin mill in Scotland.



January 2020: Two of **Edward Crutchley's** designs using fabric designed by **Jaeyong Kim**, on show at London Fashion Week Men's.

Edward subsequently invited Jaeyong to his studio in London to see the final garments and assist with fitting/styling. Jaeyong was also invited backstage during Edward's show on 4 January during London Fashion Week to see two of his designs launched on the catwalk. The third will be used by Edward in his Spring/Summer 2021 collection.

"Everyone loved the fabrics and they really added to the collection," Edward said. "Working with Jaeyong and Johnstons allowed us to add extra dimensions of texture and detail into the collection whilst at the same time celebrating how versatile wool can be."

Edward's overall collection featured approximately 75% wool, which reflects the success of the International Woolmark Prize in imbuing designers with a knowledge and love for wool that continues through their careers. The collection was also shown in January as part of the British Fashion Council's 'London SHOW rooms' initiative in Milan in collaboration with the National Chamber of Italian Fashion.

A UNIQUE EXPERIENCE

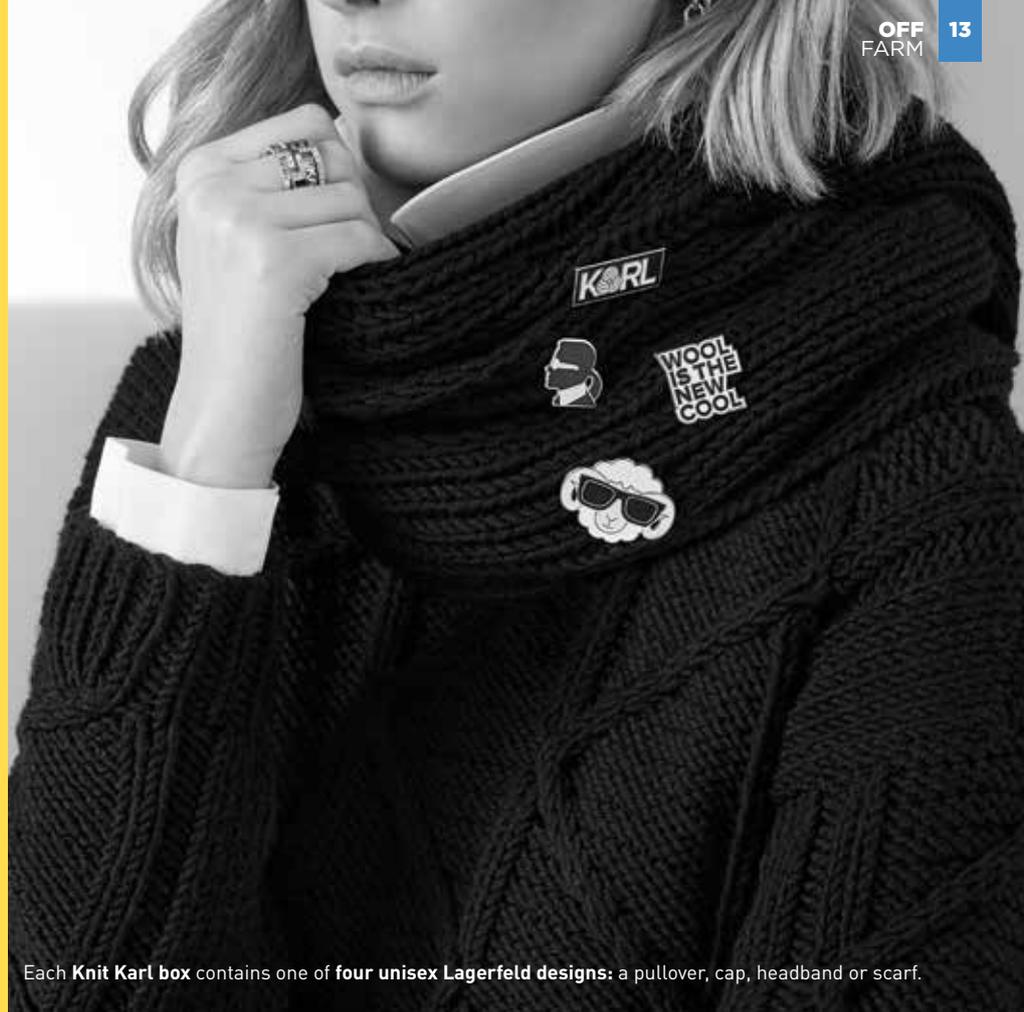
Edward helped create a truly unique and unforgettable experience for Jaeyong Kim. Following the journey of fabric design, production, garment to catwalk has been invaluable for Jaeyong who has been overwhelmed with the support he has received from all parties involved.

"I went to Edward's studio whilst they were doing styling, during which it was great to see the fabrics working their way into the collection," Jaeyong said. "Edward's show was wonderful; I was able to go backstage and see everything up close. He has been helpful and supportive throughout, even when so busy with preparations.

"I really thank The Woolmark Company for helping set up this opportunity; it definitely wasn't something I imagined possible before graduation. I'm very much looking forward to the next steps."

Johnstons of Elgin also said the collaboration was very productive.

"It has been a great experience working through this project with The Woolmark Company, Jaeyong and Edward," said Johnstons of Elgin Design Manager, Louise Sullivan. "It was a real testament to the collaborative philosophy that can be found in our industry, and we're really proud at Johnstons to have had the opportunity to be involved." **B**



Each Knit Karl box contains one of four unisex Lagerfeld designs: a pullover, cap, headband or scarf.

KARL LAGERFELD AND WOOLMARK

A TRIBUTE TO CELEBRATE KARL'S LIFE AND LEGACY

Sharing a history dating back to 1954, KARL LAGERFELD and The Woolmark Company last month introduced 777 limited-edition 'Knit Karl' boxes including pure Australian Merino yarn, personalised knitting needles, and patterns for winners to create one of four exclusive designs imagined by Karl Lagerfeld.

Breaking down borders, everyone across the world was invited to take part in a digital scavenger hunt, searching for a unique code for the chance to win a limited edition Knit Karl box. There were 777 knit boxes created – an ode to the iconic designer's favourite number. The competition ran from 7 February until 7 March, with the exclusive codes to be entered at www.knitkarl.com.

Both Karl Lagerfeld and his namesake brand share a longstanding relationship with The Woolmark Company. The late designer first rose to fame after he won the 1954 Woolmark Prize in the coat category. Then just 21 years old, the win launched the start of his extraordinary career that would change the face of fashion.

In 2018, the idea of a collaboration with The Woolmark Company was born and together the two companies developed the initial phases of this special project. Furthermore, beginning with the Autumn 2020 collection, all KARL LAGERFELD knitwear will be made using Woolmark-certified premium wool.

"This entire year we have launched special projects and initiatives to celebrate Karl's life and legacy," said Caroline Lebar, Head of Image and Communications at KARL LAGERFELD. "As Karl's first-ever creation was for the Woolmark Prize in 1954, it feels appropriate to celebrate his life with this collaboration with The Woolmark Company." **B**

CONSUMERS URGED TO BUY FROM THE BUSH

The impacts of the drought and bushfires are being felt well beyond the farm gate in all parts of the regional economy, including retail trade and small businesses. As a result, Australian consumers are being urged to support local growers and manufacturers more than ever.

To help the economies of rural communities, many of which are affected by drought and bushfires, there have been widespread calls for city-dwelling Australians to visit rural and regional communities and spend their money on local services and products, be it a bed and meal at the local pub or a souvenir from the local store.

Other initiatives have enabled businesses in drought-affected communities to showcase their products more broadly online for consumers, bridging the divide between city and country. These initiatives include the NSW Government's 'Buy Regional' campaign (www.nsw.gov.au/buy-regional) and Senator Hollie Hughes' 'Go Country for Christmas' initiative (www.gocountryforchristmas.com.au).

Another prominent initiative is the #buyfromthebush campaign, which was launched as an Instagram account in October last year by Grace Brennan, a lady from a sheep and cropping property in Warren, NSW. In the first six weeks, \$2.6 million of revenue was generated for businesses featured on its social media pages. The campaign now has more than 220,000 followers on Instagram, with 194,000 followers on Facebook and its own website www.buyfromthebush.com.au. That's about 400,000 potential customers 'buying in' to bush business. It is reported to have increased rural postage figures by 40%.

Another component of the #buyfromthebush campaign that exemplified the affinity between city and country was the #buyfromthebush pop-up market that was held in Martin Place in Sydney on Thursday 12 December. 20 retailers based in the bush were invited to participate and set up stalls in Martin Place to sell their products to city folk, from 8am to 8pm. **B**

MORE INFORMATION
www.buyfromthebush.com.au

IRIS + WOOL



Emily Riggs (wearing the iris + wool Eurovale top) after returning home to the farm at Burra after participating in the #buyfromthebush pop-up market in Sydney, pictured here with her woolgrower husband and son Sam.

Emily Riggs of Merino wool knitwear brand iris + wool, based at Burra in the mid-north of South Australia, was one of

the twenty rural-based companies invited to Martin Place.

"Wowsers, Sydney really embraced us bush businesses; it was quite incredible! You could see in their eyes how much they cared and really wanted to support us all – and this showed at the end of the day with many of the businesses selling out of stock," Emily said, after returning to Burra.

"I'm still pinching myself – it exceeded all my expectations as I'm quite a high price point but that didn't put many off. I completely sold out of all size S and M and have only a few L and XL left. What a dream for our first ever collection. It's really put us in good stead to continue on as a lifestyle brand that's passionate about showcasing farm to fashion.

"Thank you to Grace and team from #buyfromthebush. I am forever indebted to you. I loved meeting all of the other businesses too – we have such clever creative people in the country!"

iris + wool was featured in the September 2019 edition of *Beyond the Bale*.

SARAH JANE BOND



Vanessa Bell of Sarah Jane Bond on her stall in Martin Place, being interviewed for the ABC's live breakfast show.

Vanessa Bell of Merino wool baby blanket brand Sarah Jane Bond (see page 16), based at Breadalbane in NSW, was another of the rural-based companies invited to participate in the #buyfromthebush pop-up market.

"We did the bush proud with every store representing beautifully made and unique

products. The response from the Sydney public was overwhelming," Vanessa said.

"The idea of inspiring people in the city to buy from the bush has bridged the divide between city and country and has had a real impact both financially and emotionally. The initiative has provided a sense of purpose as well as a second income to many in the bush.

"The drought is catastrophic, and this was a remarkable opportunity to speak firsthand with people in the city about what we are going through. The genuine love and support was incredible and I still get emotional even thinking about it.

"I feel it is absolutely brilliant urban consumers are now aware of the incredible products, creativity and innovation the bush has on offer, and have consciously changed their buying behaviours.

"My business was immediately propelled, and I certainly didn't expect to be interviewed twice for the ABC's live breakfast show which was tremendous."

WAKE UP TO SLEEPY MERINO

Sleepy Merino is a new sleepwear brand launched by a Merino woolgrower near Inverell in NSW, whose property has been severely affected by drought. The brand was set up as a drought diversification business and sells pyjamas that are made in Australia from 100% Australian Merino wool.



Local Inverell girls modelling Sleepy Merino's flutter sleeve pyjama top and sleep shorts on Julie Bird's property, which in the photo is showing the effect of a bit of recent and very welcome rain.

The drought has hit rural Australia badly, very badly – and Inverell in northern NSW has been suffering as terribly as anywhere. The area has also endured bushfires this summer.

"Times are tough in the bush here in NSW – we are in the grip of the worst drought in living memory," says local Merino woolgrower Julie Bird.

Julie's family runs Merino sheep producing 17-18 micron wool, on 2,000 hectares of mostly native pasture, shrubs and trees. Due to the drought, the family has had to destock many of its livestock.

"But it is not only the farmers being affected by the drought. We have had many businesses

close their doors in our town, including the big end of town."

If ever there was a time or motivation for those in the bush to consider business diversification then now is that time. "Like many farmers, we have had to think outside the square for additional income options," Julie said.

Julie started to investigate other enterprise opportunities. She had always loved wearing Merino wool, such as active wear, knits and underwear, but she couldn't easily source adult Merino sleepwear or pyjamas. Seeing a gap in the market, she decided to set up a new apparel brand – and so Sleepy Merino was born.

"Sleepy Merino builds on my passion for Merino wool, and pyjamas are a fantastic use

of Merino wool's unique properties," Julie said.

The current range includes three styles of women's pyjama top (flutter sleeve, short sleeve and long sleeve), sleep pants, sleep shorts and a long sleeve sleep shirt. They are available in a range of sizes and colours (red, grey, charcoal and navy).

Soon to be launched are a men's pyjama range, a new women's flutter sleeve sleep shirt, some new colours and women's and men's sheepskin slippers.

The brand uses 100% Australian Merino wool jersey fabric of 18.9 to 19.9 micron. It has a weight of 145gsm, which is perfect for both winter and summer use.

The garments are manufactured in Australia by OCC Apparel in Sydney, which is experienced in manufacturing Merino wool active wear and underwear. OCC's Merino wool fabrics comply with Woolmark specifications and are machine washable.

Sleepy Merino was launched in Inverell, in conjunction with the local Eat Drink Live New England Festival in November.

"We held a fashion parade at a Wine and Canapes event, and a market stall. Despite the tough times in our region, the local community has been very supportive of the new business, and lots of pyjamas were purchased for Christmas presents," Julie said.

The brand's garments are all available to purchase online at sleepymerino.com.au, reaching international as well as Australian markets. "Our Aussie made Merino wool pyjamas are proving popular in Britain, and one lady is going to hike across USA with our sleep shirt," Julie said.

The brand is also aligned with the #buyfromthebush, 'Buy Regional' and 'Go Country for Christmas' campaigns – see opposite page.

"These initiatives are really helping regional businesses to stay afloat and helping this farming family keep feeding stock."

Last month, Sleepy Merino travelled to Brisbane with its full range to sell at the MindBodySpirit Festival, Australia's largest health and wellbeing event. Later this month they will be attending the MindBodySpirit Festival at Darling Harbour in Sydney (12-15 March). Sleepy Merino also sells at markets local to Inverell. **E**

MORE INFORMATION
www.sleepymerino.com.au

Vanessa Bell of Sarah Jane Bond at home at the family property at Breadalbane, NSW. PHOTOS: Rachael Cramp from it's a beautiful life photography.

SARAH JANE BOND

HAND KNITTED BABY BLANKETS



Vanessa Bell's appreciation of wool first developed in the 1990s when she was modelling superfine Merino wool garments for some of the world's top fashion brands. This admiration for the fibre grew further seven years ago when she married a woolgrower and settled in country NSW. In 2017, Vanessa launched Sarah Jane Bond – a brand selling premium hand-knitted baby blankets made from superfine Merino wool – and she has big plans for its future.

While Vanessa's relationship with Merino wool began in the late 1980s when she started modelling, the inspiration for her Sarah Jane Bond brand goes back even further, to 80 years ago when her great grandmother knitted a Merino baby blanket that was to become a family heirloom.

Vanessa's great grandmother was a lady dedicated to the wellbeing of her family in fairly tough social and economic circumstances living in Forbes and Dubbo. Like many other mothers, she knitted with Merino wool to create comfortable baby wear and durable clothes for her children.

Eighty years later, on the birth of her son, Vanessa searched for "a proper cot blanket" to keep her baby safe and warm. She reached for her great grandmother's Merino woollen blanket which was still going strong after all those years.

When Vanessa launched her baby blanket brand in October 2017, she decided to name it after her great grandmother: Sarah Jane Bond. "After all, her beautiful knitting was the catalyst and inspiration to create these family heirloom baby blankets," said Vanessa

VANESSA'S JOURNEY

Vanessa has had a very diverse background, from fashion to finance, from media to now being a farmer and business owner. She says it has been an interesting, challenging and rewarding journey.

"My love of Merino wool and my relationship with wool actually commenced on the runway modelling for clients such as Valentino and Armani. In the 1990s, high-end designers were utilising superfine Merino wool in a way I thought beautiful and functional. I'm proud to say my very first shoot for *Vogue Australia* in 1989 was wearing a Merino blazer for Jean-Paul Gaultier.

"My passion for excellence in quality and design stems from my fashion background. I lived overseas for most of my twenties, four years living in Tokyo, stints in the UK, USA and New Zealand modelling for clients such as Christian Dior, Comme des Garçons, Anne Klein and closer to home Country Road."

On returning to Australia, Vanessa focused on new careers in finance, the wine business and then more comprehensively in media.

"Then in late 2012, I met a shy farmer through friends and in 2013 I moved from Sydney to live with my now husband and son," she said.

Vanessa and her husband are based on a 875-hectare property at Breadalbane on the Southern Tablelands of NSW, with another nearly 9,000 hectares at Gilgunnia, south of Cobar. Together the two properties run about 5,000 Merinos, cattle and cropping.

"On marrying Philip, I gained three stepchildren. Our girls are in Queensland and Victoria and we enjoy raising our boys here on our farm south of Goulburn. I really enjoy being on the land and I'm very proud to be producing fine Merino wool and woollen baby products in one of the world's best growing districts."

THE SARAH JANE BOND BRAND

Sarah Jane Bond produces a range of hand knitted Merino woollen baby blankets, booties, beanies and matinee jackets, with new blanket designs in development. Vanessa is also excited to launch hand knitted sleeping bags in Autumn 2020.

Each baby blanket or product is hand knitted with completion times varying; more intricate patterns can take up to three months to finish. Vanessa's knitting team knit from their own homes, free of smoke or animals. They knit to specific designs and to demand.

They only use 100% pure Australian Merino wool, of approximately 18 micron.

"I was motivated to create an on-farm business drawing on my media skills to value add to our



existing farming enterprise,” Vanessa said.

Vanessa developed the business during the first nine months of 2017, with its official launch in October 2017.

“There were all the usual suspects sitting behind starting a new business: strategy, marketing plans, prototypes, differentiating features of the product, implications for the customer and market research, together with a positioning statement that would carry the brand as it expanded.

“In terms of building the brand it has been relatively organic, a bit like moving to a small town! It takes time to get to know everyone, for them to get to know you and to build trust. I’m keenly aware of the importance of delivering an outstanding quality product while building authentic relationships at every touch point of the business.

“This desire to create bespoke family heirlooms and to build genuine connections with families has been hugely rewarding and instrumental to our success. I feel like we’ve settled in now, we are established and focusing on new opportunities and scaling the business.”

SALES AND MARKETING

100% of the brand’s sales are online through sarahjanebond.com, with sales currently being made in Australia, the UK, Italy, Switzerland, France and the USA. Vanessa says the digital space has played a major role in the positioning of the brand, both in the domestic and international markets.

“The online space offers incredible opportunities especially for people in rural

or regional areas; you can now invite the world into your top paddock, entertain them, educate them and encourage them to buy. It’s a scenario previously thought impossible.

“Utilising the digital space is integral to the success of the business, leveraging various media channels and platforms to build a customer fan base.

“The role of social media has been so interesting; we’ve established so many connections and opportunities arising from not only a genuine following but by a sense of camaraderie as seen in the #buyfromthebush campaign.”

Brand recognition has also been bolstered by consistent PR thanks to Sarah Jane Bond being featured on the ABC’s Landline, Country Hour and in other magazines and editorials.

“I think the bottom line is we appeal to consumers who value quality products who have high social and environmental standards. We’re more than just another baby brand as we value local community knowledge and expertise. As an influencer I’m passionate about communicating the incredible attributes of this natural fibre, especially to those from the ‘city’.”

PLANS FOR THE FUTURE

Presently the wool used for Sarah Jane Bond product is sourced from Bendigo, but it’s Vanessa’s aim to eventually use wool from their own properties.

“It’s my long-term goal to produce a true ‘paddock to blanket’ offering, utilising home-grown Merino wool from non-mulesed sheep, with the certainty the wool is produced in a sustainable and ethical way.

“Ideally, I’d like to have our own wool processed into Sarah Jane Bond yarn to meet our product specifications ready for production by 2021. Our challenge is finding a processing partner, either in Australia or offshore, that aligns with our company values.”

Vanessa says that in terms of exporting to markets like the USA, Japan and UK, the brand’s focus will shift to high-end retail stores, such as Liberty or Nieman Marcus.

“We are positioning the product to customers wanting exceptional quality, those that want to purchase a hand knitted family heirloom that is so pure and unique they simply can’t buy it anywhere else in the world.

“So we will deliver a new tier of product that emphasises the importance of scarcity and bespoke. This will be in the form of limited-edition packages at a much higher price point. Certificates of authenticity will also drive the value and prestige of the brand, supported by QR coding and media content.”

GENERATION TO GENERATION

Vanessa was one of 20 retailers based in the bush that was invited to participate and set up a stall in Martin Place, Sydney, as part of the #buyfromthebush pop-up market in December (see page 14).

“I was stopped in my tracks when I saw my great grandmother’s name ‘Sarah Jane Bond’ in large letters over our stand,” Vanessa said.

“I was immensely proud and wondered what she would have thought if she’d seen her name up in Martin Place all these years down the track, all from a baby blanket she knitted back in 1940. Back then, Martin Place may as well have been London!

“I remember as a young child going back to visit Sarah’s house in Dubbo, my grandma Ruby sitting next to me in the car with tears in her eyes as the memories of her childhood came rushing back.

“I’m so grateful for the extraordinary life I’m living and hope my great grandmother together with my much-loved Ma – both very frugal and hardworking elegant women – are in heaven looking down with a smile.” 

MORE INFORMATION
www.sarahjanebond.com



Sarah Jane Bond baby blankets are hand knitted in country NSW from soft Merino wool yarn.

QUESTION: WHAT DO YOU CALL A SWEATER MADE FROM WOOL?

THE SWOOLLY!

In an initiative by WA wool company Scanlan Wools, a new knitwear brand, SWOOLLY, was launched in January that uses Merino wool from only Western Australia. The company's initial aim has been to produce a high-quality Merino wool sweater at a price everyone can afford.

Scanlan Wools is a broker and merchant with more than three decades experience of buying and selling Western Australian wool. Earlier this month, it took another step into apparel retailing with the launch of a quality worsted knitted sweater, known as the SWOOLLY.

The SWOOLLY is produced with a worsted yarn made from 19.5-micron Western Australian Merino wool.

"We have produced a high-quality 100% Merino wool sweater which we are retailing at a price (just \$79) that makes it an easy decision for consumers to purchase and wear wool," said Steve Noa, trading manager and director at Scanlan Wools Pty Ltd.

"Our aim has been to produce a sweater that will be affordable enough to be worn by so many people that the amount of wool consumed will enable us to directly contract woolgrowers to produce wool for the SWOOLLY program.

"One typical WA Merino sheep produces enough wool in one year for 6-8 SWOOLLYs. A 180 kg bale of Merino wool would have enough to produce 240 SWOOLLYs. Our goal is to use upwards of 5,000 bales per year. That's more than one million sweaters."

It's an ambitious target, but according to Steve, the SWOOLLY is proving a big hit in early sales, despite it being summer.

"Our end goal is to produce a much-loved wool sweater that will lead to a consistent consumption of wool and thus a tangible long-term benefit to woolgrowers."

Steve Noa, Scanlan Wools

The SWOOLLY is available for men and women in two colours, Charcoal and Navy, but the colour range will expand quickly as demand is proven. The yarn has been mercerised, enabling the sweater to be

cleaned in a washing machine.

"It has been knitted by one of China's most experienced and quality driven knitting companies," said Steve. "The SWOOLLY weighs in at the ideal weight of 338 grams. That means, it will feel luxuriously soft against the skin while maintaining its sleek and luxurious look and not feel heavy. Most importantly, it won't scratch, it won't shrink, and it won't end up covered in lots of little woollen balls."

Steve says the sweater has a stylish but practical design so that it can be worn in many situations: work, play, or activities such as spectating sports.

"Bulk order discounts are available to clubs, schools and other organisations. We can even arrange your logo to be embroidered on your SWOOLLY," he said.

The sale of every SWOOLLY will see a direct donation of \$5 made directly to the Michael Manion Wool Industry Foundation to assist rural families in need.

"We would also like to acknowledge the assistance and expertise we have gained from the team at AWI in starting our journey into taking our 'fibre to fashion'," Steve added.

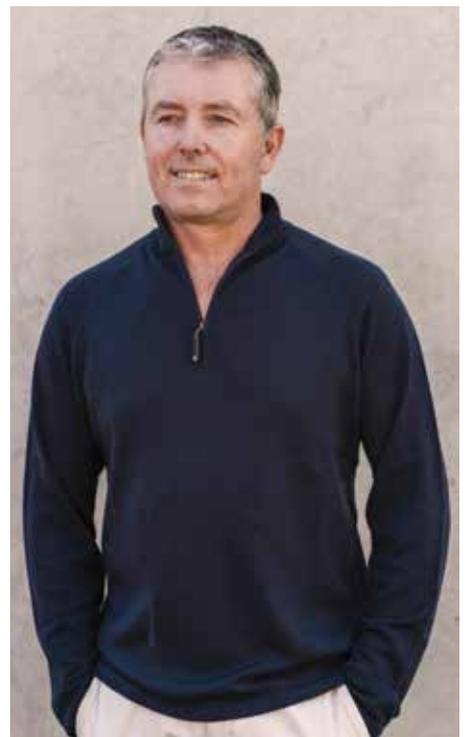
The SWOOLLY complements another apparel initiative involving Scanlan Wools. Peter Scanlan's daughter Emily, and her cousin Leanne, launched in 2018 a new label – Scanlan Collective – that manufactures and sells kids' apparel made from 100% Australian Merino wool. **B**

MORE INFORMATION

The Swoolly is available for purchase online at www.swoolly.com.au



The SWOOLLY, being modelled at the Scanlan Wools woolstore in Perth.



WOOL CARE IS EASY

(EVEN IF YOU'RE NOT ANJELICA HUSTON)

In the humorous campaign, actress **Anjelica Huston** dishes out some pertinent life advice, while reminding consumers just how easy it is to care for wool clothes.

Academy Award winner Anjelica Huston has fronted a humorous and very successful campaign by The Woolmark Company, reminding consumers just how easy it is to care for wool clothes.

The US-focused campaign is fronted by Anjelica Huston and fellow actress Katie Michaels in a series of five entertaining short films that were rolled out across social media at the end of November, garnering two million video views and more than 11 million campaign impressions to date.

The digital-first campaign involved an SEO strategy to drive consumers to www.woolmark.com/care to find useful and engaging information about how easy it is to care for wool clothes. The campaign boosted organic traffic to www.woolmark.com by 124% and increased time on site by an impressive 40%. In its entirety, the

2 MILLION VIDEO VIEWS

124% INCREASE IN TRAFFIC TO WOOLMARK.COM



campaign delivered the site's highest ever monthly visits following its launch.

With 'easy to care for' being one of wool's inherent but lesser-known benefits, The Woolmark Company has added some flair to care to bust the myths that wool is a fussy fibre.

"Our consumer research shows that care is one of wool's biggest barriers, so we have set out to change that," AWI CEO Stuart McCullough.

"Further AI-based research confirms wool care is a relevant consideration for purchasing wool apparel, with US consumers believing that solving this connection will drive positive perceptions for the fibre. This campaign addresses some consumer pain points around how to wash wool clothes." **E**

MORE INFORMATION

Watch the films at www.woolmark.com/care

TIMELESS AND SUSTAINABLE LUXURY

WARDROBE.NYC's clothes are practical, versatile and timeless – designed and made to last. Partnering with The Woolmark Company, the brand's new 'Release 05 Tailored' collection for men and women is its most sustainable yet, featuring traceable 100% Australian Merino wool pieces.

When Australian designer Josh Goot and stylist Christine Centenera launched WARDROBE.NYC in 2017, they set about producing well-made, timeless wardrobe essentials that can be worn as pre-styled looks or integrated with their own existing garments.

"The concept was to simplify and elevate modern urban dressing, while presenting an alternative to the relentless production and consumption cycle endemic to the fashion industry," explained Goot. "Sustainability has always been important for WARDROBE.NYC. We believe that less is more, and create clothes that are timeless and designed to last."

Indeed, while many brands pride themselves on the eco-friendly attributes of their collections, it is a garment's lifespan that ultimately determines how impactful they are to the planet. Clothes that are loved and worn forever will always win out over those worn once before being disposed of.

WARDROBE.NYC has released five collections, each designed around a specific way of dressing (sport, street and denim, for example). The brand's latest collection is based on tailoring, and comprises 100% Australian Merino wool pieces.

'Release 05 Tailored' embraces transparency and supply chain integrity, with the collection's journey mapped on WARDROBE.NYC's website, allowing customers to trace the collection through the supply chain, from Australia where the Merino wool is grown until the garments reach the WARDROBE.NYC headquarters.

"Merino wool has played a fundamental role in our brand since we launched and in order to elevate our use of the fibre, we partnered with the global authority on wool," Goot said. "I have a long-standing relationship with the Australian wool industry and connecting

with The Woolmark Company allowed us to deepen our understanding of the fibre and its supply chain."

'Release 05 Tailored' includes six Woolmark-certified statement pieces for women: a Merino wool coat, tuxedo blazer, trouser, midi wrap skirt, mini wrap skirt and knit turtleneck. The men's collection features five Woolmark-certified heroes: coat, blazer, trouser, pant and knit cardigan. **B**

MORE INFORMATION
www.woolmark.com/wardrobenyc
www.wardrobe.nyc



PRINCE PROMOTES WOOL TO TEXTILE TRADE

Ten years on from his launch of the Campaign for Wool, HRH The Prince of Wales delivered a personal recorded message at the influential Pitti Immagine Uomo apparel trade show in Italy, reiterating the importance for the planet that consumers choose products made from natural fibres like wool rather than man-made fibres.



Patron of the Campaign for Wool, HRH The Prince of Wales, delivering a recorded message for the textile trade: "Only wool provides the ultimate reassurance of sustainability."

To launch the first day of the Pitti Immagine Uomo apparel trade show in Florence, Italy, the Patron of The Campaign for Wool, HRH The Prince of Wales, delivered a personal recorded message promoting the natural benefits and eco-credentials of wool.

The message was showcased both at the Pitti Uomo opening ceremony, and at an evening reception for key industry, media, bloggers and influencers that was hosted by the Campaign for Wool in collaboration with The Woolmark Company and The British Institute.

The Campaign for Wool was initiated in 2010 by HRH The Prince of Wales to raise awareness amongst consumers about the unique, natural, renewable and biodegradable benefits offered by the fibre. The initiative encourages collaboration between an international community of woolgrowers, major fashion designers, retailers, manufacturers and interior designers.

The Campaign has been instrumental in educating consumers about the versatility of wool, and reconnecting them with its myriad uses – from luxurious fine Merino wool apparel through to beautiful hardwearing interior products for the home.

Here is an extract from HRH The Prince of Wales' message:

"It is hard to believe that it is now more than 10 years since I first inaugurated my Campaign for Wool at, what I knew was, a particularly challenging time for this important rural sector.

"My hope was, that if all the wool producing nations could come together and work in a spirit of cooperation perhaps we could find better ways to market this extraordinarily practical and versatile fibre, and at the same time help so many hard pressed sheep farmers.

"It is now even clearer to me, than it was then, that natural materials which are not made from fossil fuels, are not inflammable and which biodegrade naturally have an important part to play as we face up to the enormous challenges of climate change.

"So I am delighted that the message of wool's inherent sustainability is being celebrated over the coming days [at Pitti Immagine Uomo], and that in all its diverse end uses wool will be highlighted as the fibre of ecological choice.

"The fact that over 1,000 global brands have now joined the Campaign for Wool suggests that the messages of sustainability and biodegradability and the persuasive case for choosing natural rather than synthetic fibres are finally starting to get through to people. They are asking searching questions about the provenance and content of current fashion, and everything inside their homes. Only wool provides the ultimate reassurance of sustainability."

Peter Ackroyd, COO of the Campaign for Wool, welcomed guests to the evening event, reiterating HRH The Prince of Wales' message that wool is the only natural fibre that has a plethora of benefits that can make a difference to the current world situation of landfill and ocean pollution, as well as performance properties that are inherent to wool without the need for chemical treatments.

"For our own survival we desperately need to continue with the Campaign for Wool education program to the global community about the perils of plastic and the breakdown into micro-fibres that are contaminating the planet by the continued use of man-made fibres and products," Mr Ackroyd said. **B**

STUDENTS DESIGN OUTERWEAR FROM MERINO UNDER THE CREATIVE DIRECTION OF MAISON VALENTINO

The Woolmark Company introduced eight Italian fashion students from the Academy of Costume and Fashion in Rome to an exciting project aimed at reinterpreting the menswear wardrobe through the use of innovative wool applications, under the creative direction of Maison Valentino. The developed garments were then showcased at the Pitti Immagine Uomo apparel trade show in January.

AWI fosters the education and development of tertiary textile and fashion students in key markets across the world – inspiring them in the early stage of their careers about the properties and benefits of Merino wool. The aim is that this education encourages them to continue to use the fibre in their designs as they progress through their professional lives.

AWI subsidiary The Woolmark Company last year provided support to students at the Accademia Costume & Moda (Academy of Costume and Fashion, in Rome), to develop outerwear made from Merino wool. Founded in 1964, the Academy is now among the Top 3 fashion schools in the world for its undergraduate and graduate courses in fashion design, according to the *Business of Fashion*.

The project was rolled out under the patronage of the Campaign for Wool, in collaboration with Italian fashion house Valentino and Italian company Dyloan Bond

Factory (which specialises in manufacturing technologies), both of which were involved in all steps of the project from brief presentation to the final evaluation.

The students studied and researched Merino wool's properties – such as elasticity, breathability, thermoregulation and odour resistance. They also studied technological innovations such as laser cutting, heat-sealed inlay and taping and how these treatments can be best applied to Merino wool outerwear garments.

Eight selected students each then developed a personal luxury garment using Merino wool, highlighting craftsmanship excellence and innovation. Craftsmanship of course is no longer restricted to formal clothing; it is continually being redefined by multicultural and transgenerational lifestyles and influences.

The garments were showcased at the Pitti Immagine Uomo apparel trade show in January to great acclaim and reported in media such as *Vogue Italia*. **B**



A selection of the four designs from the 8 Italian fashion students, exhibited at the **Pitti Immagine Uomo** apparel trade show in Italy.



THE WOOL LAB EXPANDS

AWI's seasonal guide to the best available wool fabrics and yarns in the world – The Wool Lab – has expanded to now also include a forecasting tool known as The Wool Lab Vision.

The Spring/Summer 2021 edition of The Wool Lab and The Wool Lab Vision were launched by AWI at the Pitti Immagine Uomo apparel trade show in Italy.

While The Wool Lab will continue to connect designers directly with spinners, knitters and weavers to source the world's best commercially available wool fabrics and yarns, The Wool Lab Vision aims to show the entire textile supply chain the future of wool, from innovative manufacturing processes which spark imagination to ground-breaking product developments.

“Not everything you see in The Wool Lab Vision is currently commercially available,” explained AWI General Manager, Processing Innovation & Education Extension, Julie Davies. “It acts as a tool to showcase what is currently in development, what we are working on within the supply chain and translating visionary concepts in wool.

“The Wool Lab Vision allows brands and manufacturers to showcase the latest yarn technologies, machinery technologies for both product and process, and the diversity and potential of the fibre in apparel and lifestyle products. It also allows for designers to collaborate with AWI and work back through the supply chain to innovate with wool and turn their concepts into reality.” **B**

Imagery from the **Nagnata x Woolmark** collection that featured on the Farfetch digital platform, targeting fashion-forward millennial women.



CLICK TO BUY WITH FARFETCH

With more and more apparel purchases being made online, AWI's marketing arm The Woolmark Company has again collaborated with one of the world's largest luxury online retail platforms, Farfetch, during the northern hemisphere winter to highlight some of the season's best wool apparel for women and build demand for the fibre.

Farfetch is an online luxury fashion retail platform headquartered in London, but its retailers ship from and to many countries across the world. It has more than 17 million monthly views from across 190 countries.

More than half of Farfetch customers are millennials, who have an average household income of £103,000 (A\$185,000) and spend on average £8,000 (A\$15,000) per year on fashion with 60% of the purchases made online.

A recent four-part wool feature on Farfetch, produced in collaboration with AWI's marketing arm The Woolmark Company,

enabled its customers to be inspired by creative editorial about new wool products and – importantly – then be guided along a pathway to purchase the garments online.

The initiative targeted Farfetch's global fashion-forward womenswear audience with features on aspirational wool product, amplified through a paid media and influencer program across a six-week period with a guaranteed reach of 30 million luxury consumers.

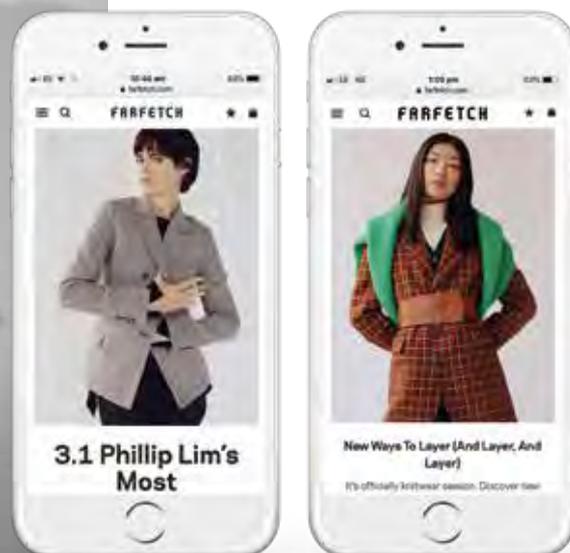
This year's program built on an already very successful content and media partnership last year between The Woolmark Company and

CAMPAIGN REACH:

30 MILLION LUXURY CONSUMERS 

23% increase in shoppers searching for wool products

78% increase in products named as Merino



Commercially available Merino wool womenswear products featuring on **Farfetch digital channels**.

Farfetch. Compared to last year, the campaign increased the number of shoppers searching for 'wool' products by 23% and the number of website impressions by 19% to 6.8 million. The share of products with Merino described in the product name increased from last year by 78%; including Merino in the product name increased purchases by 152%.

The 2019/20 campaign repeatedly presented Merino wool within a sustainable fashion context to build the fibre's association with eco-solutions for a luxury audience.

The four-part wool feature showcased three particular brands: Nagnata, 3.1 Phillip Lim and Jil Sander.

- **Nagnata** is a premium fashion and lifestyle brand from Australia that partnered with The Woolmark Company to develop the featured seamless Merino wool knitwear collection.
- **3.1 Phillip Lim** is the brand of award-winning American designer Phillip Lim. The Woolmark Company collaborated with the brand on its recent ready-to-wear collection that was featured on Farfetch.
- **Jil Sander** is a German label that produces luxurious wool separates that are a lesson in quiet elegance.
- A more general showcase of how wool can be layered, from blazers and tailoring to knit dresses and jumpers, was the fourth feature that Farfetch produced. **B**

MORE INFORMATION
www.farfetch.com

APRÈS SKI AND URBAN CHIC

Following the success of their partnership last year, French alpine brand Fusalp has once again teamed up with The Woolmark Company to launch a new collection of colourful jumpers made from Australian Merino wool that are perfect for après ski or chic urban environments.

Born in the French Alps, skiwear brand Fusalp revolutionised skiwear in the early-1950s when it launched the first technical 'fuseau' ski stirrup pants, changing the way skiers dressed when hitting the slopes. Adopted by ski champions such as Jean-Claude Killy in the 1960s, Fusalp's unique silhouettes combine French elegance with a sport-chic and slender cut, for off as well as on the slopes.

In time for the recent northern hemisphere ski season, Fusalp renewed its partnership with AWI's marketing subsidiary The Woolmark Company to unveil a new series



Chic skiwear brand **Fusalp** partnered with **The Woolmark Company** for the northern hemisphere winter, releasing a bright range of 100% Merino wool lightweight jumpers to take you from slopes to schnapps with ease.

of 100% Australian Merino wool sweaters. This follows a similarly successful partnership between the two companies during the previous winter.

Fusalp's Autumn/Winter 2019/20 range includes a selection of boldly coloured Woolmark-certified jumpers, under the

Vogue Paris promoted Fusalp's Woolmark-certified jumpers on its website.



theme 'Care for Wool, Care for Colours'.

Through this collaboration, both brands highlight not only the eco-credentials of wool, but also that when properly taken care of, the wool garment and its colours age well and can be worn for many years, retaining its as-new look and feel.

"Fusalp pays great importance to the sustainability of the products, both in terms of environmental concerns and sustainability," explained Fusalp Artistic Director, Mathilde Lacoste. "The Woolmark Company shares our values, which is why our products proudly display the label of the brand. We are happy to sign our second collaboration."

The new knitwear was promoted in-store, online and via social media channels, and via a campaign with *Vogue Paris*. The target audience

is sport-chic urbanites as well as style-conscious skiers.

The Fusalp collections can be found in the brand's 41 stores across 25 countries and online (worldwide shipping) at www.fusalp.com.

E

MORE INFORMATION

www.woolmark.com/fusalp
www.fusalp.com

Fusalp Artistic Director Mathilde Lacoste: "I really enjoy creating a crossover between the mountain and the city."



A SIMPLE WASH AND GO

Targeting China's younger generations, The Woolmark Company has recently collaborated on the promotion of a new range of machine-washable Merino wool suiting with Chinese brand RYSMILE - a flagship brand of one the largest textile manufacturers in China, Shandong Ruyi.

A Merino wool suit is a wardrobe staple for any millennial urbanite in China, thriving in their fast-paced work environment. While a wool suit already has natural easy-care properties - like resistance to wrinkles, stains and odours - they still need to be cleaned occasionally if you are worn often.

Traditional wool suits require dry cleaning and the younger generations of China are often stretched for time. What if they could simply toss their wool suit into the washing machine?

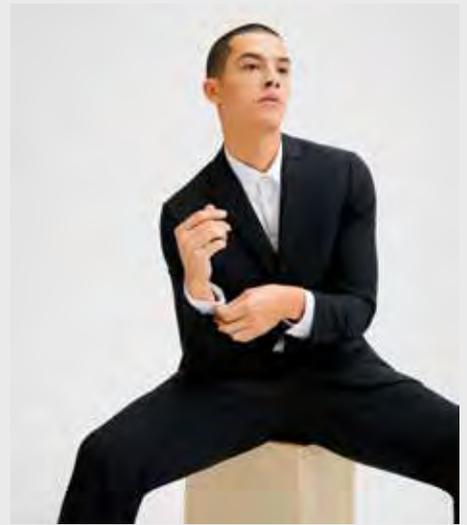
A machine washable wool suit that holds its shape and style after washing has long been identified by retailers as a development that could substantially increase the appeal of wool suits among the younger generations.

Machine washable wool suits have been around for more than a decade, and a major challenge in commercialisation of the suits has been overcoming the existing attitudes

among the traditional suit market that do not believe that machine washable wool suits can be good quality. However, times and technology have changed, and the younger generations are more responsive to new fashion innovations.

Ruyi flagship brand RYSMILE has therefore recently partnered with The Woolmark Company to promote a new range of machine washable Merino wool suits. By combining contemporary technology with the quality of Australian Merino wool, they've created a premium collection of blended wool suits.

Utilising a unique E-Wool processing technique that allows the suit to maintain its original form despite cold or hot temperature conditions, the material will retain its premium quality and texture even after machine washing - wrinkle-free and anti-static. The machine wash capabilities of this collection have been tested and certified by The Woolmark Company. **B**



Contemporary technology has enabled the production of a new era of **machine washable wool suits** for the young Chinese market.

AWI RECEIVES INNOVATION AWARD IN CHINA

AWI has been acknowledged by Chinese textile industry organisations for its product development work and education initiatives in China that help build demand for wool products.

AWI was presented with an 'Innovation Award on Textiles Development' by the China National Textile and Apparel Council (CNTAC) during its annual conference in Beijing on 5 December 2019. Nearly 1,000 guests including senior



The award ceremony at the **China National Textile and Apparel Council** annual conference in Beijing.

executives and representatives from textile associations and enterprises across China attended the event.

AWI is the first not-for-profit international organisation to receive this prestigious award. AWI was acknowledged for its work in wool innovation and product development for the Chinese textile and apparel industry.

"AWI supports the growth of the Chinese wool textile industry by helping companies

improve product development. By providing training and workshops, AWI nurtures local talents and contributes to the transformation of China's textile industry," stated the recommendation letter from the China Wool Textile Association (CWTA).

"In terms of the education of emerging talents in textile and fashion, AWI vigorously promotes the collaboration with China Wool Textile Association in organising many activities for innovation, research and development." **B**

ONWARD AND UPWARD IN JAPAN

Following an inspiring AWI-organised visit by Japanese womenswear brand 23KU to Australian wool-growing properties in 2018, the brand has increased its use of Merino wool and is now heavily promoting the fibre's Australian origins in its latest marketing campaign.



Woolmark-certified Merino wool apparel from Japanese brand 23KU.

MARKETING ACTIVITIES

Part of the marketing campaign involved the inclusion of six pages of information related to Merino wool and the Woolmark brand in 23KU's 'My Standard' catalogue, 350,000 copies of which have been distributed at the brand's 250 stores and sent directly to its customers. The catalogue featured a number of the 23KU's key Merino garments as well as the background story about the origin of Merino wool in Australia. The same Merino wool content as in the catalogue has also been included in a special web feature on its website.

23KU has also made available a 'wool care guide' that was produced in collaboration with The Woolmark Company.

Attached to the Merino wool garments being sold at its 250 stores are special swing tickets which include QR codes that guide customers to further information about the fibre on 23KU's dedicated website made in collaboration with The Woolmark Company.

IMPORTANCE OF PROVENANCE

Samuel says there is a growing interest in Japan about the provenance and story behind wool-growing.

"It started with the food industry, people really began looking at where their food comes from – and that interest has moved to clothing as well, so they're very interested in understanding where the fibre is coming from," he said.

"This is why we undertook the trip to Australia in 2018 and is why we include and highlight the origin of Merino wool in our marketing. We are helping to bridge the disconnect between consumers, retailers and brands, and the origin of the fibre."

Samuel said it was rewarding to see that the AWI efforts put into educating and inspiring brands about Australian Merino wool is resulting in the brands actually making efforts to increase their use of the fibre in their apparel ranges.

"The market is changing in Japan from something very tailored and very formal to a more casual way of dressing, especially in the office. So it is very important that AWI can accompany brands on this transition and ensure that they choose wool. There's a lot of room for growth," he added.

23KU is one of the most popular womenswear brands in Japan with 250 stores across Japan and has annual sales of A\$359 million. It is the part of Woolmark licensee Onward Holdings, the second biggest apparel group in Japan with annual sales of more than A\$3 billion.

During the Autumn/Winter season in Japan, The Woolmark Company is supporting the promotion of more than 100,000 of 23KU's Merino wool jumpers and cardigans – with many lines already sold out.

"Through this marketing campaign, we are positioning Merino wool as the premium, natural fibre of choice for Japanese women's fashion; the target market is women of about 30-40 years old across the country, with a middle to high level of income" said AWI Country Manager Japan Samuel Cockedeey.

"By increasing the demand for 23KU's wool products, we are building a successful relationship with the brand, which we hope might broaden to other brands of the Onward Group. Through the campaign, we are also promoting the Woolmark brand as providing globally recognised quality certification."



Marketing collateral by Japanese brand 23KU promoting the Australian origin of the Merino wool used in its latest range of apparel.



Designer **Aneeth Arora** of Indian fashion label **Péro** with some of the fabric used in the brand's newly launched collection.



A handloom in action during the retail launch of the collection at the **Good Earth store in New Delhi, India**.

INDIA GETS CRAFTY WITH WOOL

High-end Indian fashion label Péro has launched a collection that showcases Australian Merino wool textiles and fashion made by artisans based in the foothills of the Himalayas. Developed in collaboration with The Woolmark Company and wool weavers' co-operative Bhuttico, the collection highlights the importance of craft, culture and heritage in today's fashion industry.

Péro designer Aneeth Arora has captured the essence of the ongoing industry conversation about promoting local artisans, creating a unique collection with Merino wool with support from The Woolmark Company.

Combining Australian Merino wool with traditional Indian weaves and techniques, the grunge-chic collection in blues, khaki and off-white is an immaculate demonstration of the craftsmanship of the weavers and designer.

Merino wool has long been a fibre of choice for Aneeth Arora – who is also an alumnus of the prestigious International Woolmark Prize – but this year increased her Merino wool usage by 10%. The fibre's durability, versatility and trans-seasonality makes Merino wool garments ideal for India's varied climate.

"This collection is very close to my heart as it has given me the opportunity to work with The Woolmark Company and showcase Merino wool in a new avatar," said Aneeth.

"Given the inherent versatility of the fibre, it can be woven into intricate patterns without causing any aberration to the design. The fabrics were meticulously woven by the weavers of Bhuttico using the extra weft technique where each thread is inlaid by hand to create patterns while weaving the fabric on the loom, a technique as intricate as hand embroidery."

"The fabrics were meticulously woven by the weavers of Bhuttico using the extra weft technique where each thread is inlaid by hand to create patterns while weaving the fabric on the loom, a technique as intricate as hand embroidery."

Péro designer Aneeth Arora

5,000 pieces of 100% Merino wool products have been manufactured for this collection, along with 1,000 pieces of product made from wool blended with other natural fibres. More than 7,000 meters of handwoven Merino wool fabric has been used.

Péro's collection was showcased earlier last year at the sustainable day of Lakmé Fashion Week in Mumbai and is now available to buy at Indian retailer Good Earth, plus a selection overseas sellers, totalling 250 stores across the globe. Good Earth is the prominent go-to destination for Indian consumers, with the store offering a modern Indian point of view towards sustainable luxury.

A special launch event was held in November at the Good Earth store in New Delhi at which the collection was displayed along with an introduction of Australian Merino wool to Good Earth customers. During the retail launch, the Good Earth store was transformed into a Bhuttico-inspired location, with traditional handicrafts decorating the space and a handloom installation and demonstration.

"We take pride in highlighting Australian wool's position as the ultimate natural fibre grown year-round. Our collaborations and projects in India are aimed at unfolding the natural and renewable story behind Merino wool to newer audiences," explained AWI Country Manager India, Dilip Gianchandani.

"With increasing consumer awareness surrounding supply chain integrity and traceability we are sure that through our efforts, the story of Australian Merino wool will hold truer than ever. Our collaboration with Péro at Good Earth beautifully showcases Indian craftsmanship using Australian Merino wool and we hope to successfully be part of more such associations in the future."

B



The collection that was launched in stores in November was showcased at the sustainable day of **Lakmé Fashion Week** in Mumbai earlier this year.



Leading Vietnamese brand **IVY Moda** in November launched a marketing campaign, supported by The Woolmark Company, for its new collection of womenswear made from Merino wool.

WOOL GROWS AT RETAIL IN VIETNAM

AWI recently supported a leading Vietnamese brand to launch a wool collection, raising consumers' awareness of Merino wool as a premium fibre and its benefits.

AWI has worked in the Vietnamese market for eight years and considers the country as a key emerging market for wool. As the country's economic and social environment evolves, AWI has witnessed the country's growing interest in the use and production of quality wool product.

AWI's primary aim in the country has been to develop new manufacturing supply chains for wool products. However, we have witnessed the market for wool now extending far beyond the manufacturing sector, allowing AWI to help introduce apparel made from

Australian Merino wool to consumers in the Vietnam domestic market.

As the Vietnamese middle class continues to grow, now is an opportune time for wool to be promoted to consumers in Vietnam.



One the Vietnamese fashion brands that AWI has been working with is IVY Moda, which retails contemporary women's, men's and children's

The marketing campaign was also **run online** on the IVY Moda website and social media channels.

clothing lines. IVY Moda is one of the top four local womenswear brands in Vietnam with 70 stores nationwide as well as an online shop.

IVY Moda was recently selected by AWI's marketing subsidiary, The Woolmark Company, as a suitable partner because the Vietnamese brand is well placed in the middle to higher end range of the market and has a strong focus on marketing and social media content. The brand has previously collaborated with the likes of *ELLE* on its collections.

With support from The Woolmark Company, IVY Moda designed a 10-piece Merino wool womenswear collection for its Autumn/Winter 2019/20 range. All the pieces are Woolmark-certified and machine washable. They are available to purchase in 51 of its stores and online.

Titled 'Feel the real', the co-branded marketing campaign was launched in November. It highlighted the natural softness of Merino wool as well as the easy-care nature of the garments. The target audience is Vietnamese upper middle-class women aged 25-40 who work full time in corporate jobs in major cities (Hanoi and Ho Chi Minh) and are fashion conscious with some disposable income.

A photoshoot, video, social media campaign and instore marketing were prepared with support from The Woolmark Company, highlighting the benefits of Merino wool. Training about wool was also given to the brand's store managers as well as designers, marketing team, and quality control team. **B**



The 10-piece Merino wool womenswear collection is available at **51 IVY Moda stores in Vietnam** and selling well Co-branded instore displays and garment tags highlighted the natural benefits and provenance of Merino wool.

MORE INFORMATION
<https://ivymoda.com/lookbook/feel-the-real-71>

INDIAN FASHION STUDENTS INSPIRED BY WOOL

AWI's Wool Runway project continues to educate and inspire the next generation of fashion designers in India about the natural benefits and innovations of Australian Merino wool.



Vogue India undertook a special photoshoot of the winning design by **Debajyoti Sengupta**, posting this image to its official Instagram channel. The winning garment is a trans-seasonal saree weighing just 416 grams; it is hand woven using a technique that creates motifs that imitate embroidery without adding on any weight.

By taking part in the fourth annual edition of the Wool Runway initiative, tertiary fashion students from fashion university campuses across India last year learned about the benefits of Australian Merino wool and applied innovations in Merino wool to their chosen apparel segment.

The education program, run by AWI subsidiary The Woolmark Company, gives students the opportunity to design an outfit made from Australian Merino wool and connect with key representatives from the textile and fashion industry. In the past four years, the Wool Runway project has seen 2,470 sketched designs of wool apparel submitted by 443 participating students.

In 2019, 95 students submitted their designs

to enter the competition, with the top 10 finalists shortlisted by mentor and revered fashion stylist, Ekta Rajani. Finalists then had to make a complete wool ensemble comprising a maximum of three pieces using a minimum of 80% Merino wool. The finalists also met with the previous two winners of the Wool Runway who spoke to the finalists about their respective journeys after their big wins in 2017 and 2018.

The designs created by the 10 students were displayed at the finals event in Mumbai on 20 December, giving the audience a first-hand look at the versatility of Merino wool. The students drew inspiration for their designs from topics close to their personal experience such as the protection of the environment.

The designs were judged by a panel of Indian wool industry experts including 2017/18 International Woolmark Prize winner and founder of fashion label Bodice, Ruchika Sachdeva; Design Director at Raymond Group, Atul Apte; Director at Burnt Umber Fashion, Kailash Bhatia, and AWI Country Manager India, Dilip Gianchandani.

Debajyoti Sengupta from National Institute of Design (Ahmedabad) was announced as the 2019 winner. His winning garment is a trans-seasonal and lightweight saree made from 83% Merino wool and 17% silk – and weighing just 416 grams (60 gsm). It is handwoven in Chanderi, a town famous for fine fabric weaving. The garment is a step to revive the almost lost form of the traditional weaving technique, 'Ek Nalia', creating woven motifs that imitate embroidery without adding on any weight.

Debajyoti and the other place getters were presented with their awards by Tony Huber, the Consul General at the Australian Consulate General in Mumbai, which reinforced AWI's relationship with government.

AWI Country Manager India, Dilip Gianchandani, said every design in this edition of Wool Runway was distinctive and exemplary.

"We believe in encouraging young talent and celebrating outstanding fashion geniuses who showcase the beauty and versatility of Merino wool," he said. "The participants have excelled in showing the multiple benefits and innovations in Merino wool – a renewable, innovative and luxurious fibre. We are thrilled to have received such enthusiastic responses from students and their colleges in the fourth edition of the Wool Runway." **B**

The 10 Wool Runway competition finalists with mentors and the AWI India team.



FASHION

WITH A PURPOSE

From garments that provide acupressure, to a practical jacket for dog walkers and an outfit that helps guide a visually impaired person, the winners from 2019's Wool4School design competition were chosen for how well they incorporated technology to enhance the outfit's purpose.



Wool4School Year 10 winner **Prue Spencer** from Genazzano FCJ College in Melbourne had her 2019 winning design turned into reality by leading Australian fashion designer Jonathan Ward. Prue's winning design 'Dressed to See' features cutting edge technologies that work together to guide a visually impaired or blind person.

They were very diverse from previous years and it really shows how students are absorbing the information," said Wool4School Project Manager Ashley Hollis.

A panel of judges including leading Australian fashion designer Jonathan Ward and key industry representatives carefully assessed each submission before eventually deciding on the winners and runners-up.

Jonathan Ward highlighted the creative flair in the design of Year 10 winner Prue Spencer, whose entry was designed to enhance the lives of blind and visually impaired teenagers-young adults.

"Prue Spencer's winning design answers the brief with a contemporary head-to-toe concept embracing Merino wool with technology in the garments and accessories. It's exciting, colourful and concise in its presentation and creative flair titled 'Dressed To See'."

Prue said that fashion is more than just aesthetics, it is about helping a person reach their full potential by assisting them in a practical way.

"This was a great opportunity to emphasise the collaboration between design and disability," she said. "There is no reason why fashion cannot have a positive impact on society by being a lens on popular culture and at the same time providing a practical aid to those with a disability."

Now in its eighth year, Wool4School invites students to think about the versatility of

ENTER THE 2020 WOOL4SCHOOL COMPETITION

Registrations are now open for the Australian edition of the 2020 Wool4School competition.

This year, students are asked to **design an outfit inspired by flora and fauna** and incorporating fibres which are gentle on the earth. Wool should make up at least 70% of the outfit's share, comprised of up to 4 pieces.

There are once again a host of amazing prizes on offer.

HOW TO GET INVOLVED

WOOLGROWERS AND PARENTS

Contact your local high school and encourage them to get involved in the Wool4School program. Information for schools and teachers is available at www.wool4school.com

YEAR 7-12 TEACHERS

Simply register your school and year groups at www.wool4school.com to receive free online resources for the classroom.

YEAR 7-12 STUDENTS

Learn more about the exciting competition at www.wool4school.com and talk to your teacher about getting involved.

KEY DATES

Registrations close: 29 May 2020

Submissions close: 23 July 2020

Announcement of winners: 20 August 2020

various wool fabrics as part of a creative design of their own.

First launched in 2012, Wool4School is an annual student design competition that has involved more than 100,000 students, not only learning the fundamentals of fashion design but also exploring the benefits and versatility of wool and the fabric it creates.

"The aim of the Wool4School design competition is to teach school-aged students the benefits of Australian wool so that these future designers and consumers understand wool's benefits and are more likely to use Australian wool as their fibre of choice," Ashley added.

Open to all Australian school students from years 7 to 12, the Wool4School competition invites students to design an outfit using a minimum 70% Australian wool. By putting wool into the minds of Australia's future fashion designers, Wool4School encourages students' innovative thinking and creative design, in keeping with The Woolmark Company's tradition of fostering the education of the future generation.

On the back of the success of Wool4School in Australia, AWI now also runs the student design competition in the key markets of the United Kingdom, Hong Kong and Italy. **B**

MORE INFORMATION

For details of all the 2019 winners and how to enter the 2020 competition, visit www.wool4school.com

Wool4School has involved 100,000 students

The theme of the 2019 edition of Wool4School challenged students to design a garment or outfit that embraces the use of technology to enhance garment performance or function. The participants took on this challenge and applied their talent into the designs that went above and beyond expectations.

"I was impressed with this year's entries.

Designs from Chanelle's Merino wool-rich graduate collection at the **Whitehouse Institute of Design**.



Chanelle fondly remembers her time during Wool4School.

"It's just a really good competition; it gave me a lot of insight into the basics to fashion designing and I became really interested in it," she said.

"The competition comes with a student booklet which guides you through the process. I highly recommend Wool4School to anyone who's interested in fashion.

"I learned so much about Merino wool during Wool4School. It's got wonderful drape, great texture, it's good for the environment, it's so versatile, you can do anything with it with the help of innovations."

THE SCHOLARSHIP AT WHITEHOUSE SCHOOL OF DESIGN

Now 18, Chanelle embarked on a two-year scholarship at Sydney's Whitehouse Institute of Design, with the goal of getting her Bachelor of Design, becoming a professional designer and owning a fashion business. Chanelle was also a recipient of a grant from the Australian Wool Education Trust.

"I chose to study Fashion Design because I aspire to be a fashion designer and this course would help me understand the fashion industry and the process of fashion design much better," Chanelle said.

"Having done Wool4School definitely made me feel more comfortable starting at Whitehouse. I was aware of the basic design processes involved in creating a garment. During my course I was refining and growing

the skills and knowledge I had learnt from Wool4School."

"During my course I was refining and growing the skills and knowledge I had learnt from Wool4School."

Chanelle Davenport

The Bachelor of Design is designed to provide students with an outlook and ambition that extend beyond their studies, cultivating a collaborative and global vision of design. While the Whitehouse Institute of Design recognises that a commercial framework is vital, students are encouraged to become industry leaders through a focus on innovation, experimentation and individual expression.

"This experimental spirit is balanced by close industry ties," Ms Whitehouse said. "Whitehouse graduates are recognised internationally and many have gone on to work or study overseas, including fashion capitals London, New York, Tokyo and Paris. Leading designers employing Whitehouse graduates include Givenchy, Aesop, Kenzo, Palace Skateboards, Celine, Zimmermann, Prada, adidas and Louis Vuitton."

While studying at Whitehouse School of Design in Sydney, Chanelle Davenport was one of many students who attended an AWI Naturally Inspiring seminar. These seminars not only offer students the chance to learn about wool and the numerous ways to work with the fibre, but also give exclusive insights into the fashion, retail and textile industries from experts in the field.

"The seminar provided a comprehensive

breakdown of all the many benefits of Merino wool and the various ways it can be used. It also clearly explained wool innovations and how they work and compared Merino wool to other fibres," Chanelle said. "It allowed me to better understand the fashion industry and was a great way to help me determine which path I'd like to take in fashion as well as how I should go about it."

In November last year, Chanelle graduated. Her graduate collection was, naturally, rich in wool.

NEXT STEPS

Chanelle is now focused on establishing herself in the fashion design industry, and one day establishing her own label.

Reflecting on her experience with Wool4School, Chanelle says the most rewarding part of the competition was finding a new passion.

"I never thought at the start, in 2014, that I'd be into designing; I thought I'd always end up doing photography or something, but this helped me find that I enjoy fashion designing," she said.

"Wool4School has given me the opportunity to work with industry professionals and also to further my career in fashion. Not only this but it also allowed me to step out of my comfort zone and it has given me more confidence in terms of moving from such a small country town like Innisfail to a place like Sydney; this is something I probably would not have been able to do without Wool4School." **E**

MORE INFORMATION
www.wool4school.com

GENETICS & TECHNOLOGY TO PRODUCE THE SHEEP OF THE FUTURE

Nigel Kerin from Yeoval in the Central West of NSW barely recognises the sheep enterprise he was running 10 years ago compared to his business today. And based on what he is seeing in the delivery of science and technology nowadays, he says it would be impossible to predict what it might look like in another decade.

“People ask me what is my ideal sheep for my environment? What is the end goal?” Nigel said. “I don’t have an end goal, because the world’s demand for natural fibres and for technology and breeding technology is moving so rapidly that the goal posts are continually moving. In the words of Bill Gates, ‘If I’d had some set idea of a finish line, don’t you think I would have crossed it years ago?’”

“The type of animal we need to supply to meet our customers’ increasing animal welfare demands is also an animal that performs in an ever-changing environment.

“Ten years ago, I’d have never forecast the booming prices we’re being paid for our fibre, mutton and lamb – and that Yeoval, considered a safe farming region with a 650mm rainfall, would go through three successive years of drought.”

When *Beyond the Bale* last spoke to Nigel, in 2008, he and his wife Kate had three young children and were focused on producing a plain-bodied highly fertile commercial Merino ewe. Around this time, Nigel and

Kate launched their genetics business, Kerin Poll Merino. In the first year, the stud sold 125 rams at auction. Fast forward to their 10th annual sale in September 2019: 450 rams were offered and sold to set a new Australian record for an on-property Merino ram sale.

Their land holdings have doubled in the past 10 years to 3,950ha, which includes 1,000ha of summer and winter fodder cropping. Due to climatic conditions, the stocking rate has run at 28% of carrying capacity for the past two-and-a-half years – a decision to match stocking rate to carrying capacity and meet environmental goals.

“When we started out 20 years ago, we were getting \$380-\$420 a bale for wool, a 24kg lamb carcass was worth \$27, a mutton carcass was worth \$12 and interest rates were 7.5%,” Nigel said.

“While this drought is tough, we have everything else going our way: exceptional lamb, mutton and fibre prices, combined with low interest rates. This is a perfect recipe to achieve a high return on assets and asset growth. The only complication we have

is climate.”

Nigel operates using the mantra that there are three ways to a free lunch in livestock production: management, genetics and technology.

“If you turn up the dial on any one of those, you will see the benefits. Improve all three and you’re cooking with gas. With the current high value of land and the fight for land use, the easiest way to have a high return on assets in that scenario is to harness the power of **management, genetics and technology**,” he said.

GENETICS

The four genetic traits most valued by the Kerins’ Merino type are what he says are the backbone of the future Merino industry: fleece weight and post weaning weight, as well as genetic fat and muscle. These genetic traits underpin the ability of a ewe to successfully conceive at an early age and allows the faster turn off of wether lambs. Post-weaning weight has become the Kerins’ most valuable tool in matching stocking rate to carrying capacity, as it allows the wether portion to reach sale weights up to four months earlier.

“Either way you look at it, you want to fill a B-Double with wool or meat – and the easiest way to do it is by using ASBV for fleece weight (Adult Clean Fleece Weight) and post-weaning weight (PWWT). It’s simply using the technology currently available to best effect,” Nigel said.

Nigel is focused on fast-tracking growth rates in lambs to provide more options – by either marketing the wether portion earlier or joining young ewes at seven months.

“Ten years ago, it took 11 months to produce a 28kg Merino carcass. Now it only takes me seven months. At the same time, we’ve increased fleece weight in our ewe flock by 15% whilst holding micron. We have invested heavily in targeted new genetics to improve our flock. Then, technology has been used to guide, track and monitor the application of this genetic investment, through the review of ASBV trend lines,” Nigel said.

Nigel encourages commercial producers to seek as much genetic data from their ram suppliers as possible and if that’s not possible then ask why it is not being supplied.

NIGEL KERIN’S INDUSTRY IMPERATIVES

According to Nigel, an industry that is able to meet future world demand for high quality fibre and meat will need to adapt more to a variable climate and increase the adoption of new technology. It will need to:

- produce **highly fertile, climate-ready sheep** resilient to climatic extremes
- embrace **education**, with producers recognising the value of implementing the findings of quality R&D and continual skill improvement
- blend proven traditional beliefs with **new technologies and management techniques**
- **rebuild** the flock rapidly that includes a type of Merino with high fertility and growth traits that allow ewe weaners to be joined early
- **provide a range of Merino wool types that best suit the range of our clients’ demands**
- support producers to develop **climate resilient businesses** which may involve running lower livestock numbers but more productive/profitable animals
- **lift animal welfare outcomes for** the modern Merino: plain-bodied, unmulesed wool, and an animal that has an improved lamb survival from birth to one year old – they’re simply more robust and fit for future purpose
- ensure sheep production is the most **profitable and productive enterprise choice to win the constant battle for land use against other enterprise options.**

Nigel is working double-time to develop a Merino type that may look more like a meat sheep breed but delivers 7.5kg of 19-20 micron wool, weaning 150% each year.

“You don’t know what you don’t know, and it’s costing you a fortune in unrealised profit – and untapped potential. The free lunch can come from management but if you combine that management with genetics and technology, then it is a three-course degustation dinner for the same price as a Happy Meal.”

Nigel Kerin

“The fleece weights, growth rates and doing ability of the modern Merino are all the result of using science and technology well at no extra cost to the ram buyer,” he said.

MANAGEMENT

The biggest changes in management have come about for the Kerins by being forced to do things differently due to climatic restrictions. Early weaning is one example, with lambs now weaned at 40-45 days of age into containment areas on to high starch grain diets. The period of containment varies according to paddock feed availability.

“The results of this process have been truly amazing,” Nigel said.

“The driver for early weaning was to get the ewes and lambs into containment to ensure we were maintaining groundcover and to ensure minimal loss of perennality of pasture. In addition, a major factor in our decision to early wean was also based on animal welfare.

“Feed conversion rates, weight gain and most importantly, a 99.7% survival rate in the seven months following weaning. Through that process of early weaning, those young lambs have been set up as highly productive animals for life. The results have to be seen to be believed.

“Our gate is always open to anyone who wants to come and have a look at how we do it and see the results.”

For the past two years, the Kerins have marked lambs two weeks after weaning. It’s being trialled as an animal welfare measure and Nigel says the rewards have been seen in the form of more contented and happy lambs that gain weight faster with no setbacks.

Young ewes have been joined at seven months of age for the past 11 years and in 2019 the preg-scanning rate for young ewes was 82% conception, with 141% foetuses, and a 112% weaning rate from ewes scanned pregnant.

“The key in managing this is the post weaning weight genetics, as the young ewes must be at 55kg (BCS >3) for a successful joining. This is another part of the free lunch that comes from contemporary Merino genetics,” Nigel said.

“Having the knowledge about how to apply best practice management to sheep from an early age is having a massive impact on our business. It’s taken a paradigm shift in



Kate and Nigel Kerin

thinking, and it’s about being brave enough to acknowledge there’s another way and that it might just be a better way.”

The gains from early weaning are measured in two key areas:

1. **Optimising the allocation of a precious resource: grass.** Weaning lambs at 12-17kg at 40-45 days of age to reduce the overall feed demand of what was a ewe/lamb unit. In containment, the lambs were gaining at 320g/head/day to ensure they reached 55kg at seven months for joining.
2. **Gold standard animal welfare.** During weaning, lambs were fed a liquid magnesium supplement (Beachport’s Green Cap) which Nigel found reduced stress and supported a mortality rate of 0.3% for 7,000 lambs weaned. For the past 25 years, any ewes that lambed and lost have been culled from the flock, without exception. Nigel firmly believes this creates a culture of good mothering ability within a flock, and it is repeated in the following generations. Fertility may be lowly heritable but highly repeatable. As a result of ‘wet and drying’, the Kerin ewe flock now has a foetus loss from scanning to weaning of just 10-17%.

TECHNOLOGY

“When cutting-edge technology and genetics are combined with being a good old-fashioned shepherd to your sheep, the triple bottom line is greatly enhanced,” Nigel said.

Nigel was heartened by the optimism of grain producers during the 2019 harvest who

shared their success stories as an efficiency measurement in kilograms of grain produced/mm of in-crop rainfall.

“There is no better example of the power of technology and genetics than what is being exhibited in the grains industry in Australia right now, that being through better plant gene breeding combined with innovative agronomy. The returns from in-crop rainfall to kilograms of grain harvested have seen yield increases of more than 30% just in the past five years.

“Why was that adoption of technology taken on board so easily in the grain growing industry, yet in the Merino industry 66% of rams sold in ram sales last year did not have ASBVs?”

“Is the grain grower adoption of technology just being driven by measured awareness and the sharing of knowledge, mainly through social media – especially Twitter?”

If producers applied the same science-based decision-making processes to sheep breeding, Nigel says the highly productive but resilient sheep needed to respond to climate variability and consumer demands would emerge more rapidly.

“No grain grower ever rings the seed company and says, ‘look I’m sorry I have to leave that variety because this new variety offers me 30% more yield potential’. Unrestrained by emotion and fuelled by real time data they just change to the better performer.”

MORE INFORMATION
www.kerinpoll.com.au

GOOD NEWS ON WOOL RESIDUES

Studies funded by AWI clearly show that the incidence of agricultural chemical residues in Australian greasy wool is very low. This is good news for the wool industry in its push to market the fibre's positive eco credentials amongst environmental rating agencies, governments, the textile trade and consumers.

With brands now attuned to consumer concerns about the environmental impact of products, a central part of AWI's fibre advocacy strategy is to demonstrate wool's environmental stewardship.

Since 2001, AWI has sponsored an annual survey of a wide array of agricultural chemical residues in Australian greasy wool. These chemicals are used by woolgrowers to control external parasites (lice and blowflies).

AWI monitors residue levels to ensure wool is suitable for sale into markets that are interested in the provenance of their products, including chemical residues remaining on fibres.

THE ISSUE

Some environmental apparel ratings agencies have already used toxicity in their ratings of fibres (eg 40% of MADE-BY's total environmental score was based on chemical toxicity), while other agencies (eg Sustainable Apparel Coalition) have flagged their intent to add toxicity to their environmental assessments. These ratings agencies are important in the industry because apparel brands use the agencies' ratings to help decide which type of fibre to include in their products.

Furthermore, these agencies influence government policy and there is a real likelihood in the near future of regulatory requirement for environmental impact indicators at point of sale (such as 'swing tags' on clothing) in the European Union (EU). Additionally, a ban on certain applications of neonicotinoids has already been imposed in the EU (eg in cropping sprays), but the ban might well evolve to apply to neonicotinoid

residues (such as from pour-on lice and blowfly treatments).

THE GOOD NEWS

In light of these threats, the good news is that AWI has been undertaking studies that confirm favourably low and decreasing trends in residual pesticides remaining in Australian greasy wool. Tests have been carried for chemicals including Organophosphates (OPs), Organochlorines (OCs), Synthetic Pyrethroids (SPs) and specific Insect Growth Regulators (Diflubenzuron, Triflumuron and Dicyclanil).

Residues of the older chemical groups (OP and SP) have declined toward a mean (average) of near zero. In fact, the vast majority of sale lots do have actual zero or virtually zero residual pesticide – see Figure 1 below showing the distribution of samples grouped according to their OP and SP concentrations.

"The studies funded by AWI demonstrate a proactive wool industry that is continually

WOOLGROWERS: IS YOUR CHEMICAL USE UP TO SCRATCH?

Woolgrowers are reminded that to apply chemicals correctly to control lice and blowflies, they should read labels closely (and the material safety data sheet, if necessary) and take care with preparation and dispensing of the pesticide.

Ensure all equipment is calibrated to deliver the correct dose and ensure all sheep treated comply with the instructions on the product label.

For further information, visit www.paraboss.com.au.

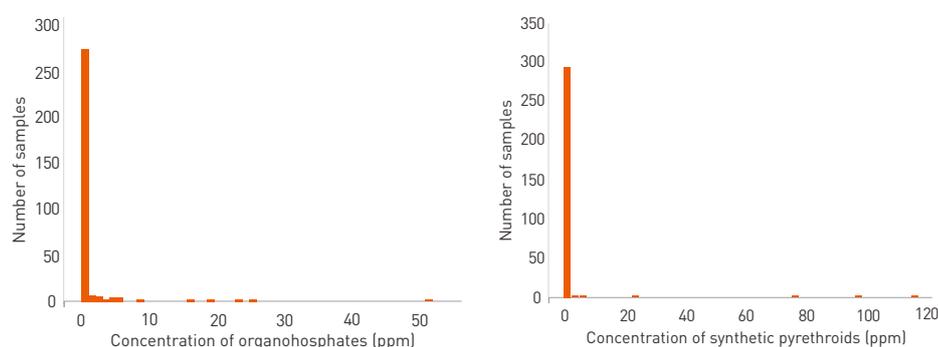
improving its environmental and safety performance," said AWI Program Manager, Fibre Advocacy & Eco Credentials, Angus Ireland.

"This body of work will give confidence to environmental apparel ratings agencies and the broader textile industry regarding toxicity in wool; these favourable results reflect careful management practices by farmers servicing the apparel wool industry, increasing confidence all along the supply chain."

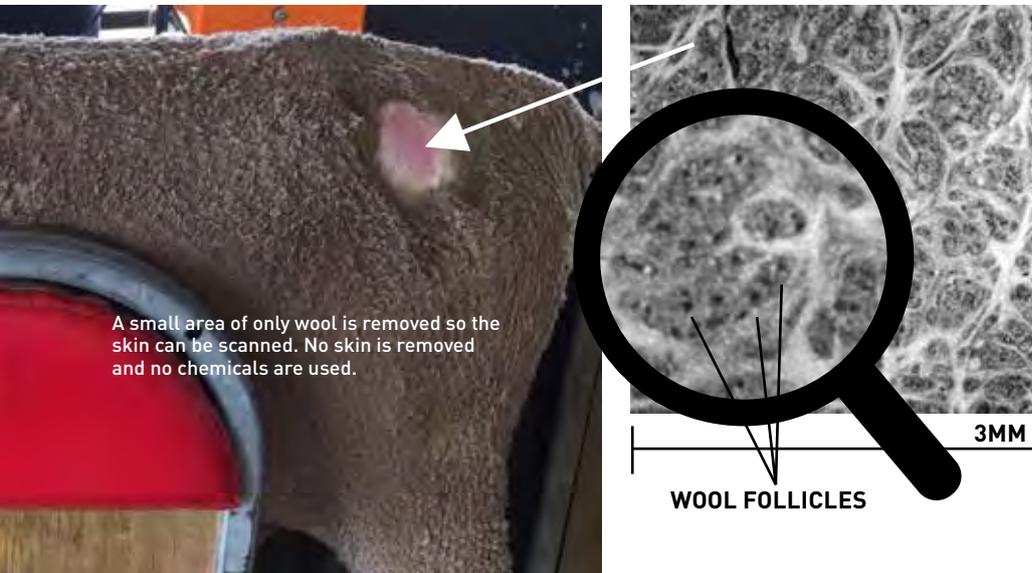
AWI will be marketing its chemical residue monitoring data. The results have already been presented at the International Wool Textile Organisation (IWTO) Wool Round Table meeting in December.

Plans include publication in a peer-reviewed journal to target environmental apparel ratings agencies and the broader life cycle analysis (LCA) industry as well as communications and marketing for the wider textile industry, brands and consumers. **B**

Figure 1: Organophosphate (OP) and Synthetic Pyrethroid (SP) distribution



NEW TECHNOLOGY TO MEASURE WOOL FOLLICLE DENSITY



A small area of only wool is removed so the skin can be scanned. No skin is removed and no chemicals are used.

Optical scan of a live sheep, showing wool follicles below the surface. Each wool follicle appears as a small, black dot and is approximately 20 microns in diameter. The image shows a 3mm x 3mm field of view.

The wool-producing 'factory' of the sheep are the millions of follicles located just below the surface of the skin of the animal. In a Merino sheep, there are up to about 60 follicles in each square-millimetre.

Sheep with higher densities of wool follicles not only produce a heavier clean fleece weight, they also produce lower diameter fibres. Therefore, woolgrowers who select sheep with a greater density of wool follicles can improve both the quantity and quality of the wool in their flock. In addition, wool follicle density is highly heritable so genetic gains can readily be made.

At present, however, although wool follicle density can be measured using 'histology', few woolgrowers find this process to be either economically or logistically viable. Histology involves taking a small biopsy sample of the animal's skin, chemically processing it and analysing it under a microscope. This process costs >\$100 per animal and can take several weeks.

MEASUREMENT AT YOUNGER AGE

A technology solution is currently being investigated in an AWI-funded project in collaboration with the University of Adelaide and Miniprobes Pty Ltd. The project brings together world-leading researchers in optical imaging, machine learning and livestock breeding and management.

Professor Wayne Pitchford of the School

of Animal and Veterinary Sciences at the University of Adelaide says there is no product available on the market that can assess the potential wool production of a lamb prior to its first shearing.

"If woolgrowers were able to more readily and cost effectively identify high value sheep at an early stage (<8 months of age) they could significantly increase the rate of genetic improvement and profit in the flock. In parallel, by identifying sheep with low quality, coarse wool at a young age, woolgrowers could eliminate these sheep from the flock at an early stage," Professor Pitchford said.

"Our primary target market is Australian Merino ram breeders. Stud breeders sell high value sheep to commercial woolgrowers, and maximising genetic improvement in their sheep is a critical product differentiator for the breeders.

"Consider the current selection situation. The gestation length for a sheep is approximately five months. Lambs are typically shorn for the first time at around one year of age. By assessing the fleece, it takes 17 months to select and produce one generation of sheep."

Although selection using follicle density could improve the accuracy of current fleece weight assessments alone, it could also reduce the generation interval when combined with other technologies, such as juvenile in vitro embryo transfer, with which

A new technology is being developed as part of an AWI-funded project that could enable woolgrowers to easily and cost effectively analyse the wool follicle density of sheep at a much younger age (prior to first shearing) than is currently possible. This would enable far more rapid genetic improvement in both wool production (weight) and quality (diameter).

it is possible to harvest eggs from sheep as early as two months of age.

"Using our technology to analyse the wool follicles in younger sheep, the farmer would be able to produce with greatly increased accuracy and speed a new generation of improved sheep."

OPTICAL IMAGING TECHNOLOGY

The researchers have developed a high-resolution optical imaging technology, known as optical coherence tomography (OCT), that can be used to rapidly quantify the density of the follicles and the diameter of the wool fibre that will be produced. Pilot scans on live sheep have already been successfully performed that show a strong correlation between the results from the optical scan and histology.

OCT is a medical imaging technology that is commonly used in the ophthalmology and cardiology departments of many hospitals. The researchers have re-purposed this technology for use in sheep.

Dr Robert McLaughlin of Miniprobes Pty Ltd says that while there are multiple manufacturers from whom off-the-shelf scanners can be sourced, the innovation in this AWI-funded project is in customising the scanners for use on-farm, and in the development of intelligent machine learning software to automatically measure the density and size of the wool follicles.

"We are developing a point-and-click scanner that uses optical imaging to look below the skin surface and analyse the wool follicles rapidly and safely," Dr McLaughlin said.

"Our technology does not use any chemicals and does not require that tissue be removed from the sheep. It only requires that a small area of the sheep have wool temporarily removed so that we can image the skin.

"With automated analysis software to measure the wool follicles, the entire process could be completed within a few minutes."

At the end of the project, the researchers will provide a detailed product development and commercialisation plan for the device. **E**

FLYSTRIKE VACCINE

RESEARCH UPDATE

AWI is now one year into a major four-year preliminary research project to help develop a commercial vaccine that will protect sheep right across Australia from the Australian sheep blowfly. This \$2.5 million collaborative project has achieved much in its first year.

Here, project leaders Tony Vuocolo (CSIRO) and Trent Perry (University of Melbourne) provide woolgrowers with updates on their respective areas of research.

KEY POINTS

- CSIRO researchers have identified key proteins in blowfly maggots that are important for their growth and development.
- The team has developed and tested prototype flystrike vaccines that help the sheep's immune system build a defence mechanism (antibodies) that will target and destroy these proteins.
- However, extracting natural larval protein from actual flies for the vaccine is prohibitively expensive commercially, so the team is looking at ways to develop an alternative and cheaper way to synthesise them.

CSIRO RESEARCH UPDATE

During the past 12 months, CSIRO has been advancing the development of a flystrike vaccine by producing and testing an initial subset of prototype trial vaccines. Results from these trials are helping inform what needs to be done next in producing a viable and affordable flystrike vaccine for the sheep industry.

CSIRO has identified key proteins in blowfly larvae (maggots) that are important for their



CSIRO scientist **Tony Vuocolo** vaccinating sheep with prototype flystrike vaccines.

growth and development. The vaccine, when given to sheep, causes the sheep's immune system to build a defence system in the blood, using weapons called antibodies that will target these key larval proteins. The antibodies react against the larvae when they try to feed on sheep by targeting and interfering with these proteins, resulting in stunted or dead blowfly larvae.

The research initially confirmed that isolating these proteins directly from larvae and using them in a vaccine was highly effective in compromising larval growth and viability. Using this information in combination with the sheep blowfly genome sequence (an outcome from another AWI-funded University of Melbourne project) has allowed the expansion and identification of additional protein-encoding genes that may be used in a vaccine.

It will be prohibitively expensive and require a lot of flies to use the actual proteins extracted from flies themselves. This means we ideally need to develop an alternative cheaper way to synthesise them. However, to generate an effective immune response, the ideal protein antigen(s) for the vaccine

must closely resemble the characteristics of the natural larval protein. To do this, antigens are being produced in specialised insect cell systems in the laboratory; in addition, CSIRO is also exploring alternative ways to manufacture key protein associated structures that may be used in a vaccine.

Eight candidate antigens are being trialled currently in prototype vaccines with an additional six in production for testing in the coming several months. The current trials have indicated that special structures associated with these proteins are critical in helping produce an effective immune response that will deleteriously affect larval growth. Ensuring we can retain these structures is the key challenge in producing these complex synthetic antigens.

The next 12 months of research will determine the directions that need to be undertaken to develop an effective flystrike vaccine. Developing a vaccine is difficult but, if successful, will have a huge beneficial impact on the sheep industry. An annual vaccination to help protect sheep from flystrike is the holy grail in flystrike control and remains the key aim of this CSIRO team.

UNIVERSITY OF MELBOURNE RESEARCH UPDATE

2019 was a big year for the team of researchers at the University of Melbourne (UOM) who have been focused on collecting, identifying and characterising blowfly samples from all across Australia as well as looking at the molecular processes these parasites use to survive on sheep. Blowfly samples were obtained from January to March 2019 from locations in Victoria, Tasmania, NSW and Queensland. Hundreds of flies were collected, not only by the team, but also thanks to a number of woolgrowers and agronomists in sheep growing areas that volunteered their time and properties, for which we are very grateful.

The fly samples have since been genotyped using a technique that provides information on thousands of markers distributed throughout the fly's genome and this has allowed us to begin building a model of the Australian sheep blowfly population structure in this country. This model, comprising the data from sampling across all years of the project, will allow us to determine how flies are moving around the country.

From our initial sampling, we have been able to use these markers to identify regions that flies are moving between as well as genes in the blowfly genome that may be helping the flies adapt to their environment. As we gather more information about fly migration patterns, this will help inform pest management strategies, such as how to best contain insecticide resistance outbreaks and allow the rapid identification of the origin of flies that are resistant to different chemicals. It is also valuable for evaluating the potential for genetic control or sterile insect release programs as possible future control strategies. We are also extracting information about the blowfly genes that are rapidly evolving as this should provide important information that can help support the selection of vaccine candidates which are critically involved in strike initiation.

Working with CSIRO, we have examined the protein sequence of current vaccine candidate genes and will continue to update CSIRO with sequence data from newly collected blowfly samples as it comes to hand. This information will help ensure that the proteins they are targeting are the same in blowfly populations across Australia and support their attempt to make a vaccine that should be effective across all of Australia.

Another area of the project that we at UOM have been busy with, is a study that aims to understand how flies establish a strike, particularly what proteins are critical in the early stages, just prior to and during the initiation of a strike. We have conducted an *in vivo* implant trial where sheep were infested with blowfly eggs, and then we

collected samples from both maggots and the sheep as the infestation was just being initiated. This work has identified hundreds of fly proteins that are being excreted during strike initiation. We are excited to continue analysing the data in 2020 for proteins that have the potential to be new vaccine candidates and finding out more about how sheep respond to the infections which will assist with vaccine development.

A large component of the second year of the project involves the 2019/20 blowfly collection. We have loved travelling across the country meeting woolgrowers and collecting flies, and appreciate all the mail we have been receiving from our amazing woolgrower and agronomist volunteers. We are working hard to obtain a wider range of blowfly samples to improve the accuracy of our model. Trips by Dr Clare Anstead to deliver collection kits around Western Australia and South Australia added many sites to our study, assisted by woolgrowers in those states.

Hundreds of flies from across the country will be identified and data from these integrated to help build our blowfly population models over the next 12 months. There is also a lot more work needed to understand the way sheep respond to strike and the battle between the maggots and sheep defence mechanisms. We will be delving further into this interaction over the course of this year using more of the samples that were collected during the *in vivo* implant trial.

Our bioinformatician and newest team

member, Dr Shilpa Kapoor, has had her hands full working on the super computers at UOM to analyse the data from our proteomics and genomics work. We will continue working closely with CSIRO, using these results to help inform the process of selecting and developing the optimal vaccine candidates. **E**

KEY POINTS

- The University of Melbourne researchers have collected hundreds of blowflies from right across Australia and are studying them to identify the regions that flies are moving between and how they adapt to their environment. This information will help inform pest management strategies, such as how to best contain insecticide resistance if it arises.
- Working with CSIRO, the researchers are examining the protein sequence of current vaccine candidate genes to help ensure that the proteins they are targeting are the same in blowfly populations across Australia.
- Research to identify blowfly proteins that are being excreted during flystrike initiation and find out more about how sheep respond to the infections will assist with vaccine development.



University of Melbourne PhD student **Gothami Welikadage** and scientists **Vern Bowles** and **Trent Perry** collecting blowfly larvae from an implanted sheep during their *in vivo* implant trial.

SHEEP FLYSTRIKE RISK FACTORS

From 2005 to 2014 the 'Breeding for Breech Strike Resistance' project investigated the risk factors that increased the incidence of flystrike in Merinos at two sites, a high summer rainfall high altitude site at Armidale NSW (CSIRO) and a winter rainfall Mediterranean site at Mt Barker WA (DPIRD WA).

The sheep in the project were provided normal husbandry practices relevant to the region except for the fact that they were not

given any preventative chemical treatments, nor for most years were they mulesed.

The data from these flocks were used to create new Australian Sheep Breeding Values for Breech Wrinkle, Cover and Dags, first released in late 2009. Progressively breeders have increased the collection of breech trait and pedigree data and selected for increased productivity with improvements in these welfare traits.

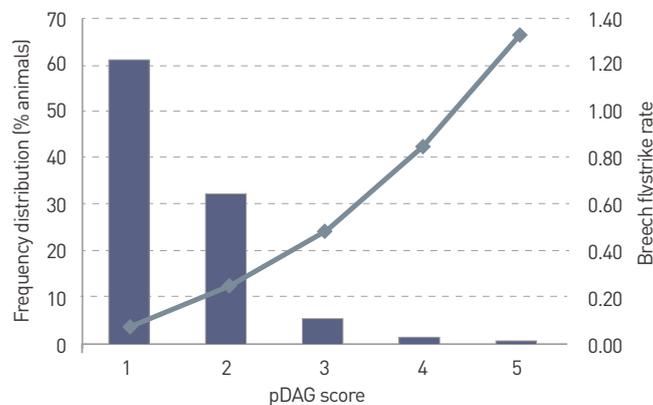
Flystrike risk factors are outlined below.

KEY POINTS

To reduce the risk of flystrike on a property:

- Select for lower breech wrinkle, lower dags and cull for high urine stain. Aim for all sheep to be phenotypically score 2 or lower for the important traits for the property.
- Once wrinkle, dags and urine stain are low, select for lower breech cover. Aim for all sheep to be phenotypically score 3 or lower.
- Select for polled animals.

DAGS - Risk of breech strike exponentially increases with increasing dags

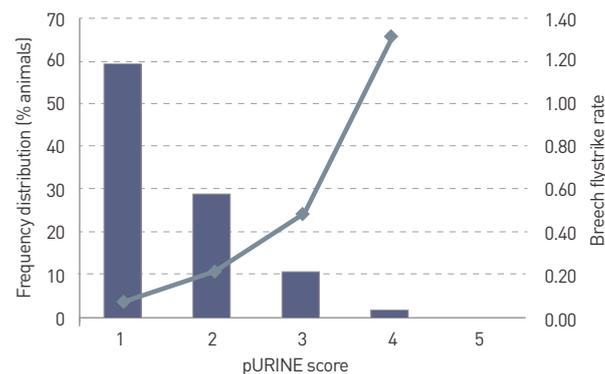


Source: AWI Breeding for Breech Strike Resistance Project, CSIRO Armidale 2005 to 2014

The site at Armidale had a low incidence of dags, (60% score 1 and 30% score 2) but for sheep that did express dags (mostly in the odd year when dags were higher than normal), the risk of breech strike was high. 50% of the score 3s, 80% of the score 4s and 140% of the score 5s got breech strike each year. A reasonable number of score 5s were struck several times per year. However, due to the low incidence of dags at the site, most strike was caused by other factors (wrinkle).

The site at Mt Barker had a high incidence of dags in most years and a similar risk of breech strike to the Armidale site across the dag scores from 1 to 5. The analysis proved that dags were a high risk factor for breech strike (along with wrinkle).

URINE STAIN - Risk of breech strike exponentially increases with increasing urine stain

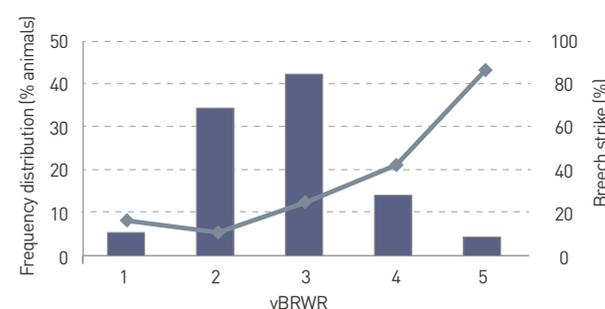


Source: AWI Breeding for Breech Strike Resistance Project, CSIRO Armidale 2005 to 2014

The site at Armidale had a low incidence of urine stain, (60% score 1 and 30% score 2) but for sheep that did express stain, the risk of breech strike was high. 45% of the score 3s, and 130% of the score 4s were struck each year. Due to the low incidence of urine stain at the site, most strike was caused by other factors.

The site at Mt Barker had a high incidence of dags in most years and a similar risk of breech strike to the Armidale site across the dag scores from 1 to 5. The analysis proved that dags were a high risk factor for breech strike (along with wrinkle).

BREECH WRINKLE - Risk of breech strike increases exponentially with increasing breech wrinkle

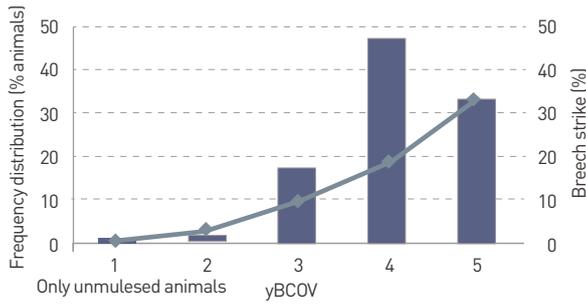


Source: AWI Breeding for Breech Strike Resistance Project, CSIRO Armidale 2005 to 2014

The site at Armidale had a high level of breech wrinkle, (60% were score 3 and higher) and they had a high risk of getting breech flystrike. 20% of the score 3s, 35% of the score 4s and 70% of the scores 5s got breech strike each year. Most breech strike was caused by wrinkle and most strike started on the breech rather than the tail. (Note: after 10 years of 'single trait' selection for flystrike, the Resistant Sires average Wrinkle ASBV was -0.6; the Susceptible Sires averaged +0.6)

The site at Mount Barker had a lower level of breech wrinkle (most were score 1 and 2) but a similar risk of breech strike across the wrinkle scores from 1 to 5 to the Armidale site. Dags and wrinkle were the main cause of breech strike. When breech strike occurred most started on the tail rather than the breech.

BREECH COVER - Risk of breech strike increases with increasing breech cover

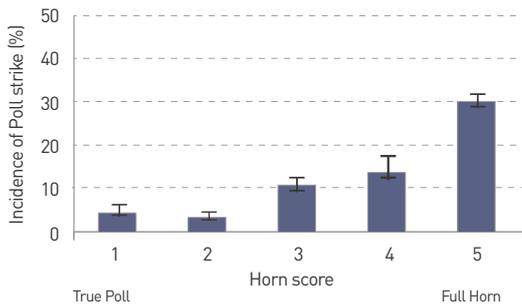


Source: AWI Breeding for Breech Strike Resistance Project, CSIRO Armidale 2005 to 2014

The site at Armidale had a high level of breech cover (80% were score 4 and higher) but a lesser risk of getting breech flystrike. 10% of the score 3s, 20% of the score 4s and 30% of the scores 5s got breech strike.

The site at Mount Barker had a low incidence of breech cover but a similar risk of breech strike. Due to the low level of breech cover, most strike was caused by other factors (dags and wrinkle).

HORNS - Risk of poll strike increases with horned rams



Source: AWI Breeding for Breech Strike Resistance Project, CSIRO Armidale 2005 to 2014

The site at Mount Barker had a low level of poll strike in the true polled rams (less than 5%) and higher incidence of poll strike in fully horned (30%).

The Site at Armidale was dominated by horned genetics, and most were horned rams.

According to the AWI 2017 Husbandry Practices Survey, polled Merinos now account for two thirds of the total Merino numbers. Polled Merinos are most popular in SA (90%) and WA (74%) and least popular in Tasmania (43%) and Queensland (46%). Both NSW and Victoria have 58% polls.

ASBV PERCENTILE TABLE FOR 2018 DROP ALL MERINO BREED SHEEP IN MERINOSELECT

	YWT	AWT	YEMD	YFAT	YCFW	ACFW	YFD	YWEC	NLW	EBWR	EBCOV	LDAG	FP+	MP+	DP+
TOP 1%	11	11	2.9	2.0	32	27	-3.2	-80	16	-1.2	-0.8	-0.4	167	182	187
TOP 5%	9	9	2.3	1.4	27	23	-2.5	-61	10	-1.0	-0.5	-0.3	155	166	170
TOP 10%	8	8	1.9	1.1	24	20	-2.1	-50	8	-0.8	-0.4	-0.3	149	160	161
TOP 20%	7	6	1.4	0.8	21	17	-1.7	-38	5	-0.6	-0.3	-0.2	142	152	152
TOP 50%	4	4	0.4	0.3	14	10	-1.0	-15	1	-0.2	-0.1	-0.1	131	137	137
TOP 70%	3	2	-0.2	-0.3	9	6	-0.5	0	-1	0.0	0.1	0.0	124	128	129
TOP 90%	0	-1	-0.9	-0.8	2	0	0.2	28	-5	0.4	0.2	0.2	111	116	116

YWT Yearling Body Weight, AWT Adult Body Weight, YEMD Yearling Eye Muscle Depth, YFAT Yearling Fat, YCFW Yearling Clean Fleece Weight, ACFW Adult Clean Fleece Weight, YFD Yearling Fibre Diameter, YWEC Yearling Worm Egg Count, NLW Number of Lambs Weaned, EBWR Early Breech Wrinkle, EBCOV Early Breech Wool Cover, LDAG Late Dags, FP+ Fibre Production Plus Index, MP+ Merino Production Plus Index, DP+ Dual Purpose Plus Index

TARGET AUSTRALIAN SHEEP BREEDING VALUES

There is considerable variability between wool-growing regions and properties in the degree to which wrinkle, worms and dags are actually 'phenotypically' expressed.

Around 50% of Merinos reside in 'low dag' country, where dags are not or very infrequently expressed. Dags are only a factor if surplus sheep are sold into high dag regions. The same applies to worms, if in low worm country there is little need to select for worm resistance.

Breeding for lower dags and lower wrinkle combined will take considerable time.

Currently the top 10% of animals for dags

have a breeding value of -0.3 or less, the top 1% of animals are -0.4 or less.

The actual or 'phenotypic' expression of wrinkle is also dependent on a range of factors, such as nutrition as a foetus and a lamb, along with impacts such as cold conditions and worms. Even on a property, wrinkle is expressed in the lamb drop more in good seasons and less in drought.

Some high profile non mulesed ram breeders have low fly risk with breeding values for wrinkle at -0.3, other non mulesed ram breeders in high wrinkle country need to average -0.8 to -1.0. The top 10% of MERINOSELECT animals are -0.8 or less.

The base year for the three breech traits is 2000, the base year for most other traits is 1990. Since 2000 the average wrinkle score has fallen to -0.2, cover to -0.1 and dags

to -0.1.

Within the Merino types, medium Merinos' average wrinkle ASBV is -0.5, fines average -0.2 and superfines average +0.1.

Woolgrowers frequently ask can we breed a new type of Merino that has low scores for the breech traits and worms that are also high in productivity (fleece value and number of lambs weaned)? This, and the current availability of these type of sires with MERINOSELECT data, will be addressed in the June edition of Beyond the Bale.

MORE INFORMATION

- AWI Breech Strike RD&E Improving Lifetime Welfare PowerPoint www.wool.com/strikepres
- Sheep Genetics MERINOSELECT Web Search <http://sgsearch.sheepgenetics.org.au/?dataset=5>

PARASITE CONTROL

HOW DO YOU COMPARE?

The Benchmarking Australian Sheep Parasite Control Survey was conducted by University of New England researchers Dr Alison Colvin, Professor Stephen Walkden-Brown and Dr Ian Reeve, with oversight from a Steering Group that included producer representation. The survey was focused on sheep parasite control practices.

Results from the survey informs AWI on rates of adoption of on-farm practices and will be used to inform updates to industry extension material, including where relevant, the development of regionally specific information under Wormboss, Flyboss and Liceboss.

More than 354 sheep producers responded to the main survey with a further 250 responding to a short follow-up survey. The age of respondents ranged from 27 to 92 years and the mean was 57 years. The mean reported annual rainfall in 2018 was 407mm, which was 27% lower than the mean average annual rainfall (557mm). Reported rainfall in 2018 was also lower than for the two previous survey periods in 2003 (610mm) and 2011 (650mm). These lower rainfall figures will have impacted the incidence of parasites and their control practices reported in the current survey.

USE OF PARABOSS HAS INCREASED

The ParaBoss suite of websites was popular amongst respondents (see Table 1). The WormBoss website was a confirmed favourite with 63% of respondents visiting the website; 28% also used the site to make changes to their worm control practices. WormBoss was ranked an important source of information on worm control, second only to 'other farmer or staff member'. The drench decision guide on the WormBoss website is also popular, ranking second only to 'self' as the most important source of information for specific worm control decisions.

WORM CONTROL

There was an **increase in the use of faecal worm egg count monitoring (WEC) since the previous survey, with 39% of respondents using WEC up from 21% in 2011.** Whilst noting Tasmania only had a small sample size, the proportion of respondents monitoring WEC in 2018 by region, is presented in Figure 1.

On average, those sheep producers who used WEC tests did 3.1 tests per year. WEC was also ranked third for techniques used for worm control (54%) and first for effectiveness. Planned preventative treatment was the most used worm control technique (74% used) but ranked fifth for effectiveness. Preparing clean pastures by spelling paddocks also ranked highly as a worm control technique that was used by 62% of respondents.

The results are in from an AWI-funded survey of Australian sheep producers regarding their 2018 sheep parasite control practices for the management of worms, flies and lice. This was the third sheep parasite survey commissioned by AWI, following previous surveys of producers' control practices in 2011 and 2003.

Table 1: Increase in sheep producer use of the ParaBoss suite of webpages from 2011 to 2018

	FLYBOSS		WORMBOSS		LICEBOSS	
	Total who visited site	Used site to make changes	Total who visited site	Used site to make changes	Total who visited site	Used site to make changes
2011	13%	2%	21%	5%	15%	3%
2018	59%	18%	63%	28%	57%	20%

Figure 1: Proportion of respondents monitoring faecal worm egg counts (WEC) in 2018 by region

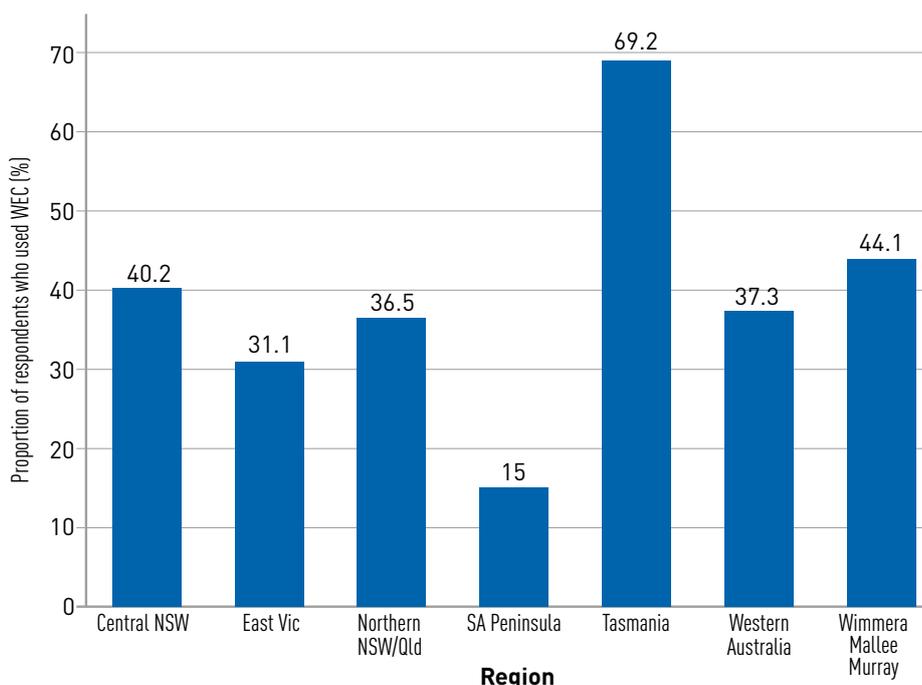


Table 2: Percentage of respondents who used methods to assist with blowfly control in 2018 by region

METHODS TO ASSIST WITH BLOWFLY CONTROL	PERCENTAGE RESPONDENTS BY REGION							
	CENTRAL NSW	EAST VIC	NORTHERN NSW/QLD	SA PENINSULA	TASMANIA	WESTERN AUSTRALIA	WIMMERA MALLEE MURRAY	NATIONAL
TIMING OF CRUTCHING	81	76.9	66.7	92.9	70	80.6	72.2	76.4
PREVENTATIVE CHEMICAL TREATMENT	77.6	76.9	74.4	78.6	80	77.8	72.2	75.9
TIMING OF SHEARING	72.4	57.7	69.2	50	40	72.2	52.8	63.1
MULESING SHEEP	55.2	30.8	35.9	64.3	20	55.6	48.1	46.8
GENETIC SELECTION	62.1	7.7	48.7	50	20	55.6	44.4	46.4
DESTROY MAGGOTS	32.8	19.2	23.1	14.3	20	30.6	25.9	26.2
BUYING MULESED SHEEP	19	38.5	20.5	50	10	13.9	25.9	23.6
FLY TRAPS	5.2	3.8	12.8	0	10	2.8	1.9	5.1
N	58	26	39	14	10	36	54	237

Shaded cells indicate percentages of respondents that are significantly higher than the national proportion (red) or significantly lower (blue). N = number of responses per region.

The annual number of drenches (2.4/year over all classes of sheep) was lower than reported in the previous survey (2.7 for ewes in 2011). The lower rainfall may be a factor in lowering the number of drenches used. **Only 16% of respondents carried out some form of drench resistance test in the past five years (between 2014 to 2018), down from 29% in 2011. This is a worrying trend given widespread drench resistance.** The top three most frequently used drench actives in 2018 (abamectin, levamisole and moxidectin) were the same as reported in the 2011 survey and the majority of drenches were given as a single active (55%).

FLYSTRIKE CONTROL

A large proportion of respondents who mulesed, used pain relief in ewe lambs (87%) and wether lambs (91%). This is similar to the results of the 2017 Merino Husbandry Practices survey which reported 87% of Merino growers chose to use pain relief at mulesing.

Respondents reported that their most popular methods used to assist with flystrike were timing of crutching (76%), preventative chemical treatment (76%), timing of shearing (63%) and mulesing (47%) - see Table 2.

However, **the greatest change in use of methods to assist with flystrike control was an increase in the use of genetic selection** with 30% of respondents stating they use genetic selection more now compared with five years ago. A high proportion of respondents said they used visual traits to select for rams (56%) and ewes (44%) that were less susceptible to flystrike; examples given included culling sheep for body strike, fleece rot, breech wrinkle and wool colour. Forty per cent of respondents reported using Australian Sheep Breeding Values (ASBVs) to select rams for breeding sheep less susceptible to flystrike. Of those respondents who used ASBVs, the most popular welfare traits were for breech wrinkle (64%) and WEC (52%). A newly updated and released AWI/MLA Visual Scores Guide for producers is available at www.wool.com/strike-breeding.

LICE CONTROL

Most respondents reported no lice seen over five years (55%), 28% saw live lice and 30% saw sheep rubbing (a possible sign of lice). The proportion of respondents not treating for lice (27%) has risen from 2011 (19%).

Biosecurity issues were the most important reported causes of re-infestation with lice with introduction through fences or from purchased sheep the largest perceived cause when ranked out of 4 (3.8). Although biosecurity was the highest concern for re-infestation with lice, only 33% of respondents isolated introduced sheep for at least two weeks and only 8% applied a quarantine lice treatment for introduced sheep. B

MORE INFORMATION
www.wool.com



ParaBoss recently launched its FREE Wormcasts podcast service. Download them directly to your phone or computer – and listen to them on the tractor, driving to town, or in fact anywhere!

Wormcasts hosts, ParaBoss Technical Manager Dr Susan Swaney and farmer Ian Campbell, cover worms, flies and lice in sheep and goats. The podcasts include interviews with experts and farmers, their stories and how parasite issues can be managed, as well as a limerick for each episode. Be entertained and learn at the same time!

Ten episodes have already been released, each about 15-30 minutes long.

Visit www.paraboss.com.au/multimedia to learn more and listen.

PARABOSS SEASONAL REMINDERS

- 1. Are your sheep showing signs of lice?** Chances are your last treatment was ineffective or poorly applied, rather than strays. Check your own practices first.
- 2. Conduct a worm egg count test now and use your regional Drench Decision Guide** to assist your drenching decision.
- 3. Is the next drench you plan to use effective?** Conduct a DrenchCheck next time you drench.
- 4. Consider smart grazing for weaner worm control.** Weaner sheep survival in southern Australia can be boosted by good worm control and Smart Grazing to prepare low worm-risk winter weaner paddocks.

Visit the 'Seasonal Reminders' section on the www.paraboss.com.au home page and click on the links provided to find out guidance on these issues.

PARABOSS: BEST PRACTICE ADVICE FOR MANAGING SHEEP PARASITES

ParaBoss is a suite of three products – **LiceBoss**, **WormBoss** and **FlyBoss** – developed to help sheep producers in the management of lice, worms and blowflies.

The LiceBoss, WormBoss and FlyBoss websites are sources of detailed management information and regional programs that will assist in managing the major parasite risks for sheep. The websites have been developed by expert panels of parasitologists and veterinarians from across Australia.

ParaBoss provides access to the three websites at www.paraboss.com.au.

Subscribe to ParaBoss News, the twice monthly free email newsletter with state outlooks on the current state of sheep parasites as well as feature articles and the quick quiz to test your knowledge of sheep parasites. You can subscribe on the ParaBoss website.

Join us on **Facebook** at www.facebook.com/paraboss.com.au



to see weekly posts on flystrike, lice and worm control.

Listen to Wormcasts, the ParaBoss podcast, at www.paraboss.com.au/multimedia. It covers parasite management topics: worms, flies, lice, ticks and fluke.

ParaBoss is funded by AWI and MLA and coordinated by the University of New England with industry oversight. B

MORE INFORMATION
www.paraboss.com.au

paraboss



PUTTING WORMBOSS INTO PRACTICE

An AWI-funded project has successfully trialed a group-approach to supporting improved adoption of key WormBoss practices that underpin proven, cost-effective worm control.

Whilst the awareness of WormBoss practices amongst woolgrowers is high, the adoption of these practices can be varied and requires continued effort by woolgrowers.

To better understand the barriers to adoption of key worm management practices and to inform ParaBoss extension and adoption activities, a ParaBoss-managed project with a producer group, Monaro Farming Systems (MFS), was recently undertaken.

The two key WormBoss practices chosen for the project were (1) using worm egg counts (WEC) to monitor worm burdens, and (2) conducting drench resistance tests to identify effective drenches.

Some of the anticipated outcomes for woolgrowers involved in the project included improved worm (and liver fluke) control decisions on pasture management/rotations, drench choice and drench programs and access to a comprehensive, district specific, data set to support local discussions and worm management planning.

The project engaged 59 MFS farm businesses,

and encouragement from the existing MFS Worm Club and then-Executive Officer, Nancy Spoljaric, saw them carry out 22 drench resistance tests for round worms, and more than 750 WEC tests for general worm monitoring. Only one drench resistance test of liver fluke was able to be carried out as the group could not find high enough liver fluke infestations.

During the project, which commenced in 2017, the group received regular updates on project progress and test results, including a number of newsletters and presentations at meetings and field days. A pre-project survey of MFS members captured information on their worm management attitudes and practices before the project commenced and a post-project survey is currently being analysed to identify any changes. Early outcomes suggest that the communication and training activities, supported by subsidised testing costs, fostered improved adoption of worm management practices.

Unfortunately, a similar project in another state was not as successful as the drier conditions meant only a few WEC tests were



MFS Executive Officer **Nancy Spoljaric** and **Briony Mitchell** collecting faecal samples at 'Corrowong', Delegate.

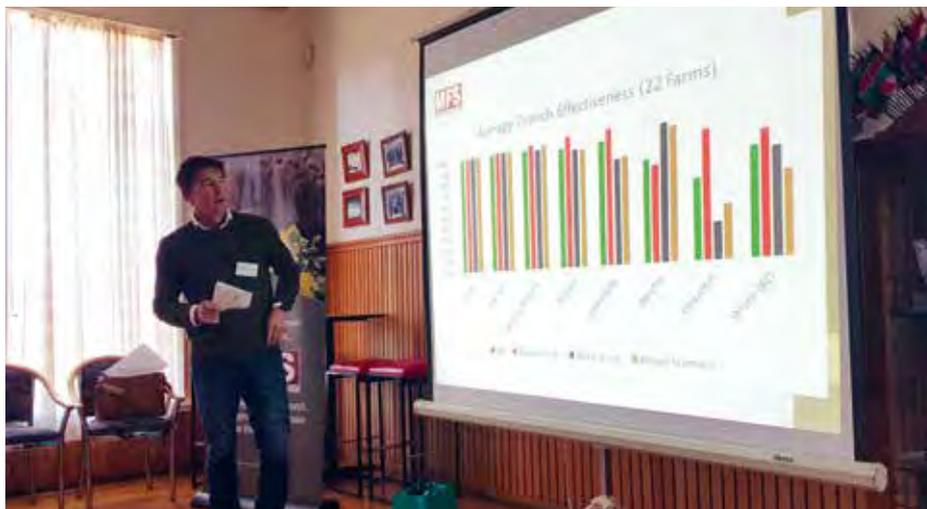
needed and only three drench resistance tests were able to be carried out. As a result, there was not enough data to support an analysis of changed behaviour or improved outcomes.

Results from the MFS project demonstrated that drench resistance issues were very much property specific and it could not be assumed that neighbouring properties have similar concerns. Some of the other key results that MFS members received during the project included:

- Barber's pole worm was present on 20 out of 22 farms and accounted for 60% of the egg output.
- There was a high level of resistance in barber's pole worm to mectin drenches, but levamisole and closantel drenches are worth considering for treating barber's pole worm. However, compared to scour worms, barber's pole worm has a larger number of effective control options.
- The newest drenches, Zolvix® and Startect®, were working on all farms for all worms.
- A triple drench containing a benzimidazole (BZ), levamisole (LV) and a mectin (ML) was effective on 20 of the 22 farms.
- A double-active (BZ and LV) drench was only effective on 10 of the 22 farms.
- Resistance to BZs alone was extensive in all worms across all farms and should not be used as a single active, but has value when used in a combination.

Deb Maxwell, ParaBoss Executive Officer said these results confirm findings from other locations.

"First and foremost is that the drench resistance profile on one farm can be quite different to that of a neighbouring farm; therefore testing on your own



MFS President **Richard Taylor** presenting the final result at an MFS field day last year.

farm is paramount. At the very least, do a DrenchCheck – a before and after WEC test – each time you plan to use a drench you have not tested in the past two or three years,” Deb advised.

“The drench resistance profile on one farm can be quite different to that of a neighbouring farm, therefore testing on your own farm is paramount.”

Deb Maxwell,
ParaBoss Executive Officer

“The Monaro, compared with other southern inland areas, tends to have more regular barber’s pole worm problems,” Deb added. “Fortunately, in the older drenches, levamisole still looks a good option, but would best be given in a triple combination so that concurrent effectiveness against scour worms is likely to be achieved. The older closantel drench could also be considered, remembering it is specific for barber’s pole worm.”

MFS was able to create a member-based repository of their members’ WEC results, which show on their website as a live graphic of the average number of eggs per gram for the month as well as bar graph results for the previous 12 months and it automatically updates when new results are added. This information will be used to inform MFS members of the latest trends in drench resistance to help them make more informed drench choices. Potential development of a similar national database of drench resistance tests has been scoped by ParaBoss.

Once the complete analysis of the project results, including the grower surveys, has been completed, information will be used to inform updates to ParaBoss extension and adoption resources and activities. **B**

MORE INFORMATION

www.wormboss.com.au

www.monarofarmingsystems.com.au/waging-the-war-on-worms

INTER-PROJECT COLLABORATION

The faecal samples that were used in the *Putting WormBoss into Practice* project (above) were value-added in another AWI-funded project (reported on page 45). Animal health company, Dawbuts, used them to trial a relatively new egg count method (Mini-FLOTAC) that is more sensitive than other existing methods.

This collaboration not only enabled woolgrowers to receive results back for their own properties, but also enabled them to assist in related research that will ultimately benefit the broader woolgrower community.

PARASITE MANAGEMENT PLANS

WRITE IT DOWN, TO GET IT RIGHT!

Writing an annual parasite control plan for your farm helps to ensure best practice parasite control. The plan should cover the important events for worms, flies and lice and include your policies (your approach) on quarantine practices, monitoring, when drench checks will be done, and which year you will do the more comprehensive drench resistance tests.

BENEFITS OF HAVING A PLAN IN WRITING

- It is there for anyone you choose to look at and to comment on. It can be discussed with your advisor to ensure it is correct, your reseller can be made aware of your order requirements in advance and workers know what’s coming up and can make their contribution.
- It ensures better timing. There’s a saying that the difference between a good farmer and a bad farmer is that the good farmer does things at the right time. Critical events, such as the first summer drench, pre-lambing drench or when to wean, are all crucial to a good parasite management plan. Certainly, practices such as the first summer drench may change their date from year to year dependent on the season, but if it’s in there on the first possible date then you will be reminded.
- A plan is making a commitment, one that you have researched and thought about. It prioritises the stock, which can then be weighed up against other priorities on the farm. It is also a good budgeting tool and enables you to see when you will have financial commitments for purchasing product and labour.
- Nobody’s memory is perfect, so a written plan creates a reminder of when things should be done and a record of events. You can record the dates, products used, class of animal and mob, which amongst other things, is useful for re-handling periods, WHP and ESIs. Keeping a record of product used enables you to consider the use of rotation in limiting resistance development.
- Most of all, a written plan put into your calendar can help motivate you to keep on track with the required tasks in a timely way.



TIPS TO GET STARTED

1. Find a prominent place that you see every day, where the whole year calendar can be displayed while you build your plan: a wall calendar, whiteboard or even a wall with some sticky notes.
2. Start with just 5 minutes: add the obvious things that come to mind and revisit for just a few minutes each day – you’ll have a plan in no time, with the benefit of thinking time in the process and without being put off by the task.
3. Let others help build it: all those who are involved in managing the sheep can be asked to add to it – this will also encourage buy-in and discussion from the whole team.
4. Just jot a few dot points for your policies and attach them to the plan, or print out some key ParaBoss information and attach it to the wall, such as quarantine drenching protocols.
5. For the tech-savvy, add dates with reminders to your electronic calendars – the old-school people can keep looking at the wall calendar! **B**

WORM EGG COUNTS

IS YOUR PROVIDER UP TO SCRATCH?

FAST FACTS

- ParaBoss has developed a QA Program for worm egg count (WEC) providers to test the accuracy of their work.
- Inaccurate worm egg counts can result in sheep producers missing the optimum drench time: too late and there will be lost productivity and animal welfare impacts; too early and drenching costs are not justified.
- In the inaugural 2019 round of testing, 70% of participants were within the accepted limits, but 30% returned results that were too low, too high or too variable.
- A list of WEC providers that successfully demonstrated the accuracy of their work is available on the WormBoss Professional Service Providers webpage.

There are many professional service providers that provide woolgrowers with worm egg counting. A new ParaBoss WEC QA Program, established by AWI and MLA, has found that 30% of participants in the inaugural round of testing gave results that were not within acceptable limits. Woolgrowers can check whether a provider is endorsed by the QA Program to deliver accurate services.



Worm Egg Counting (also referred to as a *WormTest* or simply a WEC) is one of the most useful tools a sheep producer can use in their worm management program, but it's critical that sheep producers can trust the results. In the recent Benchmarking Australian Sheep Parasite Control Survey (see page 40), 55% of respondents reported using either a government or private laboratory or their veterinarian or consultant to carry out worm counts on their behalf.

To ensure woolgrowers can have confidence in their providers, ParaBoss recently introduced the ParaBoss Worm Egg Count Quality Assurance (WEC QA) Program, which enables providers to demonstrate their WEC competence. Sets of 13 faecal samples spiked with a known number of eggs were sent to each location for operators to conduct worm egg counts and a biometrician then analysed their results to determine their accuracy.

To be endorsed in the ParaBoss WEC QA Program the averages for the 'high', 'low' and 'zero' groups of samples needed to fall within an accepted range, and there was also a limit to the variability allowed for the individual tests within each group.

The inaugural round of testing, held in late 2019, had 126 individuals from 48 businesses that provide worm egg counting services participate in the program. The 70% of businesses that were within accepted ranges for the test have been endorsed under the

Woolgrowers can check whether a worm egg counting provider is endorsed by the new **ParaBoss WEC QA Program**, established by AWI and MLA.

ParaBoss WEC QA program. Their details are available on the WormBoss Professional Service Providers page (see the More Information section below).

Participants who were not successful received procedural information and guidance from ParaBoss to assist them to identify why their results were outside the limits, as well as an opportunity to participate again in a supplementary round of tests.

Dr Brown Besier, one of Australia's most respected sheep parasitologists and manager of the ParaBoss WEC QA program said, "In recent years, laboratories have had no easy way to assess how accurate their work was, so we knew some labs would have results that fell outside the accepted statistical limits, but 30% was more than we had expected. This surprising outcome justifies the need for this program.

"Accurate worm egg counting has its challenges, and unless results are periodically cross-checked, processes and results can drift, affecting results. Learning from an accredited major WEC lab is a recommended first step; good in-house training and regular checking is also essential, especially when new staff come on board."

AWI, with ParaBoss co-funder MLA,

funded the establishment of the program, which included the development and implementation of program processes such as promotion, data management and reporting, whilst all the costs related to testing and results analysis was paid for by the participants. In the future, the program will aim to be self-funded.

Deb Maxwell, ParaBoss Executive Officer, said, "Our challenge, in 2020, is to encourage the smaller WEC providers to participate – especially those that may have had limited training and don't process so many tests during the year. I also suggest that sheep producers check whether their WEC provider is on the professional service providers list, and if not, encourage them to participate next time." **B**

MORE INFORMATION

A list of service providers that have successfully demonstrated accurate results after participating in the ParaBoss WEC QA Program is available at www.wormboss.com.au/sheep-goats/tests-tools/professional-service-providers.

Note: worm egg count providers not on this list were not necessarily unsuccessful, as they may not have participated in the inaugural round of testing.

NEW WORM EGG TEST

YOU CAN COUNT ON FOR BETTER BREEDING

AWI has funded trials of a relatively new method of conducting worm egg counts (WECs), called Mini-FLOTAC, which is ten times more sensitive than other existing methods. This will lead to ASBVs for WECs becoming available to ram breeders and buyers for many more rams than is presently the case, enabling easier and more accurate selection of better sheep.



Dr Janina McKay-Demeler of animal health company Dawbuts taking part in the AWI-funded trial.

FAST FACTS

- Selecting sheep for worm egg counts (WECs) can currently be a problem because a ram's Australian Sheep Breeding Values (ASBVs) for WECs are sometimes not available, due to current methods of counting WECs having a low sensitivity and a high variability between sheep.
- A ram needs a significant worm burden before it can currently be provided with ASBVs for WECs. As ram breeders breed more resistant sheep, the difficulty in obtaining the required WEC levels increases.
- Animal health company Dawbuts has conducted an AWI-funded trial to introduce a relatively new egg count method (Mini-FLOTAC) which is ten times more sensitive than other existing methods, particularly the McMaster method which is currently the standard for conducting WECs for ASBVs.
- Sheep Genetics is using the data from three trial mobs to assess the implication of using this new Mini-FLOTAC method for WECs for ASBVs.

moves the faecal debris away from the eggs, meaning the worm eggs are clearly visible," she said.

"It is a simple but ingenious device that makes it easy to do routine worm egg counts with very high sensitivity yet still requires a similar amount of labour as the traditional methods. Several comparison studies have shown that in sheep with high WEC both methods display a very similar result but when it comes to low WECs, the Mini-FLOTAC method is a lot more accurate."

The researchers then tested animals in tandem to see if the results from the new technique could be used in the same way as the traditional techniques to calculate ASBVs for WECs. Dr Andrew Swan of Sheep Genetics ran the results of three separate trial mobs of sheep, from farms in WA and NSW.

"The sheep were tested by both the traditional McMaster method and the Mini-FLOTAC," explained Dr Swan. "We then went through the process of constructing ASBVs using both methods. The results are comparable in the higher epg areas but due to greater sensitivity a lot less negative WECs were obtained."

NEXT STEPS

This is a promising result which will now lead to the important part of reconstructing the algorithm behind the ASBV calculation in Sheep Genetics, taking into account, firstly, sheep with lower WECs in order to decrease the current cut-off value of 300 epg and, secondly, the smaller categories of values obtained, now only in increments of 5 instead of 50.

Once a new algorithm has been established and successfully employed in the ASBV scheme, testing for WECs and selling rams with WEC ASBVs will become easier and the information more available for ram breeders and buyers.

THE PROBLEM

Many sheep producers have expressed interest in selecting for WECs but have been frustrated because ASBVs for WECs are not available for many rams.

The main reason these ASBVs might not be available is that under current recommendations, a mob of sheep must have an average WEC of 300 eggs per gram (epg), with fewer than 10% of the flock having zero counts to make the cut for testing. This high cut-off value is necessary to account for the lack of sensitivity of the currently used egg counting method.

This presents several problems:

1. Due to natural variation, a sheep mob with an average of 300 epg will have some sheep with very high counts, causing lost production, a high risk of sickness or even death.
2. On many farms, especially those that have been breeding for low WECs, the mob average will less frequently rise to 300 epg.
3. Seasonal conditions may mean that

sheep are only exposed to a low worm challenge and cannot be assessed in dry years.

4. Many ram breeders are in areas where worms are rarely expressed but have clients in high worm risk areas.

THE SOLUTION

The solution is a more sensitive worm egg count method. A recent project, funded by AWI, trialled a new method of conducting WECs for ASBVs using a more sensitive egg counting chamber, the Mini-FLOTAC device. The Mini-FLOTAC device can routinely read WECs at a LOQ (limit of quantification) of 5 epg, ten times more sensitive than current methods such as McMaster slides.

Dr Janina McKay-Demeler of Dawbuts laboratory outlined the new method.

"Faecal samples from individual sheep are mixed with saline and examined under the microscope, just as we would do in the traditional method. However, the Mini-FLOTAC slides are slightly larger, meaning that a bigger faecal sample can be used. They also have a circular rotating mechanism that

MERINO LIFETIME PRODUCTIVITY SITES LINKED BY SIREs

The five MLP sites cover different environments across Australia and each site has joined a unique ewe base to produce the MLP project ewes. This project design, involving 134 industry sires, creates the diversity of genetics, environment and timing of husbandry operations found across Australia.

The strategic repeated use of 22 industry sires as reference points across the project sites and drops enables the subsets of data to be combined into a powerful national dataset ready for analysis. These sires are termed link sires. This linkage is an extension of the process already used in Merino Sire Evaluation and by MERINOSELECT to generate Australian Sheep Breeding Values (ASBVs).

In the 2017 MLP joinings, two sires were used in the AI program at four sites: Pingelly (Pingelly, WA), MerinoLink (Temora, NSW), Macquarie (Trangie, NSW) and New England (Uralla, NSW). The sires Trigger Vale Poll, 140477 and West Plains Poll, 110004 (Mercenary) were joined across the four different ewe bases of these sites. The ewe base at each site is detailed below in Table 1.

The results for the sire's progeny at the Pingelly, MerinoLink, Macquarie and New England sites for the maiden ewes have been grouped into adjusted sire means and are reported in Table 2 on the opposite page for the Trigger Vale Poll and West Plains Poll link sires. The average for that site and drop is also displayed. Adjusted sire means account for factors such as birth and rear type (singles/twins), management groups, differences in the number of progeny from each sire and the dam age.

These results give a snapshot of the effects that the different environments, ewe bases

and management regimes are having on the ewe progeny of these link sires. Variation is also due to each site measuring and assessing ewes at slightly differing ages and wool growth.

The results of the individual link sire's performance at each site and within each year provide a reference point that enables the estimation of the site and year differences that are caused by environment, genetics of the ewe base and management. These collective differences are used to adjust each site's data subset to allow them to be combined in an across-site and across-year analysis.

Fibre Diameter (micron) results of the link sire Trigger Vale Poll, 140477 can be used to explain the process - see Table 3 on the opposite page. As a more carcass-focused type, this sire ranks as having the broadest micron at all of the four sites. A process is followed to measure the difference between Trigger Vale and the other interesting sires' results for micron at each of the four sites.

Results from Trigger Vale Poll, 140477 become the zero measure at all sites and the other sire results are benchmarked against that. So, if another sire is 1 micron below the link sire their result is $-1\mu\text{m}$, or if they were $1\mu\text{m}$ broader they would be $+1\mu\text{m}$.

This is a simple explanation of how link sires provide linkage across multiple sites for just one trait. Across flock breeding values rely heavily on good linkage and computer capacity to effectively and efficiently perform the large number calculations required for each analysis run.

The MLP project has 55 linkages across the sites and drops from the 22 link sires. This is a higher rate than the usual linkage



FAST FACTS

- The diverse sites, environments and genetics used in the MLP project are generating datasets for both year drops at each of the five sites.
- Combining these data subsets into a comparable dataset is achieved through the use of link sires who were joined at multiple sites and across different years.
- 22 sires have been used two or more times across the ten AI programs of the five MLP sites. This will allow all MLP results to be analysed together across the different environments, genetics and year drops.
- Early adult results of link sires are emphasising the diversity between the sites and years.

requirement of one link for every seven sires entered in a standard Merino Sire Evaluation trial. The level of linkage required is dependent on the traits being evaluated. With reproduction being a focus of the MLP project, linkage in the MLP project is closer to one in every five sires as reproduction is one of the least heritable traits and higher linkage is necessary.

The linkage in the MLP project will allow the site results to be analysed across the five environments and ewe bases. By August 2020 all sites will have collected one and two year old data and analysis comparing the performance of all MLP ewes at these two ages can then commence. Results are also being submitted into the MERINOSELECT database which generates ASBVs. Currently, ASBVs are generated for MLP sires and reported in the annual Merino Superior Sires publication as well as on the MERINOSELECT website.

For MLP reports, the project is working to extend that reporting out to include reproduction traits, plus multiple age and adult stages. This will provide results to inform whether reporting performance at multiple adult ages is important to optimise selection opportunities. **B**

MORE INFORMATION
Results can be found at www.merinosuperiorsires.com.au/mlp

Table 1: Ewe base information for the MLP sites

BALMORAL HOSTS: TULOONA PASTORAL	PINGELLY HOSTS: MURDOCH/ UWA	MERINOLINK HOSTS: MOSES & SON	MACQUARIE HOSTS: NSW DPI	NEW ENGLAND HOSTS: CSIRO
Fine wool	Meat/reproduction focus	Fine/medium wool	Fine/medium wool	Superfine wool
Base ewes are from Tuloona's fine wool flock with a recent emphasis on reproduction, early growth, flystrike resistance and increased wool cut. 17.2 μm .	Large framed, plain bodied, highly fertile animals with a moderate wool cut. Flock emphasis is on genetic fat, growth and muscling while maintaining wool cut and micron. 19.5 μm .	A mixed ewe base from five performance recorded studs including Pooginook, Bundilla, Centre Plus, Bluechip and commercial Pooginook genetics. 18 μm .	Commercial ewes of two contrasting types for skin and wrinkle traits equally allocated to each sire. 19-21 μm .	Typical commercial superfine wool type based on local performance recorded studs with some ewes sourced from CSIRO's breech strike resistant flock. 17 μm .

Table 2: The maiden ewe results for MLP link sires Trigger Vale Poll, 140477 and West Plains Poll, 110004 (Mercenary) showing differing results between four MLP sites and ewe bases

SITE	SIRE	Maiden Ewe Results - Adjusted Sire Means						
		CFW (kg)	FD (µm)	SL (mm)	SS (Ntex)	WT (kg)	EMD (mm)	FAT (mm)
PINGELLY 2017 Ewe base:19.5µm Meat/reproduction focus	TRIGGER VALE POLL, 140477	2.6	19.7	78.7	37.2	59.0	25.4	2.2
	WEST PLAINS POLL, 110004 (MERCENARY)	2.8	18.9	80.6	35.9	55.2	23.0	1.7
	DROP AVERAGE	2.7	19.0	80.0	37.3	56.0	24.4	1.9
	SHORN AT 1.5 YEARS OLD WITH 7.5 MONTHS WOOL GROWTH							
MERINOLINK 2017 Ewe base:18µm Fine/Medium wool	TRIGGER VALE POLL, 140477	4.6	19.2	112.3	22.4	63.9	25.2	5.1
	WEST PLAINS POLL, 110004 (MERCENARY)	4.8	17.2	100.9	16.2	53.9	22.3	2.8
	DROP AVERAGE	4.9	17.8	106.3	22.4	58.4	23.7	3.6
	SHORN AT 1.7 YEARS OLD WITH 12 MONTHS WOOL GROWTH							
MACQUARIE 2017 Ewe base:19-21µm Fine/Medium wool	TRIGGER VALE POLL, 140477	3.0	20.0	88.1	47.8	62.3	25.5	5.0
	WEST PLAINS POLL, 110004 (MERCENARY)	3.1	18.0	82.3	43.9	55.9	24.5	2.9
	DROP AVERAGE	3.1	19.0	87.6	50.8	57.5	24.6	3.7
	SHORN AT 1.5 YEARS OLD WITH 8 MONTHS WOOL GROWTH							
NEW ENGLAND 2017 Ewe base:17µm Superfine wool	TRIGGER VALE POLL, 140477	3.5	18.6	100.2	36.8	50.0	25.3	2.1
	WEST PLAINS POLL, 110004 (MERCENARY)	3.7	17.0	92.1	33.0	46.8	24.0	1.6
	DROP AVERAGE	3.5	16.7	94.3	37.1	46.1	23.1	1.7
	SHORN AT 1.7 YEARS OLD WITH 11.5 MONTHS WOOL GROWTH							

Table 3: The maiden ewe fibre diameter results of Trigger Vale, 140477 from four MLP sites provides the measure to compare other sire results at these sites.

PINGELLY 2017 DROP	
TRIGGER VALE, 140477	+0µm
BILLANDRI POLL, 151280	-1.3µm
MIANELUP POLL, M00540 (EXPO)	-0.2µm

MERINOLINK 2017 DROP	
TRIGGER VALE, 140477	+0µm
GREENDALE, 140141	-2.6µm
TOLAND POLL, 151058	-0.9µm

MACQUARIE 2017 DROP	
TRIGGER VALE, 140477	+0µm
HAZELDEAN, 13-4936	-1.8µm
MUMBLEBONE, 151367	-0.5µm

NEW ENGLAND 2017 DROP	
TRIGGER VALE, 140477	+0µm
CRESSBROOK, 140055	-3.5µm
EGELABRA, HEK 1.36	-1.5µm

This enables the sires to be compared across the sites:

COMBINED RESULTS	
TRIGGER VALE, 140477	+0µm
MIANELUP POLL, M00540 (EXPO)	-0.2µm
MUMBLEBONE, 151367	-0.5µm
TOLAND POLL, 151058	-0.9µm
BILLANDRI POLL, 151280	-1.3µm
EGELABRA, HEK 1.36	-1.5µm
HAZELDEAN, 13-4936	-1.8µm
GREENDALE, 140141	-2.6µm
CRESSBROOK, 140055	-3.5µm



Macquarie West Plains Poll, 110004 (Mercenary) 2017 drop progeny at the Macquarie MLP site and a wool view from corresponding progeny at the New England site.

FUTURE FIELD DAYS

- **Balmoral MLP Results Update -13 March** (NB. MLP ewes not on display). General Sire Evaluation progeny display including those from 50 year old semen. Details and report available via merinosuperiorsires.com.au
- **New England 2020 MLP Field Day - 26 June** Details available via wool.com/mlp

ABOUT MERINO LIFETIME PRODUCTIVITY (MLP)

- The AWI funded MLP project is a \$7 million (plus \$5 million partners), 10-year partnership between AWI, the Australian Merino Sire Evaluation Association (AMSEA), nominating stud Merino breeders and site hosts.
- The project, which commenced in 2015, aims to increase the understanding of the lifetime genetic, environment and economic interactions for a diverse range of Merino types producing wool, lambs and meat.
- The MLP project runs at five sites where sire evaluation trials operate for the first two years and then continue tracking performance of ewe progeny as they proceed through four to five joinings and annual shearings.
- A full suite of assessments will be undertaken during the MLP project

including visual trait scoring, the objective assessment of a range of key traits, classer gradings and index evaluations.

- A unique and extensive dataset will result and be used to enhance existing Merino breeding and selection strategies, for both ram sellers and buyers, to deliver greater lifetime productivity and woolgrower returns

BREECH FLYSTRIKE PREVENTION PUBLICATIONS

AWI makes available publications about breech flystrike prevention on its website at www.wool.com/flystrikelatest

Here is a selection of the available publications:



PLANNING FOR A NON-MULESED MERINO ENTERPRISE

(March 2018)

This 16-page report outlines the key learnings from a number of wool-growing enterprises, from a diverse range of environments and Merino types, that have moved to a non-mulesed enterprise.



MANAGING BREECH FLYSTRIKE

(June 2017)

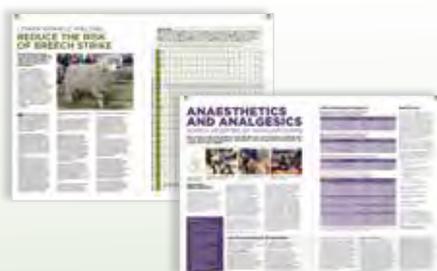
This 44-page manual is designed to help woolgrowers further reduce their flock's flystrike risk. It includes coverage of management options, breech modification, scouring and worm control, breeding for breech strike resistance and moving to a non mulesed enterprise.



DEALING WITH DAGS MANUAL AND FACTSHEET

(August 2019)

This 44-page manual for advisors, and 2-page summary factsheet for woolgrowers, review the causes, diagnosis, management and treatment of dags and provides a guide to manage and prevent scouring and dag formation.



BREEDING LOWER WRINKLE AND DAG

(June 2017)

2-page summary article from
Beyond the Bale.

ANAESTHETICS AND ANALGESICS

(December 2019)

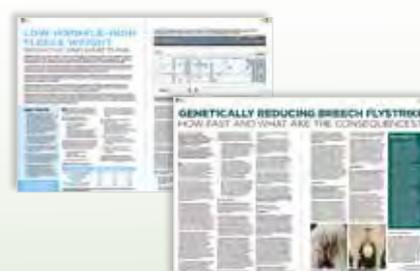
4-page summary article from
Beyond the Bale.



AWI'S BREECH FLYSTRIKE RD&E TECHNICAL UPDATE PRESENTATION

(July 2018)

Presentation slides from
AWI's Breech Flystrike R&D
Technical Update events held in
2018, 2016, 2014, 2012 and 2010.



GENETICALLY REDUCING BREECH FLYSTRIKE: HOW FAST AND WHAT ARE THE CONSEQUENCES?

(June 2019)

LOW WRINKLE-HIGH FLEECE WEIGHT PRODUCTIVE SIRES EASIER TO FIND

(June 2019)

Each is a 2-page summary article from
Beyond the Bale.

Information available to woolgrowers about footrot has been boosted by the launch of two new resources: the South Australian version of 'Footrot: A guide to identification and control in the field', and a website by University of Sydney: www.footrotsydney.org.

FOOTROT RESOURCES

Footrot management strategies can include footbathing. PHOTO: James Tyson

The South Australian version of 'Footrot: A guide to identification and control in the field', from AWI, Sheep Connect SA and PIRSA Biosecurity SA, is now available to download and in a hard copy. The new ute guide has been built using the popular Tasmanian version of the publication as a base, including SA-specific guidelines and contact details.

The University of Sydney recently launched a new website that provides a suite of technical resources, based on decades of research partly funded by AWI. Suitable for veterinarians and other animal health practitioners as well as producers, the information on the website ranges from footrot diagnosis to its prevention, treatment, control and eradication.

The website can be accessed directly at www.footrotsydney.org, but can also be accessed via the AWI website at www.wool.com/footrot, which contains links to the ute guide from

South Australia and other useful footrot information, such as:

- Farmer Footrot Tool, an excel spreadsheet developed under the direction of Tasmania DPIPWE with funding from AWI to help footrot-affected producers understand the financial cost of the disease on their farm and to evaluate the cost effectiveness of different strategies to control or eradicate the disease.
- Footrot Ute Guide, a guide to identification and control of footrot in the field, which was developed by AWI's Tasmanian grower extension network, Sheep Connect Tasmania, as part of a collaborative project with DPIPWE. The guide outlines the disease's cause, symptoms, treatment, management and eradication options. It also features case studies from two Tasmanian producers

who have overcome the challenges of footrot.

While the number of flocks with virulent (severe) strains of footrot has been reduced considerably over the past 20 years, footrot remains a serious disease with significant welfare and economic impacts. Virulent footrot can be eradicated from flocks but at considerable expense. Success is often season dependent because wet, warm conditions favour footrot. Less virulent strains can cause considerable lameness and production loss but may not be eradicable.

An AWI funded project, commenced in 2018/19, with the University of Sydney and Treidlia Biovet, to investigate a new multivalent vaccine formulation is expected to lead to improved short-term protection or control of footrot. E

MORE INFORMATION
www.wool.com/footrot

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FARMERS BITE BACK

WITH NATIONAL WILD DOG ACTION PLAN

The National Wild Dog Action Plan (NWDAP) is an industry-driven and Government-endorsed initiative that aims to provide a national coordinated approach to wild dog management. The NWDAP was published in May 2014 in response to the increasing impact of wild dogs throughout Australia.

At the broadest level, all investment and activity associated with wild dog management in Australia, from on the ground control funded by local landholders to state cluster fencing initiatives and national wild dog RD&E and policy, falls under the strategic umbrella of the NWDAP.

Specific projects/activities that require collaboration under the NWDAP are funded by both public and industry (private) resources. Key funding partners have included the Federal Department of Agriculture, AWI, MLA and State and Territory Government Departments.

INDUSTRY-DRIVEN INITIATIVE

National Wild Dog Management Coordinator Greg Mifsud says the NWDAP was implemented in 2014 following industry demand.

“Peak farming groups, concerned producers and research scientists saw the benefit of a nationally-recognised strategy that would ensure wild dog management was carried out using best practice guidelines and tools that would enable effective, ethical and targeted broadscale management

that transcended title boundaries and jurisdictions,” he said.

“Today, the Plan is recognised by industry and governments as the primary strategic mechanism.”

South Australian woolgrower Geoff Power was one of the grassroots agitators for a NWDAP.

“Ten years ago, we had dogs in every mainland state creating havoc, every state’s control approach was ad hoc and areas that were no longer safe to run sheep were getting bigger,” he said.

“The Plan is one of the few initiatives that has grown out of industry, that has united industry, government and researchers, in a common cause. There’s been a lot of goodwill from all sectors wanting to do the right thing. Looking at what has evolved, it’s been a great achievement.”

FIVE-YEAR REVIEW OF NWDAP

An independent review the NWDAP’s initial five-year term (2014-2019) was contracted by AWI on behalf of sheepmeat, cattle, wool and goat industries and the Federal Government.

The review found that the NWDAP achieved or partially achieved 94% of its Action Implementation Requirements indicating a high level of success and achievement of progress towards the NWDAP’s objectives.

Total investment in the NWDAP 2014-2019 was \$2.62 million (present value terms). The

According to a recent independent review, the National Wild Dog Action Plan has improved wild dog management across Australia and delivered significant benefits to the community through increased confidence, leadership, capability and investment in wild dog control.

investment was estimated to produce total benefits with a net present value between \$13.31 million and \$40.68 million and a benefit-cost ratio between 6.1 and 16.5 to 1.

The direct, primary benefits of the NWDAP investment came from more efficient expenditure (both public and private) on wild dog management, more efficient resource allocation for RD&E investment associated with wild dog management and maintained and/or enhanced social licence to undertake wild dog control.

The review also said that NWDAP contributed significant value through other key outcomes including improved leadership and increased capacity, increased government and industry confidence, and increased leverage and investment for wild dog management at all levels throughout Australia.

Overall, the review found that the NWDAP has been highly successful and should continue to be supported by all stakeholders beyond 2019, however several recommendations to amend and/or improve the NWDAP post-2019 were made.

National Wild Dog Management Coordinator Greg Mifsud says the Victorian Wild Dog Program, an early adopter of the NWDAP’s principles and strategies, is a great example of its effectiveness.

“During the past five years, there has been up to a 71% reduction in number of sheep killed and maimed across the program and, for some Wild Dog Management Zone groups, stock losses have been almost eliminated,” he said.

Federal Department of Agriculture spokesperson Shalan Scholfield said the review has shown how effective collaboration can greatly improve outcomes in managing the negative impacts of established pest animals such as wild dogs.

The NWDAP continues to operate, with work under way on developing and endorsing its next phase to 2030. **B**

South Australian woolgrower and chairman of the NWDAP Coordination Committee, **Geoff Power**: “Without the National Wild Dog Action Plan, we wouldn’t have all the tools, strategies and coordinated management we have now.”

MORE INFORMATION
www.pestsmart.org.au/national-wild-dog-action-plan/progress

The rabbit calicivirus RHDV2, which was discovered in the Australian landscape in 2015, is replacing RHDV1 biocontrol agents as the dominant RHDV field strain in Australian rabbit populations. Work is under way to determine whether RHDV2 would be a suitable registered biocontrol product, which would enable the strain to be used strategically by land managers as an additional biological control.



RHDV2 RABBIT CALICIVIRUS

Wild rabbits are Australia's most widespread and destructive agricultural and environmental vertebrate pest. PHOTO: John Schilling.

Rabbits are an invasive pest that actively compete with Australian livestock and – particularly during drought – can strip pastures bare. Just two rabbits per hectare are enough to stop plant regeneration.

AWI is committed to maintaining downward pressure on rabbit populations to ensure ongoing environmental and production benefits. In general, rabbits are under reasonable control nationally. However, after the current drought there will again be strong upward pressure on rabbit populations.

For the past 60 years, rabbit biocontrol has had dramatic and widespread benefits to Australian agriculture and the environment, with benefits estimated at more than \$70 billion. However, there is an ongoing need for new rabbit biocontrol agents to be released on a regular basis to counteract reduced effectiveness of existing agents (due to increasing immunity and genetic resistance).

In 2015, an exotic strain of rabbit haemorrhagic disease virus (RHDV), known as RHDV2, was discovered in the Australian landscape. Researchers from across Australia have been monitoring this virus intensively over the past few years and have found that it has suppressed rabbit abundances by an average of 60%, with impacts most pronounced in southern and western Australia.

This result was recently published in the *Journal of Applied Ecology*, where the paper states that “serological analyses suggested that RHDV2 arrived in Australia during spring 2014 and spread rapidly through the Australian rabbit population within two years”.

IS RHDV2 BEING REGISTERED WITH THE APVMA AS A BIOCIDES?

We know that RHDV2 is effective at killing wild rabbits. The Centre for Invasive Species Solutions (CISS) is now working with researchers based at the CSIRO, NSW DPI, PIRSA and Vic DELWP to better understand its interactions with other strains of RHDV.

The ultimate goal is to determine whether RHDV2 could be registered as an additional biological control for strategic use for the landscape management of rabbits.

However, before RHDV2 can be registered through the Australian Pesticides and Veterinary Medicines Authority (APVMA), its efficacy needs to be demonstrated. Researchers are now carrying out efficacy testing of RHDV2 in adult and young rabbits, and also assessing the welfare impacts compared to that of other RHDV strains as well as other control options approved for rabbit management.

Work is also under way to better understand the extent to which RHDV2 can overcome acquired immunity to RHDV1, and vice versa, and researchers are aiming to understand how immunity passed on from mothers to their offspring influences the timing and outcome of an RHDV2 infection in very young rabbits.

AWI aims to invest \$746,000 in the current three-year strategic period (2019/20 to 2021/22), on top of the \$322,000 already invested in the previous two financial years, in these CISS rabbit biocontrol projects.

IS CISS STILL MONITORING DISEASE?

Absolutely, the national rabbit biocontrol monitoring program of CISS is still active, and the team will still provide free testing of rabbits that are found dead for all caliciviruses known to circulate in Australia.

Sampling kits include a sampling tube, detailed instructions how to collect a tissue sample and a return envelope, and can be requested via the RabbitScan website and results will be uploaded to the rabbit biocontrol tracker: www.feralscan.org.au/rabbitscan/map.aspx?mapMode=rhdv

The team is also investigating if flies can be used as an additional tool to monitor continental scale activity of RHDV. Bushflies and blowflies are a known vector of RHDV, and fly sampling and analysis is carried out in regular intervals at selected sites across

Australia to validate this method.

HOW WOULD RABBIT CONTROL BE IMPROVED IF RHDV2 WAS RELEASED STRATEGICALLY, RATHER THAN LETTING NATURE RUN ITS COURSE?

Natural outbreaks of RHDV (or RHDV2) occur when a sufficient number of susceptible animals has built up in the population (eg through breeding) that can carry an outbreak. Registered biocides and other controls can be applied to populations before this critical mass is reached, thereby preventing numbers from building up, resulting in less rabbit damage.

The monitoring of RHDV provides essential information regarding which virus is active when and where, and if/how this changes over time. This is important information that allows land managers to choose from the available biocontrols/biocides in a way that will maximise management outcomes.

A very important feature of RHDV is that it can fatally infect very young rabbits. In contrast, RHDV1 strains (such as K5) can infect young rabbits but does not kill them, and results in lifelong immunity in the surviving animals. This means that the application of K5 is not recommended during the breeding season as many young animals will survive and may become next year's immune breeding population. If RHDV2 was available as a registered biocide, it could potentially be a more robust biocide that could be applied year-round, irrespective if rabbits are breeding or not.

RHDV is not a silver bullet. Rabbit biocontrol is beneficial when applied as part of an integrated and complementary pest management approach, including poison baiting, warren fumigation and ripping, and the removal of above ground harbour such as blackberry and lantana bushes. **B**

MORE INFORMATION
www.wool.com/rabbits
www.pestsmart.org.au

COORDINATING WILD DOG CONTROL

To help the rebuild of Queensland's once thriving wool industry, a new wild dog coordinator has been appointed in the state's Central West. He will work with woolgrowers and other stakeholders to strengthen the rural communities' efforts to achieve sustained on-the-ground control of wild dogs.

Ray Aspinall is the new wild dog coordinator dedicated to working with rural communities in Queensland's Central West. His role is to assist woolgrowers and other key stakeholders to work together to lessen the impact of livestock predation by wild dogs.

Mr Aspinall grew up on a farming operation near Warwick in the state's south east and is an experienced shearer, fencer, musterer and wild dog trapper who now considers himself a Blackall local.

"I've lived in Blackall since 1985, so I have a strong understanding of the issues faced by rural communities, and this region in particular," Ray said.

"It's important we continue to raise awareness about wild dog control. I'm aiming to improve stakeholder participation in control measures and management so that we reduce the number of livestock lost to wild dogs.

"It's not only about building an exclusion fence. It's about using every control tool available to reduce the number of wild dogs within the environment and allow our farming families to sleep easy at night."

AWI Program Manager Vertebrate Pests, Ian Evans said collaboration between local landholders is vital to combat wild dogs, but can be challenging without external help.

"Woolgrowers recognise the vital need for wild dog control, but they often don't have the relationships with all land managers across sometimes vast distances as in Queensland that are needed to be able to work together on the dog problem. Nor do they necessarily have all the skills or resources to combat wild dogs," Ian said.

"Communities need a coordinator to step in and help out. They need somebody independent, who can break down these barriers and get landholders working locally and across shires."

Ray's work in the Central West complements the work being done by Skyela Kruger who is the wild dog coordinator for the south-west of the state. The two positions are co-funded by AWI, with further support from MLA Donor Company, the Queensland Department of Agriculture and Fisheries, and the Queensland regional bodies of the Remote Area Planning and Development Board (RAPAD) and the South West Regional Economic Development Association (SWRED).

Brett Carlsson (Senior Wild Dog Coordinator / North Queensland) along with the two western Queensland coordinators work toward building effective coordination and action across more than 70% of the state. **B**



Ray Aspinall is the new AWI-funded wild dog coordinator in Queensland's Central West. There are AWI-funded wild dog coordinators in every mainland state.

AWI-FUNDED WILD DOG COORDINATORS

If you have a problem with wild dogs on your property, contact your region's wild dog coordinator to see how you can get on top of the problem.

- QUEENSLAND (CENTRAL-WEST) RAY ASPINALL 0437 116 875
- QUEENSLAND (SOUTH-WEST) SKYELA KRUGER 0429 232 089
- NSW (NORTH-EAST) DAVE WORSLEY 0429 638 078
- VICTORIA (NORTH-EAST) LUCY-ANNE COBBY 0488 712 616
- VICTORIA (GIPPSLAND) BRIAN DOWLEY 0408 436 600 AND MICHAEL FREEMAN 0477 358 061
- SOUTH AUSTRALIA MARTY BOWER 0419 835 120
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AWI SMART EAR TAGS PUT TO THE TEST

AWI smart ear tags are being tested on a large commercial wool-growing property near Barcaldine to see if they can withstand the tough conditions of western Queensland. Researchers are using the ear tags to develop alerts that detect animal health and wellbeing issues faced by sheep.

AWI's smart ear tags aim to enable woolgrowers to track, monitor and assess the status of their flock in real time – and make more informed decisions to increase their enterprise's profitability.

AWI has partnered in a project with CQUniversity in an Advance Queensland Industry Fellowship to test the AWI smart ear tags in real life situations faced by woolgrowers. CQUniversity researchers will assess the robustness of the ear tags and their ability to help woolgrowers detect key issues such as wild dog predation and disease detection.

In previous smaller trials, the smart ear tags have demonstrated an excellent ability to increase the level of livestock monitoring and thereby potentially increase profitability, but it is important that the ear tags can withstand the harsh conditions faced in trials on larger properties in regional Australia.

'Dunraven' near Barcaldine in Central West Queensland is a 25,495ha sheep and cattle station and is the first property in the state to take part in the research. CQUniversity lead researcher on the project Dr Jaime Manning visited Dunraven in November with a small team to fit the ear tags to a mob of sheep and install the tag readers.



Sheep with the **AWI smart ear tag** in the paddock at Dunraven Station.

Dr Manning said the first year of the trial is about collecting data on tag robustness or how well the tags stay in the ear and to monitor the solar panel that powers the tag.

"One of the biggest challenges is the difficult environment our commercial sheep grazing systems face in terms of remoteness, terrain and topography," Dr Manning said.

"We therefore need technology that can survive in this harsh environment, but that is also capable of providing us with information on individuals when there is limited connectivity.

"After deploying the AWI smart ear tag, we now have access to real time information on individual sheep at Dunraven. This is a massive benefit for our producers to have the ability to monitor their sheep, without having to go out in the paddock."

This project is aimed at developing algorithms which can provide early warning alerts of changes in sheep behaviour ahead of wild dog predation or disease events. This will enable producers to detect and manage problems well before they turn into more significant issues. A key benefit of the sensors is that they monitor sheep activity, behaviour and health 24 hours a day, seven days a week.



Paul Doneley of Dunraven Station with his wife **Ali** and son **George**.

Dunraven producer Paul Doneley said the project has significant potential for his property and the wider sheep industry. Dunraven has had a big problem with wild dogs, despite having cluster fencing.

"Two of the main health benefits I foresee with the AWI smart ear tag is being able to detect when my animals are affected by disease or being predated," Paul said.

"Being able to monitor the flock from the comfort of the homestead and receiving real time information on them is a huge step forward to improve welfare, productivity and profitability on farm.

"It is terrific to see this technology be tested on real life commercial conditions on a large-scale property."

It is expected that the smart ear tags will be rolled out for further trials on more properties in Queensland and NSW during 2020.



Dr Jaime Manning of CQUniversity and **Paul Doneley** of Dunraven Station, Barcaldine, deploying the AWI smart ear tag.

PREGNANCY SCANNING

FOR IMPROVED PRODUCTIVITY AND WELFARE

A project jointly funded by AWI and MLA to increase the adoption of pregnancy scanning will help more producers to customise their management of multiple-bearing ewes, leading to an increase in lamb survival, faster lamb growth and reduced ewe mortality.

Sheep producers who don't scan their ewes are missing out on a valuable opportunity to boost farm profitability through increases in lambing percentages.

Producers who scan their ewes for the number of lambs they carry can manage their multiple-bearing ewes differently to single-bearing ewes, feeding each group according to their respective nutritional requirements. Through this targeted nutrition and lambing management, producers can lift lamb survival and flock efficiency.

A 2½-year-long AWI and MLA project that began in July last year aims to increase the adoption of pregnancy scanning across the industry by 10%. This would increase the number of ewes scanned by two million ewes per year, up from 20 million ewes per year.

15% more of the scanned flocks providing customised management of twin/multiple-bearing ewes by 2032 would lead to a 5% increase in twin-lamb survival to weaning, up from the current 75% to 80%, plus faster lamb growth and reduced ewe mortality. The predicted extra twin lambs weaned from 2022-32 is 1,326,927, with 11,439 extra weaned in the year 2022, rising to an extra 285,976 in the year 2031.

This project is also aimed towards achieving the National Wool R&D strategy objective of by 2022 increasing from 25% to 34% the number of Merino ewes that are scanned for the number of lambs they

carry and are differentially managed to aid reproductive performance.

STRONG CASE FOR SCANNING

Associate Professor Forbes Brien of the University of Adelaide's School of Animal and Veterinary Sciences, who leads the project, estimates that about 40-50% of the Australian flock is being scanned, but that some producers may not scan every year.

"The relatively low level of adoption of scanning technology by producers is one of the key factors preventing good nutritional management of pregnant ewes. Only around half who are using scanning are looking at the number of lambs they carry in addition to whether ewes are pregnant or not," Dr Brien said.

"The relatively low level of adoption of scanning technology by producers is one of the key factors preventing good nutritional management of pregnant ewes."

Dr Forbes Brien, University of Adelaide

Dr Brien says there is a strong case for scanning for the number of lambs carried and subsequently managing twin-bearing and multiple-bearing ewes according to their nutritional requirements.

"Studies on twin-bearing Merino ewes have shown that if you can get the ewe to lambing with a condition score of 3.2 compared to 2.3, you increase your lambing percentage from 115% to 142%. The survival of twin-born lambs from birth to marking also increases when the ewes were in better condition, from 57% to 71%," he said.

"In times of drought in particular, many people are having to contain their stock to almost full feeding. If you can accurately tailor your feeding to different nutritional requirements, you are going to be well ahead."

Dr Brien says scanning can also be used to age

the foetuses and organise flocks according to lambing dates, particularly if flock size is not an issue.

"There are advantages in knowing what is going to be born early or late, particularly when people are allocating limited resources," he says. "If you can organise the flock within a two-week window, you can manage the lambs more appropriately for marking and weaning, streamline management and improve welfare outcomes."

INCREASING ADOPTION OF SCANNING

The project objectives will be achieved by overcoming key barriers to adoption, including strengthening the business case for pregnancy scanning and addressing concerns about scanning accuracy, the economics of adopting the technology and the associated logistics of managing ewes separately according to the number of lambs they carry.

Extension materials (including workshops and webinars) for woolgrowers and consultants will be produced, tailored to different production environments, skill levels and resource availability (eg livestock identification systems and labour availability). Separate materials will be produced for pregnancy scanners.

Further opportunities to improve the usefulness and benefits of pregnancy scanning will also be investigated during the project, including identifying early indicators of foetal health, the feasibility of remote diagnosis of scanning imagery and the better linking of the technology with EID sheep tags and associated data capture.

A Benefit Cost Analysis (BCA) of the project for woolgrowers has predicted a high return of \$13.49 for every dollar of industry and collaborating organisation in-kind investment, despite relatively conservative assumptions. **B**

DR BRIEN'S TIPS AHEAD OF SCANNING

- Joining should ideally be five weeks (but no more than six weeks) long.
- Use teaser rams to get ewes cycling when the ram goes out.
- Stop supplementing one to two days before scanning. Take them off food and water the night before.
- Ensure enough help is available on the day to keep ewes moving.
- Have good yards and panels to allow for the subdivision of the scanned ewes.
- Make sure the animals are not wet or daggy. It makes scanning more difficult.
- Competent scanners are in demand. Book them early.



Increased lambing percentages through better use of pregnancy scanning technology will provide significant lifts in productivity as well as major welfare benefits. Pictured is Andrew Naylor (Belubula Scanning) scanning ewes at Woodstock, NSW.

SHEARING HANDPIECE TO GET SMART

AWI is working with a design company to develop and construct a proof of concept prototype of a smart shearing handpiece. The new semi-automated handpiece, if successfully created and commercialised, has the potential to make shearing available to less experienced operators while increasing animal welfare.

The mechanical shearing handpiece has remained relatively unchanged since its development in the late 1800s. While equipment suppliers have made incremental improvements over the years, a design and engineering company from Scotland, 4c Design, has recently identified an opportunity for fundamental change.

AWI has teamed up with 4c Design to design a new generation of shearing handpiece that incorporates the latest automation technology.

"Advancements in materials, manufacturing methods and sensing technology make this a timely moment to reconsider the fundamental process of shearing wool," said 4c Design Director, Will Mitchell.

"Using new automation technology, we have identified an opportunity to redesign the device in a way that would de-skill and de-risk the currently difficult and complex shearing process."

With shearers sometimes being hard to find (despite AWI's training efforts), a semi-automated method of shearing would open up wool harvesting to a new workforce by making shearing easier. Additionally, given animal welfare is a high priority to the industry, the smart handpiece aims to deliver

a humane and high-quality shear with less chance of skin cuts.

DESIGNING THE SMART HANDPIECE PROTOTYPE

4c Design is working with AWI and consulting with Heiniger, shearing experts and sheep farmers (in Australia and the UK) to generate several potential concepts from which the most promising will be selected, developed, tested and refined. Research into 'parallel products' used in other industries for cutting are also being explored.

At the end of the six-month project, 4c Design aims to have designed and constructed a proof of concept prototype of the smart shearing hand tool. It will have been tested by experienced shearers to assess its performance on a purpose-built test rig (rather than sheep at this stage) and 4c Design will report back to AWI on the design's development, the test results and feedback from stakeholder engagement. 4c Design will also define a clear route for onward development and commercialisation.

"The key area we are looking at in this new project with AWI is the shearing head of the handpiece," Will explained.

"An adaptation of a handpiece head to the

DESIGN CRITERIA FOR THE SMART HANDPIECE

4c Design is designing the proof of concept prototype with the aim of providing confidence that the final design solution will be capable of delivering the following animal welfare and user impacts:

- Substantially reduce, or eliminate, the risk of skin cuts to the sheep.
- Provide feedback to the shearer, enabling them to track activity and improve technique.

4c Design will also work towards the following *desired* impacts:

- Provide a method for working over sharp changes in contours of the sheep's body.
- Remove by other means the requirements for stretching the skin of the sheep.
- Decrease the amount of maintenance required for the tool.
- Allow for adjustment to the length of wool removed.
- Allow the wool to be removed in a single fleece, reducing the frequency of second cuts.
- Consider digital integration for a more autonomous system.

contours of a sheep's body would increase the feasibility of a semi-autonomous method of shearing. In time, and most likely through a series of complementary steps, it could lead to a fully autonomous robotic system."

The smart shearing hand tool will be designed so that it can be introduced simply into existing wool shed infrastructure.

STRONG TRACK RECORD

Although based in Glasgow, far away from the sheep paddocks and yards of Australia, 4c Design has a strong track record of innovation and commercialisation in the sheep farming sector, with specific expertise in mechanism and hand tool development, which is highly relevant to this project.

4c Design's prior work includes the development of the Numnuts® hand tool that provides pain relief when lamb marking with rings, the Barbervax® bottling machine that enabled large quantities of vaccine to be produced commercially to protect sheep against barber's pole worm, and the TagFaster automatic ear tag applicator.

Another very different 'hand-held' object developed by the team at 4c Design was the Queen's Baton used for the Glasgow 2014 Commonwealth Games, which passed through many thousands of hands during its 190,000km relay across 70 nations. Let's hope that this new project results in a product that ultimately ends up in as many hands. **B**



Director Will Mitchell with Product Design Engineer Katherine Moriarty from 4C Design, which is developing a prototype smart shearing handpiece. 4C Design's prior work includes the development of the Numnuts® hand tool (pictured behind).



WA SHEARING CAMP PROVIDES A BRIGHTER FUTURE

The nine graduates with the AWI trainers and supporters of the camp at the Teakle family's shearing shed at 'Ingavale'.



Aboriginal shearing and woolhandling students learning with AWI trainers **Kevin Gellatly** (top) and **Amanda Davis** (bottom).

A shearing camp for young indigenous Australians in the Mid-West region of Western Australia has given them a taste for shearing shed work and helped build the wool harvesting workforce, thereby benefiting local communities and the wool industry.

The first trainees have graduated from a shearer training camp that may serve as a prototype for creating both Aboriginal economic development and new shearing labour in WA – and potentially further afield.

The Geraldton-based Mhunga Whalla group, founded by Aboriginal shearing legend Bobby Pepper, and the WA Department of Primary Industries and Regional Development organised the camp, hosted by the Teakle family of 'Ingavale' at Northampton, about 50 km north of Geraldton.

The nine keen participants aged 16 to 29 completed the two-week course facilitated by accredited trainers supplied by AWI, Amanda Davis and shearing legend Kevin Gellatly, and have all gone on to obtain further work experience in Mid-West shearing sheds.

Following the success of the shearing camp, the WA Government is expanding the model in conjunction with the WA Shearing Industry Association (WASIA) and AWI, supporting upcoming camps at Brookton in the Wheatbelt, Wellstead in the Great Southern and at Esperance. Mhunga Whalla is considering developing a permanent training facility in the Mid-West.

WA Agriculture and Food Minister

Alannah MacTiernan congratulated the Northampton camp graduates.

"Many young Aboriginal people today had grandparents in the industry – and they live in sheep growing regions. It makes sense to offer this employment opportunity for young Aboriginal people across our regions and particularly in the Mid-West.

"With wool prices on the rebound, demand is growing for shearers. This program responds to the projected 10% per annum growth in demand for shearing labour to meet the increases in wool production."

BUILDING UP NUMBERS

Attracting young Indigenous Australians into the wool harvesting industry and making them job ready for shed work will not only benefit the young people and their local community, it will also benefit the wool industry by building the number of trained people available to work in the sheds.

AWI General Manager of Woolgrower Services, Stephen Feighan, said AWI regularly funds training for shearers and wool handlers to attract and retain new entrants into the wool harvesting industry.

"But this school has been quite unique because we have aligned with the WA Department of Primary Industries, the

Minister, and also WASIA. We have all come together and not only trained the kids, but also provided pathways for their careers," he said.

"Through initiatives like this one, AWI is helping to ensure that there are adequate numbers of skilled professional staff to harvest and handle the nation's high-quality wool clip, which is vital for the Australian wool industry."

Woolgrower Greg Teakle said it was fitting to have a training camp in an area where woolgrowers are in need of shearers.

"There has been a shortage of shearers here. When we get shearers here there just seems to be an age demographic where you notice there's... 40 year old to infinity and beyond. We need some new fresh faces," Greg said.

PRACTICAL, HANDS-ON LEARNING

It was a very hands-on school that covered shearing gear, set-up and safety, handling sheep, shearing technique, wool handling and some yard work, the significance of a good work ethic and camaraderie, and the importance of a quality end-product.

But the camp was not only about shearing and wool handling, it also gave the young students life skills, such as the benefits of health and nutrition, personal development and hope for a brighter future.

AWI shearing trainer Kevin Gellatly said his role was also to mentor the students and guide them into the workforce.

"They've been working so well together in a team environment. I think every student in this group could get a job in the shearing industry, because we have given them lots of avenues where they can go if they want

to," he said.

"The students are very co-ordinated and have proven they can be very good with animals, with a few of them on the first day able to shear a sheep on their own. Seeing their faces light up when they have shorn that one sheep is really something. To be able to change their attitude from 'can't' to 'can' is the most important thing for me."

The Mid-West camp attracted strong financial and logistical support from AWI and many local businesses and individuals.



MORE INFORMATION

www.facebook.com/mhungawhalla



WA State Agriculture Minister **Alannah MacTiernan** visiting the camp.



"What these kids have learnt here is absolutely amazing. I'm over the moon with everything that's happening at the shearing school."
 Aboriginal shearing legend Bobby Pepper



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From the pros and cons of raised boards to ensuring good airflow; from the placement of powerpoints to LED lighting options; from the bracing for safety rails to shearing staff facilities - there were many topics discussed at a recent workshop for woolgrowers held in Longreach.

AWI's grower network in Queensland, Leading Sheep, held a workshop in Longreach in December on the topic of shearing shed efficiency and design. There were 40 attendees comprising mainly woolgrowers. The presenters were chosen based on their practical on-ground experience.

Leading Sheep Project Coordinator Jed Sommerfield presented photos of various shed designs and ideas - and their benefits - that different producers had implemented in their shed. South Australian sheep producer Paul McGorman provided a 20-minute video tour of the new 'Thornby' shearing shed at Sanderstone, 80km east of Adelaide, the first new shearing shed that has been built in the district for 50 years.

Longreach based building contractor Marty Smith talked to the audience about local sheds

that he has been involved with upgrading and building. He emphasised planning before building and looking at as many different sheds as possible. Longreach-based shearing contractor Raeleen Bowden spoke from a contractor's point of view regarding the safety and design aspects of shearing sheds, including quarters and facilities, while Barcaldine sheep producer David Counsell presented on the efficiencies and running a profitable shed.

Central Queensland region representative of the Queensland Rural and Industry Development Authority (QRIDA, Brad Whittington, presented on the products and services that QRIDA offer, focussing on low-interest loans to increase production and productivity.

SHEARING SHED DESIGN

WORKSHOP IN LONGREACH

Attendees at the Longreach workshop watching a presentation of shearing shed photos.

From the 26 feedback forms completed, attendees rated the event as highly satisfactory with 7.9 out of 10, and value to their business as 7.7 out of 10. 15 attendees said they were likely or very likely to make a practice change. Examples listed included an upgrade of catching pen floors, general shed upgrade, review of shed safety, upgrade of smoko facilities and installation of better lighting.

AWI's Shed Safety Signage Kit was on offer and it was encouraging to see so many producers, approximately 14, taking a kit home.

MORE INFORMATION

Visit www.wool.com/sheddesign to learn more about shearing shed design or to purchase a Shed Safety Signage Kit (\$25).

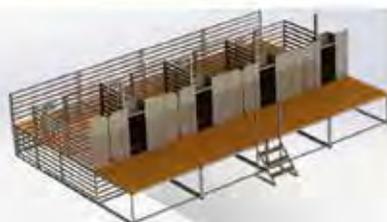
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COMPETITIONS PROMOTE EXCELLENCE

AWI-supported shearing and woolhandling competitions held at local, state and national levels encourages better techniques, which ultimately benefits woolgrowers.

AWI provides support for many shearing and woolhandling competitions across the country to promote excellence and quality within the shearing industry and to encourage young people to join the industry.

In the 2018/19 financial year, AWI provided support for 46 local competitions. Part of AWI's support includes payment of entry fees for novice shearers and wool handlers. AWI also supports state and national shearing and wool handling championships, plus the Australian national team.

AWI General Manager of Woolgrower Services, Stephen Feighan, says AWI

is keen to raise the profile and status of the shearing industry by enabling participation in well conducted shearing and woolhandling competitions.

"Competitions help encourage better techniques in shearing and woolhandling, which is for the benefit of the wool-growing industry from which they derive," he said.

"AWI's support aims to encourage a quality workforce, an interest in wool, and an appreciation of the art and skill of shearers and wool handlers. AWI's financial support for competitions makes a significant impact on the viability of many competitions." **E**



Jason Wingfield of Victoria competing in the Trans-Tasman machine shearing test held at Dubbo in November. The Australian team – also including Daniel McIntyre (NSW) and Callum O'Brien (WA) – beat the Kiwis for fifth consecutive time. PHOTO: Zoe Magner for NSW Sports Shear Association



The Dyson Jones Corrigin Shears in WA, held last year for the 20th time, was one of many local shearing competitions supported by AWI.

WOOLMARK BALE STENCIL

AWI and The Woolmark Company are offering Australian woolgrowers a free stencil of the Woolmark logo for use on their wool bales, to identify and brand their wool fibre as being proudly grown in Australia.



The new Woolmark stencil on a bale produced by the Ranger family of 'Oak Plains' at Bogan Gate in the Central West of NSW.

The Woolmark logo is world-renowned and the most recognised label for fibre quality in the textile industry. If you are an Australian woolgrower, AWI encourages you to apply for a stencil.



By branding your bales with the Woolmark logo, you proudly identify your wool as Australian grown and connect your greasy wool to this global branding opportunity.

The new Woolmark bale stencil will, over time, form part of a broader supply chain integrity program that has been initiated by AWI.

Woolgrowers are eligible to apply for a stencil if they were eligible to vote in WoolPoll, ie they have paid more than a total of \$100 in wool levies over the past three financial years.

Eligible Australian woolgrowers should head to www.wool.com/stencil and order their Woolmark stencil.

You can order up to two stencils per order and you'll need to provide your AWI Shareholder or Levy Payer Reference Number on application. For further information, contact the AWI Helpline on 1800 070 099. **E**

MORE INFORMATION
www.wool.com/stencil
stencils@wool.com



LAMBEX HEADS TO MELBOURNE IN JULY

Woolgrowers and sheep producers are invited to attend LambEx 2020 in Melbourne, being held 1-3 July. More than 1,000 local, national and international delegates are expected to attend the event, which will include informative and inspirational presentations, trade displays, entertainment and networking opportunities.

Preparations are in full swing for LambEx 2020, being held at the Melbourne Showgrounds from Wednesday 1 July to Friday 3 July. It is the first time the event will be held in Melbourne but the second time for Victoria, which successfully hosted the 2012 conference in Bendigo.

The event will be hosted at the Melbourne Showgrounds' new, state-of-the-art, multi-million dollar conference facility – and will be one of the first livestock events held in the new space. The exhibition area offers a huge 10,000 square metres of display space.

INFORMATIVE AND ENGAGING

The event is shaping up to be one of its best-ever, with an exciting program featuring a star line-up of international, Australian and local speakers who will present on a wide-range of topics within the sheep and lamb industry.

LambEx 2020 Conference Chair Georgina Gubbins, who is a producer from the Western District of Victoria, says she is looking forward to showcasing the best of the state's sheep and wool industry, alongside the latest technology and innovations.

"LambEx is an exciting opportunity for everyone involved in the supply chain, from sheep and wool producers to researchers, processors, consultants, agribusiness professionals and more, to network and be at the forefront of industry," she said.

"LambEx encourages producers to operate best practice businesses that will grow supply while achieving consumer quality expectations, driving the future profitability and sustainability of the industry."

HAVE A CHAT WITH AWI

AWI will have a booth at the event and have staff on hand to chat to woolgrowers and other delegates.

As an exhibitor at LambEx, AWI will be promoting the role of Merinos within lamb enterprises and showcasing opportunities to sheep producers who might not normally associate with Merino or wool enterprises. As Merinos account for upwards of 75% of the national flock, it is crucial to promote the value Merinos contribute to the Australian wool and sheep industries as a whole, and their importance in rebuilding the national flock.

A number of optional pre-conference tours will be available to all LambEx delegates, including a special 'Fibre Tour' led by AWI to local mills.

Early bird registrations for LambEx open in March.

MORE INFORMATION

Visit www.lambex.com.au or contact event organisers, AgCommunicators, on lambex@agcommunicators.com.au or 08 8332 3277.

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STUDENTS GAIN INSIGHT INTO RAM HEALTH

Murdoch University animal and vet science students were given a masterclass in improving ram breeding efficiency at a special RAMPing Up Repro workshop.

Rams are a considerable investment for a woolgrowers' business; with the rams' performance impacted by management and preparation for joining.

To help ensure that woolgrowers get the most from their rams, AWI in partnership with Zoetis Australia in 2017 developed the hands-on RAMPing Up Repro workshop. The half-day workshop continues to be made available across the country, in conjunction with leading deliverers, via AWI's State Grower Networks.

While the workshop is primarily aimed at producers already working on wool-growing properties, students at Murdoch University in Perth had the opportunity towards the end of last year to attend a specially organised workshop run for them at their on-campus veterinary farm.

The workshop was attended by 45 students who improved their knowledge in key areas relating to ram reproduction through hands-on activities and presentations from industry experts.

Participants learned how ram management influences breeding success, and the follow-on benefits of best practice ram management for wool and sheep meat businesses. Supporting topics including anatomy, physiology, nutrition, health management and biosecurity were also covered by the presenters to round out the students' understanding.

INDUSTRY-SUPPORTED WORKSHOP

Presenter Dr Michylla Seal from Genstock, said she was pleased to support the workshop and it was great to work with so many students with great enthusiasm for the sheep industry.

"The main focus of these workshops is to give attendees the skills to assess and manage rams that ensure they perform like elite athletes for maximum breeding efficiency," Dr Seal said.

"I was very impressed with the students' involvement and discussions during the day. As a business owner providing services to sheep producers in artificial breeding and flock health, it is reassuring to have young people keen to enter the industry. I was



Animal Science student **Kirsty Blakemore**, Genstock veterinarian **Dr Michylla Seal**, veterinarian and researcher **Dr Tom Clune**, and veterinary science student **Ben Madlener** examine a ram at the RAMPing Up Repro workshop held at Murdoch University.

thrilled to have the opportunity to support their training," said Dr Seal.

Other speakers included Jarvis Polglaze from animal health company Zoetis who highlighted the importance of good vaccination techniques for sheep health and human safety.

Dr Tom Clune, who is currently undertaking a PhD research project at Murdoch, helped to demonstrate the breeding soundness inspection on rams.

PRACTICAL, HANDS-ON EXPERIENCE

First-year animal health and animal science student Kirsty Blakemore said the workshop helped her get to grips on the challenges of reproductive health in rams. "The workshop helped me get a glimpse into the world I want to be in, as livestock health is what I believe to be my passion," she said.

Veterinary medicine student Ben Madlener said the workshop provided students with critical pre-joining examination skills and presented the critical managerial aspects of sheep reproduction.

"I hope to be able to apply this broad knowledge during my clinical placements in the following years through an understanding that there is no blanket rule for each farming business and that each requires its own best practice management plan," he said.

Workshop organiser Associate Professor Caroline Jacobson said the session was a great opportunity for students to gain hands on experience and networking opportunities with industry.

"These industry workshops are a terrific way for our students to see how they can apply the theoretical knowledge learnt throughout their studies to improve profitability of sheep enterprises," Professor Jacobson said.

AWI Program Manager, Research and Extension, Emily King said the interest in the workshop was a promising sign for the future of the sheep and wool industry.

"It's encouraging to see so much interest in the sheep and wool industry from students and we hope the RAMPing Up Repro course provided not only a masterclass on ram health but an insight into how industry workshops are structured and delivered by experienced industry consultants, like Dr Seal," she said.

The RAMPing Up Repro workshops complement AWI's **Lifetime Ewe Management course**, and **Picking Performer Ewes** and **Winning With Weaners workshops** – see www.wool.com/LTEM. **B**

MORE INFORMATION
For more information on upcoming RAMPing Up Repro workshops in your area, contact your AWI State Grower Network (contact details at www.wool.com/networks).

FOSTERING WOOL INDUSTRY LEADERS

David Young of Bookham in NSW is the latest woolgrower to graduate from the Australian Rural Leadership Program thanks to support from AWI. He will use his knowledge and experience to advance the interests of rural industries and communities, and the sheep and wool industry in particular.

The Australian Rural Leadership Program (ARLP) is rural Australia's iconic leadership development program that aims to produce a network of informed, capable and ethical leaders who are able to work collaboratively to advance the interests of regional Australia.

David Young, who last year graduated the ARLP, runs and manages a 1,200-hectare aggregation focusing on fine wool, prime lamb and beef production, with his wife Jan on her family's property near Bookham in the Southern Tablelands of NSW.

David's contributions as a leader include sitting on the national Committee for Animal Health and Welfare for Sheep Producers Australia, being Deputy Chair of the NSW Sheepmeat Committee, and captaining his local fire brigade.

DIVERSE EXPERIENCE

The ARLP course consists of about 50 days face-to-face, delivered in multiple sessions over 15 months. Five of these sessions take place in locations across Australia, including the Kimberley, a state capital city and a regional area, and involvement in Canberra's political scene. One session takes place overseas with an eye-opening visit to one of Australia's closest neighbours, Indonesia.

A great attribute of the program is to bring together participants from a diverse range of backgrounds, industries and communities, who have all shown an ability to lead.

"I've always been very results-driven, and used to working with smaller teams, where

it's been somewhat easier to get your message across," David said. "Within the ARLP, it certainly throws people together who are totally unlike you. The way different people perceive you can come as a bit of a shock. You certainly become more self-aware.

"Straight away this helped me to get a greater understanding of how to find that common goal, which is what you often have to do in your industry. It really taught me to sit back and reflect."

David says the initial ARLP session in the Kimberley and the session in Indonesia stand out when he reflects on the program.

"I'm an outdoors kind of person, but the Kimberley does push your limits, as does travelling to a different country. Indonesia is a country with people from so many different backgrounds. It puts into perspective the challenges we face bringing along industries and interest groups back in Australia," David said.

"Especially in my role with the animal health committees, you're dealing with sensitive issues like mulesing and pain relief. One thing the program has given me is that added confidence to interact with diverse perspectives and to gently but politely challenge certain views to find a more conciliatory approach."

ENCOURAGING THE NEXT GENERATION

In the world of wool, David says the next generation of leaders will play a key role in taking the industry forward.



David Young (left) with other ARLP participants starting the program in the Kimberley in August 2018.

"Wool is an environmentally sustainable fibre with huge potential, globally, but there's still a large debate and process of education to be had. We need more leaders that have the knowledge to take the conversation forward, and I see a real interest from some of the younger ones in ag," David said.

While there are a myriad of issues affecting rural Australia that would benefit from stronger leadership, of particular concern is a lack of proper succession planning and a general ageing of farmers in the sector."

David Young, Woolgrower and ARLP graduate

"I want to do a lot more for my industry, whilst encouraging interest from the next generation, and creating opportunities for them."

David says the ARLP does provide leaders with a "huge leg-up" to achieve their goals for rural Australia.

"I'm terrifically appreciative of the opportunity I've been presented with by the AWI."

AWI funds the participation of emerging wool industry leaders in the ARLP. These wool industry leaders engage with AWI, the wool industry and community about the learnings from the ARLP and continue to use these learnings for the advancement of woolgrowers.

Kirsty Wall from Bukkulla near Inverell in NSW is the current AWI-sponsored participant on the ARLP. Kirsty is a registered nurse and midwife, is co-principal of a Merino stud on her family's farm and is a strong advocate for 'all things wool'.

The AWI-sponsored participant prior to David Young was Stacey Lugsdin from Hay, who graduated in October 2018. Stacey was recently appointed as an independent director to the board of WoolProducers Australia.

B

MORE INFORMATION
www.rural-leaders.com.au
www.wool.com/ARLP





FUTURE LEADERS' OPTIMISM FOR WOOL

The 25 participants of the 2020 Breeding Leadership course, pictured here with the Meyer family at Mulloorie Merino Stud in South Australia.

AWI held a five-day professional development course in February for 25 enthusiastic young people working in the wool industry – the industry’s next generation of leaders.

The future of the wool industry is in good hands judging by the latest group of Breeding Leadership participants.

25 wool industry representatives from across the country participated in AWI’s Breeding Leadership 2020. Held every two years, Breeding Leadership arms the young participants – selected from throughout the wool industry, from on-farm to education and wool marketing – with the skills and tools to become better leaders.

The program develops skills and knowledge in personal leadership as well as strategic planning and team leadership. It also provides an excellent opportunity for participants to network with 24 other like-minded people from across Australia, as well as the skilled program deliverers and others from the wool industry.

Now in its eighth year, the five-day course has helped progress the careers of about 175 young people within the wool industry, many of which hold leading wool roles today, such as 2018 WoolPoll Chairman, Syd Lawrie.

The course this year was held at Clare in South Australia. The group also toured two wool-focused businesses: Michell Wool in Adelaide, Anlaby Station near Kapunda, Mulloorie Merino Stud at Brinkworth and Collinsville Stud Merinos at Hallett gaining valuable insights into their vision and business strategies.

“Breeding Leadership was an amazing opportunity that successfully provided it’s participants with the right training and resources to create a voice for the

youth of the wool industry. In doing so, its participants can now implement the change and growth the industry needs to be sustained,” said participant Georgia Reeves from Rutherglen in Victoria.

“These new leaders are now informed and have the confidence to voice innovative ideas and encourage change in a very traditional industry. I would highly recommend this course to any young wool industry leaders or individuals who will find themselves in a leadership position within the industry in the future.”

AWI General Manager for Woolgrower Engagement, Marius Cuming, delivered a session to the participants at the event, discussing with them AWI’s strategic direction and current and planned projects.

“The participants were very engaged with what challenges we all face as an industry. We have some very passionate and very savvy people coming through – they seem ready and willing to take on the mantle. The future looks very bright for wool in this regard,” Marius said.

Funded by AWI and delivered by Rural Directions Pty Ltd, Breeding Leadership forms a key part of AWI’s growing commitment to education in the wool industry. Other initiatives include the National Merino Challenge and support for the Hay Rural Education Program, Nuffield Scholarship, Australian Rural Leadership Program and Horizon Scholarship, to name a few.

2020 BREEDING LEADERSHIP PARTICIPANTS

NEW SOUTH WALES	
Ian Cameron	Jerilderie
Samara Harris	Broken Hill
Amie L’Estrange	Condobolin
Emma Turner	Goulburn
Benjamin Watson	Wee Waa
William Wragge	Boambolo
VICTORIA	
Kyle Cordy	Sidonia
Candice Cordy	Epsom
Georgia Reeves	Rutherglen
Matthew Tattersall	Point Cook
SOUTH AUSTRALIA	
Annie Ashby	Gulnare
Dale Button	Robertstown
Josh Cousins	Burra
Declan Harvey	Narrung
James Henderson	Lochiel
Alistaire Linder	Yunta
Peter Mitchell	Angaston
Reuben Solly	Via Carrieton
Kayla Starkey	Mt. Pleasant
Karl Zerner	Eudunda
QUEENSLAND	
Felicity Brumpton	Mitchell
Kristy Walters	Leyburn
WESTERN AUSTRALIA	
Alexandra Coole	Frankland
Christie Felber	Pengelly
Lachlan Mouritz	Hyden



TOOLS BEING DEVELOPED FOR PRICE RISK MANAGEMENT

Risk management is one of the key challenges facing Australian agriculture. This is more so for the sheep and wool industries than any other sector. AWI has begun a project that aims to deliver to woolgrowers the tools to effectively understand and manage risk. Woolgrowers can provide input into the project by completing a short online survey at www.wool.com/risk.

PRICE VOLATILITY IN THE AUSTRALIAN WOOL INDUSTRY

Australia has one of the most volatile agricultural sectors of any country in the world (see Figure 1) and within Australia agriculture is the most volatile sector of the economy (see Figure 2), when we consider value of output.

Within the agriculture sector, sheep farms are the most volatile with regard to price volatility (see Figure 3). Recent studies show a direct link between volatility and farm income.

This continued volatility is most disruptive to orderly marketing and seriously hinders delivery of accurate market signals. We are currently experiencing this at present in the wool market with volatility running at historical highs. Developing a strong forward market that shares the risk along the pipeline will mitigate some of the problems such as delays, defaults and renegotiations that have dogged the export sector during the last year.

To put this into perspective, in the 21.0 Index there have been only six occasions during the past 25 years in which daily movements of greater than 30 cents have occurred on more than 10 days in a calendar year, yet four of those occasions have been in the past five years and the two highest in 2018 and 2019 (see Figure 4).

What is even more disturbing in that we have had already five such movements in the first three weeks of 2020.

High volatility affects the ability to execute the targeted objective of increasing Return on Farm Assets Managed (RoFAM) leaving income margins for woolgrowers at the whim of the rollercoaster of spot prices. This volatility is affecting the whole pipeline resulting in uncertainty that will eventually affect decision making from the consumer right back to the farm gate.

AWI PROJECT TO HELP WOOLGROWERS MANAGE RISK

The lack of risk management tools and education across the agricultural sector has become a focal point for government, financial institutions and peak bodies. Now is the time to position the wool industry as a leader in price risk management (PRM) awareness/training and education.

As such AWI has commissioned a project to:

1. Identify the current state of PRM awareness and adoption
2. Identify any impediments to PRM development
3. Create a body of PRM content using WoolQ as the primary repository. This is to include daily and weekly trade data; weekly reports; forward curve, percentile and price charts. There might also be potential for a 'risk' chat room.
4. Monitor and evaluate the effectiveness of engagement and uptake.

The aim of the project is to deliver to woolgrowers the tools to effectively understand and manage risk.

EFFECTIVE PRICE RISK MANAGEMENT

Nobel prize winning economist Joseph Stiglitz said: "Risk is like love. We all know what it is, but we don't know how to define it." Whatever definition of risk might be used,

Figure 1: Index of volatility of national annual agriculture output value, 1961-2009

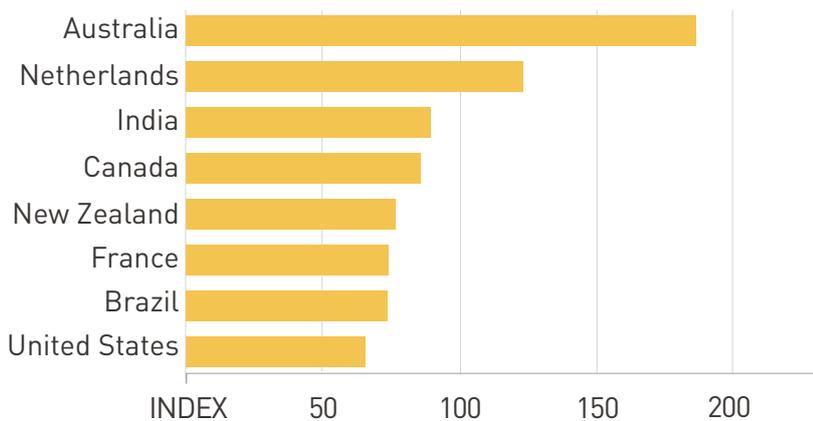
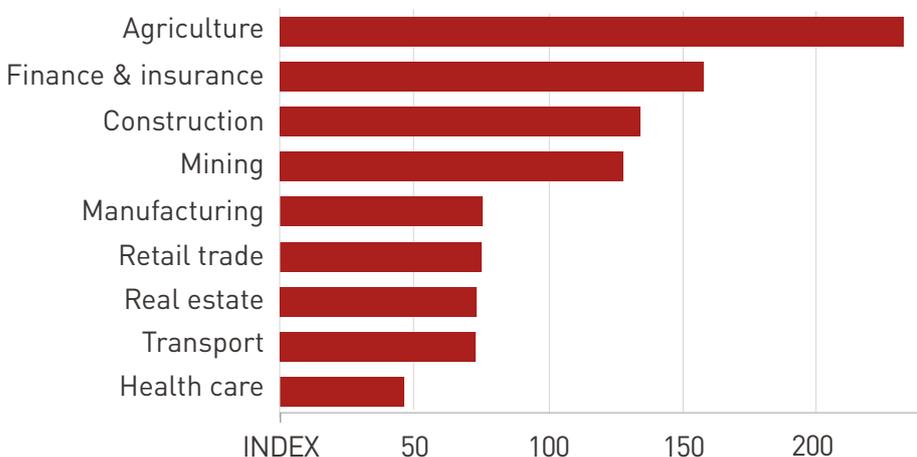


Figure 2: Index of relative volatility in annual value of output for selected Australian economic sectors



Source: ABARES Insights, Issue 1, 2018, Snapshot of Australian Agriculture. Adapted from Keogh, 2012, Including risk in enterprise decisions in Australia's riskiest businesses.

Note: Average volatility of agricultural output across 15 countries (not all shown) = 100. Average volatility of industry output across all sectors (not all shown) = 100.

It is important to remember that risk is an inevitable part of life, and most certainly of farming life. It is not something to be afraid of. Profit is the reward of bearing risk. The task is rather to manage risk effectively.

Price risk management is about margin management. Price is not necessarily the most important factor to a successful business. Managing margin is. Effective price risk management aims to meet and manage budgets, enhance and protect margin goals

and increase bottom line profitability.

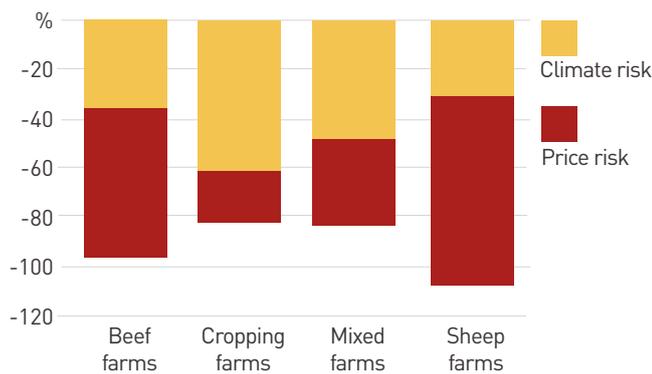
Hedging products, such as wool forwards, need to be simple to understand and versatile in their application. The intended outcome should be the reduction of risk and increase in the stability and the predictability of the financial results. **B**

MORE INFORMATION
www.wool.com/risk

PLEASE PROVIDE INPUT

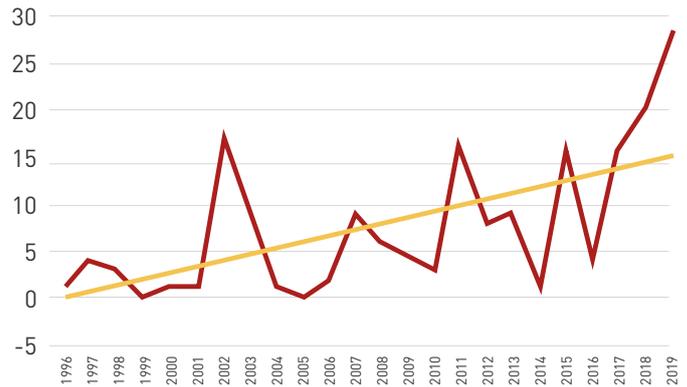
Woolgrowers are requested to provide input into the project by answering a short online questionnaire on the AWI website at www.wool.com/risk. The focus of the questionnaire is to provide guidance on woolgrowers' preferred information delivery methods, and develop a baseline of current awareness and activity across the various forms of risk management and forward selling options.

Figure 3: Broadacre farm cash income risk by sector. Change in farm cash income (bad year relative to good year)



Source: ABARES model estimate (1949-50 to 2018-2019 climate and 1977-78 to 2018-19 prices). Note: Percentage change between good (90th percentile) and bad (10th percentile) years.

Figure 4: 21micron daily variance greater than 30c (days per year + trend line)



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AVERAGE MONTHLY EMI COMPARISON

EMI STEADIES AND STILL HISTORICALLY HIGH

The chart opposite provides a snapshot of how well the AWEX monthly Eastern Market Indicator (EMI) and a range of microns have performed for the past three months (November 2019 – January 2020) in Australian dollar terms compared with the previous five years November 2014 to October 2019 (circles) and the decade previous to that, November 2004 – October 2014 (squares).

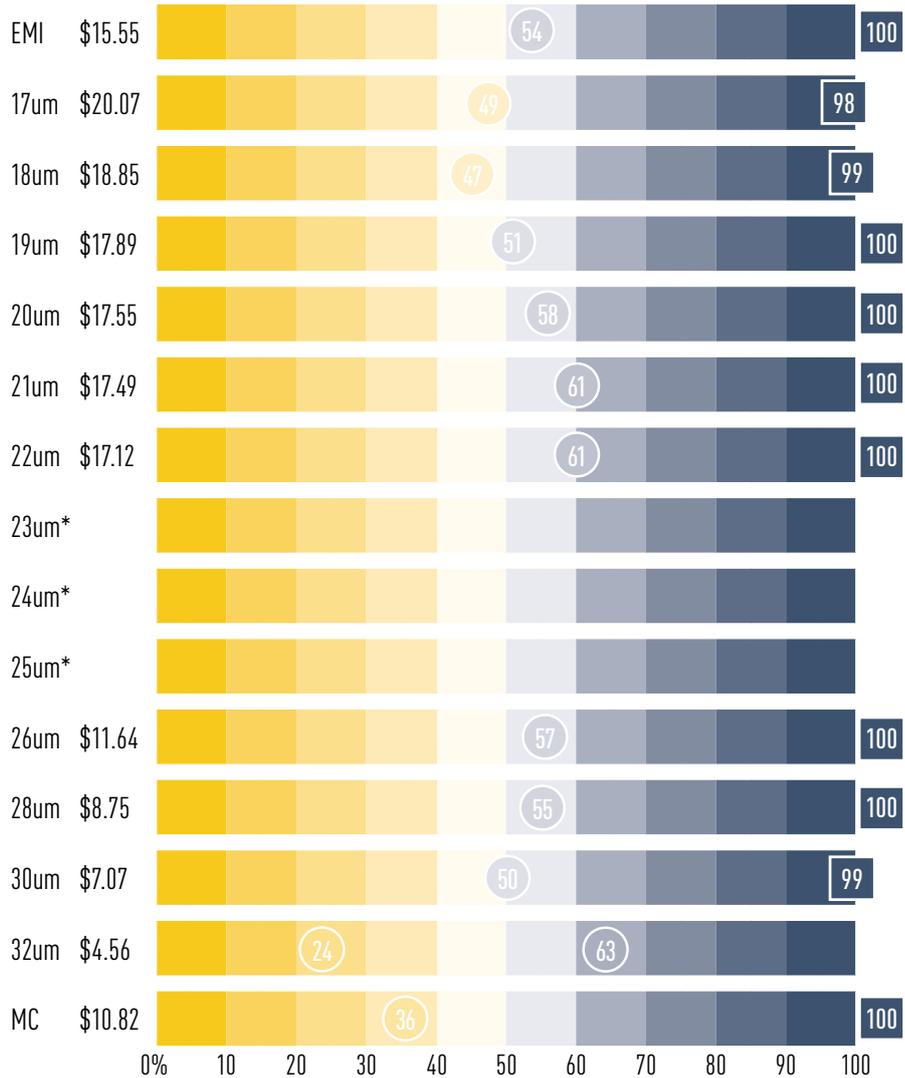
For the past three months, the monthly EMI averaged at \$15.55, which is an improvement from the previous three months, and is tracking at the 54th percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current \$15.55 (November 2019 – January 2020) for 54% of the time.

While the EMI is tracking at the 54th percentile over the previous five years, it is still at the 100th percentile when compared to the decade November 2004 – October 2014. This means the current EMI of \$15.55 (November 2019 – January 2020) is higher now than it was for all that decade.

Most microns have remained fairly steady during the past three months. 18 micron averaged at a monthly value of \$18.85 (47th percentile for the previous five years and 99th percentile for the decade before that), 21 micron averaged at \$17.49 (61st percentile for the previous five years and 100th percentile for the decade before that), and 28 micron averaged at \$8.75 (55th percentile for the previous five years and 100th percentile for the decade before that).

Merino Cardings (MC) have strengthened. For the past three months, Merino Cardings averaged at \$10.82, operating at the 36th percentile for the previous five years and still at the 100th percentile for the decade before that. **B**

AVERAGE MONTHLY EMI FOR NOVEMBER 2019 – JANUARY 2020 COMPARED WITH
 ● PREVIOUS 5 YEARS NOVEMBER 2014 – OCTOBER 2019
 ■ THE DECADE NOVEMBER 2004 – OCTOBER 2014



*insufficient data

NEW MARKET INTELLIGENCE AT WOOL.COM

An important part of the recent revamp of AWI's Wool.com website was the introduction of more market intelligence information for woolgrowers.

As well as the Weekly Price Reports and Monthly Market Intelligence Reports, there is now a graphical display of

- Eastern Market Indicator – you can select to display AUD, USD, CNY or EUR.
- Micron price – you can select to display the selling centre and the micron(s).

- Offering – displays bales offered and bales sold.
- Currency movements – you can select to display AUD/USD, AUD/CNY or AUD/EUR.
- Forecast of bales sold – displays previous season, current season, current week and forecast.

For the first four categories above, you can select to display data from 3 months to 3 years ago.

AWI also continues to send wool prices and market intelligence direct to about 5,000 woolgrowers' mobile phones. If you would like to subscribe to the free SMS service, visit www.wool.com/sms where you will be asked to input your name and the mobile phone number to receive the SMS. You can unsubscribe from the service at any time. **B**

MORE INFORMATION
www.wool.com/marketintel

WOOLGROWER AND CLASSER LYNDON KUBEIL REVIEWS WOOLQ



The WoolQ team sat down with Lyndon Kubeil, a Victorian woolgrower at Violet Town who classes his own wool, to review the WoolQ platform. Lyndon has been using WoolQ since the early days and recently completed a WoolQ eSpeci for the third time. After the shearing, the clip data passed from the eSpeci to his broker and then back to his WoolQ account. He discusses using WoolQ tools and the benefits as a woolgrower and classer.

The WoolQ eSpeci is an alternative to the current paper speci. It's an app you use on a mobile device in-shed. What's been your experience of using the eSpeci for the third time?

LYNDON: I class my own wool. I'm a bit of a glutton for punishment I suppose, but I do like to have control of my own product, so I think classing is a really important step in that for me. I found the eSpeci really easy to use and quite a simple process. If you understand a paper-based speci, it's really easy to follow through the eSpeci because it just follows the same processes.

In fact, I actually found it's even easier than paper because a lot of that lotting is done for you. At the moment, I am still writing in the wool book because of the hectic pace of the shearing shed and you've got a number of different people pressing bales, so you do want to make sure every time a bale is pressed that they're recorded in the wool book and that's up to date. I'd update the eSpeci during breaks if time permits or at home in the evenings.

Once you completed the eSpeci you submitted it to your broker. How did that process work?

LYNDON: Once the clip was finished, submitting the eSpeci was instantaneous on the iPad and talking to the brokers the next day all of the data was there so that all worked really smoothly. From their point of view, I think they probably still had to train some staff that were there the day that it was submitted. But I think the whole industry is really starting to get the hang of it and understand the benefits of the eSpeci.

Your wool was tested and then that test data came back into your WoolQ account. What did you do then?

LYNDON: Another feature of WoolQ is the WoolQ valuing (Ready Reckoner). So as soon as that data is on there, I get a feel for the current market prices, what it's worth at the moment and I can just keep tracking that as the market changes.

Once the clips build up over the seasons, how do you think you'll use this historical data in your WoolQ account?

LYNDON: In the past I'd think "it'd be great if I could just go back and look at all my past clips", but it's all sitting in the filing cabinet in the paper base form. It's too much time to actually find it and then to try to analyse it. The beauty of WoolQ is having all that data in electronic form in one spot. I log in and there it is with some analysis done for me. But also, there's an opportunity to really dig into something specific that I want to analyse.

What would those insights be?

LYNDON: I can track wool cut per head. I can track some micron changes. I can look at variations in staple strengths or length and then correlate them back to some management issues or seasonal conditions.

It'll be a really useful tool for forecasting in terms of looking backwards and then projecting at what sort of test results I might be expecting for different lines or different age groups of sheep.

The WoolQ Industry Network is an industry directory of woolgrowers, classers, brokers and buyers. How do you see your profile working for your business?

LYNDON: There isn't a lot of linkage between the producer and that buyer so this is where I do see that WoolQ might actually help to provide that in the future. If we've got a profile on WoolQ, the buyer can easily get a bit of an insight into our farming systems, how passionate we are about wool production and managing our sheep.

What would you say to woolgrowers and classers that haven't tried WoolQ yet?

LYNDON: Have a go. You'll find it's really simple and easy to use. Once you've had a go, you'll start to see the benefits – and I think those benefits are only going to get stronger and stronger as the WoolQ system builds. There'll be more and more benefits to be a part of WoolQ.

The WoolQ team supports woolgrowers with adoption through presentations and in-shed assistance. But first, the WoolQ team recommends talking to your broker. Brokers can help woolgrowers get set up on the platform. The majority of brokers have now been enabled to accept the eSpeci directly into their systems.

You can learn more about the eSpeci and other WoolQ tools at www.woolq.com. WoolQ supports all key stages of the growing and selling cycle, enabling woolgrowers to store and easily access a digital record of all their shearing information, from clip data through to test and sales results.

MORE INFORMATION
www.woolq.com





Image: aaaaimages

CORONAVIRUS: AN ISSUE NOT TO BE SNEEZED AT

With three quarters of Australian wool normally exported to China, what does the Coronavirus outbreak in China mean for the Australian wool trade?

Given that China is Australia's biggest partner for processing of our wool and also our biggest consumption market for wool apparel products, it's hard not to imagine that, from an apparel consumption point of view and a commerce or trading point of view, that Coronavirus (COVID-19) will have some effects on the wool industry and the fashion industry in general. Obviously, like the rest of the world, we will continue to closely monitor the situation and act accordingly with our industry partners.

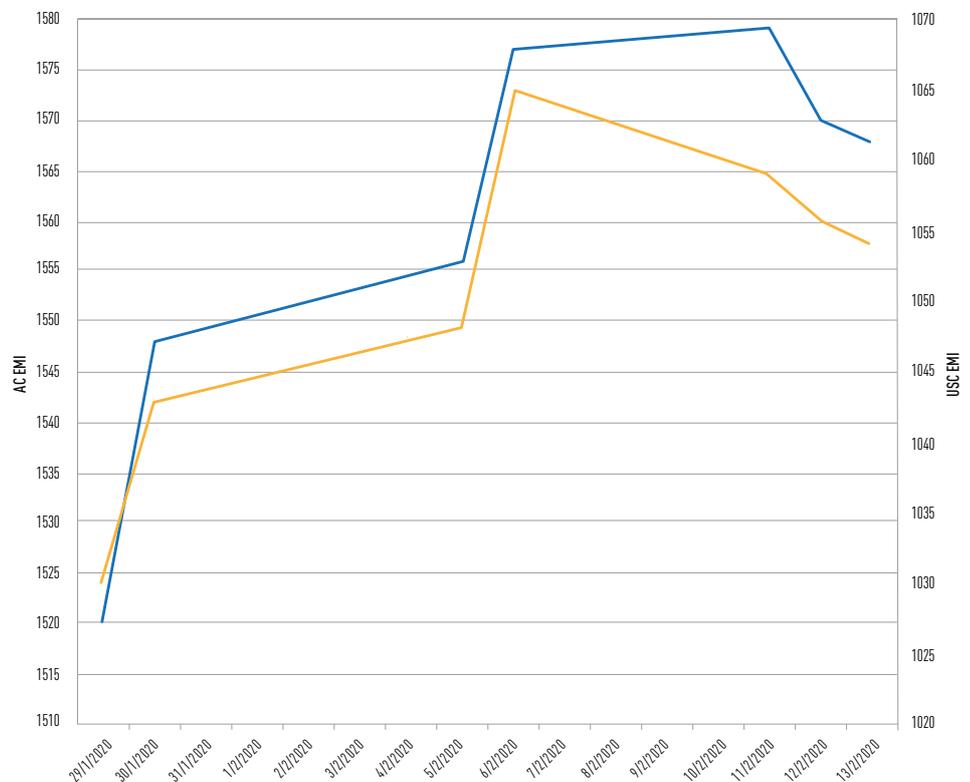
The widely-held expectation that the wool market would drop after the discovery and spread of COVID-19 has not eventuated, as of the time of the writing of this synopsis. In fact, the wool market has lifted during the period since the official disease notification in late January. The value of the Eastern Market Indicator (EMI) in Australian currency has gained 3.2% or 48ac clean/kg from 1520ac to 1568ac and in US currency the value has increased by 2.3% or 24usc/ clean kg from 1030usc to 1054usc.

LOCKDOWN HAS IMPLICATIONS

China has been in an almost complete lockdown. Movement of almost half of the Chinese population (600 million) has been entirely halted and the other half's movements severely restricted. Business activity, logistics and bricks and mortar retail has also been brought to a virtual standstill.

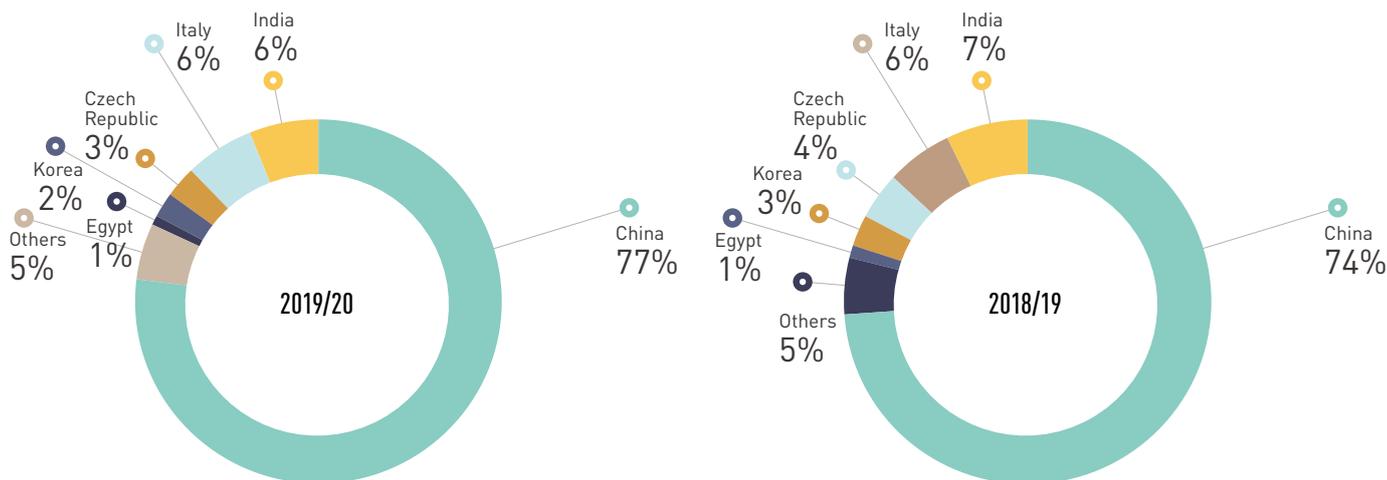
This is particularly important for wool as we

EMI SINCE COVID-19 OUTBREAK



	29/1/2020	30/1/2020	5/2/2020	6/2/2020	11/2/2020	12/2/2020	13/2/2020
AC EMI	1520	1548	1556	1577	1579	1570	1568
USC EMI	1030	1043	1048	1065	1059	1056	1054

AUSTRALIAN WOOL EXPORT DESTINATIONS (AS OF DECEMBER FOR EACH SEASON)



rely upon China to take three out of every four bales from Australia. With more than half of that volume ultimately consumed in China at retail, this presents immediate and potentially large challenges for the Australian wool industry.

On the flip side, it is well understood that a lot of the retail purchasing is done online these days. This should entice the current stocks to be sold as consumers are thought to be more likely to buy when in such a lockdown situation as boredom sets in. Next to skin wool garments are premium priced goods and should be an easy sale, but whether a new wool outerwear jacket or coat is on that shopping list when the consumer is locked indoors is somewhat problematical.

MILLS START TO OPERATE AGAIN

Most of the Chinese mills reportedly reopened around the 10th February with some of the weavers in outer provinces that are many thousands of kilometres away from the disease epicentre opened a bit earlier. Some mid-sized manufacturers in Zhejiang and Jiangsu province won't resume operations until the end of February and that is still pending the central Government's approval.

For the factories that have already opened, only 70% of employees have been able to return to work. At the moment, the production is nowhere near being fully recovered and is thought to be running at production levels between 30 to 50% of total capacity. At best, these mills estimate production will have reached just 80% at the end of February if all went well.

IT'S AN ISSUE OF LOGISTICS

The logistics issue is the main challenge for all companies due to the lockdown of people movement in many infected areas and the lack of available drivers.

Most of the delivery for overseas orders has been delayed by 15 to 30 days and possibly now those delays will extend further.

Manufacturers are constantly in discussions with their customers and most of their international customers are for the time being showing agreement and understanding.

For Chinese domestic orders, it has not yet been a big issue, but if the situation can't be recovered, some orders will be cancelled by brands simply because the Spring/Summer season is missing. It is estimated by most participants that the annual factory output of the 2020 calendar could decrease by 15 to 20%.

UPTURN FROM OTHER MARKETS

Since the global reporting of the disease, there has been a corresponding lifting of activity from other processing facilities from outside of China. Most notably the Czech Republic has become an important player at the top of buyers' lists on the Merino sector. Interest from Italy and India has also been apparent.

Whether this interest from non Chinese participants is coincidence or whether a lightning quick reaction from garment manufacturers and retail store buyers to ensure they have supply in the upcoming months is open to speculation.

Given the potential for serious issues surrounding access to export goods from China being available in coming months, this could prove to be a master stroke as capacity outside of China in processing of wool is severely limited compared to mainland China. If coincidence is the primary reason, that brings to the front of mind thoughts of where the wool markets would be had China remained at full strength during this period.

LESS SHIPS TO EXPORT WOOL

But while the COVID-19 outbreak continues to affect business activity in China, there is a looming shipping issue that could easily have a longer-term flow-on effect.

One of the major roadblocks on the horizon for Australian wool exporters will be the immediate lack of containers and vessels arriving from China. For many years the

Australian shopper has had a strong appetite for the keenly priced goods from China meaning several vessels per month arriving from that nation. The shipment of wool relies on the import of these goods into Australia to get the wool back to Chinese factories as the vessels return.

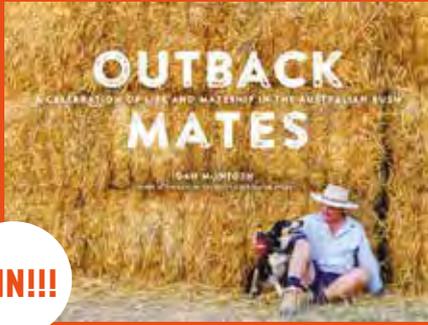
This is relevant not just for the physical transfer, but also for the discounted cost. Ships heading back to China are usually very competitive for freight rates and if we use the comparative analogy of a 'backload discount' we enjoy at times in Australia in the trucking industry, these shipping costs have been exceptionally low for years. Full container load (FCL) rates are expected to have severe upward pressure placed upon them as well as the applicable port charges until the current China situation remedies itself.

That's all of course subject to vessel availability as authorities work their way through the ability or not of the virus to live and transmit contagions on non-organic matter. Information from the Journal of Hospital Infection reports the virus could live for at least a week on most surfaces from the initial research conducted. Whether vessels and the FCLs on board can enter Australia or are subject to a withholding period remains unknown.

WHY HAS THE MARKET NOT BEEN AFFECTED (YET)?

It is thought that the impact (or lack thereof) on wool trading has not yet manifested itself because we are currently in a short supply situation. For example, the Australian production of wool is only two thirds or 33% less compared to the year of 2003 when the SARS virus affected global markets of all descriptions.

In addition, overseas orders were placed and kept being written before the Chinese New Year which was around the time of the disease notification to the world. This has allowed exporters with access to good capital and finance terms to remain in the market and lock in potentially good sales hopefully enabling some future profit taking.



WIN!!!

If you submit a photo that gets published in Readers' Photos, you'll receive a copy of Dan McIntosh's 'Outback Mates'.

This 208-page hardback book is a celebration of outback Australia and the bonds of friendship that are forged living and working on the land.

READERS' PHOTOS!

Have you got any interesting photos that you'd like to share with other readers of *Beyond the Bale*?

If so, please email the image and a brief description to the editor of *Beyond the Bale* Richard Smith at richard.smith@wool.com.

 **Beyond the Bale has its very own Instagram account.** You can follow [@beyondthebale](https://www.instagram.com/beyondthebale) on Instagram and also tag us in your photos for your chance to be featured. We will also be showcasing on Instagram some photos emailed in to Readers' Photos (we'll ask your permission first), so you can keep emailing them in.

SHAUN THE SHEEP DOWN UNDER?

After reading about Shaun the Sheep in the last edition of *Beyond the Bale*, **Jim and Rachel Seager** of 'Lighthouse Stud' near **Geelong** in **Victoria** spotted the resemblance of Shaun's flock with their own flock of Suffolks with their distinctive black faces and legs.



MONSTER OF A CLOUD

This great photo was taken on her iPhone by **Annabel Lugsdin** of Bel's Rural Photography (www.belsruralphotography.com) in January between **Jerilderie and Conargo, NSW**. She says it had been a long time since she had driven through a storm let alone this monster of a rain cloud, which she says dropped 30mls in probably less than 20 minutes.



TWO GREAT SMILES

Leo Hamilton from **Sarsfield** in East Gippsland in **Victoria** sent in this photo of his wife's grandson **Jake Barry** at lamb marking last year. In January bushfires went through Sarsfield and reached the boundary of Leo's property but it was thankfully not impacted.



SOLIDARITY FROM VENICE

The **Gondoliers of Venice**, whose uniform is made of Australian Merino wool, sent in this photo wanting to express their solidarity with the producers of the wool they are wearing, who they know are experiencing very difficult times because of the drought and bushfires.



HOLEY MOLEY!

These two similar photos were sent in by two different woolgrowers, more than 200km apart in the Riverina of NSW. The first is from **Jeanette Watts** taken at 'Ingold' at **Adjungbilly** and the second is from **Lisa Ralston** of 'Round Plain' at **Rand**. Lisa wondered whether they were exporting lambs "direct to China" via deep sink holes in the paddocks. Both sheep were safely retrieved.



WILLY WILLY

Adele Smith took this photo of a large Willy Willy out at **Quandialla** in the Central West of NSW, picking up and spinning the dust from a hot and parched drought-affected paddock. Adele said "If we can get through this, we can get through everything!" Adele is the Wool Technical Officer with Moses & Son at Young & Temora.





WOOL

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