Beyond the bale

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awi

THE WOOLMARK COMPANY

Beyond the bale

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Beyond the Bale is published by Australian Wool Innovation Ltd (AWI), a company funded by Australian woolgrowers and the Australian Government. AWI's goal is to help increase the demand for wool by actively selling Australian wool and its attributes through investments in marketing, innovation and R&D – from farm to fashion and interiors.

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FRONT COVER
Three important generations busy at work in the yards at **Lach River Merino Stud** at **Darbys Falls**, east of Cowra in **NSW**. Pictured are young Henry Chalker with his father Brad and grandfather Richard. The photo was shot by Brad's wife Elena who documents days on the farm on her Instagram account **@misspip_rural**.

"Like the generation prior, interest for life on the land comes easily for our little ones. Our future farming, our farming future," said Elena.

Lach River Merino Stud last month hosted an AWI-funded shearer and wool handling course (see image top right). Thanks go to the Chalkers and all involved.

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GD4194

06 AMERICA'S CUP PROMOTION OF WOOL

50 AWI-FUNDED IN-SHED TRAINING

OFF-FARM

ON-FARM

AWI INVESTMENT STRATEGIES

Marketing | Sheep Production, Science & Technology | Consultation | Processing Innovation & Education Extension | Traceability

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AWI E-NEWSLETTERS:

To subscribe to the free monthly AWI e-newsletter for woolgrowers, and the weekly wool market review e-newsletter, visit **www.wool.com/subscribe**

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AWI STATE-BASED GROWER NETWORKS

AWI-supported networks are present in each state.

- **Sheep Connect NSW**
- **Sheep Connect SA**
- **Sheep Connect Tasmania**
- **BESTWOOL/BESTLAMB (VIC)**
- **The Sheep's Back (WA)**
- **Leading Sheep (Qld)**

Find your grower network at www.wool.com/networks or call the AWI Helpline on 1800 070 099.

GETTING ON WITH BUSINESS

Stuart McCullough
Chief Executive Officer
Australian Wool Innovation

Throughout the global COVID-19 pandemic, AWI has continued to work relentlessly for woolgrowers to ensure the sustainability of our industry and profitability for your enterprises.

Vaccines provide optimism

While the COVID-19 pandemic continues to impact many countries across the world, with some countries such as India being especially badly hit, there is evidence that the roll out of vaccination programs can be very effective at suppressing the virus.

The UK, which just four months ago was suffering more than a thousand deaths each day plus severe lockdowns, has implemented perhaps the most successful vaccination program, resulting in dramatic falls in cases, hospital admissions and deaths. This has allowed the UK Government to largely ease its restrictions: the shops are open and the normality of life is returning. The Bank of England is forecasting the UK economy will experience its fastest growth in more than 70 years in 2021. This is great news for Australian woolgrowers because, as well the UK being the fifth largest economy in the world, it is also a large wool consuming market.

AWI is therefore very closely examining the UK market and considering the release of marketing funds to take advantage of the expected growth in consumption. This is a similar strategy we employed in China, whose economy recovered very fast after its early suppression of the virus. For example, AWI recently completed a successful spring/summer marketing campaign in China (see page 12) following on from the very effective autumn/winter campaign held there six months ago.

After a weak start, vaccination programs in the Europe Union are now progressing well, as they are in the US, and we anticipate that they will result in a similar easing of lockdown restrictions and rebound of their economies, which could be very lucrative for Australian wool. This current rise in optimism for future wool consumption will also hopefully provide an incentive for brands and retailers placing orders during the second half of this year for autumn/winter 2022/23 collections.

In the meantime, particular apparel segments continue to be more resilient than others, with the knitwear and outdoor/sports sectors performing well. The demand for suiting and formal attire is still lagging but we hope that demand will return once office workplaces open more fully and when consumers begin to indulge in social gatherings once again.

Longer term outlook

I strongly believe that the premium and natural qualities of our fibre and the relationships we have built along the supply chain ensure a positive outlook for Australian wool, not only as the industry recovers from the economic effects of COVID-19, but in the longer term.

There are two macro trends that play in wool's favour. Firstly, the trend towards health and wellness, a trend that has sharply increased in the past 18 months. Consumers' interest in how the clothing they wear, the bedding they sleep under, the carpets they walk on and the furnishings that surround them is increasing – and the natural properties of wool, in contrast to synthetic fibres, have been shown to be beneficial for people's wellbeing.

The second macro trend is the shift towards products that are environmentally friendly. In response to significant pressure from global consumers and governments, brands throughout the fashion industry are striving to improve the environmental and social impacts of their products. Australian wool has a great natural and sustainable story to tell, and the wool industry is on the front foot in evidencing and promoting the fibre's eco-credentials.

On-farm R&D and extension

It is important to note that while much attention during the past 18 months has been understandably on our retail markets, AWI's on-farm R&D and extension projects are largely run in Australia and have escaped the worst of the fallout from the pandemic. They continue to operate largely as normal, although we closely monitor their progress and budgets.

We continue to invest in on-farm R&D in the areas that producers have told us are important to them, including optimising sheep health and welfare, combatting wild dog and fox attacks, increasing the reproductive efficiency of ewes, improving the genetic gain of the Merino, funding of in-shed shearer and wool handler training, and harnessing opportunities for on-farm automation.

In addition, we deliver practical training programs through our extension networks in each state to increase producers' adoption of best practice on-farm production and management. We also provide timely market intelligence to woolgrowers, hold many face-to-face industry events, and we run projects to encourage the next generation into the industry.

As AWI staff cross the country to host or attend industry events, woolgrowers' thirst for engagement with AWI is very strong as they not only wish to boost their flocks in the face of better seasons and improving commodity prices but are also wanting to simply meet with their fellow woolgrowers again.

The sense of optimism around the wool industry is obvious and this will only be pushed further as the global economy and therefore demand for wool picks up as expected.

I hope you have all been safe and well during 2021 and remain so. B

WoolPoll 2021

Your Wool Your Vote!

What is WoolPoll?

WoolPoll is a poll of eligible wool levy payers, conducted every three years, to determine the levy rate paid to AWI for industry research, development (R&D) and marketing. Currently the levy rate is 1.5% (of the sale price woolgrowers receive for their shorn greasy wool).

At WoolPoll, eligible woolgrowers are asked to consider up to five levy rate options. They can vote for one or more levy rates in order of preference.

The levy rate that receives the highest number of votes will be paid by all woolgrowers for the next three years (2022/23 – 2024/25). The levy rate takes effect from 1 July 2022.

In the 2020 WoolPoll Review, it was suggested that an additional question be put forward to levy payers, for the 3-yearly cycle of WoolPoll to be changed to 5 years with the objective of providing greater stability in the levy rate. This question is being put forward in the 2021 WoolPoll via the ballot paper to test the preference for a 5-yearly poll more widely with levy payers.

Why vote?

WoolPoll is the opportunity for levy payers to directly influence how much funding AWI will receive for the ensuing period until the next WoolPoll to deliver R&D and marketing services for the Australian wool industry.

Who can vote?

If you have paid $100 or more in wool levies over the past three financial years, you are eligible to vote in WoolPoll. For each $100 of levy paid, you are entitled to one vote.

Your voting entitlement is determined from records of your wool sales. You will be notified of your voting entitlement in August. If you believe your voting entitlement has been miscalculated, you will be able to contact a voter assistance hotline.

When is WoolPoll?

- **September:** Eligible wool levy payers will receive their voting papers, a Voter Information Kit (containing details about how AWI proposes to invest the levy funds at each of the five levy rate options and AWI's recommendation) plus a summary of an independent review of AWI's performance (2018/19 to 2020/21).
- **Monday 13 September: Voting opens.** Voting will be by mail, fax or online – as per the instructions that will be sent with the voting papers.
- **Friday 9 November: Voting closes** at 5pm (AEDT).
- **Friday 19 November**: The WoolPoll result will be announced at AWI's Annual General Meeting. The levy rate takes effect from 1 July 2022. B

2021 WoolPoll Panel members

The 2021 WoolPoll Panel members are:

Steven Bolt, Panel Chair
Kate McBride
John Murdoch
Don Macdonald, AWI Board
Christopher Dobbie, DAWE
Jo Hall
Dianna Martin
Daniel Rogers
Michael Wright
Mark Waters

The Panel has elected Steven Bolt as its Chairman. Mr Bolt is a woolgrower from Corrigin, Western Australia. He is principal of Claypans Merino stud and a Director of The Livestock Collective.

As Chairman of the 2021 WoolPoll Panel, Mr Bolt is leading the efforts to get a strong turn out by growers when voting gets under way later this year.

"It is an honour and a privilege to be Chairman of the WoolPoll panel at a time of enormous change and opportunity for the Australian wool industry," Mr Bolt said.

"It is vitally important for all woolgrowers – no matter where you live – to cast your vote for the levy rate you want to pay.

"The Panel's role is not to tell growers what rate to support but to encourage all growers to have their say."

More information:
www.woolpoll.com.au

QR code for Woolpoll website

New AWI Grower App

provides information at your fingertips

AWI has launched a new app that provides via smartphone the latest AWI news and resources to woolgrowers to support their business.

The latest digital communication channel between AWI and Australian woolgrowers is now available.

Through the new AWI Grower App, woolgrowers will be able to customise and prioritise the content and information they receive from AWI, allowing the information that is most relevant to them to be quickly and easily accessed at the forefront of the app.

Available on iPhones and android phones, the app is a very accessible resource given that it would be right there on the smartphone's home page.

The content of the App will be continually updated and its functionality enhanced to suit Australian woolgrowers' needs. The app can be downloaded for free from the Apple App and Google Play stores – search for AWI Grower App.

The new App complements AWI's other digital communication channels that include the wool.com website, e-newsletters and social media (Facebook, Twitter, Instagram and YouTube). B

More information:
www.wool.com/growerapp

Download on the App Store

GET IT ON Google Play

Review of Performance recommendations AWI's progress of implementation

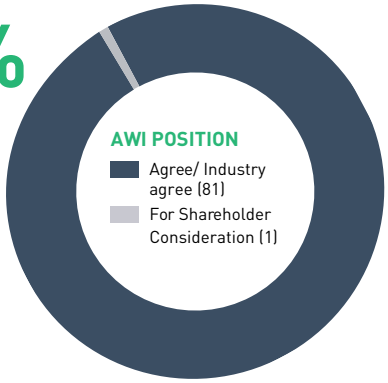
As part of AWI's three-year business cycle, an independent review of performance (ROP) of AWI is routinely undertaken to assess the company's performance. The latest ROP was undertaken by Ernst & Young (EY) for the period 2015-2018. EY's report, which was published in July 2018, included 82 recommendations.

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**

99.76%

OVERALL IMPLEMENTATION PROGRESS



THEME IMPLEMENTATION PROGRESS

CONSTITUTION 24 out of 24 recommendations complete.	100%*
GOVERNANCE 22 out of 23 recommendations complete.	99.57%*
MONITORING EVALUATION & REPORTING 16 out of 16 recommendations complete.	100%*
COLLABORATION 3 out of 3 recommendations complete.	100%*
PEOPLE & CULTURE 6 out of 7 recommendations complete.	98.57%*
CONSULTATION 5 out of 5 recommendations complete.	100%*
ROP RECOMMENDATIONS & IMPLEMENTATION 4 out of 4 recommendations complete.	100%*

* 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

Broader micron wools

About 18% of the Australian wool clip is currently broader that 23.5 micron. AWI's *The Broader View* publication provides examples of how AWI's marketing and R&D supports producers of non-Merino wool.

Marketing broader wools

AWI markets Australian wool of all microns, including the broader wools. For example, projects such as the Campaign for Wool are active in reconnecting consumers to the multitude of wool's uses including hardwearing interior products for the home as well as apparel and accessory products. Similarly, AWI's Woolmark Learning Centre and Learn About Wool education initiatives provide resources to students and textile professionals about the broader as well as finer microns.

There are many Woolmark licensees that produce products made from broad wool and use the Woolmark logo in their marketing activities. More than 130 Woolmark licensees worldwide are bedding companies that market their wool products with the help of the Woolmark brand. Similarly, there are a number of Woolmark licensees that manufacture and market wool carpets and there is also an increase in the use of Woolmark-certified car interiors.

AWI's marketing of all Australian wool, irrespective of the micron, and the Woolmark brand is beneficial to all wool including broader wools.

On-farm R&D and extension

AWI's on-farm R&D and extension projects largely benefit all Australian woolgrowers, irrespective of the breed and micron of their sheep.

AWI invests in on-farm R&D in the areas that producers have told us are important to them, including optimising sheep health and welfare, combatting wild dog and fox attacks, increasing the reproductive efficiency of ewes, funding of in-shed shearer and wool handler training, and harnessing opportunities for on-farm automation.

In addition, AWI delivers practical training programs through its extension networks in each state to increase producers' adoption of best practice on-farm production and management. AWI also provides timely market intelligence to woolgrowers, holds many face-to-face industry events, and runs projects to encourage the next generation into the industry. **B**


The broader view
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The latest edition of AWI's **The Broader View** publication for non-Merino woolgrowers.

More information:
AWI's *The Broader View* publication for non-Merino woolgrowers is available on the AWI website at www.wool.com/broaderview2021

The Luna Rossa yacht – with the **Woolmark logo** displayed on the sail – competing in the final of The America's Cup in March.

America's Cup promotion pays dividends

Through AWI's support of the Luna Rossa Prada Pirelli team at the 36th America's Cup, Australian Merino wool was showcased to millions of potential customers, and significant interest was generated from global apparel brands who are now working with AWI on product development initiatives.

AWI subsidiary The Woolmark Company was the official technical partner of the Luna Rossa Prada Pirelli team during the 36th America's Cup, the world-famous yachting race series and the oldest trophy in the history of sport.

The Woolmark Company supported the team in the research and development of a Merino wool-rich uniform for the entire team and crew during training and sailing. Select garments were also commercialised though Prada's network of stores and e-commerce platforms.

"The partnership between the Luna Rossa Prada Pirelli team and The Woolmark Company is based on a shared philosophy, inspired by innovation and technology, as well as research into new materials and social responsibility," said Prada Group Head of Marketing and Communication, Lorenzo Bertelli.

The racing team spectacularly won the Prada Cup in February to become the unique challenger in the 36th America's Cup Match held in March. Both races received immense media coverage.

AWI CEO Stuart McCullough said the partnership with this legendary Italian team highlighted the strong link between the world of sport and Australian Merino wool as a premium performance fibre.

"AWI's decision to be the official technical partner of the Luna Rossa Prada Pirelli team was a smart and cost-effective move. It promoted wool as a premium, breathable, water resistant and sustainable fibre on the world stage," he said.

"Through a program of content, media and events, we amplified the environmental and performance benefits of Australian Merino wool to a vast global audience of sporting fans and performance brands with the ultimate goal of increasing market share and demand for Australian Merino wool within the performance apparel category."

What benefits did the partnership deliver to woolgrowers?

1. **Increased consumer awareness**: There has been a rise in awareness of Australian wool's technical and environmental benefits amongst a global consumer audience, plus reputational benefits for the fibre through association with the world's most prestigious sailing race and global brand partner, Prada.
2. **Product sales**: Woolmark-branded items including race jackets, polo shirts and T-shirts have been sold at retail and are still available through Prada's online store.
3. **New business opportunities for wool in the performance market**: Most promisingly, the project has generated significant interest from many global performance brands who are currently working with AWI teams on various product development opportunities with Australian Merino wool. These include Loro Piana, Max Mara, Woolrich, Lacoste, Sease, Canada Goose, Moncler, Salewa and many others across the world. Furthermore, the European Space Agency is now interested is testing wool's suitability for its astronauts.

"The assessment for the value of this program was determined by the opportunity for an audience of both consumers and industry, and the value associated with aligning Australian Merino wool with Prada, one of the world's most influential and iconic brands," Stuart said.

"Due to the impact of COVID-19, partnerships such as this which provide a global platform to broadcast our fibre message are essential. During the past 12 months, virtually all apparel industry events and physical sourcing opportunities were cancelled, but the America's Cup allowed us to continue to market Australian Merino wool as an elite performance fibre despite the lock-downs." B

The 36th America's Cup in figures

REACH

198
territories worldwide in which the America's Cup was broadcast (236 including social media)

66.7 million
dedicated viewing audience (live plus highlights)

225%
increase in the dedicated audience from the previous America's Cup

1 billion
people viewed America's Cup coverage (dedicated, plus news and sports magazines)

PRODUCT DEVELOPMENT

12
suppliers of wool yarn and fabric involved in the R&D for the team's uniform

42
international brands, plus other specialist sports brands, have now contacted AWI directly regarding wool in sport

850
brands viewed the uniform collection at trade shows

Basketball star chooses **Merino wool**

Australian-born NBA All-Star Ben Simmons has collaborated with AWI to develop his first-ever merchandise: a high-performance T-shirt made from Australian Merino wool.

Basketballer Ben Simmons from Melbourne is currently Australia's greatest sporting export and one of the most gifted players in the American NBA. Ben debuted in 2017 for the Philadelphia 76s and was named NBA Rookie of the Year in 2018 and an NBA All-Star in 2019, 2020 and 2021.

His skill is praised by many including the legendary Magic Johnson who said of him: "Ben Simmons is the best all round player I've seen since Lebron James came out of high school straight to the NBA!" The 24-year-old's high profile has also garnered him a large following on social media, with 5.4 million followers on Instagram alone.

In collaboration with AWI, Ben recently launched his first-ever merchandise: a T-shirt made from 100% super soft Australian Merino wool of 18.9 micron. Designed by Ben himself, the T-shirt seamlessly blends high-performance, sustainability and high fashion. The T-shirt carries the Woolmark seal of approval following a rigorous quality assurance process which guarantees fibre authenticity and long-life performance.

"We chose to work with Australian Merino wool because it's a sustainable, ethically produced fibre that's also incredibly high quality. It's soft, odour resistant and temperature regulating, and it has an amazing drape," Ben said.

"For me, you shouldn't have to compromise between luxury and performance, and I'm proud that it's produced in Australia, so Merino wool was a natural choice for the fabric."

Destined to shoot hoops

Ben's American-born father, Dave, originally from the Bronx in New York, also had a professional basketball career, which saw him relocate to Australia in the late 1980s to play for the Melbourne Tigers. Dave met his Australian wife-to-be, Julie, and in 1996 Ben was born in Fitzroy.

The following year, the family moved north to Newcastle where Dave played for the Newcastle Falcons. Ben showed promise early on at basketball, playing for the Newcastle Hunter's under-12 side, but he also played competitive rugby league. After the family moved back to Melbourne, when Ben was age 10, Ben continued to excel at basketball. He was also keen on Australian rules football and continues to be an avid supporter of the Essendon Bombers in the AFL.

At 15, Ben travelled to the USA to play amongst the world's best high school basketball players, a time during which he realised his basketball future lay in the USA. He later joined Louisiana State University before being drafted #1 by the Philadelphia 76s in the NBA where he has shined.

Giving back to Australia

Born and raised in Australia alongside his five siblings, Ben feels a responsibility to "give back" to kids in Australia. He has been running unique community and family focused basketball camps since 2017. With 1,400 participants across Sydney and Melbourne, the events offer Australian fans a unique basketball experience to learn from and interact with Ben.

In December, he also launched the Ben Simmons Family Foundation (BSFF), an Australian-based charitable organisation that has the core purpose of supporting programs that promote equal access for children to education, sport, wellness and technology.

The Ben Simmons Merino Wool T-shirt was born from the BSFF value 'Do it with Heart' – lead with heart, do the right thing and value that everything is connected. The T-shirt design centres around the mantra 'equalize' which is written on the back of the T-shirt in some of the many languages spoken and inspired by communities around the world that love and celebrate basketball.

The Ben Simmons Merino Wool T shirt was made available on the Hypebeast e-commerce store HBX.com on 29 April. **B**

Basketball superstar **Ben Simmons** has launched a T-shirt made from Australian Merino wool.

Woolmark Performance Challenge continues to make a splash

Now in its fourth year, the Woolmark Performance Challenge is an annual competition for tertiary students from across the world to develop innovative new product applications for Merino wool within the sports and performance market. In 2020, the students were asked to consider ocean racing and the harsh and demanding nature of the sport as the catalyst for their design process.

Unlike other competitions which are based solely on design aesthetics, the Woolmark Performance Challenge asks students to delve into fibre science and garment technology, while harnessing the unique natural properties of Australian Merino wool. The initiative aims to really 'push the limits' of product innovation by inspiring students from a very wide range of specialisms – including science, technology and design.

All entries must use a minimum of 50% Merino wool within their product composition.

AWI's ultimate objective for the Woolmark Performance Challenge is to increase the demand for Australian Merino wool in the activewear sector. Although leading manufacturers and brands in this sector are already promoting the natural benefits of Merino wool as a performance fibre, there is still further significant potential for the fibre in this sector.

AWI partners with sports and outdoor industry heavyweights to amplify the messages about the competition and the performance benefits of Merino wool. During the first two years of the competition, AWI's partner was leading sportwear company adidas; in 2020 the partner was Norwegian-based outdoor apparel company Helly Hansen; in the 2021 the partners are Swiss running shoe and apparel brand On and Italian mountain equipment brand SALEWA.

College students from across the world each year are invited to apply for the Woolmark Performance Challenge. First launched in 2018, the annual initiative continues to grow and has so far involved more than 4,500 students from more than 260 universities in 25 countries across the world.

The Woolmark Performance Challenge thereby gives AWI and its partners access to a global pool of world class inventive minds. It also provides a unique learning experience for participants and awards the winners with prizes including industry internships and ongoing training support, plus the opportunity to sell their idea to AWI or that year's competition sponsor.

Education is a key component of the initiative. Through a series of Woolmark Performance Challenge webinars by industry experts and sportspeople (including Olympic gold medallists), AWI during the past 12 months has educated participating students about wool – to not only arm them with information to assist in their competition entry, but to also encourage and inspire them to think about wool in their future careers.

AWI General Manager, Processing Innovation & Education Extension, Julie Davies, said the Woolmark Performance Challenge continues to be one of the highlights of the company's product development and education programs.

"The Woolmark Performance Challenge is a very exciting initiative that enables young talent to learn about Merino wool, understand its attributes as a sustainable performance fibre, and explore unchartered territories in sportswear."

Innovative products from the 2020 challenge

The 2020 Woolmark Performance Challenge brief invited participants to consider how Merino wool can replace synthetic fibres in modern highly technical sailing clothing.

From 352 entries for the 2020 competition, ten tertiary students were shortlisted. The three winners and all ten of the finalists' innovative concepts were announced in March.

4,500+
tertiary students involved

263
universities in 25 countries

1,053
innovation ideas submitted

550,000+
website hits since program launch

Carly Conduff of the University of Oregon, USA, was awarded a three-month paid internship with Helly Hansen.

Using 100% Merino wool, Carly created a system of apparel under the athlete's outer dry suit that is specifically tailored to the female body – providing superior support, strategic insulation, and lightweight protection to enable optimal performance in race conditions.

"A lot of my inspiration as a designer is understanding how products can play a role in removing physical barriers, such as the severe environmental conditions that ocean racing athletes are partaking in, as well as the mental ones – so that women on race day can have the confidence that the product was made for her and will not get in the way of what they can achieve," Carly said.

Younghwan Kim of Kookmin University in South Korea was awarded a research bursary to continue his idea development.

Concerned about the prevalence of plastic in our lives and environmental catastrophes such as the Great Pacific Garbage Patch, Younghwan asked himself: how can we make a waterproof material while keeping Merino wool's softness and light weight, without plastic?

"I achieve this goal with a novel 100% natural and renewable material, bringing together Merino wool and Ottchil – a natural paint derived from a sap of the lacquer tree, which affords additional benefits of salinity tolerance, thermal resistance, water resistance, moth-proofing and durability – to create the perfect knitted wool footwear," Younghwan said.

Bettina Blomstedt of Aalto University in Finland was awarded a three-month paid internship with The Woolmark Company.

Bettina started her research with sustainability in mind, asking: how can the inherent properties of Merino wool be utilised in sportswear, without adding any synthetic materials to the mix?

Using my knowledge in knitting technology and taking a look back at traditional techniques, my concept explores alternative ways of achieving sportswear performance by enhancing the natural existing properties of Merino wool," Bettina said. **B**

More information:
www.woolmarkchallenge.com

FEEL MERINO
campaign a winner

AWI's Feel Merino marketing campaign that was launched in November last year in the US succeeded in increasing US consumers' awareness of Merino wool as a natural fibre that is soft on the skin and ideal for sports and outdoor pursuits and, importantly, drove increased sales of Merino wool products.

$14.3 million
Merino wool sales

8 million
video views

77 million
impressions

The Woolmark Company's Feel Merino store on **Amazon.com** made it very easy to find commercially available Merino wool products for each consumer's preferred sporting activity.

12.5%
uplift in awareness of Merino wool and The Woolmark Company

260K
Merino wool units sold

Woolgrower **Dave Ward** from 'Spring Ponds' near Goulburn in NSW also featured in the campaign.

The Feel Merino campaign was developed by AWI's marketing arm The Woolmark Company to help put an end to the mistaken perception amongst the average US consumer that wool is "warm and itchy" and only suitable for very traditional (ie non-sport) sectors.

Instead, the campaign created a new narrative for Merino wool as a hard-working, but always soft, performance fibre – the campaign's message being: "Soft on your skin no matter the challenge, Mother Nature knows best with Merino wool."

A key element of the Feel Merino campaign was to drive purchases of commercially available Merino wool performance wear on e-commerce giant Amazon.com. Consumers viewed the Amazon partner pages 7.8 million times with more than a quarter of a million units of Merino wool products sold.

Shot in NSW, the campaign's story of Merino wool was told through the people who wear it: the iconic Australian woolgrower and the everyday athlete. The two were presented in parallel, showing that woolgrowers have days as physical and exacting as athletes.

More information: www.woolmark.com/feel-merino

Seamless Merino cycling kit

Two new innovative prototype collections of cycling garments, developed by AWI in collaboration with industry partners, illustrate the full potential of Merino wool used in technical seamless performance apparel.

The two collections, one comprising cycling garments for women and the other for men, were developed using Merino wool yarns from Südwolle Group and knitted on state-of-the-art knitting machines from Santoni.

The fabrics in both collections benefit from Merino wool's superior softness, breathability, moisture management, elasticity and odour resistance. When combined with the latest technological advancements in yarn development and knitting technology, the Merino wool provides the garments with superior comfort, durability and performance for the modern cyclist.

"These collaborations with leading industry players shine the light on how technical advances in the industry can create supremely functional garments for high aerobic activities while incorporating the natural benefits of Merino wool," said AWI General Manager, Processing Innovation & Education Extension, Julie Davies.

The garments are vastly more eco-friendly than their synthetic counterparts. The eco-credentials of Merino wool – a 100% natural, renewable and biodegradable fibre that doesn't produce microplastics – ensure a minimal environmental footprint on the planet.

Furthermore, the seamless knitting technology reduces fabric waste in comparison to traditional cut and sew

The cycling bib (the first layer) has been created for the female form with bra shaping that gives support and stretches with the body to accommodate a range of breast sizes.

The mesh pattern knit across the torso and legs of the bib creates a raised structure for breathability and ventilation.

The short sleeve cycling jersey (the second layer), pictured at the top-left of the page, has a gradient yarn colour application with a closed mesh body for air movement and diverse density for breathability.

The half-zip front and integrated pocket storage at the back add functional benefits whilst the bonded seam finishing and the seamless side adds comfort and performance benefits.

The cycling arm warmers feature a textured fabric with reflective detailing and integrated grip at the top of the sleeve to prevent slippage whilst the knit structure has shaping at the elbow for comfort and bonded seams.

The cycling socks have a detailed knit pattern with reflective details knitted into the cuff (rather than bonded or printed on top) and a rib structured footbed for comfort, cushioning and breathability.

methods – and due to its piece-by-piece bulk production method, seamless knitting provides a high degree of flexibility and personalisation.

Women's collection

The women's seamless cycling garments were developed by AWI in collaboration with innovative knitwear designer studio Studio Eva x Carola. The collection comprises a cycling bib, jersey, arm-warmers and socks, that together create a complete, layered kit for ultimate cycling performance (see opposite page).

The garments were knitted using Santoni's Top2 Fast technology (single jersey machine) using a finer gauge to what is mainly used in the market, which provides a lighter weight material.

Key stitch structures include compression for performance and recovery, an open structure for ventilation and breathability, and loft on both the inside and outside of fabric for insulation and warmth.

"By smartly selecting the right Merino wool yarns and creating beautiful textures and loft structures, the garments not only offer a gentle-on-the-skin comfort, but also provide durability and protection during your ride," said Eva de Laat of Studio Eva x Carola.

The seam bonding used in the garment construction was developed in collaboration with Italian company MACPI. It incorporates a very clean finish that eliminates any seam friction while also retaining the flexibility and movement needed during cycling.

High quality reflective tape on the face of the fabric was created by heat transfer in close collaboration with S.E.C. Accessories, a company that works with the world's leading sports brands.

"Each of the yarns for the garments have differing compositions, weights and characteristics suited to provide optimal performance for each particular garment," said Stefan Schöffel of Südwolle Group.

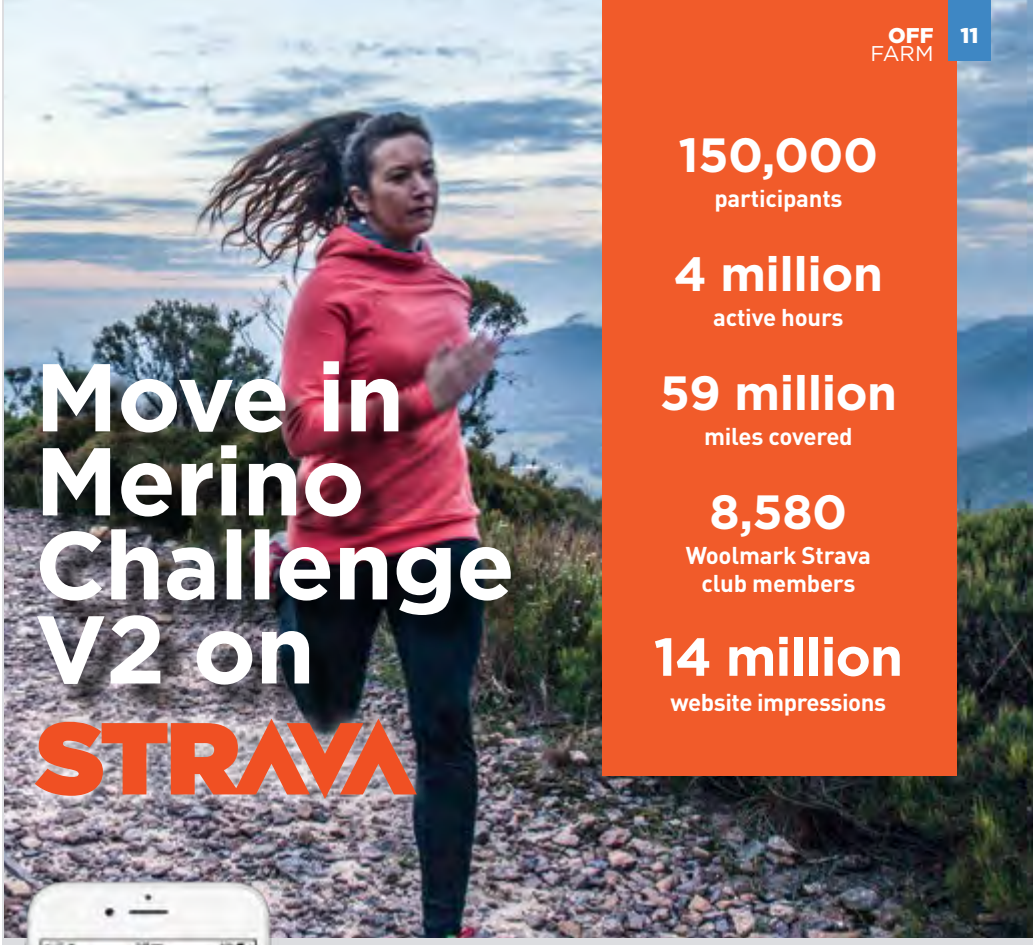
Men's collection

The men's seamless cycling garments, comprising a cycling jersey and short, were developed by AWI in collaboration with Hong Kong-based company Chemtax, pairing a Merino yarn from Südwolle Group with Fulgar's bio-based EVO® yarn, and knitted using Santoni's Top2 Fast technology.

EVO® by Fulgar is a yarn derived from the castor plant that, like Merino wool, is a totally renewable resource. Plated together with the Südwolle Merino wool yarn, the two yarns create a very eco-friendly product.

A fine and high strength yarn, the EVO® by Fulgar provides extra stretchabilty to the product.

More information:
www.woolmark.com/seamlesscycling



Move in Merino Challenge V2 on STRAVA

150,000 participants

4 million active hours

59 million miles covered

8,580 Woolmark Strava club members

14 million website impressions

The Woolmark Company in April held its second highly anticipated 'Move in Merino Challenge' on the exercise-focused social networking platform Strava. The community engagement initiative once again encouraged consumers to exercise wearing Merino wool, driving sales of brand partners' products and building its community of active-minded Merino wool ambassadors.

Following the success in November of its first 'Move in Merino Challenge' on Strava, AWI subsidiary The Woolmark Company held the initiative again, in April, encouraging people to get outdoors and active... in Merino wool. But this time, there were more partners, bigger discounts up for grabs and prizes from partners to win.

Especially popular with runners and cyclists, Strava has 58 million registered users worldwide. The website enables users to upload their fitness activity. They can compare their performance over time, compete with their community, and share the photos, stories and highlights of their activities.

The Move in Merino Challenge ran from 1-28 April, with approximately 150,000 people joining the initiative.

Participants were challenged to undertake 28 hours of activity during the month, which once completed enabled them to access exclusive discounts from top Merino wool performancewear brands including Aclima, ashmei, FUTURUM, Isadore, Minus33, Tracksmith and Unbound Merino, thereby encouraging consumers to purchase and exercise in Merino wool products.

"Our Move in Merino Challenge on Strava encouraged people to get out-of-doors, breathe in the fresh air and exercise in Merino wool. By connecting directly with individual users, the initiative aimed to increase awareness of the benefits of our country's premium natural fibre and drive sales for our brand partners," said AWI CEO Stuart McCullough.

"From running and cycling to walking and hiking, outdoor exercise has perks for the body, mind and soul. Wearing Merino wool whilst you exercise means you are choosing a product that is 100% natural, renewable and biodegradable. The best decision for you and the environment."

The Woolmark Company also has The Woolmark Company Club on Strava, providing a platform for active-minded consumers to come together to find out the latest Merino performance offerings, stay connected and share inspiration to get moving in Merino wool. A Strava Club works much like a brand Facebook page. B

More information:
www.strava.com/challenges/Woolmark-Move-in-Merino-2021

Luxury wool products promoted for **Goddess Day** in China

Timed to coincide with the major 'Goddess Day' shopping festival across China, AWI's marketing arm The Woolmark Company partnered with two leading fashion e-commerce platforms to promote Australian Merino wool.

103 millon
impressions

20 millon
video views

55%
significantly more likely to purchase Merino wool after seeing the campaign

150%
increase in wool sold on Net-a-Porter

150%
increase in wool-related searches on Net-a-Porter

The **consumer marketing campaign** increased awareness of the Merino wool as a fibre suitable for spring/summer apparel, plus it drove purchases of apparel from a range of Chinese and international brands.

Consumers were encouraged to purchase the featured Merino wool. Pictured is a shot from Weibo, one of the largest social media platforms in China.

Related to International Women's Day on 8 March, Goddess Day in China has become established during recent years as a time for shopping, with many Chinese men buying gifts for their female relatives, and women (female employees get a half-day holiday) rewarding their inner "goddess" by shopping online.

For Goddess Day this year, The Woolmark Company partnered with e-commerce retailers Net-a-Porter and Farfetch, as well as local and international fashion brands, to promote a large range of womenswear apparel products suitable for spring and summer.

The aim of the campaign was, firstly, to build awareness of Merino wool's versatility amongst digitally savvy shoppers and, secondly, to increase consumers' intent to purchase Merino wool products.

Initial reports from the campaign have shown that consumers have significantly increased their association of Merino wool with the attributes "suitable for spring and summer", "breathable" and "soft and light". Meanwhile 55% of consumers said that, having viewed the campaign, they are now significantly more likely to purchase apparel made from Merino wool; this rating is higher than industry averages.

While the marketing campaign was a response to the growing demand for high-quality products in the Chinese retail market, it was especially well timed due to the current strength of the Chinese market while many other retail markets across the world are still unsettled due to COVID-19. Furthermore, China is the world's largest e-commerce market and online sales have grown even larger since the pandemic hit. Online sales in China were valued at US$1.17 trillion in 2020.

Actress Chun Xia (whose name literally and very aptly means Spring Summer in English) was the face of The

Famous actress **Chun Xia** was the face of the campaign and starred in a short film and the imagery accompanying the campaign.

Woolmark Company's marketing campaign and featured in promotional imagery and a short fashion film *Spring & Summer Action*, in which the lightness, breathability and superior quality of Merino wool garments were highlighted.

As part of the campaign, Net-a-Porter offered wool styling suggestions through its T-mall store and presented gifts to consumers who purchased wool products from brands including Altuzarra, Vince, JW Anderson and Ganni. Farfetch, together with brands including AMI Paris, Comme des Garçons, Alexander McQueen, Isabel Marant, Etro, Theory and Zegna, showcased spring/summer collections of wool apparel on the Farfetch China app, where stylists also provided live personal shopping services. Local premium womenswear fashion brands ICICLE, JNBY, Edition and MEILLEUR MOMENT also took part in the campaign.

"Soft, breathable and environmentally friendly, Merino wool is the fibre of choice of luxury fashion brands and designers," said AWI Country Manager for Greater China, Jeff Ma. "We are very honoured to have Miss Chun Xia as our ambassador, and we thank Net-a-Porter and Farfetch for their support in helping us reach a wider audience through their platforms."

This spring/summer campaign followed on from the successful marketing campaign held by The Woolmark Company in China six months ago. That campaign promoted Australian Merino wool products on China's popular e-commerce platform T-mall during the autumn/winter retail season. B

Zozotown ecommerce campaign in Japan

With more and more apparel purchases nowadays being made online, AWI's marketing arm The Woolmark Company has collaborated with Japan's largest online fashion retailer, Zozotown, to drive sales of Merino wool apparel products.

ZOZOTOWN PROJECT RESULTS

25%
more wool products sold

33%
increase in sales value of wool products

14 million
campaign impressions

The Woolmark Company worked with Japanese online fashion retailer Zozotown to increase purchases of Merino wool products by consumers for a month during the winter 2020/21 retail season. The campaign promoted 6,686 commercially available wool-rich apparel products, available from more than 200 brands.

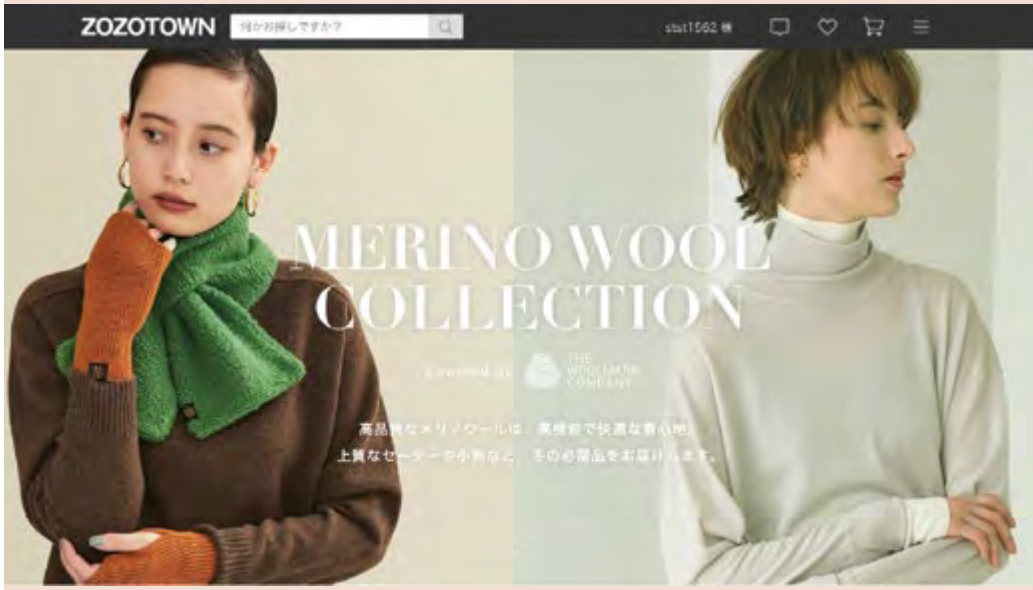
The campaign focused on apparel with a premium-casual aesthetic which has been recognised as a target area in the market due to shifting trends towards less formal dressing.

For a month, from 7 December 2020 to 7 January 2021, a bespoke Merino wool landing page was live on Zozotown's website (desktop, mobile) and app, which highlighted the most popular wool categories for men and women, as well as information about the meaning of the Woolmark logo.

A series of online banner advertisements were also placed for 48 hours on the home pages of the Zozotown website and app. The campaign content received 13.8 million impressions (the number of times the banners were displayed), which was 38% more impressions than projected.

In addition, a promotion on Twitter was held on the campaign's launch day, which not only created $96,500 in organic media value, but also resulted in 84,896 mentions of Merino wool on Twitter in December in Japan, compared to 2,201 mentions in December 2019.

As well as directly increasing the sale of Merino wool products, the project also provided The Woolmark Company with insights into consumers' current online purchasing behaviour on Zozotown, such as users of the app being more engaged shoppers than users of the web, and that the most popular premium casual selling categories for wool being cardigans and jumpers. B



The landing page on the **Zozotown website** that promoted Merino wool products to Japanese consumers.

Tailored knitwear for people on the go

With the aim to create new commercial opportunities for wool, AWI and industry partners have developed a modern new look for suiting, using knitwear technology rather than woven fabrics.

Dress and bomber jacket made with **Tollegno 1900** yarns.

Coat, jumper and trousers made with **Zegna Baruffa Lane Borgosesia** yarns.

Coat, jumper and trousers made with **Filati Loro Piana** yarns.

AWI has collaborated with knitting machine company Shima Seiki Italia and three Merino wool yarn manufacturers in Italy – Filati Loro Piana, Tollegno 1900, and Zegna Baruffa Lane Borgosesia – to create a 'first of its kind' capsule collection that offers a new interpretation of tailoring by using an innovative form of knitwear.

Titled 'Wool To Go - Tailored Knit', the collection comprises three outfits that provide a modern and urban take on the classic formal look using knitted fabrics, rather than traditionally used woven fabrics. The garments are a showcase of the latest knitting technology from Shima Seiki as well as Woolmark-certified Merino wool yarns.

Innovative fabric construction

The fabrics have a 'double face' structure comprising two layers of knits, the first made using Merino wool yarn which provides a beautiful texture and luxurious touch, and the second made using a TPU Evolution® yarn, from Italian company CoatYarn SRL, which provides a 'peach-like' touch. The result is a garment that is more rigid, yet elastic and soft to touch.

The combination of the two knitted materials, created when the TPU Evolution® yarn melts during a heat treatment, provides wool knitwear garments with a new and contemporary look. As well as having wool's usual benefits including comfort, natural stretch, thermoregulation and odour- and wrinkle-resistance, this unique fabrication provides additional performance benefits such as water repellency and minimal chance of pilling.

"All three of the outfits originated from the same creative matrix, conceiving a man and a woman always in motion, metropolitan, and with this thought in mind we have produced structures with the latest generation machines from Shima Seiki, using Merino wool yarns from three different spinners from the Biella region," said Creative Director of Shima Seiki Italia, Vittorio Branchizio.

A close up of the **three-dimensional padded effec**t (left) incorporated in the bomber jacket, and **pleats** (right) used in the dress made using Tollegno 1900 yarns (see top left image).

The **heat vapour treatment** that joins the two layers of knitwear.

The production process is an environmentally friendly one that avoids the traditional cut and sew technique and uses exactly the correct quantity of yarn, thereby resulting in less fabric waste than traditional garment manufacturing. Furthermore, no linings are needed with these garments.

New opportunities for wool

AWI's Research & Development Manager for Europe, Birgit Gahlen, was instrumental in setting up the collaboration with Shima Seiki and brought together all the project partners to work on the capsule collection.

"At AWI, we are always looking for new product and process developments; it's important that the supply chain continues to work together, nowadays more than ever," Birgit said.

"Collaborations such as this not only stimulate the supply chain to undertake innovative R&D, but it also provides new opportunities for the whole textile supply chain, from manufacturers to brands, to create new commercial opportunities for wool, in this case for the urban and contemporary market favoured by the younger generations."

Shima Seiki and AWI are now reaching out to companies and brands across the world to offer them a presentation of the capsule collection. The fabrics from the collection are featured in AWI's The Wool Lab Digital sourcing guide and are also being promoted at the Pitti Connect digital trade show. B

More information:
www.woolmark.com/tailoredknit

Creative Director of **Shima Seiki Italia, Vittorio Branchizio**, showing the 'double face' structure of the knitwear.

Superwash wool now even more super

AWI has worked with an industry partner to commercialise a new shrink proofing technology for machine washable wool garments, which is less complex and costly than traditional shrink proofing processes whilst also reducing water, chemical and energy consumption.

AWI has worked with **Jeanologia** to develop and commercialise a groundbreaking new technique for making wool garments machine washable.

The development nearly 50 years ago of machine washable wool, sometimes known as superwash wool, revolutionised the wool industry and it has been extensively adopted. It means that consumers are able to easily launder a wide range of wool garments in their domestic washing machine without fear of the product shrinking, losing its shape or felting.

However, as part of AWI's commitment to minimise wool's environmental footprint along the supply chain, AWI has recently completed a project with Spanish-based machine manufacturer Jeanologia to commercialise a new, more eco-friendly process to make wool garments machine washable.

The eco-advantages of the process, known as WoolUp, is that it uses significantly less chemicals, water and energy than the traditional method and its impact on the environment is very small.

Furthermore, it is a much less complex and more accessible process than the traditional process. It is suitable for use on an industrial scale.

How does the new treatment work?

Without any treatment, the small scales on the surface of wool fibres can interlock when exposed to moisture and agitation leading to felting. A washing machine is the perfect environment to create this felting effect leading to shrinkage in garments. The new WoolUp treatment is a relatively simple dry process that uses an ozone treatment, to modify the surface of the wool fibres. It removes the tips of the scales and smooths the fibres which allows them to slide against each other without interlocking, thereby preventing felting and shrinking.

While the WoolUp process can be used for the treatment of worsted and woollen apparel (100% wool and wool blend), the technology is a breakthrough particularly for companies wishing to enter the lambswool knitwear market, in which machine washable claims have previously been difficult to achieve due to the nature of the finishing required and its complexity.

With the WoolUp process having been successfully validated through testing and evaluation, AWI's focus will now be to encourage garment manufacturers across the world to adopt the technology. B

3D printing on Merino wool

Three-dimensional (3D) printing is the latest big innovation in textile design and manufacturing, with the world of high-end fashion showing significant interest in 3D printing directly onto base fabrics.

3D printing is being used across a range of industries, from aerospace and automotive to medical and dental applications. However, the latest 3D printing technology is also very suitable for use on fabrics made from Merino wool and could open up new opportunities for the fibre.

AWI's Research & Development Manager for Europe, Birgit Gahlen, says designers can combine the aesthetic freedom of 3D printing while maintaining the comfort, beautiful drape, and natural performance of Merino wool and wool blend fabrics.

"3D printing directly onto a base material of Merino wool enables endless new visual possibilities, dynamism and movement, while still retaining the supreme comfort, wearability and performance of the fibre," Birgit said.

Characteristics of 3D printing

Today's 3D printing technology produces microscopic accuracy. Designers have complete freedom to create as complex shapes and textures as they desire. Intricate details and delicate decorative features are possible.

As well as using complex shapes, designers can incorporate the widest variety of colours, including multi-colours, unique gradient colours and transparency.

3D printing on the base fabric can create new visual appearances such as enigmatic shimmer effects when the garment moves on the body.

Production times and environmental costs (less waste) can be minimised thanks to the integration of technology into the design process.

There are also endless possibilities for customisation and personalised design.

"Using 3D printing and knitting together will be a revolution in the fashion industry."
Matteo Cibic, designer

'Knitting the future' project

D-house, urban laboratory by Dyloan, has been researching and applying 3D printing technology on Merino wool and wool blend knits.

To show the versatility of the possible applications, the company undertook a 'Knitting the future - 3D printing meets Merino wool' project in collaboration with The Woolmark Company and manufacturer of 3D printers, Stratasys.

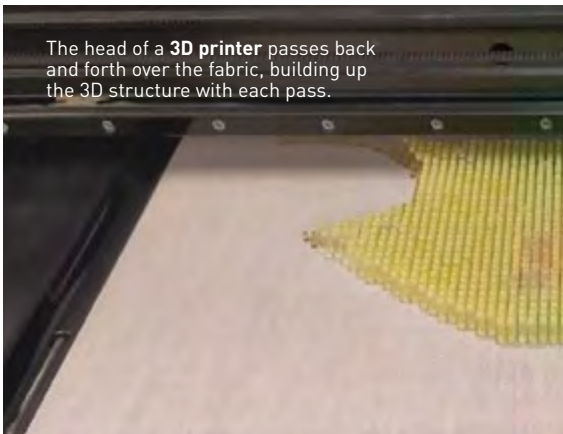
The project involved three international designers and four students from the Royal College of Art in London creating 3D printed designs on Merino wool knitwear that were produced at Dyloan's production facility Bond Factory.

The three international designers were: Italian creative and experimental knitwear designer Vittorio Branchizio, Italian trans-media artist and designer Matteo Cibic, and London-based knitwear designer Laura Theiss. The four students from the Royal College of Art were Katharina & Cissel Dubbick, Amaranthe Frost, Oliver Hurdman and María Fernanda Nava.

The project was supported by yarn suppliers Manifattura Sesia, Tollegno 1900, Zegna Baruffa Lane Borgosesia, Südwolle Group, CoatYarn, Expotex and Fulgar; and knitters Alessandro Simoni, Artemaglia, Effebi, Mas, Miles and Ribknit. **B**

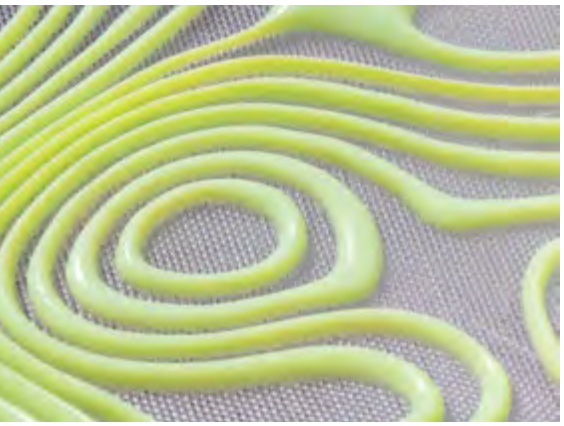
"Technology will constantly evolve as time goes on. It is important to remain up to date as well as nurture the more traditional artisanal way of making things. It is this marriage between the old and new that I find most fascinating."
Amaranthe Frost, fashion student

More information:
www.woolmark.com/3Dprinting

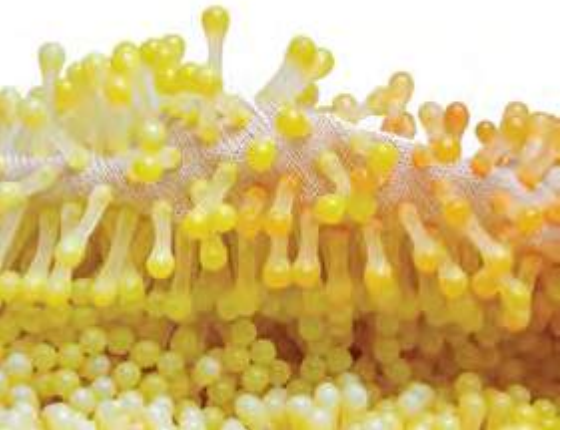


The head of a **3D printer** passes back and forth over the fabric, building up the 3D structure with each pass.

A design)left), plus close-up shot, by London-based knitwear designer **Laura Theiss**. "3D printing opens up new possibilities," Laura said.



A close-up of a design 'The Onion Dress' by Royal College of Art student **María Fernanda Nava**. "I think the gap between technology and sustainability is becoming narrower," María said.



A close-up of a design 'Under My Skin' by Royal College of Art student **Katharina Dubbick**. "Technology will give us new ways to create and help us push the boundaries of craftsmanship," Katharina said.

Blooming lovely **Wool4School winner**

Wool4School is a student competition that offers a complete fashion design experience in the classroom, introducing a new generation of students to the versatility of Australian wool.

First launched by AWI in 2012, Wool4School is an annual competition that has involved more than 120,000 students, not only learning the fundamentals of fashion design but also exploring the benefits and versatility of wool and the fabric it creates.

The winner of the Aspiring category in the 2020 Wool4School competition in Australia, Simran Prasad from Aldridge State High School in Queensland, had her design, which was inspired by the skeleton flower of eastern Asia, bloom into life – see picture below. Entrants in the competition were asked to design an outfit inspired by flora and fauna and incorporate fibres that are gentle on the earth.

Simran was inspired by the enchanting beauty of the petals of the skeleton flower which turn translucent in the rain, and was a tribute to her favourite singer, K-Pop star Kim Jong-hyun, who penned a song about the flower.

Simran's design consists of an 70% Merino wool mesh top that symbolises being open. Bold high-waist pleated trousers, as well as an undercoat made from wool that is water and wind resistant, represent the vines and petals of a plant. A twill weave flannel overcoat that has an elegant open back and a woollen scarf accessory complete the design.

The Wool4School prize for Simran is a life-changing scholarship at the Whitehouse Institute of Design. "This competition gave me the prospect to have fun, be creative and follow my true passion," Simran added.

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

"The aim of Wool4School 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," said Wool4School Project Manager Ashley Hollis. **B**

More information:
www.wool4school.com

The winning design of **Simran Prasad** from last year's competition was inspired by the skeleton flower of eastern Asia and, as part of her prize, was manufactured into a real-life outfit.

2021 Wool4School competition now open

Registrations are open for the 2021 Wool4School competition, which is available for Year 7-12 students. This year's theme is 'wool on the go' with students asked to design an outfit ideal for commuting. Wool should make up at least 70% of the outfit's share, comprised of up to four pieces.

Contact your local high school and encourage them to get involved in the Wool4School program. The program provides teachers with a range of education resources and is the perfect program for online learning. Information for students and teachers is available at www.wool4school.com.

Submissions close on 22 July and winners will be announced on 19 August.

Quality wool processing education in China

AWI teaches the science and technology of wool processing to textile engineering students in China to help ensure that graduating students have the skills and knowledge that enhance the ability of the country's wool processing mills to manufacture new and innovative quality products from Australian wool.

Certificates awarded to one of the Yantai Nanshan University students, **Ms SONG Di,** by the university's Head of Textile Engineering and Design, **Ms LIU Meina**, and AWI's **Dr Allan De Boos** (online).

Australian woolgrowers take great pride in producing the world's best quality wool, but to ensure consumers can buy quality end products, it is also important that Australian wool is properly processed.

Most Australian wool is processed overseas, mainly in China, and it is in the interest of Australian woolgrowers that the people who work with it there understand all about its attributes and the technology used to process it.

With well over 80% of the Australian wool clip being processed in China, AWI in 2014 initiated its Woolmark Science, Technology and Design Education program in the country. AWI's Dr Allan De Boos, who runs this education program, says it is vital that prospective technical people within the Chinese wool industry understand wool and its potential.

"AWI has developed the program to ensure that prospective technicians and scientists understand the qualities of Australian wool, how the fibre can be processed into high quality products, so they have the tools to innovate and make new types of wool products for the marketplace," he said.

> "AWI is very keen to make sure that Australian woolgrowers' efforts to grow premium quality wool is backed up by quality manufacturing of wool products from that raw wool."
> **Dr Allan De Boos, AWI**

The education program demonstrates AWI's commitment and dedication to fostering the next generation's education, ensuring that technical education about wool remains readily available in a market as important as China.

Wool education program with an industry focus

Typically occurring over three semesters, the program is usually delivered as face-to-face lectures, tutorials, practical classes, assignments and a series of written exams set by AWI. In addition, the students are required to successfully complete the same courses on the online Woolmark Learning Centre to supplement the course work at the university.

Currently the program has seven courses: Wool fibre science; Introduction to wool processing; Raw wool scouring; Worsted top making; Woollen and worsted spinning; Wool dyeing; Wool fabric finishing. AWI also delivers single courses intensively over periods of two days to two weeks.

A key institution at which the program is delivered is Yantai-Nanshan University in the township of Nanshan in the Shandong province. The University is set up to teach textiles and has a particular interest in wool due to the University's close connection with the Nanshan Group, one of the biggest weavers of wool in China.

"The Nanshan mill is just ½ km from the university which provides an excellent environment for learning the practical elements of wool processing technology," Allan said.

"The typical students that undertake courses on the program are 2nd and 3rd year textile engineering students. Those who have subsequently entered the wool industry have found the courses very beneficial."

AWI works closely with teachers at the University with the aim of integrating the wool courses as part of the general curriculum for textile engineers.

Components of the wool education program are also delivered at other Chinese universities, including Jiaxing University, which has strong ties with Xinao, one of the biggest spinners in China.

Woolmark certificates awarded at Yantai Nanshan University

In March this year, 81 textile engineering students from Yantai Nanshan University were awarded certificates for the successful completion of courses in 2020. Thirty 3rd year students completed the five advanced courses and 51 2nd year students completed the two introductory courses in the program.

Of the 252 certificates awarded, 23 students received one or more 'completion with commendation' awards requiring a grade of 80% or more in the combined result of their university requirements. Two students (Ms SONG Di and Ms JI Qianru) from the 3rd year achieved this level in all of the advanced courses studied.

Given the challenges in 2020 imposed by COVID-19 restrictions, which required periods in which students were required to study online at home, the results are a tribute to their tenacity and diligence as well as to the extra effort from university staff.

Dr Allan De Boos

Allan has worked in the wool industry, for his whole career, since 1967. Allan is a graduate of the University of NSW (Textile Chemistry) and the Victoria University of Manchester (Dept Chemical Physics). Prior to joining AWI in 2002, Allan was employed by CSIRO Division of Wool Technology conducting research initially into the machine washability of wool garments and then the finishing of wool fabrics.

At AWI, Allan's early focus was on management of R&D projects and, more recently, on education at tertiary level. Allan has also been Chairman of the IWTO Technology and Standards Committee. B

Screenshot from the first online seminar in Japan, 'Wool from farm to fashion'.

FAST FACTS

- AWI has shifted its tertiary education Naturally Inspiring seminars to an online format.
- 2,304 students from seven countries attended 21 seminars during February-April.
- The seminars aim to provide the students with a knowledge of and connection with Australian wool which will stay with them as they progress through their professional lives.

Naturally Inspiring online seminars

Due to restrictions on face-to-face education because of the global COVID-19 pandemic, AWI has shifted its popular Naturally Inspiring seminars to an online format. This initiative enables tertiary textile and fashion students to learn about the natural properties and benefits of Australian wool as well as various employment opportunities within the industry.

First launched in 2014, AWI's Naturally Inspiring seminars soon became a must-attend event for tertiary students, with the seminars being held in key textile education hubs across the world.

Despite the lockdowns and limitations on education caused by COVID-19 during the past 12 months, AWI has continued holding the seminars, but now they are held online. They continue to build AWI's engagement with the next generation of decision makers.

Importantly, the seminars aim to provide the students with a knowledge of and connection with Australian wool which will stay with them as they progress through their professional lives.

From February to April, AWI hosted 21 Naturally Inspiring online seminars, in conjunction with leading fashion and textile universities. The seminars attracted 2,304 attendees across all sessions:

- **Japan** – six seminars, 1,359 students, which is the largest online education event that AWI has hosted. These seminars were held in conjunction with the leading yarn trade show, The Bishu.
- **India** – four seminars, 344 students.
- **Turkey** – five seminars, 134 students.
- **UK/EU & USA** – one standalone seminar each, 168 students.
- **Australia/New Zealand** – four seminars, 299 students.

Broadly, the content of the seminars covered Australian wool's provenance from farm to fashion, the fibre's benefits and place in contemporary fashion and textiles, the latest wool innovations and technologies, and the importance of sustainability in the industry. However, the program for the seminars was tailored to suit the requirements of each country.

Expert presenters

The seminars not only offered students the chance to learn about wool and the numerous ways to work with the fibre, but it also gave exclusive insights into the fashion, retail and textile industries from experts in the field, with each presenter bringing to the mix their own career journey.

For example, as well as AWI staff, the presenters were from companies including from:

- **Japan**: spinning mill and a knitwear manufacture Saton Seni, fitness apparel company Super Natural, retail creatives Firsthand / 2G Creative, and ethical fashion company Unisteps.
- **India:** textile manufacturers Raymond Textiles and Jaya Shree Textiles, wool footwear brand Neeman's, natural dye manufacturer BioDye and Bhuttico Weavers Cooperative Society.
- **Turkey**: woven fabric supplier Kıvanç Tekstil, men's clothing brand Ramsey, women's clothing brand NİHAN PEKER and the Textile Engineering Department of Pamukkale University.

The **UK/EU** and **USA** seminars featured Sheila-Mary Carruthers of Carruthers Associates, an experienced design-led practitioner who has worked across the global supply chain and supported countless industry projects to raise awareness of wool's benefits. At the seminars, Shelia-Mary's aim was to inspire the next generation of creative thinkers, provide counsel on career opportunities, and outline technology advances and innovations that reduce textile's impact on the planet. Sheila-Mary also presented at the Indian and Australia/New Zealand seminars.

Australia/New Zealand seminars

The seminars in Australia for the first time included New Zealand institutions as well as Australian ones. The topics were designed by head lecturers, and teachers are incorporating some of the sessions into their course work.

As well as a seminar on sustainability presented by Sheila-Mary Carruthers and a seminar on wool technologies presented by AWI's Product and Education Extension Manager in Japan, Tomohiro Nishizawa, there was a seminar on regenerative agriculture presented by Tasmanian superfine woolgrowers Matt Dunbabin of 'Bangor' at Dunalley and Simon Cameron of 'Kingston' at Conara.

There was also a seminar on the suitability of wool for the circular economy and how businesses can adapt to the circular economy by using the fibre. Teachers and students taking part in AWI's Wool4School initiative were also invited to this seminar. It was presented by Clare Press, founder of The Wardrobe Crisis, a sustainable fashion podcast and online magazine.

The fifth seminar, titled 'Indigenous endeavours' had a very Australian flavour. Supported by the National Museum Australia and its Piinpi exhibition of contemporary indigenous fashion, the seminar delved into the cultural inspirations, design methods and sustainability practices of indigenous fashion businesses. B

More information:
The seminars were recorded and are being made available on AWI's online Woolmark Learning Centre (**www.woolmarklearningcentre.com**) for other students across the world to view.

Aussie wool in the comfort zone

Australian owned and based in country Victoria since 1989, Woolmark licensee Aussie Wool Comfort manufactures and retails pure wool bedding products made from quality Australian cross bred wool.

Founded with humble beginnings in the 1980s at Warragul in Victoria, Aussie Wool Comfort has grown into a company now producing a range of pure wool quilts, under blankets, pillows and other bedding products that are in demand across the world.

The company is proud to still be Australian owned and based at its regional workshop at Warragul, a small country town an hour east of Melbourne. Its range of products are hand crafted locally by seamstresses that sew every stitch, giving the company full control of every item produced.

Aussie Wool Comfort is also a proud Woolmark licensee meaning their products have been independently tested for quality and carry the internationally recognised Woolmark logo.

"Producing handmade in our own workshop enables us to deliver the highest quality," said owner Catriona Ronalds. "A lot of our team members have been with us for many years and some through multiple generations. Their genuine skill and eye for detail is something we highly value in our business and we love that each piece has been produced under their careful eye."

Catriona bought the business five years ago but was already very familiar with the benefits and attributes of wool due to her having been raised on a wool-growing property in the Western District of Victoria.

"Growing up in a family of generational sheep farmers, I have an intimate knowledge of Australia's wool quality, and have always had a keen interest in all things wool," she said.

"I moved to Warragul after I got married. It was there that my husband Andrew and I heard that the Aussie Wool Comfort business was for sale. We immediately and enthusiastically talked to the owners and were excited about the opportunity to put our personal touch on such a wonderful Australian product. My dad is particularly proud of me for getting back to my grass roots!

"Everyone who is involved in the business is very passionate about the product – and you see this all the way through the entire supply chain, from the farmers and truck drivers through to the customers."

Aussie Wool Comfort sources its wool mainly from first cross Border Leicester/Merino flocks located in Catriona's native Western District.

"These specially selected flocks yield the best high-grade wool for quilts. Our quilts only use wool from the premium part of the sheep, the top part.

"Our wool keeps its natural loft and stays comfortable for years. We have a unique and chemical-free Loft-Advantage™ process that helps trap air in the wool, further enhancing the natural insulating qualities of the fibre. It provides an even, soft, fluffy quilt that lasts. The quilts are line-stitched, meaning the wool will not ball, move or get lumpy.

"Not only do we guarantee our quilts and under blankets for six years, we promise you'll feel the difference. Using the best wool, means you get the best sleep."

The company's products are free of chemicals and resin, which Catriona says make them perfect for allergy-sufferers.

"Because we use premium wool of the highest quality, there is no need to add chemicals or nasty resins, so it is a 100% pure and healthy allergen-free quilt. We even wash the wool organically before carding and the quilts are encased in a luxurious 100% cotton sateen. Being free of resins and chemicals was the very reason the company began to make quilts in the first place, to get away from allergy-causing products."

As all Aussie Wool Comfort's products are handmade, the company can also make bespoke sizes and products.

"We often have customers wanting specially made products for caravans and boats or just unusually sized beds. We have even made sleeping bags and under blankets for swags."

Aussie Wool Comfort products sell direct to the consumer, mainly via its website. "We cut out the middle man, which means our customers get a premium quality product without paying a premium price," Catriona added. B

More information:
www.aussiewoolcomfort.com.au

Woolgrower's daughter **Catriona Ronalds** who owns **Aussie Wool Comfort**, with her son **Oscar.**

All of **Aussie Wool Comfort's** quality wool products are hand crafted in Warragul, Victoria, from 100% Australian wool.

Silver anniversary for Woolstar's golden fleece products

Graeme Kerr, the founder and Managing Director of Woolstar which is celebrating its 25-year anniversary this year.

Woolstar produces high quality woollen bedding such as quilts, underblankets, pillows and accessories.

Established in Sydney 25 years ago, Woolstar provides customers with Woolmark-certified woollen bedding products – including quilts, underblankets and pillows – made from specially sourced Australian-grown wool.

In his early 40s, Graeme Kerr had an epiphany. He wanted to start his own business and become a major exporter of a quality Australian product. What that product was, he had no idea; until a surplus of wool in a warehouse led to the launch of Woolstar.

"I had no experience with wool before," said Graeme. "But I became aware of this stockpile of wool in a warehouse near Sydney and it seemed like an opportunity not to miss, especially as I'd always had an interest in Australian agriculture and manufacturing.

"I knew that Asia loves all things Australian as well as anything wool. So I made a few samples and went from there."

Export market remains the main focus

Now, 25 years later, Woolstar exports woollen bedding products and accessories to countries across the globe. The company is a world leader in wool innovation and sustainability, with all products free of harmful chemicals, and fully traceable back to the very farm the wool came from.

The Asian market has always been the biggest success for Woolstar, with Graeme noting the innovative approach of the Korean market in particular, alongside Japan and, of course, China.

"With Australian retailers, a lot of the time it's about price, whereas in Asia it's often about quality and traceability. Our Asian clients will come and visit us; they want to see the factory, meet the farmers. They become more involved," he said.

But it's not just Asia that Woolstar exports to. The company now exports to countries including Russia, the UK, and is about to start supplying a major US retailer.

Woolstar's Farm2Shelf traceability

The company's Farm2Shelf concept – launched in 2015 – enables consumers to trace the wool used in their quilts right back to the farm it came from.

"So many competitors out there seem like they're Aussie produced and made," Graeme said. "But they're actually made overseas. We wanted to make sure there was traceability. We wanted to show that our products are real."

One thing is for sure. This is about more than just marketing. The Farm2Shelf concept means that there is no room to hide across the entire lifecycle of the product.

The Farm2Shelf concept is a milestone on what Graeme refers to as the brand's ongoing sustainability journey. "Wool is inherently more sustainable than other fibres," he said. "It returns to the earth in six months. But there's more to do such as other elements of the product, packaging, recycling, and transport."

Support from farmers and wool industry

Graeme is quick to point out that Woolstar's success is only possible due to the people and organisations that have supported the company along the way.

"We are Woolmark certified and AWI and The Woolmark Company have helped us substantially over the past few years with their ongoing global advocacy for wool," Graeme said.

The Campaign for Wool, backed by HRH The Prince of Wales, is another campaign whose global focus has helped support Woolstar by bolstering the global reputation of this sustainable fibre.

"Endorsement from organisations like Australian Made and The Woolmark Company are extremely important in demonstrating quality to the consumer," Graeme said.

The farmers themselves also endorse the product and have become integral to Woolstar's success. It's certainly a step change from when farmers sell to brokers, with no idea where their product ends up.

"If a farmer knows what their wool is being used for, they're super excited and want to know more. It becomes about more than just growing wool. They're part of the story," he said.

Whilst Graeme is proud of Woolstar's past, his focus is solidly on the future. If the past 25 years is anything to go by, one thing is for sure: whatever Graeme and his team put their minds to, there is no doubt that they will make it happen. B

More information:
www.woolstar.com.au

A seating fabric option in the new Skoda Enyaq iV is a **Woolmark-certified blend** of new wool and polyester. The seat covers carry the Wool Blend Performance label.

Sustainability drives ŠKODA

It is not only the electric engine of ŠKODA's award-winning ENYAQ iV that is environmentally friendly, the interior of the SUV also has a focus on sustainability with the availability of a Woolmark-certified wool blend fabric.

Founded in 1895 as a bicycle and then motorbike company, ŠKODA started manufacturing automobiles in 1905, which makes the Czech company one of the oldest car producers in the world.

Now a subsidiary of the German Volkswagen Group, ŠKODA has a very strong market in Europe and has expanded into other regions such as China. The company delivers more than one million vehicles each year to its customers worldwide.

ŠKODA's new all-electric ENYAQ iV SUV premiered in September last year and production began in November. The company's commitment to sustainability in the model goes beyond low emissions and is underlined by the use of natural and sustainably processed materials in the car's interior. This includes an option for upholstery made from a blend of 40% new wool and 60% polyester from recycled PET bottles.

The **Skoda Enyaq iV** is a 100% battery-electric SUV.

The seat covers carry the Wool Blend Performance label, having been certified according to The Woolmark Company's strict assessment criteria.

In its promotional material to consumers, ŠKODA says the inclusion of wool in its seat covers helps ensure a comfortable experience for the driver and passengers: "The seat covers feature a unique surface feel and offer a pleasant seat temperature – getting neither too hot nor too cold. Wool is one of the most moisture-absorbent natural fibres. It has a cooling effect, is breathable and also filters out pollutants and odours from the surrounding air."

Head of Colour & Trim Design at ŠKODA, Kateřina Vránová, says the car's interior has been specifically designed so that the car's occupants enjoy spending time there – like the feeling of sitting on the sofa at home.

"For many people, their car is just as personal a place as their own home, where they spend a lot of time and want to feel comfortable. We draw inspiration from these living worlds, transfer them to the ENYAQ iV and extend that at-home feeling to the vehicle," Kateřina said.

Colour and Trim Project Leader on the ENYAQ iV, Stefan Webelhorst, says sustainable and comfortable materials such as wool are fundamental to the car's interior.

"They are a perfect choice for customers who care about both our planet and aesthetics," he said.

"As well as visual research, we have done a lot of material research because it's not only the look, it is also the feel that is necessary to achieve a great product."

"A combination of a high wool content and recycled polyester greatly reflects the new direction of the car industry itself and the wish for having a lot of comfort in your car."

Stefan Webelhorst, ŠKODA

In February, the ENYAQ iV won the 'Compact SUV/Off-Road Vehicle' category in the 'Best Cars 2021' awards organised by the widely read German *Auto Motor und Sport* car magazine. More than 100,000 car enthusiasts voted in the awards and picked the ENYAQ iV as winner against 52 competitors.

ŠKODA is not the only car brand to introduce wool in its interiors. For example, BMW uses wool in its i3, Range Rover in its Evoque and Velar, Toyota in its Century and Volvo in its XC90. Bentley uses wool in its bespoke Mulliner division, as well as its State Limousine which is an official state car for the Queen. B

MORE INFORMATION
www.skoda-auto.com

Shepherd Filters are a clean winner in the kitchen

Made from 100% Australian wool, Shepherd Filters capture up to 98% of airborne grease before it enters kitchen exhaust systems, resulting in decreased cleaning times and costs while also reducing the risk of fire.

From McDonalds to the Marriott, kitchen grease filters from Shepherd Filters are being used in restaurants, hotels, cafes and clubs across Australia. The company's filters are all made in Australia from broad micron Australian wool and are also exported to the Asia-Pacific, UK, Europe and the Middle East.

Based on the Gold Coast in Queensland, Shepherd Filters was established five years ago by Jeremy Kronk who progressed the idea for the wool filters while recovering from third degree burns to 52% of his body, suffered during a horrific explosion and house fire. It was the experience of terrible burns that prompted Jeremy to engineer a product that helps prevent fires from occurring, thereby safeguarding other people from the pain that he suffered.

Wool minimises risk of fire

Jeremy says that in contrast to traditional metal kitchen grease filters that only capture 20 to 40% of airborne grease, his company's filters are made from 100% wool, a naturally fire-retardant material, that capture up to 98% of this grease before it has the chance to enter the exhaust system.

"The build-up of grease in kitchen hood exhaust systems is often the cause of commercial building fires. However, wool is very effective at absorbing the grease and oil from cooking activities, thereby preventing it from accumulating in the hood, ducting, fans and roof. This greatly reduces the risk of a catastrophic fire occurring. The wool filters do not burn with a flame even if saturated with grease," Jeremey said.

> "Wool's flame-resistant properties make it an ideal fibre for kitchen grease filters, helping to reduce the risk of fire spreading."
> **Jeremy Kronk, Managing Director, Shepherd Filters**

"A grease fire can burn through a typical fast food style restaurant in as little as five minutes. When a restaurant is located in a larger building or complex, such as a hotel, shopping centre or other multi-storey complex, the risk increases exponentially. We want to reduce the risk of these devastating types of events occurring.

"A fire in a kitchen exhaust system at Heathrow Airport once shut down three terminals, delayed or cancelled hundreds of flights and generated hundreds of millions of dollars in losses that far exceeded the physical damage bill. That fire spread through 200m of exhaust duct-work to a plant room before it was extinguished."

Reduced financial and environmental costs

Aside from lowering the risk of fire, Jeremy says Shepherd Filters provides other benefits such as reduced labour costs by eliminating the need to frequently clean kitchen filters and exhaust ducts.

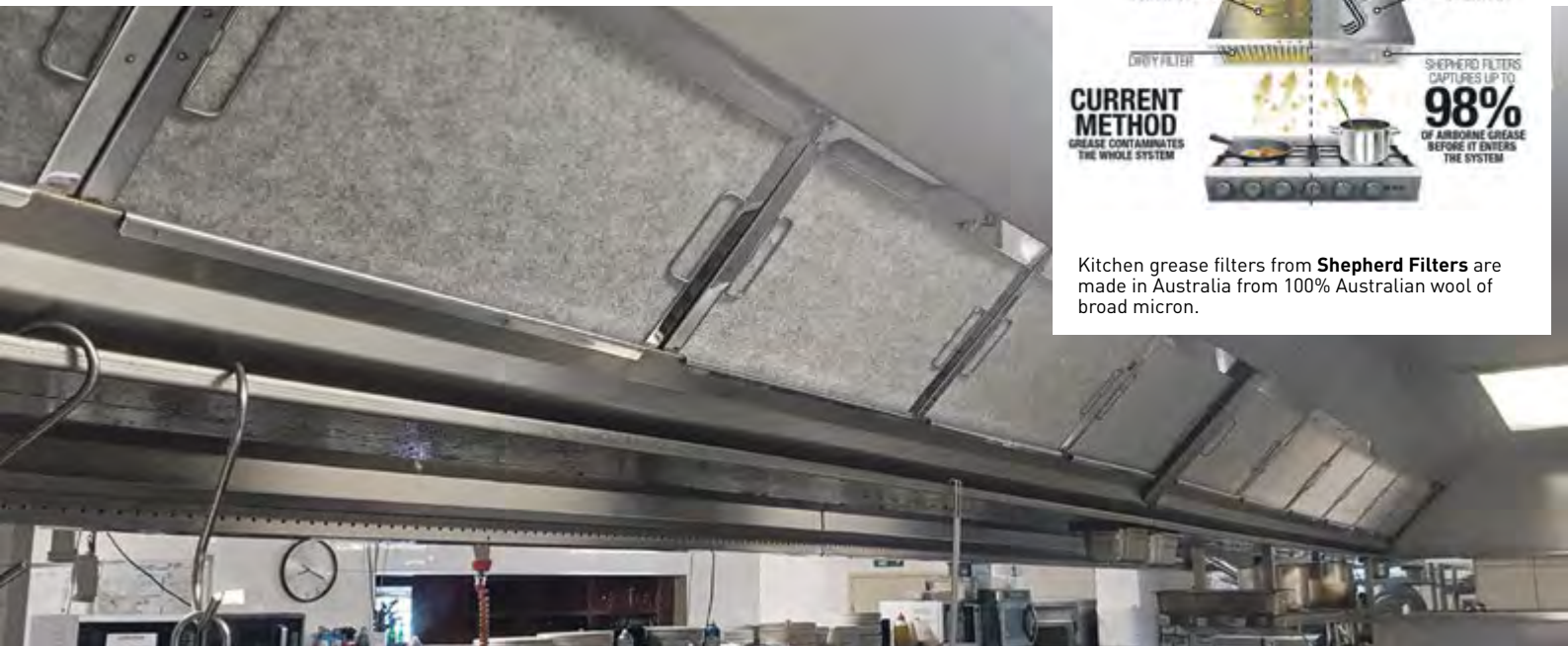
"Traditional metal kitchen grease filters and exhaust ducts need to be cleaned on a regular basis, which can be costly – many commercial kitchens would have to do their grease filter cleaning nightly or weekly and routine kitchen hood cleaning is performed every three to six or 12 months, amounting to large labour and contractor costs. However, our disposable wool filters provide an easy and cost-effective solution, ensuring kitchen exhaust systems stay cleaner for longer. The wool filters are able to be replaced in seconds and only when necessary," he said.

Jeremy adds Shepherd Filters are environmentally friendly as they not only reduce the amount of water and chemical cleaners commonly used on kitchen exhaust systems today, but also because they are made from wool.

"Our filters are made from Australian wool which is a natural, biodegradable and renewable resource, so they are the obvious choice for anyone concerned about the environment. We are very proud to support our Australian woolgrowers."

Shepherd Filters has won multiply awards for its wool filter, including the 'Product of the Year' at the 2019 AIRAH (Australian Institute of Refrigeration, Air Conditioning and Heating) Awards and the 'Best New Hospitality Product' award at 2017 Fine Food Australia, and has HACCP Food Safety Certification. B

More information:
www.shepherdfilters.com



Kitchen grease filters from **Shepherd Filters** are made in Australia from 100% Australian wool of broad micron.

Measuring and reporting the Australian sheep industry's **sustainability credentials**

The Australian sheep and wool industry in April launched the world's first Sheep Sustainability Framework. It was initiated by Australia's sheep industry leaders to demonstrate the industry's sustainable practices, identify areas for improvement, and better communicate with customers and consumers.

The role of the Sheep Sustainability Framework is to monitor, measure and report the Australian sheep industry's performance against sustainability priorities.

The Sustainability Framework has identified 21 priorities relevant to sustainable sheep production in Australia, which have been classed into four themes:

1. Caring for our sheep
2. Enhancing the environment and climate
3. Looking after our people, our customers and the community
4. Ensuring a financially resilient industry.

The performance of the sheep industry in these areas, tracked over time, will provide evidence of the industry's commitment to continuous improvement. It will demonstrate that Australia has a clear path towards sustainably produced sheep meat and wool.

Sheep Producers Australia and WoolProducers Australia led the development of the Sustainability Framework with AWI and Meat & Livestock Australia providing funding, together with strategic and secretariat support.

The Sustainability Framework is unique in that it is a food and fibre framework. It encompasses the value chain for both Australian sheep meat and wool – from farm to fork and sheep to shelf.

The Sustainability Framework covers on-farm (including feedlots), transport (including live sheep exports), saleyards and Australian sheep meat and wool processors. However, it is expected the boundary of the Framework will extend to cover overseas processing sectors within the next three years.

The Sustainability Framework will be a living document, subject to review and refinement so that it remains relevant and meets the expectations of all stakeholders. This ongoing commitment to transparency, continual improvement, and engagement will ensure the Australian sheep industry remains a strong and important industry for its participants and its customers.

The beef, dairy, grains, eggs and horticulture sectors also have sustainability frameworks.

> "It'll allow better market access for some of our product. We think that's a terrific outcome and we're really happy to be open and transparent with what we do, and we think as a whole industry that's the way forward."
>
> **Sheep producer Mark Wootton, Hamilton, Victoria**

Why develop a Sustainability Framework for the sheep industry?

Demonstration of sustainable production of sheep meat and wool is critical in securing access to local and global customers and markets. Our customers want to be confident that the food and fibre they purchase has been produced responsibly. The Sustainability Framework will provide evidence of this, improve transparency and build trust.

A focus on aligning animal welfare, environmental, economic and social practices with best practice and community expectations, while managing sheep profitably, will help ensure continued access to markets and capital for Australian sheep businesses.

Sheep Producers Australia Chair, Chris Mirams, said there are significant opportunities available to Australia's sheep industry as a result of the world's growing interest and demand for sustainably produced food and fibre.

"Increasing access to markets and investment, building confidence in the integrity of sheep meat and wool products, enhancing community trust and better rewarding industry are some of the opportunities we have as a result of this growing consumer interest," Mr Mirams said.

"The Australian Sheep Sustainability Framework has been designed and developed so our sheep industry can best harness these opportunities."

WoolProducers Australia President, Ed Storey, agreed, saying with consumer trends and demand, there was a real opportunity for Australia's sheep industry to better articulate its sustainability story, with improved transparency a critical part of that success.

"To me, being transparent is the key to the Australian sheep industry seizing our opportunities and maximising the benefits," Mr Storey said.

"Having this industry-led Framework means that we will provide an open and honest picture of our high standards of practice and performance using the most appropriate and robust data available."

> ""Importantly, it will support better communication with stakeholders, improving transparency and providing evidence to our customers that the food and fibre they purchase have been produced responsibly."
>
> **Professor Bruce Allworth, Steering Group Chair**

Sustainability Framework Steering Group Chair and Holbrook wool and prime lamb producer, Professor Bruce Allworth, said that the sheep industry acknowledges there are challenges linked to the many available opportunities.

"For the industry to seize these opportunities, we need to ensure we address challenges such as ensuring businesses

are financially sustainable, avoiding land degradation and biodiversity loss, managing climate risk and water scarcity, meeting expectations on animal welfare, and protecting human rights in the global supply chain," Professor Allworth said.

Are there requirements for sheep producers?

The Sustainability Framework takes an industry-wide perspective and therefore does not require any direct input from sheep and wool producers at an individual business level. The Framework does not audit or certify individual businesses, nor impose costs or create paperwork for individual businesses.

However, producers need to be aware of changing customer expectations, reflect on their current practices and take opportunities to improve these where necessary. Individual businesses may use the Framework to understand the industry's sustainability credentials and consider these in their forward planning.

Who was involved in developing the Sustainability Framework?

Sheep Producers Australia and WoolProducers Australia led the Sustainability Framework and appointed a Steering Group – which has strong representation across regions, and the wool and meat value chain – to develop the Framework.

The development the Framework involved significant consultation and input from industry representatives and stakeholders, including customers, government, interest groups, technical experts and investors.

The three-stage consultation process included consultation with sheep producers via Peak Industry Councils and State Farming Organisations. Producer participation was instrumental in shaping the Framework design and development. B

Snapshot of the Sustainability Framework

In order to monitor and report on the industry's performance, a set of focus areas and 21 priorities has been developed – see below.

A number of metrics for measuring the performance of indicators in each priority area have also been developed. **Baseline data (available at the date of publication) for each of these metrics are reported in the Framework document.**

THEME	FOCUS AREA	PRIORITY
Caring for our sheep	**1. Animal care and handling**	1.1 Reduce, refine and replace painful husbandry practices
		1.2 Implement best practice sheep management
		1.3 Ensure humane processing and on-farm euthanasia
	2. Animal health	2.1 Prevent and manage disease
Enhancing the environment and climate	**3. Environment**	3.1 Improve natural resource management
		3.2 Responsible environmental practices
		3.3 Encourage biodiversity
	4. Climate change	4.1 Reduce net greenhouse gas emissions
		4.2 Adapt to a changing climate, including extreme weather events
Looking after our people, our customers and the community	**5. Health and safety**	5.1 Improve industry safety culture
		5.2 Improve our people's health
	6. Capacity building	6.1 Support and grow workforce
		6.2 Encourage workforce diversity
	7. Contribution to community	7.1 Enhance community trust
		7.2 Deliver products that customers demand
Ensuring a financially resilient industry	**8. Profitability, productivity and investment**	8.1 Maintain or increase industry profitability
		8.2 Maintain or increase contribution to the Australian economy
		8.3 Increase productivity
		8.4 Encourage innovation
	9. Market access	9.1 Ensure positive market positioning and access
		9.2 Guarantee product integrity and safety

MORE INFORMATION
View and download the 40 page Framework at www.sheepsustainabilityframework.com.au

Hear more from Bruce Allworth in Episode 175 of AWI's The Yarn podcast, available at **www.wool.com/podcast**

Susan Rowbottom holding up the pure wool jumper that has significantly biodegraded after being buried in soil for six months, while holding in her other hand the polyester jumper that has not biodegraded at all.

Revealing wool's **biodegradable benefits**

The Women on Farms gathering in March saw an impactful demonstration of wool's biodegradability, highlighting the fibre's eco-credentials in a world that is paying more and more attention to sustainability issues.

The Women on Farms movement in Victoria, which has existed for 30 years, gathered in March at Port Fairy in the south west of the state for its annual celebration of women playing a crucial part of farming.

Superfine woolgrower Susan Rowbottom was one of the organisers of the event and she had the foresight in September last year to bury two jumpers, one pure wool and one fully synthetic, to be unearthed six months later at the gathering to showcase wool's biodegradability.

"We buried the jumpers side by side, each between two pieces of wire mesh, and at the gathering in March we dug them up to see the extent that they had biodegraded," Susan said.

"The results speak for themselves. There was not much left of the woollen jumper, it was well on the way to be fully decomposed. The only thing that was holding it together was the wire. In contrast, the synthetic jumper was fully intact, and aside from needing a bit of a wash was no different to the day it was buried."

Susan said the sharply contrasting biodegradability of the two jumpers symbolises perfectly that the decisions that consumers make today have long-term consequences for the environment.

"The sustainability of products is increasingly in the spotlight and so we did the demonstration to prove and showcase wool's eco-credentials. It is important to understand that natural fibres like wool can return to the soil, whereas nylons and other synthetics, aside from being made from a non-replaceable fossil fuel, will continue to add to the waste in our landfills forever and a day."

This is an important message that AWI continually reinforces through its subsidiary The Woomark Company in its marketing to consumers, brands, retailers and regularity authorities. The initiative by Women on Farms to demonstrate the biodegradability of wool replicates the burying of a wool jumper by HRH The Prince of Wales in a flowerbed at his Clarence House residence in 2014 as part of the Campaign for Wool.

Wool is made of a 100% natural biodegradable protein, similar to that found in human hair. When a wool product reaches its end-of-life and is disposed of, the wool fibre readily decomposes in soil in a matter of months or years, slowly releasing valuable nutrients and carbon back into the earth, acting like a fertiliser. Wool also biodegrades in a marine environment and does not contribute to microplastic pollution.

In contrast, synthetic fibres do not biodegrade and significantly contribute to the world's overflowing landfills. Microfibres from synthetic textiles (microplastics) also accumulate in marine environments, as well as terrestrial environments, where they damage ecosystems.

Susan and her husband David farm at St Helens in south western Victoria. They are well known for their commitment to safeguarding the environment on and around their property, 'Rowensville', illustrating the harmony that exists between wool-growing and the local wildlife. They work with the Basalt to Bay Landcare network and have planted trees on their property since the 1990s.

The Rowbottoms have won the Vellus Aureum Trophy in six of the past seven years. Ermenegildo Zegna introduced the award in 2000 to reward the woolgrower who has produced the finest of the finest Merino fleece in the world. In 2016, the Rowbottoms' winning fleece was recorded at an exceptional 9.9 microns, still an unbeaten world record. **B**

More information: www.facebook.com/WomenOnFarms

Hear more from Susan Rowbottom in Episode 172 of AWI's The Yarn podcast, titled 'Burying wool and stereotypes', available at **www.wool.com/podcast.**

Above: The two jumpers being buried side by side in September last year.
Below: The two jumpers being dug up in March.

Australian Wool Innovation Limited

AWI WORKING TO SUPPORT THE FUTURE OF AUSTRALIAN WOOL-GROWING

AWI regularly runs one-day **sheep classing workshops** that are a practical way for woolgrowers to learn about increasing the production of their Merino flocks. Pictured is a workshop held in partnership with Quality Wool in April at the 'Greydene' property of **Phil and Anne Salter** near Manildra, NSW, attended by 25 young woolgrowers.

Retrofitting existing fencing with electric offsets

Are you thinking about building a new exclusion fence to prevent wild dogs from entering your property? If you already have a fence in location that is in decent condition, then retrofitting it with an electric offset could be an easier and more cost-effective option.

Well designed, built and maintained wild dog exclusion fencing can provide an effective first line of defence against wild dogs and other pest animals, resulting in increased on-farm productivity and the ability for woolgrowers to run sheep without the stress of worrying about attacks.

However, installing a brand-new exclusion fence can be expensive. If you have an existing fence that is functional, a suitable alternative to building a new exclusion fence might be to instal an electric offset onto your existing fence.

On the other hand, maybe you already have an electric exclusion fence, but you are looking for some extra protection. Again, installing an electric offset might be a solution.

Electric offsets can be used in conjunction with an existing prefabricated wire or electric fence.

- To prevent wild dogs pushing through a fence consider the inclusion of an electric offset wire at or below snout-level (450mm).
- To prevent wild dogs burrowing under a fence consider an electric offset ground wire – 100–150mm above ground level will be most effective, and definitely no less than the 100mm to minimise the risk of shorting the fence due to vegetation/moisture.
- To prevent wild dogs climbing a fence consider a sloping electric offset or an electric outrigger offset midway up the fence.

As well as being valuable for reinforcing fences against wild dogs, electric offsets also reduce the risk of damage caused by other animals.

Electric offsets are a psychological barrier that relies on wild dogs learning that touching it is a painful experience. If the offset fails to deliver an adequate shock whenever it is touched, wild dogs will quickly pass through it. A minimum of 7000V / 10Joules is recommended.

If you install an electric offset, it is critical that you monitor and maintain it and are extra vigilant for the first three months while the wild dogs become accustomed it. Each section of an electric offset installed during the day should be electrified that same night so that the dogs immediately learn that contact with it will deliver a shock.

For the best results, exclusion fencing should be backed up with other methods of wild dog control. As wild dogs travel along fence lines, your fence is an ideal place to carry out additional control activities such as trapping and baiting. You can also focus your efforts on any known weak spots, such as gullies and roads. But remember, the success of wild dog control relies on a co-ordinated effort of all landholders in a given area working co-operatively.

Types of electric offset

There are three main types of offsets that can be used to protect an existing fence that is in good condition: free standing, sloping and outrigger offsets.

FREE STANDING OFFSET

This is a plain wire electric fence that runs parallel to the existing fence, with one or more wires. It is recommended that there are 1, 3 or 5 wires with 1, 2 or 3 wires electrified. Regardless of the number of wires, the bottom wire **MUST** be electrified. It is recommended that it be located 200–300mm from the existing fence on the approach side.

SLOPING OFFSET

The sloping offset is similar to a free-standing offset, except that it runs back towards the fence at a 45-degree angle from the ground line. It is recommended that there are a minimum of 2 hot wires.

OUTRIGGER OFFSET

The outrigger offset is attached to the fence. One or more electrified wire(s) run parallel to the existing fence. They are attached to the fence specifically where additional protection is needed (eg snout level to prevent pushing, or at the base of the fence to prevent burrowing). The wires must be 100–150mm above ground.

	ADVANTAGES	DISADVANTAGES
Free-standing	• Fairly cheap and quick method of protecting an existing fence.	
Sloping	• Suitable for fences that are built on a ridge or the contour of a hill and are at extra risk from burrowing.	• Requires more maintenance to keep the offset free of vegetation than other offsets.
Outrigger	• Quick method of reinforcing an existing fence. • Uses less materials than other offsets. • Can easily target specific animal activity (eg burrowing, pushing through) and specific areas of the fence.	

The existing fence must be free from excess wire or other material that may impede the effective operation of the offset.

Free-standing and outrigger offsets should be located between 200mm and 300mm from the existing fence, on the approach side. This distance reduces the risk of shorts and allows wild dogs to make contact with the offset without putting pressure on the existing fence.

The electric and barb issue

According to Australian Standard *AS/NZS 3014:2003 Electric Installations – Electric Fences*, there are specific requirements around how barbed and electric wires are used in fences – and particularly in the same fence – to satisfy health, safety and animal welfare standards. Some of the most important requirements are:

- Barbed wire or razor wire must never be electrified by an electric fence energiser.
- If barbed wire is in a fence, then the live wire needs to be 150mm minimum distance on a horizontal plane away from the fence on an offset (can't have barb and electric in the same plane).
- The barb or razor wire should be earthed at regular intervals in accordance with earthing recommendations. B

AWI's practical guide to wild dog exclusion fencing

The same considerations that apply to designing, constructing, monitoring and maintaining plain wire electric fencing also apply to electric offsets. Refer to AWI's 36-page 'Wild dog exclusion fencing' practical guide for woolgrowers, available for free at www.wool.com/exclusionfencing

Summer sowing legumes to renovate pastures

Herbage availability for **arrowleaf clover**, established either by summer sowing of unprocessed seed (left of photo) or via conventional sowing (late May) of scarified seed (right of photo) in late winter at Condobolin, NSW in 2020. *PHOTO:* Dr Belinda Hackney

A collaborative project is looking at increasing the feed supply on mixed farms with acidic and alkaline soils in the medium-low rainfall zones through summer sowing legumes and the development of new legume species.

The Dryland Legume Pasture Project (DLPS) funded by AWI in collaboration with the Department of Agriculture Water and Environment, GRDC and MLA – in WA, NSW, SA and Victoria – is investigating the capacity of hardseeded annual legumes to improve feed supply and reduce risk in mixed farming systems. Researchers from Murdoch University, NSW DPI, DPIRD, SARDI, CSIRO, Charles Sturt University and Frontier Farming Systems are leading this national research effort.

After emerging from recent widespread drought, growers throughout the mixed farming zone are faced with the need to renovate paddocks where favourable pasture species were lost or severely depleted. Hardseeded annual pasture legumes investigated in this project were significantly more productive than traditional legumes throughout the drought in NSW and WA. They also set more seed to ensure regeneration post-drought. These legumes offer opportunity to establish pastures in novel ways that better integrate with other on-farm enterprises. They also allow woolgrowers to more reliably produce high quality feed for a longer period of time throughout the growing season and under variable climatic conditions to reduce feed gaps. This means there is greater capacity to match feed supply with sheep nutritional needs, especially for classes of sheep requiring higher quality forage such as weaners and pregnant and lactating ewes to optimise growth rates and wool cut.

Renovating pastures can be an expensive process, partly due to the laborious and multi-step seed harvesting and processing required for traditional species such as subterranean clover and annual medics. In mixed farming systems, most pastures containing traditional legumes are sown after the danger of false breaks have passed and often after the winter cropping program is complete. As temperatures decline, the emergence time for pasture legumes increases dramatically and late sown pastures often produce little herbage in the establishment year. Small seedlings of traditional shallow-rooted legumes produced by conventional sowing can struggle to survive moisture stress periods in spring. As a result, seed production is compromised leading to poor regeneration capacity in subsequent years.

Hardseeded legumes such as serradella, biserrula, gland clover, bladder clover and arrowleaf clover produce and retain their seed aerially. Seed can be harvested using a conventional cereal header. Seed yields of 300-1500 kg seed/ha are commonly achieved on-farm, depending on species and growing conditions. Seed harvested from these legumes can be sent for processing (scarification) for sowing in a conventional manner in mid- to late-autumn, but there is opportunity to utilise the seed in its unprocessed form.

Summer sowing was developed in WA by Murdoch University and DPIRD researchers Drs. Brad Nutt, Angelo Loi, Ron Yates and Professor John Howieson. Unprocessed seed is sown in mid- to late-summer. Fluctuation between day and night temperatures and moisture break down the hard seed. Some seed is then capable of germination on opening growing season rainfall. Seedlings emerge rapidly while the temperatures are favourable, significantly increasing herbage production in the establishment year. The root systems of these species develop rapidly and extend deep into the soil profile (1.3-1.8 m compared to <90 cm for subterranean clover and annual medics). Summer sowing allows pasture sowing to be completed before the winter cropping program commences, better distributing availability of farm labour resources.

The capacity to produce and harvest seed on-farm at a fraction of the cost of buying seed means higher seeding rates can be used. For summer sowing, seeding rates of 20-30 kg/ha of serradella pod or 12-15 kg/ha of unprocessed clover or biserrula seed are suggested. In practice, many farmers producing their own seed sow at rates higher than this.

Summer sowing requires inoculant (rhizobia) to be delivered in a way that ensures its survival even under very high summer temperatures. Clay-based granules impregnated with appropriate rhizobia for the species sown have proved very successful for this purpose.

Summer sowing is proving successful not only in WA but also in NSW and is being explored in SA and Victoria. Experiments have been conducted under some of the driest years on record and have found summer sowing increased feed supply at the end of winter by 4- to 10-fold compared to the same species sown conventionally. Total herbage produced for the growing season was increased by 2- to 10-fold (see photo above and video at wool.com/legumes, showing herbage biomass at end of winter) at sites in NSW run by Dr Belinda Hackney's NSW DPI team. With higher levels of herbage available, there is capacity for some utilisation in the establishment year. Modelling using GrazFeed showed summer sown treatments utilised in late winter could achieve wool growth gains of 20-25 g/hd/d and liveweight gains of 360-

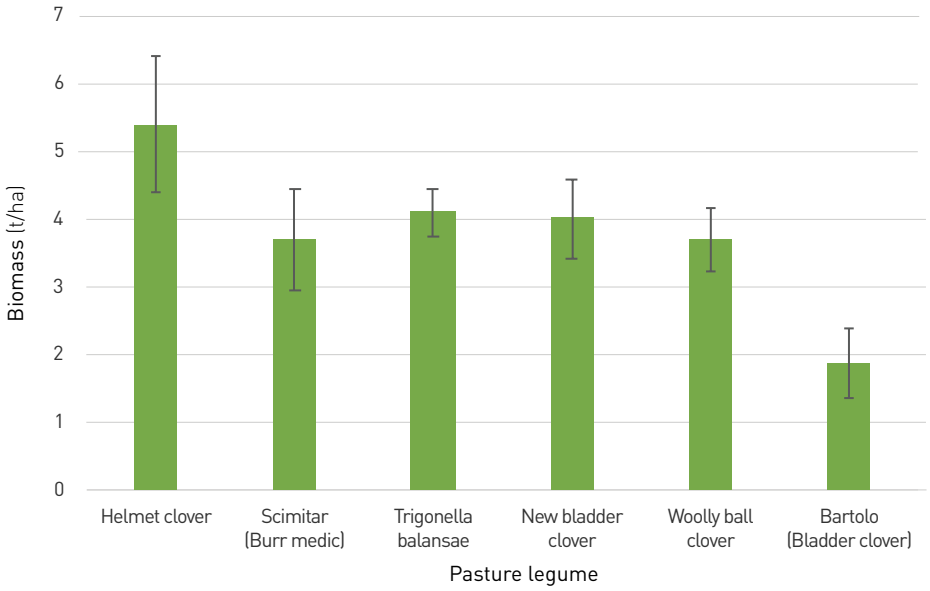


Figure 1: **Biomass (t/ha) of pasture legumes** evaluated in the low-medium rainfall environment of Canna, WA. Controls were scimitar (burr medic) and Bartolo (bladder clover). Error bars represent standard error.

450 g/hd/d for Merino weaners compared to a maximum wool growth gain of <5 g/hd/d and liveweight gain of 90 g/hd/d (for conventionally established pasture).

Summer sowing increased seed production in the establishment year which is critical for strong regeneration. Once a seedbank is established, growers have greater flexibility in terms of future paddock use than for traditional pasture species. Species such as biserrula have very high levels of hard seed which break down slowly under WA and SA summer-autumn conditions and it is generally advisable in those regions to crop biserrula paddocks in the second year. For other hardseeded legumes (and for biserrula in NSW), somewhere between 30 and 50% of seed produced in the establishment year, depending on seasonal rainfall and temperature conditions, has softened in the paddock by the following autumn and is capable of germination. Therefore, growers can choose between cropping the paddock or allowing it to regenerate for grazing. Some growers choose to sow moderate rates of cereal over paddocks with established seedbanks to provide a better energy-protein balance for grazing or to take through for use as silage or hay. Paddocks with an established hardseeded legume seedbank are capable of regenerating after cropping phases without the need for resowing. This provides capacity to switch between using paddocks for grazing or cropping more rapidly and with less risk than in conventional systems.

Summer rainfall patterns have a significant impact on which legumes can be used for summer sowing. In summer-dry WA and SA, hardseeded French serradella cultivars and bladder clover work well as summer sow options. In NSW, in addition to French serradella and bladder clover, arrowleaf clover, gland clover, biserrula and some cultivars of yellow serradella are also successful, due to higher incidence of rainfall in summer resulting in increased hard seed breakdown.

The project is also working on the development of new legume species and additional varieties of existing species. Already a new, earlier flowering French serradella, Fran20, has been released for lower rainfall areas and sufficient seed has been produced in the first year of its release for sowing of more than 3,000 ha.

Sheep grazing **trigonella** *PHOTO*: Dr Hayley Norman

Developing header-harvestable, deep-rooted legume options that are suited to summer sowing for neutral to alkaline soils is also a key focus of the project. Breeding research co-led by Rob Harrison and Dr Nutt at Murdoch University has identified trigonella, helmet clover, woolly ball clover and bladder clover as well suited to these soils in medium and low rainfall areas. At Canna, WA (between Morawa and Mullewa), the new species all produced >3.6 t DM/ha and out-yielded Bartolo, the only cultivar of bladder clover currently available (see Figure 1). These new legumes will complement underperforming background medic populations, particularly in WA. Trigonella, helmet clover and new bladder clover lines from this breeding program have also performed well on acidic soils in NSW indicating considerable potential for adaptation and adoption of these species across a wide region.

Additional breeding research is being led by David Peck at SARDI. This work has identified lines of trigonella and arrowleaf clover well adapted to the low rainfall Mallee region where there are currently limited, well-adapted readily header-harvestable legume options. Traditional legumes have not been ignored with the SARDI team releasing Seraph strand medic which is resistant to powdery mildew and has good tolerance of sulfonylurea residues. The SA project team is also investigating the potential for header-harvesting of medic pod.

Research by Dr Hayley Norman's team at CSIRO in WA has examined the opportunity to use new deep-rooted annual legumes to extend the growing season and supply high quality feed for livestock. This includes comparing meat and wool production achieved by the novel species/varieties and ensuring they are safe for livestock. Trigonella, the first novel species to emerge from the project, has been the subject of the first intensive grazing experiment. In another grazing study by the SA research team at Minnipa, trigonella produced similar or better liveweight gain in sheep compared to other annual legumes, including medics.

A team led by CSIRO's Dean Thomas and Rick Lewellyn are putting the legume, livestock and crop production data into farming systems' models to quantify benefits to growers and highlight future opportunities for further plant and systems improvements.

The project so far has demonstrated the capacity to use a range of hardseeded legumes in innovative ways to increase the success of pasture renovation and broaden the pasture base. Summer sowing in particular has been widely adopted, deemed successful and offers growers a new, lower risk alternative to traditional pasture establishment in WA and NSW. With new legumes on the horizon, growers can look forward to having a wider suite of legumes to support sheep production and improve flexibility in the mixed farming zone. **B**

More information:
Head to www.wool.com/legumes for links to videos, podcasts, papers and updates.

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Hear more in Episode 174 of AWI's The Yarn podcast, available at **www.wool.com/podcast**.

Modern climate management

Rick and Jenny Robertson from East Gippsland in Victoria have increased the resilience of their Merino business by moving to a grazing system suited to the increasingly variable climate.

Rick and Jenny Robertson's 1,000-hectare property at Bengworden, near Bairnsdale in Victoria, has been in the family for 70 years. Rick's father bought the property in 1950 to breed Merinos for fine wool, and Rick continues that tradition.

"Merino breeding is the only thing I have wanted to do since leaving school," Rick said. "We join 3,000 and have no wethers over one year of age. Our Merino breeding operation also includes a stud, and crossbred lambs are produced from second grade ewes."

Rick and Jenny were finalists in the most recent Weekly Times Coles farmer of the year competition.

The catalyst for change

During the 1980s and 1990s, the Robertsons ran a high input system with their sheep set stocked, grazing across large landscapes on their property. A run of droughts and poor seasons resulted in poor ground cover, reduced stock numbers and regularly having to buy feed for summer feeding out. The collapse of the wool reserve price scheme in the 1990s and poor commodity prices compounded financial difficulties for the Robertsons' business.

It was not until the end of 2008 that things changed for the better, after the Robertsons watched an inspiring episode of ABC Landline about NSW Farmer of the Year Nigel Kerin's success with time controlled rotational grazing.

"It was during another dry run of years, and our three daughters were all at home watching Landline with us. The NSW Farmer of the Year was on the program showing how he farms successfully irrespective of whether the seasons are good or bad. At the end of the program, the girls encouraged me to give it a go. I had already done the training without implementing it, so we just decided there and then to change the way we farm," Rick explained.

"Climate change with the too frequent dry years was a major catalyst for change. Rainfall has been below average for a third of the past 40 years and the average has fallen 15%. In the high stocking rate system, there was a constant roller coaster of excessive fodder bills, erratic lambing percentages, and poor stock performance. The risk and stress were too high."

Since then, the Roberstons' business philosophy has been to adopt a lower risk, more sustainable system of managing livestock and the land. Although the change has been challenging, it has provided new opportunities whilst at the same time making the Roberstons feel more in control of their business.

Rick says that by changing the way they farm, they have created a more resilient farming system in a low-rainfall environment.

"We operate a system of 'modern climate management' where we work with the rainfall we receive and adjust our sheep numbers down when the rains fail. Having three months standing feed at all times and a mob identified as 'ready to sell' takes out the roller coaster ride of profit and loss, weaning percentages and fodder bills."

Rotational grazing improves pasture resilience

The Robertsons introduced rotational grazing by dividing up their paddocks into smaller sizes. Sheep are run in larger mobs, at a higher density for short periods of time, and then rotated around the different paddocks. (At lambing, they greatly reduce the mob size and allow the sheep to graze for longer periods.)

With paddocks rested for two to three months between grazing, the grass has plenty of time to recover and grow strongly before the next grazing. Animals graze more evenly and knock down dry grasses, creating a mulch layer from which organic matter is added to the soil. This improves the soil's water-holding capacity rather than rain flowing straight off the property into the Gippsland Lakes.

"We now have 75 paddocks, up from about 30 previously, each now sized about 15 hectares. We rotationally graze each paddock for four to five days with fewer but larger mobs, except when lambing. Each three-month rest allows the grass to grow larger solar panels (leaves) which increases the dry matter production compared to set stocking," Rick said.

"The benefits include better ground cover, deeper roots accessing moisture and nutrients, and greater persistence of the important perennials.

"Grazing of longer leaves results in sloughing off of the roots which increases organic matter and leads to higher carbon levels. A one percent increase in carbon levels increases the water holding capacity by 160,000 litres per hectare. And with 10% of the property under trees, 90% of our enteric emissions are offset."

The new system has meant that ground cover has improved substantially to 100% ground cover throughout the year. Whereas previously it took longer for the pasture to recover after a dry period, better ground cover means a much quicker bounce back after rain because the pasture is making the best use of whatever rain it receives.

Additional hand feeding is only ever used to optimise weaner growth rates under the Grow program (a service now offered by Elanco Animal Health), which has

Finalist in the recent Weekly Times Coles farmer of the year competition, **Rick Robertson** on his property near **Bairnsdale** in Victoria.

substantially reduced their business's costs. This is an example of keeping the risk out of their farming system and developing better resilience in the whole system for tough times.

Improved pastures and landscape

The Robertsons have seen a noticeable improvement in their pastures. Their goal has been to get perennial grasses back into the system because they have a deeper root system that can access water at a lower level and respond well to rainfall. Rick believes that set stocking can be tough on perennials whereas rotational grazing increases their number and diversity.

"We have expanded our areas of perennial grass. Exotic perennials are the focus when sowing new pasture because they suit our continental environment," he said.

"Multi species cover crops are also used to fill feed gaps with highly digestible, high energy and protein fodder at half the cost of bought grain to grow young sheep. Up to 10 species are sown together – we find this gives better rumen/gut health and growth rates compared to mono crops."

The Robertsons manage their stocking rates according to how much rainfall they receive.

"We run at district average stocking rate or slightly lower," Rick said.

Profit not production

"There is a push by some farmers, consultants and resellers to run excessive stocking rates and quote high numbers, but we find our business risk is lower and profit levels more consistent. We can't control the weather or prices, but we can control the costs. We are not trying to outproduce our environment," Rick said.

The Robertsons have also been passionate advocates for Landcare and, even prior to changing their farming system, had established kilometres of shelterbelts and tree planting across the property. Salt affected land adjacent to the foreshore of the Gippsland Lakes had also been reclaimed with a 10-hectare plot of saltbush.

Improvements in wool quality and sheep health

Rotational grazing has benefited the performance of the Robertsons' flock by providing a consistent level of nutrition throughout the year.

Rick says their wool cut and tensile strength have improved.

"Under this new system, our fleece weights are up by 0.5 kg per head to 6.0 kgs per head of 18.9 micron wool without the erratic swings of the bad old days. Light soils in this district restrict the amount of wool you can stack on a Merino without compromising doing ability and fertility on grass alone. One kilo of wool per 10 kilos body weight seems the right balance," Rick said.

"Another benefit is our foetal retention rate and marking percentages are consistently respectable compared to the high intensity figures we see. Last year, our maiden ewes scanned only 2% empty and the mixed age ewes had only 3% empty after the year from hell. 90% of scanned foetuses make the lamb marking cradle even in dry years."

Pregnancy scanning enables the Robertsons to separate multiple-bearing ewes from single-bearing ewes and manage their feed requirements accordingly.

Their animal health costs have also decreased significantly because a major benefit of implementing the rotational grazing system is that the sheep are regularly moved onto clean paddocks, thereby reducing their worm burdens. Their reduced drenching is based on worm egg counts.

The modern Merino shows its worth

Rick says he strongly believes the Merino is still the most profitable breed of sheep, because it has multiple income sources.

"With wool sales now 45% of turnover and sheep sales 55%, the emphasis has obviously to be on fertility. Also, current Merino ewe prices are often three times the value of the fleece so we will continue to sell ewes SIL (scanned in lamb), LAF (lambs at foot) or with rams to maximise sale price. Some groups of progeny are now often 2-3 times the value of the ewe's fleece at a young age. Merinos are only being shorn 3.5 times on average in the industry; the focus has changed," he said.

"For many years we called ourselves woolgrowers; a more appropriate description these days is sheep breeders because there are so many more aspects to the package that affect the phenotype and genotype of this modern Merino.

"Wool is my great interest but over the past 10 years I have added fat, muscle and growth rate allowing us to join our ewe lambs at eight months, which is very uncommon at this latitude. The plain bodied modern Merino has other benefits – including rearing twins that are similar to singles, a lower culling rate at classing (20%) and having culls that are not over skinned, small and unsaleable.

"Selection of rams and ewes with feet that are the right shape and length, no dag, and a breech wrinkle score of 2 or less allowed us to stop mulesing. The message is clear from the wool buying fraternity – wool that is from mulesed sheep will be discounted, especially at the finer end. And don't be surprised if the same applies to sheep meat. We still use long acting Buccalgesic pain relief during lamb marking."

Rick has calculated some figures on the profitability of the different types of sheep – and he says the "hype" around lamb production needs to be put into perspective.

"The gross returns of wool, lamb, and surplus sales less replacements, converted to a DSE figure in districts with around 500-600ml make interesting reading: Merino $135, Border Leicester/Merino cross $115, composite $110," he said.

"Some districts will of course be too wet for Merinos and others too dry for composites, yet some producers may be surprised by the figures. And Merinos don't need as much rocket fuel feed to achieve a result compared to the cross bred types that rely on a legume-dominant pasture."

An improved business and lifestyle

The shift in their farming system means that the business's finances have effectively turned around from a loss to a profit and improved gross margins. The Robertsons feel much more in control of their future.

"We have a policy of balancing our three important inventories: grass, money and livestock. A deficit, and in some cases a surplus, of an inventory can be dangerous to the business," Rick explained.

"For example, too many stock and a deficit of grass leads to perennial grass dieback, large fodder bills and poor stock performance. Running out of grass leads to increased debt. Of course, on the other hand, too few animals can be a lost opportunity."

As well as their farm now being in a healthier financial position than it was 12 years ago, it has also provided the Robertsons with a better lifestyle and more time to spend on other activities. B

The University of Adelaide's **Bianca Agenbag** is researching the effect of colostrum on the health of lambs and their production later in life.

Taking a closer look **at colostrum**

A new AWI-sponsored project aims to fill a knowledge gap in the early development of lambs by focussing on colostrum, the first milk produced by ewes.

The University of Adelaide's Bianca Agenbag will undertake the 12-month project through an AWI-sponsored Science and Innovation Award for Young People in Agriculture.

"Colostrum contains all of the essential antibodies needed for the lamb to start its digestive system and gastrointestinal tract," Bianca said.

"Lambs are born with absolutely no antibodies of their own, so having that first drink is absolutely crucial."

Bianca says that while a lot of research has been done into colostrum in humans, cattle and pigs, relatively little has been done in sheep. Her current research aims to change that by investigating colostrum quality in Merino ewes.

"As we started digging deeper, we figured out that colostrum doesn't just affect the essential health of the lamb but also reproductive factors, production factors and even behaviour. I saw this as a massive gap in the research," she said.

Bianca will use the grant to further her research and look at the impact of colostrum on the reproductive potential of rams. It follows other research showing quality colostrum can improve scrotal growth and semen characteristics in pigs.

She says one of the main outcomes of her project will be developing selection criteria to select ewes with better colostrum.

AWI CEO Stuart McCullough says that improving reproductive potential is a key part of the wool industry's focus on sheep welfare as well as productivity.

"Research like Bianca's is all about improving animal health and getting better results for Australian woolgrowers. It is a win-win situation," he said.

"AWI has a great interest in reproduction and nutrition R&D and we feed the findings into our Lifetime Ewe Management (LTEM) training program and other workshops for woolgrowers."

See opposite for information on the LTEM course.

The Science and Innovation Awards for Young People in Agriculture are coordinated by ABARES and are open to young people aged 18-35 years working or studying in rural industries. The annual awards aim to support and inform best farming practices and develop strategic planning within the sector. B

More information:
www.wool.com/scienceawards

Lifetime Ewe Management

Setting your ewes up for success

Good conception and lamb marking rates are key to a successful sheep business.

FIND OUT HOW you can maximise lamb numbers by joining an LTEM group in your area.

Course overview

Being involved in a LTEM course gives you the skills and support to make feeding and managing your ewes easier. Working with groups of 5-7 farmers who meet six times in 12 months, your trainer, an experienced sheep consultant, will work with you to:

- Learn how to condition score
- Prepare ewes for joining
- Manage singles and twin-bearing ewes at different stages of their reproductive cycle
- Assess pasture and calculate supplementary feeding rates
- Set up lambing paddocks
- Form weaning strategies to maximise weaner survival
- Set targets for condition score, conception, lamb survival, ewe mortality, lamb growth rate and feed on offer.

Course investment

The cost of LTEM is $2,400 plus GST per participant. AWI offers eligible woolgrowers a subsidy of $1,000 bringing the course cost to $1,400 plus GST per participant.

How do I join an LTEM course?

LTEM is delivered on farm and is ideally suited to a small group of 5-7 participants. We encourage you to contact like-minded neighbours and farmers in your local area to form a group, and a trainer will come to you to deliver the LTEM course. B

More than 4,000 Australian producers have taken part in LTEM, representing 30% of the national flock. On average, producers increase stocking rate by 9.3%, marking percentage by 7%, weaning percentage by 8% and reduce ewe mortality by 25%.

Contact

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Monitoring project demonstrates Australia's healthy flock

An annual sheep industry project that last year monitored nearly 9.5 million Australian sheep has found a low and decreasing incidence of disease, demonstrating the excellent animal health and welfare practices in the Australian sheep industry.

PHOTO: Redzaal

The National Sheep Health Monitoring Project (NSHMP) commenced in 2007 to monitor lines of sheep in abattoirs for animal health conditions that reduce farm profit through productivity losses or by affecting market access.

In 2019/20, the monitoring occurred in 10 abattoirs, located in all states. Meat inspectors inspected 9,455,621 sheep in 40,786 lines from 9,013 Property Identification Codes (PICs) for up to 20 animal health conditions.

Sheep were sourced from all Australian states. Of the sheep inspected, 45% were from NSW, 15% from Western Australia, 18% from South Australia, 14% from Victoria, 6% from Tasmania and 2% from Queensland.

The NSHMP Annual Report provides an analysis of the data from the project, for 15 of the 20 monitored conditions thus providing a snapshot of the health of a significant proportion of the Australian sheep flock.

The analysis shows that there is a low and generally decreasing incidence of disease in inspected sheep – see Table 1 above.

For each of the 15 health conditions, the NSHMP Annual Report provides details of:

- the number of sheep in Australia inspected and affected during the past three years
- the percentage of PICs inspected in each state that had at least one affected animal
- the percentage of animals inspected in each state that were affected
- a map showing the percentage of sheep affected in each local government area.

Table 1. The percentage of inspected sheep affected by each of the listed conditions

	2017/18	2018/19	2019/20
Arthritis	1.1	0.9	0.6
Bladder worm	3.9	3.5	3.6
Cheesy gland	1.8	3.7	2.5
Dog bite	0.03	0.03	0.03
Grass seed	0.9	0.4	0.3
Hydatids	<0.01	<0.01	<0.01
Knotty gut	0.1	0.3	0.2
Liver fluke	0.5	1.1	0.6
Lungworm	4.2	2.3	0.8
Measles	1.2	1.5	1.3
Nephritis	1.7	2.4	2.8
Pleurisy	3.0	2.8	1.8
Pneumonia	0.9	0.5	0.3
Sarcocystosis	0.5	0.5	0.3
Vaccination lesions	1.0	1.1	1.14

The NSHMP is run by Animal Health Australia (AHA) with the support of sheep industry organisations Sheep Producers Australia and WoolProducers Australia.

AWI Program Manager, Sheep Health & Welfare, Bridget Peachey, who is a member of the NSHMP Steering Committee, says the project has generated comprehensive data that provides a good indication of the excellent animal health status of the Australian flock.

"While governments, industry groups and processors use this information to provide solid evidence to demonstrate the high quality of Australian sheepmeat and to support market access, it also provides further evidence to a wider audience that Australian sheep and wool producers are committed to exceptionally high standards of animal health and welfare," Bridget said.

"The report is also useful for producers, animal health advisors and state departments of agriculture to track if there are any adverse health conditions emerging in their region so that they can fine tune their animal health programs and address the issues swiftly.

"Bladder worm, cheesy gland and nephritis recorded the highest levels of incidence during 2019/20, but nephritis appears to be the only condition that has been gradually increasing in occurrence nationally in inspected sheep during the past three years.

"Cheesy gland is something that woolgrowers should particularly look out for because it is associated with a decrease in wool production, wool contamination and chronic infection causes ill thrift, emaciation and can affect reproductive performance." **B**

More information:
The NSHMP Annual Report and further information, including fact sheets on several diseases (including prevention and treatment options), are available at www.animalhealthaustralia.com.au/nshmp

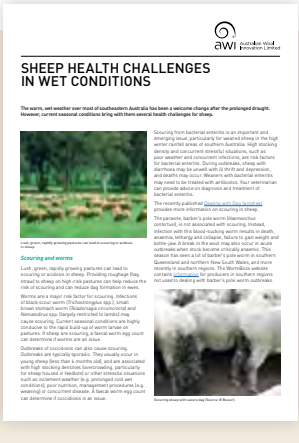
Sheep health challenges in wet conditions

While warm, wet weather over most of south-eastern Australia was a welcome change after the prolonged drought, such seasonal conditions can bring on several health challenges for sheep.

AWI has produced a 3-page factsheet that provides woolgrowers with advice on sheep health issues that might affect their sheep during wet conditions. These issues include:

- Scouring and worms
- Flystrike
- Other insect-related conditions, such as pinkeye and *Mycoplasma ovis*
- Footrot
- Bacterial pneumonia and pleurisy
- Clostridial diseases.

Download the fact sheet at www.wool.com/wet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CLiK Extra Spray-On Meat WHP now 21 days. Wool WHP remains 3 months. Always read and follow the label directions. Good agricultural practice is essential for optimal blowfly strike prevention. *Conditions apply, see www.clikextrarewards.com.au. Offer not valid in conjunction with any other offer. Only available while 20 L drums are in-stock. Open to AU residents. Purchase between 01/06/21 and 11:59 pm AEST 31/8/21. Claims commence 01/06/21 and close at 11:59 pm AEST 30/09/21 or once allocated gift card stock runs out, whichever is first – see terms for conditions. Purchase must be in a single transaction. Retain receipt. Only one claim permitted per claimant. Promoter: Elanco Australasia Pty Ltd (ABN 64 076 745 198) of Level 3, 7 Eden Park Drive, Macquarie Park, NSW, 2113. [1]CLiK Extra Spray-On contains 65 g/L dicyclanil and provides up to 29 weeks protection from blowfly strike. CLiK Spray-On contains 50 g/L dicyclanil and provides 18–24 weeks protection from blowfly strike. [2]When used for protection against breech strike, or body and breech strike. Insecticide resistance in sheep blowfly larvae: http://www.flyboss.com.au/sheep-goats/files/pages/treatment/insecticide-resistance/Resistance_download_130410.pdf

When administering veterinary and agricultural chemicals, **always read the label** before use and follow the instructions exactly.

Always read and follow label instructions

'When all else fails, read the instructions' is a common saying. But when using veterinary and agricultural chemicals, it is crucial to read the instructions BEFORE you do anything else.

Applying chemicals and administering veterinary products to sheep can seem like a complicated business but there is a simple rule to follow that takes the guesswork out of it – follow the label instructions. Always. In all situations. Without exception.

Sheep veterinarian Dr Joan Lloyd says stories abound of various practices recommended by someone or someone's neighbour but the simple truth is that if it's not written on a product's label, it should not be done.

"The fact is that the label recommendations are there for a reason," Dr Lloyd said. "There is a lot of research and trial work that goes into devising the label recommendations and they describe the safest, most effective and best way known to use the product. Always read the label and follow the instructions exactly."

If producers are thinking of using any chemical or vaccine, Dr Lloyd recommends they find the label recommendations and safety information using the PubCRIS search function on the Australian Pesticides and Veterinary Medicines Authority (APVMA) website (https://portal.apvma.gov.au/pubcris).

"The PubCRIS search is very easy to use and the results are clear and easy to read," Dr Lloyd said. "Farmers can use it as a tool to find out about particular products before they go out and buy them.

"It can also be used if the actual label on a product is hard to read for some reason."

Maximum effectiveness

Zoetis Associate Director – Livestock Veterinary Operations, Dr Kelly Graham, says the majority of the time when consumers complain that a product has not been as effective as it was claimed to be, investigation reveals that it was not used according to label directions.

"If you ever want to do anything off label, talk to the manufacturer or your veterinarian before you do so," Dr Graham said. "Other than when specifically advised by your veterinarian, make sure you follow the label recommendations."

Dr Graham says labels are there for a reason.

"They explain the safest, most effective way for the chemical or vaccine to be used," she said. "Too much time and effort goes into mustering animals, and buying and administering products to not use the product correctly. Take the time, and follow the advice."

Separate injection sites

Dr Lloyd says she has heard of instances where meloxicam and a vaccine had been injected in the same site.

"This should never be done," she said. "Both injections should be given high on the neck behind the ear, but on opposite sides. Vaccination sites elsewhere on the body cause problems at the abattoir. When vaccination sites are high up on the neck, less trimming is required.

"The actual sites of the two injections must be separate. The two products do different things and require a different response from the body. They need to be kept separate.

"Some vaccines, such as the OJD vaccine, can cause quite a large site reaction especially if administered incorrectly. If meloxicam is injected at the same site, it may affect the response to the vaccine, or the vaccine may decrease the efficacy of the meloxicam."

Dr Lloyd said vaccines should always be administered in the position and way described on the label. She said particular

care must be taken with the scabby mouth vaccine as it is a live virus and should be given on the bare skin on the side of the brisket or the inside of the front leg to ensure it causes the least possible discomfort to the sheep. This site also ensures it is in an area that stops the sheep from contaminating other parts of its body, ie lips due to licking.

The percentage of sheep with vaccination lesions has recorded a slight increasing trend over the past few years, to 1.14% of sheep inspected at abattoirs – see the article on page 36. At the abattoir, vaccination lesions are trimmed from the carcase. Vaccination lesions can be caused by improper technique, poor hygiene or using a contaminated vaccine. The accidental introduction of bacteria or dirt with the vaccine results in infection which can lead to abscess formation.

Dual vaccinator

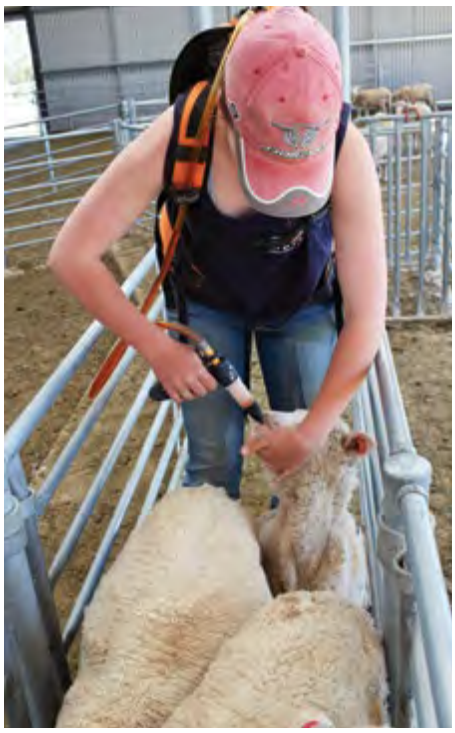
Dr Graham said the only time two injectables should be used together is when giving Glanvac and Eryvac through the Zoetis Dual Vaccinator.

"We developed the dual vaccinator specifically to deliver Glanvac and Eryvac," she said. "We were developing a combination vaccine and developed the dual vaccinator as a stop gap before the combination product was released. We had to do serology and safety testing to ensure they could be administered together and so we could have the co-administration advice written on the label."

Dr Graham said that while they were doing the work to support the label claims for dual administration of Glanvac and Eryvac, they tested a range of other products for dual delivery.

"We tested other vaccines and anthelminthics through the same system," she said. "We were unsuccessful with all the other products, so only those two have the claim.

"With other products delivered together, there were issues with safety, including injection site reactions and efficacy. We found in some cases the antibody response to the vaccine was not as good as when the vaccine was administered alone. With some of the pharmaceutical products, we found the absorption from the injection site was modified by the dual administration, which would therefore result in impacting the product's efficacy."



A lot of research goes into devising label recommendations; they describe the safest, most effective and best way to use the product.

Don't mix it up

Formulations of agricultural and veterinary products contain active ingredients and a range of other ingredients.

"When you have a product, there's the active ingredient, but there's all the other things that go into it to make it work and be absorbed by the body," Dr Graham said. "If you mix something else into it, it won't work. When you put two things together, they don't always work as they do on their own."

Dr Graham likened this to cooking. "If you are making a chocolate cake and you get the mix of ingredients wrong or add in an extra ingredient, it either doesn't taste right or doesn't rise properly.

"There's always a lot of research behind formulations and label recommendations, therefore always follow the label."

Dr Lloyd says it is a false economy to add something to a product in the hope it would make it go further or be absorbed better.

"You can't add vegetable oils to lice or fly treatment products as a surfactant," she said. "Adding anything not recommended on the label to a product will dilute it and may affect its efficacy. Diluting it or not applying at recommended rates may contribute to the development of resistance. We need to maintain the efficacy of the chemicals available for treating animals and that means ensuring they are used at the correct rate and in the correct way."

Safety first, always

Dr Lloyd says it is important to realise that some products contain chemicals that must be used correctly to ensure the safety of workers.

"Lice treatments containing diazinon is an interesting example," she said. "It may seem quick and easy to apply it on the board after the sheep have been shorn.

"But the label says diazinon should only be applied to sheep contained within a narrow sheep race and the person applying it should stand outside the race. Contact with eyes and skin should also be avoided. You cannot follow these safety directions and apply it on the board.

"Diazinon is poisonous if swallowed and repeated minor exposure may have a cumulative poisoning effect.

"When you read a label, if it says DO NOT, then it doesn't matter who you are, you aren't allowed to do that thing." B

Give parasites **the toss with ParaBoss**

Regardless of what the weather has been doing around your property, winter is a critical time for parasite management, whether you're taking important actions or laying down a plan for the months ahead. ParaBoss provides information and resources to help you manage worms, flies and lice in your sheep flock as we head towards spring.

wormboss

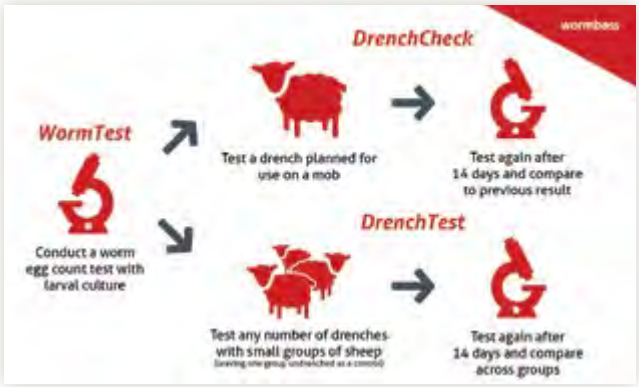
Make time to find the most effective drench

Slowing drench resistance is vitally important for the wool industry, to ensure that worm populations can be managed, and that sheep continue to grow and produce to their fullest potential. One significant factor leading to greater drench resistance among worms is the continued use of drenches which are no longer as effective as they once were.

Thankfully, getting an early indication of the effectiveness of the drenches you are using is quite simple. If you're familiar with the *WormTest* – ie a count of how many worm eggs are present in faeces, indicating the extent of the worm burden – you can follow up with a second *WormTest* 14 days after you next drench your sheep; just make sure to collect individual samples instead of a bulk collection! We call this process a *DrenchCheck*. The resulting change in egg numbers can tell you how effective the drench was. We also recommend requesting a larval culture with each *WormTest* to understand the types of worms present before and after. Ideally, you'd be using a drench which is more than 98% effective, meaning it reduced the worm egg count to nil or very, very low.

Choosing and using drenches wisely is an important part of a sustainable and effective worm control program and with careful use you can slow down the development of drench resistance on your property.

Take the opportunity to conduct a *DrenchCheck* before you reach the end of the drum, and definitely before you order more drench. There's no sense in buying a product which isn't doing its job!



If you find you're using a drench which isn't at least 98% effective, it may be time to consider a *DrenchTest*. This will give you a comprehensive look at which drenches are most effective against the worms on your property. The process is similar to a *DrenchCheck* – you're going to conduct a *WormTest*, drench the selected sheep, then conduct a follow-up *WormTest* 14 days later.

Where it differs is in the selection of different groups of comparable sheep (same age, same approximate weight and same drenching history), which will each undergo a separate but simultaneous testing and drenching process, including one group that is left undrenched as a control. Each group must receive a drench containing a different active ingredient or combination to the others. You will need to use a system of coloured spray or tags to mark which sheep were in which group, so that you can round them up again for the follow-up test.

The differences in results across groups for the follow-up test will tell you not only how effective each drench active is, but how it stacks up against the others. This helps you to select the most effective drench actives for use on your property over the next few years.

Bear in mind, however, that combination drenches or drenching with multiple simultaneous products can be a big help, so don't write off a less effective active altogether! While individual worms may be resistant to particular actives, the odds that any one worm is resistant to multiple actives is much, much lower. Using 'Active A' and 'Active B' together can be more effective than using either active alone, even if one is less effective overall, because Active A is there to kill those who survive Active B, and vice versa – though of course worms will survive if neither is fully effective.

Using effective combinations is best practised as part of a broader management strategy to keep whole-of-farm worm levels low or build the worm-resistance of your sheep, both of which will reduce the reliance on drenches to manage worm burdens.

WormBoss can provide more information on each of these strategies as part of your regional program, which is tailored to your local climate conditions. **B**

More information:
www.wormboss.com.au

flyboss

Shear and crutch as a non-chemical flystrike prevention method

Did you know that shearing and crutching can have a significant impact on flystrike risk and provide up to six weeks ongoing protection from flystrike?

There are, of course, a number of factors which influence why woolgrowers shear when they do. This includes working around lambing, having shearers available, and managing fleece quality. This can vary significantly, even within a small region.

While winter certainly isn't the peak period for flystrike management activities, given how much flies hate the cold, it does offer a useful reprieve during which you can review your strategies and make adjustments for the upcoming season.

One way in which to do this is using the FlyBoss tools to optimise your treatment times. Both the online and downloadable version of the FlyBoss tools can help you understand the impact your strategy has on flystrike risk, and the gains which could be had by moving shearing and crutching forwards or backwards by as little as a month.

The tools can also take into account chemical usage, breech modification and, in the case of the downloadable Flystrike Risk Simulator, the effect of breeding for reduced breech strike. This gives you a clear picture of the impact of what you've been doing on your property, and whether a modified strategy could give better results.

Find out more, access the FlyBoss tools, and download a Flystrike Management Calendar template via FlyBoss. B

More information:
www.flyboss.com.au

liceboss

Got lice? Don't keep scratching your head, try for eradication

Shearing is a critical moment for lice control, as you have all of your sheep in one place, and many lice treatments are only capable of eradicating lice when used off-shears or in short wool.

Treating every sheep – and more importantly applying that treatment properly – may take time and effort, but the benefits of a lice-free flock can be seen for years to come.

Of course, on the other hand, one sheep missed during shearing or treated poorly can undo all of your hard work, as a lice infestation only needs one sheep to begin growing and spreading again. There are a few key considerations when planning your approach, such as the chemical group you're using and whether you have the equipment to do the job.

Keep in mind as well that automated jetting races, while convenient, may not be able to completely eradicate lice, and long wool treatments certainly will not be able to. This will impact the products and techniques available to you. You'll also need to consider whether lice on your property are resistant to any chemical groups and, if you're conducting split shearings, whether you'll be able to keep treated sheep away from non-treated sheep.

The final consideration, if your eradication is successful, is how to prevent lice from being reintroduced. LiceBoss can help with determining how and when to treat, choosing products and methods, and implementing good biosecurity to keep lice away for good. B

More information:
www.liceboss.com.au

paraboss

Best practice advice for managing sheep parasites

Collectively, the three Boss websites – WormBoss, FlyBoss and LiceBoss – promote **best practice for the management of sheep parasites** at the farm level, developed by a community of veterinary experts and parasitologists from across Australia and supported by the sheep industry.

The collective ParaBoss tools are accompanied by a free, **twice-monthly newsletter** which discusses the current state of sheep parasites nationally, explores issues most pressing on-farm, and provides an update on timely and effective management strategies. Sign up to receive newsletters and tap into the expertise of the ParaBoss network at www.paraboss.com.au/subscriptions.

Also, **join ParaBoss on Facebook** at www.facebook.com/paraboss.com.au to see regular posts on flystrike, lice and worm control.

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

Genetics update

Fast facts

1. Ram breeders continue to make progress in breeding productive, naturally flystrike resistant Merinos.
2. List of High Use Merino Superior Sires has been released, and more Sire Evaluation sites commence.
3. Combined wether trial analysis is under review.

Breeding productive, naturally breech strike resistant Merinos

From recent R&D we know that Merinos with actual (phenotypic) Wrinkle score 2 and less, Dag score 2 and less, and Breech Cover score 3 and less, have low risks of breech strike similar to mulesing, while even lower scores lower the risk further.

We also know that mulesing, on average, reduces the natural wrinkle by 1.0 score, reduces urine stain by 0.5 score and reduces dag by 0.4 score. The higher the starting natural score, the greater the reduction.

Trials have also shown that to achieve the required wrinkle score to move to a naturally non-mulesed enterprise without an increased reliance on chemical prevention, the target Wrinkle ASBV in high wrinkle country is around minus 1.0, in moderate wrinkle country minus 0.6, and in low wrinkle country minus 0.3. There is consensus among most non-mulesed ram breeders regarding these targets, but there is considerable variability between country and sheep types, and each grower needs to arrive at targets specifically relevant to their sheep and country.

In low dag country, a target Dag ASBV is a lower priority as they are much less frequently expressed. In high dag country a Dag ASBV of -0.4 is required but it is a tough target as only 5% of all MERINOSELECT animals measured for dag meet this performance target (see Table 4).

Armed with an increasing amount of breech trait scoring and Adult fleece assessments, Merino ram breeders are increasingly breeding more productive sires with high adult fleece weight and fertility along with natural resistance to breech strike. This is evidenced by the fact that the leading sires come from relatively recent drops of progeny tested sires and the momentum is building.

Tables 1 to 3 are generated using the MERINOSELECT animal search function (April 2021) and are examples of the leading breech strike trait sires for some high, moderate and low diameter sires. While only an indicative selection, they show that breeding high performance, naturally resistant Merinos is harder in lower fibre diameter Merinos and for breeders in high dag regions. See how the low diameter sires have higher wrinkle scores, a function of past Merino types and breeding. Some of these leading sires will be too high in Worm Egg Count or Adult body weight or low in fat for some breeders.

During the past 15 years, a range of new traits has been added to Merino breeding objectives such as Worm Egg Count, Fat, Muscle, Wrinkle, Cover, Dag and Polled Genotypes. Whilst these additional traits are more important in some production systems than others, it has added further complexity to breeding programs. For an enterprise to move away from mulesing, important measures to consider are both the average performance of all sires in the flock as well as their consistency in type. Without consistency, the result will be wider variation in welfare risk, diverse management and costly culling.

Table 1. High micron, high index sires with leading breech trait ASBVs. There are sires in top 10% for wrinkle and top 10% for adult fleece weight.

DROP	ACFW	YFD	YFAT	YWt	WEC	NLW	EBWR	ECOV	LDAG	DP+
2016	34	**0.6**	1.1	17	-71	2.0	**-1.4**	-0.3	-0.3	210
2016	27	**-0.5**	0.6	11	18	0	**-1.0**	-0.3	0.1	187
2017	40	**-0.1**	-0.6	11	–	4	**-1.1**	-0.2	0.0	192
2017	25	**-0.7**	1.5	16	-17	20	**-0.7**	-1.3	-0.5	255
2019	21	**-0.6**	1.0	11	–	10	**-1.0**	-0.7	-0.3	204

Table 2. Moderate micron, high index sires with leading breech trait ASBVs. Leading sires are top 30% for breech wrinkle.

DROP	ACFW	YFD	YFAT	YWt	WEC	NLW	EBWR	ECOV	LDAG	MP+
2015	12	**-1.8**	0.7	8	-48	17	**-0.5**	-0.8	-0.1	193
2017	26	**-1.7**	0.8	10	–	10	**-0.5**	-0.8	–	201
2018	16	**-1.4**	0.6	17	–	15	**-0.6**	-1.4	0.1	198
2018	34	**-1.8**	-0.4	16	-6	0	**-0.4**	0.2	-0.1	202

Table 3. Low micron sires with leading breech trait ASBVs. Leading Sires are in the top 50% for breech wrinkle.

DROP	ACFW	YFD	YFAT	YWt	WEC	NLW	EBWR	ECOV	LDAG	FP+
2013	8	**-2.9**	-0.4	4	–	–	**-0.2**	-0.1	0.0	155
2014	14	**-3.0**	-0.5	5	-8	3	**-0.2**	0.0	0.1	160
2015	17	**-3.0**	-1.0	5	10	-9	**0.0**	0.0	-0.1	149
2018	2	**-2.7**	1.0	5	–	14	**-0.2**	-0.4	-0.2	164

Table 4. MERINOSELECT ASBV percentile table (7th April 2021)

PERCENTILE	ACFW	YFD	NLW	EBWR	ECOV	LDAG	DP+	MP+	FP+
Top 1%	35	-3.2	14	-1.3	-0.8	-0.5	197	192	177
Top 5%	29	-2.5	10	-1.1	-0.6	-0.4	181	178	163
Top 10%	26	-2.2	8	-0.9	-0.5	-0.3	173	170	157
Top 20%	22	-1.7	5	-0.7	-0.4	-0.2	163	162	150
Average	15	-1.0	1	-0.2	-0.1	-0.1	146	146	137
Top 70%	9	-0.5	0	+0.1	+0.0	+0.1	137	136	129

Trait leaders show the ASBV is top 10%

ACFW Adult Clean Fleece Weight YFD Yearling Fibre Diameter NLW Number of Lambs Weaned EBWR Early Breech Wrinkle ECOV Early Breech Cover LDAG Late Dag DP+ Dual Purpose Plus Index MP+ Merino Production Plus Index FP+ Fibre Production Plus Index

Merino Sire Evaluation new sites

List of high use Merino Superior Sires

The Australian Merino Sire Evaluation Association (AMSEA) oversees Sire Evaluation sites across Australia. These sites provide opportunities for ram breeders to compare the genetic performance of individual rams with those from other ram breeding flocks.

AMSEA has collated the ASBV and classing results of the 25 most-used industry sires that have been entered in Merino Sire Evaluation between 2015–2019. This report is available for download in the 'Latest Updates' section of www.merinosuperiorsires.com.au.

These 25 most-used sires are drawn from the 351 sires entered in Merino Sire Evaluation and the Merino Lifetime Productivity (MLP) project between 2015 and 2019. Eighteen of the 25 sires have been used in the MLP project, highlighting the popularity of many of the MLP sires.

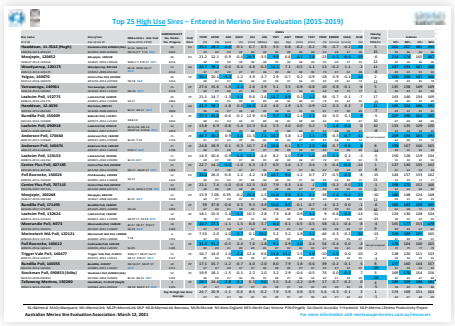
Together, these 25 rams have sired more than 46,000 progeny across Australia, averaging 1,800 progeny per sire. All 25 have more than 1,000 progeny, with the most-used sire having nearly 5,500 progeny in 26 flocks. The average number of flocks directly using the genetics of these 25 sires is 16 flocks per ram.

Recent results for both wool and carcase traits are reported as ASBVs from MERINOSELECT. AMSEA classing results are also incorporated with the Tops and Culls which are reported as percentage deviations from the average.

Traits that are ranking in the top 10% are **highlighted**. Sires entered in the MLP project are denoted with the tag **MLP**.

Yearling (Y) and Adult (A) stages are reported where possible to provide an important older age perspective on results. Early Breech Wrinkle (EBRWR) and Late Dag (LDAG) scores plus Number of Lambs Weaned (NLW) are reported as per MERINOSELECT. Accuracies for these ASBV and index results are high, as would be expected with such large numbers of progeny.

If you would like any further Merino Sire Evaluation information or the 25 High Use Sires report, please email merinosireevalution@bcsagribusiness.com.au.


Top 25 High Use Sires – Entered in Merino Sire Evaluation (2015-2019)

New Dohne Sire Evaluation site

A new Dohne site has commenced this year at 'Coonong Station', Urana, with the Australian Dohne Breeders' Association acting as the Site Committee. This is the first time a specific Dohne site has been established, although Dohnes have been evaluated in Merino sites previously. Fifteen sires, including three link sires, were artificially inseminated (AI) to 90 ewes each in January 2021. Lambing will be in June this year with the first field day planned for September 2022 and the final field day in September 2023. The site is planning to run all the ewe progeny through and assess them for their maiden lambing performance.

New Bathurst Merino Sire Evaluation site

A new Bathurst Merino Sire Evaluation site has started at 'Ferndale', Bathurst. MerinoLink will take on the responsibility as the Site Committee with Bathurst Merino Association working alongside. Sixteen sires including two link sires have been joined by AI to 55 ewes.

The number of high rainfall sites has expanded in recent years to now include New England, NSW; Bathurst, NSW; Boorowa, NSW; Yass, NSW; and Balmoral, Victoria.

There is also increasing interest at Sire Evaluation sites to additionally assess the sire's ewe progeny for their maiden lambing performance.

Each Sire Evaluation site is run by a Sire Evaluation Site Committee. If you are interested in joining a committee and actively keen to assist in providing good oversight for the animal assessment protocols needed to obtain the high quality breeding value data, please contact Emma Grabham from AMSEA via merinosireevalution@bcsagribusiness.com.au.

AUSTRALIAN MERINO SIRE EVALUATION ASSOCIATION
MERINO
Superior Sires

Where to for wether trials?

The last Merino Bloodline Performance was conducted in 2018. It was an across wether trial site analysis of trials conducted in the previous 10 years. There has been a long-term decline in the number of wether trials in recent times and they are now only conducted in NSW. There has also been a significant increase in the number of mixed bloodline teams (wether flocks with multiple ram sources) that are difficult to describe as a single "bloodline or stud".

AWI, NSW DPI and Animal Genetics and Breeding Unit (AGBU) are reviewing the impact of these changes on the validity of conducting another across trial analysis. If an across site analysis is no longer robust/ cost effective, the aim will be to find the best way to support the individual wether trials at Glen Innes, Bathurst, Australian National Field Days (Orange), Bookham, Parkes, and the Peter Westblade trial at Wagga and Condobolin. The DNA Flock Profile test may be able to replace or complement wether trial evaluations and at a lower cost, but this also is being investigated. **B**

More information:
AWI Program Manager Genetics and Animal Welfare Advocacy, Geoff Lindon at Geoff.Lindon@ wool.com

Adding on to the MLP

Opportunities of a ewe's lifetime

It's a novel opportunity to be able to research Merino ewes right across their lifetime. As the MLP project tracks ewes across the years, it is enabling additional research opportunities for site hosts and their affiliated organisations. Every MLP site now has Add-On projects in progress. Here is a directory of Add-On projects.

MLP fast facts

The AWI-funded MLP project is a $8 million (plus $5 million from partners), 10-year partnership between AWI, the Australian Merino Sire Evaluation Association (AMSEA), nominating stud Merino breeders and site partners.

- **Balmoral, Vic**
  Partner: Tuloona Pastoral
  Committee: Balmoral Breeders Association
- **Pingelly, WA**
  Partner: Murdoch University / UWA
  Committee: Federation of Performance Sheep Breeders (WA Branch)
- **MerinoLink, Temora, NSW**
  Partner: Moses & Son
  Committee: MerinoLink Inc.
- **Macquarie, Trangie, NSW**
  Partner: NSW DPI
  Committee: Macquarie Sire Evaluation Association
- **New England, NSW**
  Partner: CSIRO
  Committee: New England Merino Sire Evaluation Association

The MLP project is tracking the lifetime performance of 5,700 ewes as they proceed through four to five joinings and annual shearings.

A full suite of assessments will be undertaken including visual trait scoring, classer gradings, objective assessment of a range of key traits 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.

To stay up to date with the latest MLP findings, visit www.wool.com/mlp. Subscribe to MLP updates via www.merinosuperiorsires.com.au/contact-us

MLP
Merino Lifetime Productivity Project

Pingelly, WA

FOUNDATION EWES
(DAMS OF MLP EWES)

- **Use of sensors** to allocate dam pedigree
- **Evaluation of mob size for optimal lamb survival**
  Funding: Murdoch University / AWI

More information:
andrew.thompson@murdoch.edu.au / a.lockwood@murdoch.edu.au

WETHERS (MLP EWE SIBLINGS)

- **Growth & wool production project** recording teeth eruption, worm egg counts, breech, wool and carcase assessments up to the adult age stage (2016 and 2017 drops). Funding: Murdoch University / AWI

More information:
bronwyn.clarke@murdoch.edu.au

- **The Genetic Evaluation: Productivity Efficiency and Profitability (GEPEP) project** is looking to improve current estimates of profitability per hectare, by assessing feed intake and total body reserves rather than metabolic body weight (DSEs). GEPEP includes an additional fleece measurement at age 2.5 years and comprehensive economic analysis. Funding: Murdoch University / AWI

More information:
s.blumer@murdoch.edu.au. *Beyond the Bale*, March 2021, pages 42-44.

- **Footrot Genetic Evaluation of Resistance.** Evaluation for susceptibility and extent of footrot across Pingelly MLP sires to further develop Australian footrot breeding values (2016 and 2017 drops). Funding: Murdoch University / Animal Health Australia

More information:
andrew.thompson@murdoch.edu.au

Macquarie, Trangie NSW

FOUNDATION EWES
(DAMS OF MLP EWES)

- **Rectal temperature** and the implications for AI conception. Funding: DPI

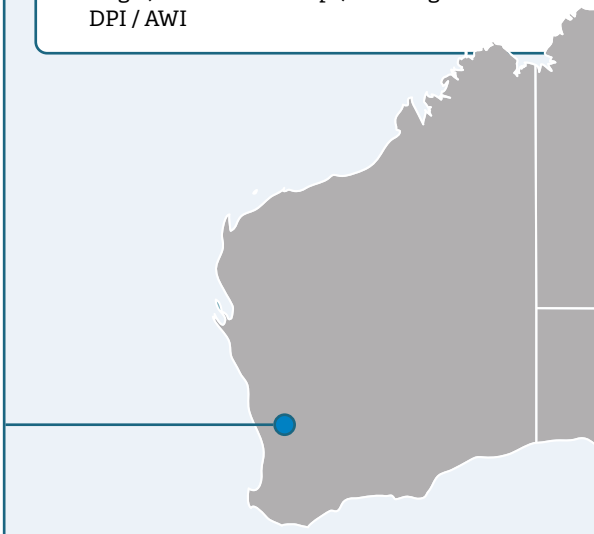
More information:
Gordon.refshauge@dpi.nsw.gov.au

MLP EWES

- **Wells Classer Trial** involving both the 2017 and 2018 drops (see Balmoral)
- **Ram Mating Success** (see MerinoLink)
- **Yield Project** (see MerinoLink)

WETHERS (MLP EWE SIBLINGS)

- **Measurements** including wool assessments, visual scores and carcase measurements up to their yearling age stage (2017 and 2018 drops). Funding: NSW DPI / AWI



Balmoral, Harrow Vic

MLP EWES

- **Data collection** including lamb teeth eruption and teat counts, then at later stages, feet/leg component scores (2015 and 2016 drops). Funding: Balmoral Breeders

More information:
balmoralsireevaluation@gmail.com

- **Wells Classer Trial.** The 2015 drop has undergone this trial exploring the repeatability of a classers grade within a sire group to that sire's own breeding objective. Funding: AWI

More information:
anneramsay1@bigpond.com

- **Ram Mating Success** project working on the results of syndicate sires joined to MLP ewes with evaluation of physical and semen

- **Carcase measurements, slaughter traits and meat quality project** combined with production data (2017 and 2018 drops). Additionally, meat eating quality and consumer taste panels were incorporated into the 2018 drop work. Funding: NSW DPI / MLA

More information:
sue.mortimer@dpi.nsw.gov.au

F2 PROGENY (MLP EWE'S OWN LAMBS)

- The Macquarie site and NSW DPI are also utilising the MLP F2 lambs for research around selecting for nutrient efficient livestock and improved grazing technologies.

performance to help explain foetus getting ability (2015 and 2016 drops). Funding: Livestock Logic

More information:
Lexie Leonard, l.leonard@livestock.com.au

WETHERS (MLP EWE SIBLINGS)

- **Later stage measurements** including yearling wool assessments, AWEX-ID, visual traits and carcase measurements up to their first adult year. Funding: AWI

More information:
ben.swain@bcsagribusiness.com.au

- **Hogget slaughter data** collected on a sample of each 2015 drop sire group. Funding: MLA

More information:
balmoralsireevaluation@gmail.com

New England, Armidale NSW

FOUNDATION EWES
(DAMS OF MLP EWES)

- **Reproduction, fitness and survival work** collecting birth and death records, plus fitness compromise of MLP ewes and their wether siblings to evaluate performance in neonatal survival, and fitness survival to yearling age. Funding: CSIRO / AWI

More information:
jen.smith@csiro.au

- **Use of foetal age for prediction of birth date.** This used foetal age at pregnancy scanning to better predict birth date for improved management and improved genetic evaluation accuracy (Kim Bunter, Australian Genetics Breeding or AGBU). Funding: AWI

More information:
kbunter2@une.edu.au

MLP EWES (2017 AND 2018 DROPS)

- CSIRO site research:
  - **Young sheep dentition.** Age of permanent teeth eruption of MLP ewes and wethers was assessed to target management options, evaluate sire effects plus associations with fertility at first mating.
  - **Lamb survival and birth weight.** Birth and death records at lambing for evaluation of lamb survival (F2s), lambing ease and maternal behaviour.
  - **Neonatal mortality.** Autopsy of neonatal F2 lamb deaths to determine cause of death and accuracy (or not) of death assignment in the field (UNE student project).
  - **Udder and teat traits.** Udder trait recording for evaluation of associations with ewe performance, lamb survival and growth to weaning (UNE student project).
  - **Estimation of fleece value.** Incorporating style grade information from crimp frequency measures and AWEX-ID assigned to fleeces at shearing to improve estimation of fleece value within and across years (MLP ewes and wether siblings). Funding: CSIRO

More information:
jen.smith@csiro.au / amy.bell@csiro.au

- **Investigation of anti-mullarian hormone (AMH).** Examining the relationship between AMH levels in young ewes and future reproduction performance to assess AMH as a marker of ewe lifetime fertility. This work was undertaken by Will van Wettere, University of Adelaide, (2018 drop). Funding: University of Adelaide / AWI / CentrePlus Merino

More information:
william.vanwettere@adelaide.edu.au

- **Mini FLOTAC validation.** This looked at Mini FLOTAC as a potential method of providing a more sensitive WEC test and allowing WEC sampling at lower levels (2018 drop). Funding: Dawbuts / AWI

More information:
matt@dawbuts.com. *Beyond the Bale*, March 2020, page 45.

WETHERS (MLP EWE SIBLINGS)

- **Resilience project.** Half the wethers were tested for immune competence as weaners. Lifetime fitness compromise and disease incidence was recorded to validate the potential for tests to identify resilient animals and investigate resilience with production traits in different production pathways. Funding: CSIRO / AWI

- **Meat quality and slaughter traits (see Macquarie).** Half the wethers were backgrounded on site, feedlot finished and slaughtered as lambs. The other half were retained as wool-growers with full production and disease trait recording, then slaughtered. Carcase and offal disease data was collected at slaughter (2017 and 2018 drops). Funding: CSIRO / MLA / AWI

More information:
brad.hine@csiro.au. *Beyond the Bale*, December 2018, page 61.

MerinoLink, Temora NSW

MLP EWES

- **Wells Classer Trial** involving the 2017 drop (see Balmoral)
- **Ram Mating Success**, similar to the work at Balmoral, this work is being undertaken by Jillian Kelly, Local Land Services (LLS), and Tim Gole, For Flocks Sake. Funding: LLS / For Flocks Sake

More information:
jillian.kelly@lls.nsw.gov.au / tim@flockssake.com.au. *Beyond the Bale*, March 2021, pages 40-41.

- **Yield project** which compared yield and fleece measurements between the mid side, pin bone and whole fleece core samples of one shearing during drought (2016 and 2017 drops). Funding: AWI / NSW SMBA

More information:
ben.swain@bcsagribusiness.com.au

WETHERS (MLP EWE SIBLINGS)

- **Data collection** including wool assessments and carcase measurements up to their hogget age stage, plus slaughter carcase data (2016 drop). Plus, additional assessments and measurements up to the adult age stage (2017 drop). Funding: MerinoLink / AWI

More information:
admin@merinolink.com.au

AWI shearing shed design ‘Broome Farm’ open day Kojonup, WA

The shearers and wool handlers in action at the shearing shed open day at **Kojonup** in WA.

New shearing sheds are exciting! More than 300 people attended an open day in February at the shearing shed of woolgrowers Geoff and Linda Bilney of Kojonup in WA. The shed was primarily built using the innovative design that was developed in 2019 by AWI.

The shearing shed open day that was held on 25 February at Geoff and Linda Bilney’s ‘Broome Farm’ property was attended by 320 people, including woolgrowers, shearers, contractors, brokers and local agribusiness agents from across WA.

Attendees were able to talk to those involved in the design and build of the Bilneys’ shearing shed and watch the shearing in action. AWI’s WA-based Industry Relations Officer Ellie Bigwood spoke to the crowd about the AWI shed design and consultation project that resulted in shed blueprints.

“AWI’s shearing shed design aims to improve the efficiency of workers and the flow of livestock – while reducing costs and optimising worker safety, animal welfare and the quality of wool preparation,” Ellie said.

“The design was developed following extensive industry consultation with shearers, wool handlers, classers and woolgrowers, plus reviews of existing working sheds. Multiple trials led to refinements and a final design.

“The internal fit-out, incorporating the stands and yards, has been designed to have its own structural integrity so can even be built within any suitable pre-existing shell.”

Choosing the AWI shed design

Geoff and Linda Bilney own and lease 3,000 hectares of land, running a mixed sheep and cropping enterprise with a lamb finishing feedlot. Last year they shore about 65,000 head from their feedlot, plus their own sheep in the paddock, during a nine-month period. So with an operation of that scale, it’s no surprise that their old four-stand shed with a holding capacity of 300 was creating all sorts of problems.

“It was getting nearly impossible in the old shed to shear the number of sheep that needed to be shorn. Instead of shearing for three days per week, we can now shear the same number in two days which frees up an extra day for our farm staff,” Geoff said.

About four years ago, Geoff started thinking seriously about getting a new shed.

“As well as wanting to increase efficiencies and reduce the number of days

shearing, I wanted a shed that would still be relevant to the safety and workplace standards that will be expected of shearing sheds in twenty years' time, because I can see OH&S becoming more and more significant."

Geoff says they used the AWI Shearing Shed design with a few additions here and there to suit their operation.

"The AWI shed to us was the first shed that someone had actually spent time and money researching properly; looking at all the different aspects of the shed, then trialing and improving it before coming up with well thought out design – that approach appealed to me greatly.

"AWI's focus was the same as what we wanted, which was to make a really safe workplace. My aim was to get to the point where the insurance people could say 'we'll charge you a lower premium for your workers' comp because you have a safer shed'."

Collaborative planning for the new shed

Geoff emphasises the importance of involving the shearing contractor, shed builder as well as shed staff in the design and rollout of a new shed.

"I went over to Dubbo two years ago to an open day at the first shed built from the AWI designs, to see whether the shed would be suitable for us – and I was really comfortable with all the things that I saw there and thought it would work really quite well," Geoff said.

"So a couple of months later, I took our shearing contractor and shed builder over to Dubbo to have a look at the shed together, which was a really valuable thing to do because once everyone sees the physical shed in front of you everyone has a better understanding of what you are trying to achieve.

"The fact that our shearing contractor was involved in the decision-making process was very important. Through him, the shearers and wool handlers were also involved and so were a focus of the design. Plus, people are far more willing to accept something new or different if they have been involved in the decision-making process."

The Bilneys' new shed needed to be built with the strongest materials.

"The Dubbo shed is well built, but we need our materials to be stronger because we are putting through the shed eight or nine times more sheep than a normal shed. Our walls are a little bit thicker, our posts a bit stronger, our gates are made from heavier materials. It turned out to be a good decision because the lambs that get shorn in there have been on feed for a reasonable period of time, so can rush about!"

An efficient and safe work environment

One of the many notable features of the new shed is the use of plastic grating, which took three days to put down compared to the three and a half to four weeks it would have taken to put down wooden grating.

"The sheep are able to move on the non-directional plastic grating quickly and in any direction without baulking at light from below, and the panel walls mean that the sheep move exactly to the open gateway. The sheep flow around the pens and shed very smoothly," Geoff said.

"The flooring in the catching pens is steeper than is traditional, so the sheep are in a position pointing uphill so that the shearer can safely and easily choose a sheep, then catch and drag out the sheep downhill in a straight line. After shearing, the sheep go easily straight down the wide chute, with it positioned for the front feet to fall into the leading edge once shorn.

"We went for a flat board rather than a raised board, partly because the wool handlers use a broom about 95% of the time, plus wool handlers don't like having to lunge to the back of the board to get the wool. Also, a flat board means that the wool handlers do not have their face and neck at the same height as the shearer's handpiece and sheep's feet.

"We have insulated the roof to keep out temperature extremes for the benefit of the staff and the sheep. While this means there is little natural light, we have used plenty of LED lights and it almost looks brighter than daylight when all the lights are on in there.

"Overall, the new shed has increased workplace satisfaction and safety, and everybody is happy to work in the new environment." **B**

More information:
The blueprints of AWI's Shearing Shed Design (technical drawings for a six-stand shearing shed, plus the floor plan for working group member Hilton Barrett's 'Arrow Park' shearing shed at Dubbo, the first built from the designs) and a video about the design process are available free on the AWI website at **www.wool.com/sheddesign**.

Hear Geoff Bilney talk more about his new shed in the recent **It's time for ewe** podcast from AWI's woolgrower network Sheep Connect NSW, available via **www.sheepconnectnsw.com.au** and on Spotify.

Hear Geoff Bilney's shed builder and shearing contractor explain the costs, design and long-term benefits of his new shed in Episode 168 of AWI's **The Yarn** podcast, available at **www.wool.com/podcast** and on Spotify.

AWI CEO **Stuart McCullough** with **Stuart** and **Gabie Le Lievre** at the shearing shed open day.

AWI shearing shed open day – Louth, NSW

Stuart and Gabie Le Lievre of 'Yathonga Station' at Louth in northern NSW are another couple of woolgrowers who built their new shearing shed based on the AWI shed design project's blueprints.

On 14 April, the Le Lievres held a shearing shed open day, attended by 55 people who were able to hear from and talk to those involved in the design and build of the shed, as well as AWI CEO and staff about the latest in wool R&D and marketing.

Shearing shed safety program in action

The shearing shed safety program *SafeSheds*, which includes a best practice guide and checklists, is making the wool harvesting workplace safer for shed workers. The resources are available for free to woolgrowers across Australia.

SafeSheds was launched in November last year to improve safety in shearing sheds. It is now being used across the country by many woolgrowers and shearing contractors to help them assess the safety of their shearing sheds, thereby enabling the woolgrower to create a program to rectify any safety hazards, improve working conditions and comply with modern workplace standards.

While safe shearing sheds help attract people into the industry, retain current staff and extend the longevity of their careers, they also improve industry productivity and profitability. By planning and documenting the improvements and steps to control risk, woolgrowers will be able to provide direct evidence of efforts in managing safety as required by relevant State Workplace Health and Safety Legislation.

However, it is important to note that *SafeSheds* is a self-assessment guide and not a formal audit.

Developed by AWI and WA Shearing Industry Association, *SafeSheds* harnesses the support of industry including WoolProducers Australia, Pastoralists & Graziers WA, WAFarmers and Shearing Contractors' Association of Australia.

Taking safety seriously

The launch of SafeSheds was reported in the December edition of *Beyond the Bale*, and one of the woolgrowers that read the article and acted upon it is Jason Stokes from the Mid West region of Western Australia.

Jason is a mixed farmer from Nanson in the Chapman Valley, between Geraldton and Northampton. His farming operation includes sheep, joining about 6,500 ewes each year, and broadacre cropping of about 4,000 hectares.

The family property, 'Mt Erin', was purchased in 1964 by Jason's grandparents, and Jason and his wife Renaye took over the running of the property in 2010 from Jason's parents Barry and Margaret.

Mt Erin Station was established 1851 in what was then known as Paradise Valley. The current shearing shed is about 50 years old and it is starting to come to the end of its natural life. It was originally a four-stand shed but has been converted to five stands, however Jason says that with the thousands of sheep being shorn in it each year it really needs six stands.

Jason is beginning to consider building a new shed (and is taking a close look at the AWI's Shearing Shed Design – see page 46), but in the meantime he is keen to ensure that his current shed is as safe as it can be.

"We take the safety of our shearers and wool handlers seriously. So for instance, we have previously installed emergency stops so anybody can turn off the shearing machines if a shearer loses control of a handpiece. But the *SafeSheds* program enabled us to double check that our shed facilities are up to scratch and best practice," Jason said.

"Plus we currently have a worker's compensation claim from a crutching contractor, so we are looking to ensure that moving forward we have done everything possible to provide a safe workplace."

Useful tool to help assess shed safety

"Seeing the article in *Beyond the Bale* about the *SafeSheds* program was very timely and so I downloaded the app version of SafeSheds tool to my iPad and I used it to help me assess our shed. While it turned out that the shed was on the whole in accordance with best practice, it did identify a few things that we could improve," Jason said.

"Most of the changes were easily carried out, such as providing a bright stripe for the side of the ramp and top step to improve visibility. But there were a couple of issues raised that I was less confident in making decisions about myself, such as regarding the drag distance from the back of the catching pen to the downtube, so I liaised on that with my shearing contractor."

Jason says he thinks *SafeSheds* is comprehensive and detailed enough to be very useful.

"It's a good program and clearly outlines potential hazards and how to take actions to improve your shed. In fact, given that I have half an eye on building a new shed, it is also useful in highlighting the areas that I should be looking at for that. But in the meantime, it will certainly help ensure we can stretch out the life of the current shed," he said.

"It will also form part of the armoury for us to provide reassurance to contractors and their shearers to ensure staff keep coming back."

Also available as an easy-to-use digital app

While *SafeSheds* is available as an 80-page booklet (downloadable in PDF format from the AWI website or you can order a hard copy – see opposite page), the *SafeSheds* checklists are also available in a handy digital, interactive format.

The app version of *SafeSheds* allows you to add photos, create tasks and record actions based on improvements needed, record and document the assessment results with date and time stamps, share reports and track changes over time.

Jason used the app version of *SafeSheds* tool on his iPad.

"I found the app easy to use and we utilised a lot of its functionality, such as adding photos, creating tasks and subsequently recording actions taken. It will also be a good record and enable us to track changes over time."

It's important that woolgrowers use the program with plenty of time before their next shearing to allow enough time to rectify any hazards and improve shed conditions.

The next shearing at 'Mt Erin' occurs in February, so there is plenty of time for Jason to double check facilities before then.

"However, Tropical Cyclone Seroja went through the region in April causing a fair bit of damage to our machinery sheds and I will be sure to check whether the shearing shed needs some maintenance too," Jason added. **B**

More information:
www.wool.com/safe-sheds

SafeSheds booklet now available

SafeSheds is available as an 80-page booklet with four sections:

1. Legal obligations of people involved in shearing
2. Guidance on how to assess their current shearing shed and manage risks
3. Detailed best practice guidelines for all areas of shearing operations
   - Module 1 – The shearing shed
   - Module 2 – Machinery and equipment
   - Module 3 – Amenities and facilities
   - Module 4 – Work practices
   - Module 5 – General working conditions
4. Assessment checklists
   - Full assessment
   - Pre-shearing checklist
   - Induction checklist
   - Post shearing checklist.

The *SafeSheds* booklet is available in downloadable PDF format in full, or in separate sections, from the AWI website at **www.wool.com/safe-sheds** or you can order a hard copy by phoning the AWI Helpline on 1800 070 099.

Safety checklists on your mobile device

The *SafeSheds* checklists are also available in a handy mobile, digital, interactive format – available to download and use for free.

The tool allows woolgrowers and shearing contractors to self-assess their wool harvesting workplace and work together to identify and rectify safety hazards from their mobile device.

Woolgrowers and shearing contractors can use the app for multiple sheds and properties and provide access to employees or shearing teams to record issues. It all works offline, even if you are in a location with poor or no mobile reception.

The *SafeSheds* digital checklists are available via the AWI website at **www.wool.com/safe-sheds**.

Top: The cover and example page of the best practice guidelines and checklists from the Shearing Shed Safety Program, *SafeSheds*.

AWI-funded in-shed harvesting **courses**

Pictured below is a small selection of AWI-funded shearing and wool handling courses recently run across the country. AWI funds the training to attract and retain new entrants into the wool harvesting industry, build the capacity and longevity of existing staff, and increase returns to woolgrowers through improved clip preparation practices.

'Haddon Rig', Warren, NSW

Willalooka, SA

Rylington Park, Boyup Brook, WA

'Beaufront', Ross, Tasmania

Towonga Stud, 'Owendale', Peak Hill, NSW

TAFE NSW, Dubbo, NSW

Adequate numbers of highly skilled professional staff to harvest and handle a high-quality Australian wool clip in a timely manner are key to the profitability of the Australian wool industry.

AWI therefore funds hands-on practical training for shearers and wool handlers in the shed, aimed at increasing their productivity, skills development and professionalism. Training covers a wide range of experience, from learner to professional shearers and novice to professional wool handlers.

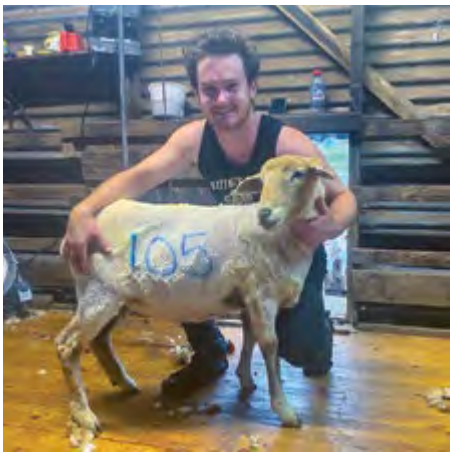
Due to the current shortage of and demand for shearers, there is a concerted effort to run extra novice and improver schools and workshops, funded by AWI and several state governments.

Best practice in shearing sheds results in a high-quality wool clip and the health and wellbeing of both professionals and sheep.

AWI thanks all the woolgrowers who provide their facilities and sheep, and all the other organisations and individuals that lend their time and resources to help run this training. **B**

More information:
To arrange training in your state, phone AWI on 1800 SHEARS or email swt@wool.com.

Lachlan (back row, far right) with students and AWI trainers at **'Steam Plains'** at Conargo, NSW. Thanks to Paraway Pastoral and manager **Magnus Aitken** for their support.



Young shearer **Lachlan Rowen** is now working and recently shore his first hundred sheep.

Lachlan (middle row, second from right) with students and AWI trainers at **'Lyndon Station'** at Barcaldine, Queensland. Thanks to **Scott** and **Sharon Counsell** for their support.

Shearing schools lead to **employment**

After recently completing two AWI-funded shearer training schools, Lachlan Rowen now has a full-time shearing job.

Although Lachlan Rowen already had some experience working as a wool handler, he really wanted to become a shearer. So after seeing an advert on AWI's Facebook page for a shearing school in February at Barcaldine in Queensland, Lachlan contacted AWI and got booked in.

Lachlan and the other enthusiastic students had a great week on the course, held at Scott and Sharon Counsell's 'Lyndon Station'.

"One of the trainers, Mike Pora, then booked me in for a two-week school the following month at 'Steam Plains' in NSW, which also really went well," Lachlan said.

"The training is awesome, and the trainers are so dedicated. Thank you to them all – Mike Pora, Andrew Ross, Jovin Taiki, Brian Sullivan and Ian Elkins – I truly am grateful for your help and training.

"I'm now working as a shearer for a shearing contractor, Gary Leersen, down in Victoria. I shore my first 100 sheep the other day so I'm super happy.

"I will continue to shear and make a career out of it. The industry has so many positives, great people, good money; I am excited about the future. Without the initial training from AWI, I honestly could not have learnt to be a shearer, so thank you to everyone." **B**

Grace being presented as the winner of the Under 21 shearing competition at **Wagin Woolorama** in March by Greg Drew of the WA Competition Shearing Association. *PHOTO*: Sarah Munns

Grace hard at work in the shed.

A shining start to a shearing career

With a family background in wool harvesting, twenty-year-old Grace Schoff from Chinchilla in Queensland began her first shearing job as soon as she left school. She loves her work and taking part in competitions and says shearing is a great career.

"If you have got the heart and the willingness to continue learning and improving every day, shearing is a great career," says Grace Schoff, who started her first shearing job in November 2018 as soon as she left school.

"The whole first year I shore, I'd pull up at least five minutes before the end of every run so I could watch each of the other shearers to see if I could learn something new. I found you can always discover something different from every shearer. And if you're genuinely interested, they are more than happy to show you a few tricks they've picked up over the years."

Grace comes from a family where working in shearing sheds runs in the family. Her father, Phil, has been shearing since he was a teenager; her mother, Michelle, has been in the sheds most of her life too, wool handling and classing; and her older brother Alexander (known as Slim) has represented Queensland in the open wool handling at the Nationals.

Before the family moved to Queensland, when Grace was aged about ten, they had a sheep station at Cobar in central western NSW so Grace has been involved in sheep for most of her life.

"I was very keen to learn about shearing from the age of 13. I was always pestering my dad with questions and he patiently took the time to teach me quite a bit about how to shear. I also went to a shearing school at Willalooka in South Australia which was helpful," Grace said.

"After leaving school about 2½ years ago, I managed to go straight into shearing. Mark 'Crackers' Buscumb of Crackers Contracting gave me a chance for which I am very grateful.

"I love the atmosphere in the shearing shed. When you get in a team with people who enjoy their job and love having a laugh it makes the day go way too fast. It's a great way to meet new people from all over the country and I love the challenges that come with the job."

Grace has travelled the country with her work which she enjoys, but she encourages woolgrowers to make sure their accommodation and facilities are up to standard.

"Unfortunately, there are quite a few quarters that have been allowed to deteriorate, some quite badly. Sometimes woolgrowers don't understand that some workers in the industry basically live at shearing quarters as they travel interstate to find work, so constantly going from one rundown show to the next is a little discouraging."

Grace has just got back from shearing in WA. Conscious of needing to look after her body, she is going to take a short break from shearing to give herself a rest before she gets back in full swing.

While in WA, Grace won the Under 21 shearing competition at Wagin Woolorama, one the few competitions that have been held in the past 12 months due to COVID-related restrictions. Grace has been taking part in competitions pretty much since she learnt to shear, with her highlight being representing Queensland in the novice division at the National Championships in Perth in 2018.

"Dad does competitions and has represented Queensland, so seeing him compete made me want to get involved. As I went to more competitions, I met heaps of amazing shearers.

"I love meeting new people and making new mates that have the same interests and are passionate about what they do. It also allows you to watch how other people shear at a competition level, and of course it's good to catch up with mates.

"When I was younger and still in school, I only ever saw women compete in the wool handling, but in the past couple of years I've seen more women compete in the shearing. I've worked with a few female shearers too, and they are all extremely talented and wonderful women. Having more women becoming shearers is wonderful to see." B

SA Sheep Expo encourages next generation

Left: The **SA Sheep Expo** provides students with hands-on experience and guidance.

Top: Nearly 100 students attended this year's three-day **SA Sheep Expo**.

Nearly 100 students from across South Australia attended the AWI-supported SA Sheep Expo in April at the Adelaide Showground, during which the students developed a better understanding of the sheep industry and the opportunities it offers them.

Established in 2016, the three-day SA Sheep Expo is an education initiative for young sheep enthusiasts aged 12 to 23 years. The Expo aims to build their knowledge of the sheep industry and enable them to engage at a grassroots level within the industry.

AWI is a Foundation Sponsor of the SA Sheep Expo and has supported the event in each of the five years it has been held. AWI's Project Coordinator for Training & Education, George Lehmann, was involved in several of the sessions and delivered a presentation to the students about the R&D and marketing that AWI undertakes on behalf of Australian woolgrowers.

"There were 98 students from South Australia at this year's Expo. The interactive three-day program included hands-on sessions, demonstrations and presentations from leading industry experts. The Expo not only increases the students' practical knowledge of how to run successful sheep enterprises, but also provides them with exposure to the wide range of career pathways within the industry," George said.

Participants compete in age groups to maximise learning outcomes with major incentives being a study tour to New Zealand and sponsored education bursaries for seniors, as well as other prizes for each age group. The Expo is usually open to students from all states, but COVID precautions prevented that this year. **B**

More information:
www.facebook.com/sasheepexpo

Applications for **2022 Nuffield Scholarships are open**

NUFFIELD AUSTRALIA FARMING SCHOLARS

AWI invites proactive people from the wool industry across Australia to apply for the 2022 AWI Nuffield Wool Scholarship. The world has seen some enormous changes recently and there has never been a better time to research how the wool industry can adapt. Applications close on 7 August 2021.

The AWI-supported Nuffield scholarship is a unique opportunity to travel and study a particular subject of interest – to find new best practices, ideas and resources – thereby increasing practical knowledge and management skills in the Australian wool industry.

The scholarship, worth $30,000, is provided to cover costs associated with the successful recipient's study and reporting. For 2022 scholars, the scholarship tenue will be 14 weeks (98-days), which also includes a 42-day individual study component to be completed in 2022 or early 2023.

Nuffield Australia is committed in 2022 to delivering the same high-quality and valued program as it has for the past 70 years.

As a result of the global COVID-19 situation, Nuffield Australia is enabling scholars to include domestic (Australia-based) research as part of the individual study component. A total of two weeks (14 days) of the 42 days can be used for domestic research purposes. Should the global COVID-19 situation worsen, the program will be rescheduled or rolled over to extended timelines, in collaboration between the scholar, AWI and Nuffield Australia.

Nuffield Australia is offering greater access to online learning than ever before, including virtual connections to the global alumni network, agribusiness professional speakers and the ability to prepare in advance of research travel to make stronger linkages and better utilise the overall travel experience. **B**

More information:
To apply for the scholarship, or to access Nuffield students' reports, visit www.nuffield.com.au

Merinos return to Yanco

Yanco Agricultural High School students with their newly purchased Merino ewes from Tolland Poll Merino.

Yanco Agricultural High School in the NSW Riverina was established nearly a century ago on the site of pastoralist Sir Samuel McCaughey's North Yanco station. The school recently purchased 30 Merinos ewes to start its own stud, which is a fitting continuation of the wool-growing tradition of the site.

Sir Samuel McCaughey is well known for his success in establishing the irrigation systems and the development of the Merino to suit the climatic conditions of the Riverina. In the early 1900s, he was in control of the largest sheep flock in Australia, purchasing the property North Yanco and building a homestead which is currently known today as McCaughey mansion, the heart of what is now Yanco Agricultural High School.

When the school opened in February 1922, McCaughey's homestead provided accommodation, a kitchen and dining room. The shearer's quarters, some distance from the homestead, were converted into classrooms. Nearly a full 100 years later, the school has grown enormously in size from those humble beginnings.

It is McCaughey's legacy of sheep breeding and education that is the continued focus at Yanco Agricultural High School, with the school recently purchasing 30 Poll Merino stud ewes from Toland Poll Merino to start its own stud, which is in the process of being registered.

Students have chosen the name 'Yanco Ag Poll Merinos'. The school's aim is to breed a small flock of Poll Merinos that are plain-bodied and non-mulesed, producing a high-yielding 18-micron wool with a long staple length, shorn six-monthly.

The students in the Year 9 Animal Management class have recently learnt about Australian Sheep Breeding Values (ASBVs) and have used their newly acquired skills to select semen for the artificial insemination program that was conducted in February. The chosen sire was a West Australian ram with outstanding carcass and wool characteristics, ranked in the top 5% for Dual Purpose Index on MERINOSELECT.

In the upcoming months, the students will be tasked with monitoring lambing, matching offspring with mothers, recording birth weights and lamb marking. The ewe lambs with ASBV values in line with the breeding objectives will join the flock and a small number of ram lambs will potentially be retained for sale.

The wethers produced by the school stud will run alongside the wethers they receive for the AWI-supported NSW School Merino Wether Challenge (see opposite), giving students more hands-on industry experience in wool and carcass assessment. B

Students collecting DNA samples.

Year 9 Animal Management students preparing the Merinos for the AI program.

Students take up **Merino Wether Challenge**

Students from schools across NSW are gaining practical hands-on sheep management experience by looking after teams of three Merino wethers for six months in preparation for a two-day competition in August.

Students at the training days in March at **Dubbo** (above) and **Jerilderie** (right).

The 2021 School Merino Wether Challenge in NSW is the biggest one yet of this annual competition organised by the NSW Stud Merino Breeders' Association, with support from AWI.

This year's Challenge included training days with industry leaders at Dubbo, Jerilderie, Orange and Mudgee, with nearly 500 students attending.

Students undertook mini workshops on topics including agricultural careers, sheep selection using measured and visual appraisal, animal husbandry, nutritional requirements, sheep and wool handling and judging, and the profit drivers in Merino sheep production.

At the workshops, each school team collected three Merino wethers which they are now looking after for six months. The students form a close relationship with their three wethers, which provides a unique 'hands-on' experience and insight into key components of good sheep management, in contrast to education in a classroom.

Each team will show their wethers and be judged in a two-day competition at the Rabobank National Merino Sheep Show and Sale in August at Mudgee.

Similar competitions are held in South Australia by the SA Stud Merino Sheepbreeders Association and in Western Australia by the Stud Merino Breeders Association of Western Australia. **B**

AWI Graduate Training Program

The AWI Graduate Training Program provides successful applicants with a thorough understanding of the wool supply chain from fibre to fashion. Applications for the 2022 program open on 1 July.

The 18-month program starts each year in March and is based primarily at the AWI office in Sydney, where the graduates gain exposure to many areas of the AWI business, from on-farm and off-farm R&D through to marketing. Graduates are also given the opportunity to gain exposure to the global wool supply chain through rotations to AWI's international offices.

The program is open to those who have graduated in 2020 and 2021, and is aimed at graduates from a broad cross section of disciplines who have a background in or connection with the Australian wool industry.

Applications for the 2022 program can be made from 1 July via **www.wool.com/graduate-program**. B

AWI graduates – where are they now?

Ellie Bigwood

Hailing from the Frankland River region of WA, Ellie was one of AWI's first graduates, joining the program in 2018 and bringing with her an abundance of enthusiasm and passion for wool. Since completing the program in 2019, Ellie has relocated back to regional WA where she is now AWI's Industry Relations Officer, a role that provides an essential conduit between AWI and wool industry networks in WA.

Ellie at the ***SafeSheds*** program launch in WA in November last year, with WA Farmers' Vice President **Steve McGuire** and WA Shearing Industry Association (WASIA) President **Darren Spencer** and Executive Officer **Valerie Pretzel**.

Miles Barritt

Miles entered the program in March 2019, after completing his bachelor's degree in commerce at the University of Western Australia. Miles has now taken on the role at AWI of Business Analyst, Risk & Recovery. In this role, Miles analyses the implications of the COVID-19 pandemic on global marketing strategies, as well as the opportunities and threats to the global supply chain and key markets in terms of trade, manufacturing and consumption.

Miles presenting at the Leading Sheep **'Leading the market with Merinos'** forum at Longreach in March.

Emma Murphy

From NSW, Emma began the program in March 2019. Her background in event management, a bachelor's degree in Agricultural Economics, and a recipient of the Gold Duke of Edinburgh's Award, helped her thrive across all the program's rotations, including an extended international rotation in the London office. Back in Sydney, Emma supports AWI's global marketing team in the role of Marketing Communications Coordinator.

Emma representing AWI at the inaugural **Elders Walcha Merino Flock Ewe Competition** in April, pictured with AWI's WoolQ & Traceability Project Manager, **Mark Scott**. *PHOTO:* The Land

George Lehmann

Coming from a wool-growing property in Junee, NSW, George joined the program in March 2020 which was unfortunately when the global pandemic started to hit. The postponement of his international rotations and the ending of the program earlier than anticipated did not dampen George's enthusiasm or motivation. In March this year, he joined AWI's Woolgrower Services team as Project Coordinator, Training and Education.

George presenting at the **SA Sheep Expo** in April.

Use the NWD so your wool attracts the most competition

All woolgrowers are being urged to complete the National Wool Declaration (NWD), regardless of their mulesing status. The NWD provides transparency to buyers and helps woolgrowers earn Premiums and/or avoid Discounts for their wool.

Key messages

- To attract the most competition for their wool, all woolgrowers, regardless of their mulesing status and wool type, should ensure that their wool is accompanied by an NWD.
- Failure to complete a NWD has usually resulted in the wool being discounted.
- Using the NWD helps promote not only your clip, but also the Australian wool industry.

The National Wool Declaration (NWD) enables woolgrowers to communicate directly with prospective buyers, processors and retailers. Whenever AWI discusses the Australian wool industry's animal welfare with brands and retailers along the supply chain, they invariably say that they would very much like Australian woolgrowers to declare their wool through the NWD; it creates transparency and choice in the marketplace.

The message is clear. To ensure your wool attracts the most competition available, you need to ensure that your wool is accompanied by an NWD.

All woolgrowers are encouraged to complete the NWD, regardless of their sheep's breed and wool type, and regardless of their mulesing status. Completing the NWD is about giving our global customers assurance of the quality and integrity of Australian wool.

President of the National Council of Wool Selling Brokers of Australia (NCWSBA) and Managing Director of Jemalong Wool, Rowan Woods, says all sheep producers should ensure that their wool is accompanied by an NWD.

"Undeclared clips do not attract full competition," he said.

The percentage of bales accompanied by a declaration of their Mulesing Status rose to 74% for the 2019/20 season, up from 50% five years previous. While this increase is to be applauded, it means there are still about a quarter of bales being sold as Not Declared (ND).

From a financial perspective, it is clear that woolgrowers usually receive Premiums for wool declared as Non Mulesed (NM), Ceased Mulesed (CM) and (to a lesser extent) wool declared as mulesed with Analgesic/Anaesthetic (AA).

However, did you know that **wool sold as Not Declared (ND) has usually received a Discount** compared to wool that is declared as Mulesed (M), see Table 1 below. Based on this data, even if you do mules, it would likely be financially advantageous for you to complete the NWD and declare your wool as Mulesed (M), or preferably Mulesed with AA, rather than not complete the NWD.

The rate of completion of the NWD varies across the country. The percentage of bales for which Mulesing Status is declared (for Merino wool ≤24.5 µm) continues to rise: **NSW 85%** in 2019/20 (up from 60% in 2014/15), **Victoria 88%** (up from 66%), **South Australia 84%** (up from 58%), **Tasmania 89%** (up from 53%), **Queensland 83%**, (up from 40%), and **WA 44%** (up from 21%).

Once a woolgrower has completed the NWD, the contents are converted by the wool handling agent into a recognised Mulesing Status for inclusion in sale catalogues and test certificates.

AWEX developed the NWD for Mulesing Status in 2008 in consultation with the Australian wool industry, to assist buyers and their clients gain access to information on issues that can influence purchasing decisions. The NWD also includes, as well as Mulesing Status, an option to declare the mob's Dark and Medullated Fibre Risk (DMFR), ie contact with shedding breeds of sheep, which sheep producers are also encouraged to complete. B

Table 1: Discounts for Not Declared (ND) Mulesing Status compared with prices for wool declared as Mulesed (M), for Seasons 2013 to 2019. *Source:* AWEX.

		MERINO							NON-MERINO			
		16	17	18	19	20	21	22	27	28	29	30
NOT DECLARED												
Season	2013/14	-2	2	-1	0	0	0	-4	-4	3	-3	-2
	2014/15	5	4	-4	0	-1	-4	-2	-4	0	-2	5
	2015/16	8	5	-2	-4	-4	0	0	-6	-4	-2	-2
	2016/17	-1	6	1	-12	-7	1	-3	1	0	-2	1
	2017/18		6	11	-9	-4	-2	-9	-8	-2	-9	0
	2018/19		2	-4	-8	-2	-5	-3	-21	-8	-10	-18
	2019/20	**-12**	**-3**	**-1**	**-6**	**-4**	**-3**	**-10**	**-12**	**-11**	**-6**	

The calculation of Premiums and Discounts (c/kg clean) for Mulesing Status requires that as many criteria as possible are held constant. The following describes the dataset used:

- Australian stored; Merino fleece/weaners and crossbred fleece
- >30 N/ktex, >60% Schlum Dry Yield, <2.2 VMB, Styles 4/5, Good/light colour (incl. H1), P Certificate
- Lengths according to diameter range: 70–95 mm (<18 µm), 75–99 mm (19–21 µm), 83–104 mm (22–24 µm), 90–110 mm (26–29 µm), 100–130 mm (30–34 µm)
- Records per group (micron/NWD status) >2, empty cells when not enough data to generate a P or D.

Market Intellige

Australian wool production levels recovering

The most significant upswing in volume of wool tested for at least ten years has occurred in the two months of March and April. These past two months have seen 22% more wool flow though the AWTA than the same period last year. As at the end of April 2021, the AWTA has tested 1.1% more wool compared to last season at the same time.

The Australian Wool Production Forecasting Committee's (AWPFC) fourth forecast of shorn wool production for the current 2020/21 is 290 mkg greasy (see tables below). This is a 2.1% increase on the 284 mkg estimate for 2019/20 as key wool-growing regions experience favourable seasonal conditions.

The Committee's first forecast for 2021/22 is for shorn wool production to be 305 mkg greasy, an increase of 5.1% compared with the current season. The current favourable conditions for wool production are expected to extend into the new season boosting average cut per head. However, low sheep numbers will put a ceiling on further shorn wool production growth.

FIGURE 1: 2020/21 WOOL TESTED BY STATE AT THE END OF APRIL 2021

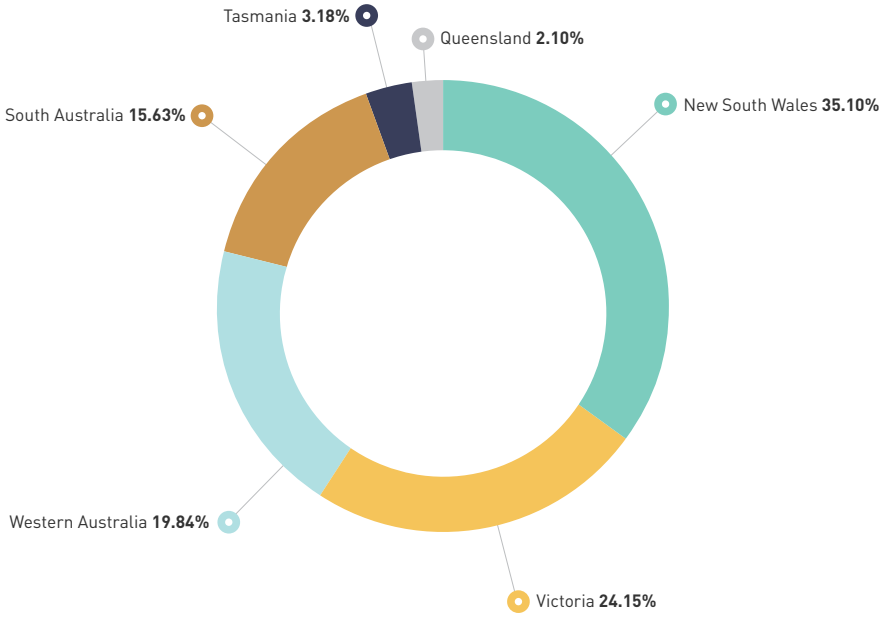


TABLE 1: TOTAL SHORN WOOL PRODUCTION BY STATE

MKG GREASY	NSW	VIC	WA	SA	TAS	QLD	NATIONAL
2018/19 final estimate	99.1	66.9	62.2	54.3	9.0	8.1	**300**
2019/20 final estimate	94.3	63.2	59.8	50.0	9.0	7.5	**284**
Change y-o-y %	-4.8%	-5.5%	-3.9%	-8.1%	0.2%	-8.3%	**-5.3%**
2020/21 fourth forecast	98.3	68.4	53.0	53.0	10.8	6.5	**290**
Change y-o-y %	4.2%	8.2%	-11.4%	6.0%	20.0%	-13.3%	**2.1%**

Source: AWPFC report, April 2021

TABLE 2: SUMMARY OF WOOL PRODUCTION ESTIMATES AND FORECASTS FOR AUSTRALIA

	2019/20 FINAL ESTIMATE	2020/21 FOURTH ESTIMATE	CHANGE Y-O-Y %	2021/22 FIRST FORECAST	CHANGE Y-O-Y %
Sheep numbers shorn (million head)	68.6	65.5	-4.5%	67.9	3.7%
Average cut per head (kg/head)	4.13	4.40	7.3%	4.49	1.4%
Shorn wool production (mkg greasy)	284	290	2.1%	305	5.1%

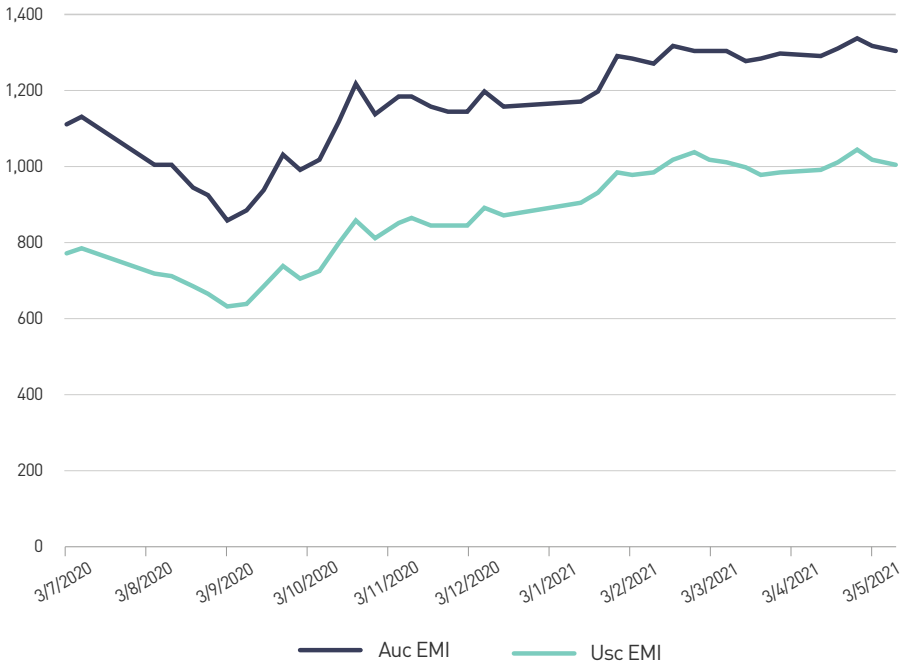
Source: AWPFC report, April 2021

nce report

Wool prices consolidate

Wool prices (see Figure 2) have continued to consolidate since the commencement of 2021 with the EMI averaging a solid 1288ac clean/kg. Since the New Year, the EMI has maintained an increase of 12.9% (149ac). In US dollars, the advance has been even greater because the AUD/USD pair favoured a strengthening AUD side of the pair. A 15.1% or 132usc gain in the US value of wool has been registered.

FIGURE 2: 2020/21 PRICE PROGRESSION



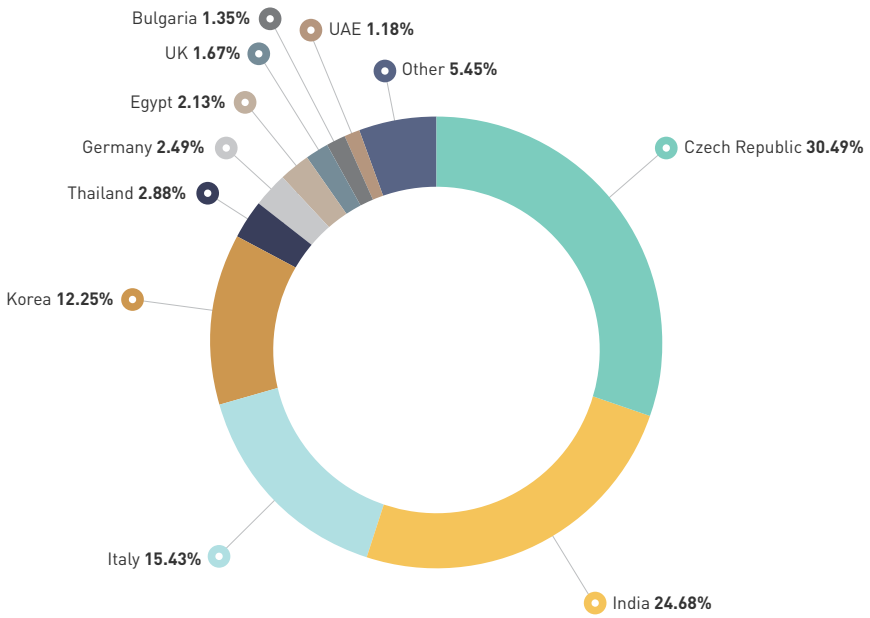
Logistics issues

Logistics issues continue to be the wild card currently impacting the trade of wool (and other export goods). Skyrocketing transport charges across the globe are forcing inflationary pressure on consumer goods. Access to timely vessel departures and delivery are becoming more problematical each week. Unprecedented congestion levels at empty container parks across Australia are ongoing. Backlogs are causing delays in import container de-hiring, and there are problems associated in getting export empties, as well as challenges in redirections and queuing of trucks.

All Chinese ports are congested and the additional average waiting time is two or three days on both sides of import/export operations. These shipping issues are primarily responsible for holding up exporters' funds to allow further spending at auction. Vessel bookings made in advance are often subject to trans shipments being added at the last moment, rather than the direct sailing. This also will add a week or two to delivery time.

The shipping disruption obviously affects the main export destination of China but harder impacts are being felt upon the Indian and European importers. Available vessels setting sail for those nations are much scarcer than Chinese bound vessels and the space available on those limited vessels is ever tightening. As the market has shown, when those nations are in the room competing, the wool price is the beneficiary of that additional bidding.

FIGURE 3: ALL EXPORTS JULY 2020 TO MARCH 2021 (EXCLUDING CHINA)



China continues to dominate Australian exports

The month of March 2021 saw total Chinese imports of Australian wool hit more than 168.3mkg – which is a 21.6% increase compared to last year. Exports to China now account for 86.75% of all Australian wool being exported. According to the ABS, as at the end of March 2021, there have been 12 countries importing Australia wool in the greasy raw form, with another 13 taking semi processed wool, making a total of 26 wool export destinations (see Figure 3).

Perhaps the most significant data from the ABS figures shows that just 10.3% of all exports is greater than 23.9 micron. The AWTA tested data shows around 17.8% of all wool tested is in that range so it can be assumed that a much greater percentage of the grower and buyer held stocks in Australia is in the crossbred micron areas. B

Average monthly **EMI comparison**

The chart opposite provides a snapshot of how the AWEX monthly Eastern Market Indicator (EMI) and a range of microns have performed for the past three months (February 2021 – April 2021) in Australian dollar terms compared with the previous five years February 2016 to January 2021 (circles) and the decade previous to that, February 2006 – January 2016 (squares).

Although the coronavirus pandemic has continued to negatively impact the global economy during the past three-month period, there has been a definite improvement in the EMI, and especially the finer microns, compared to the previous three-month period.

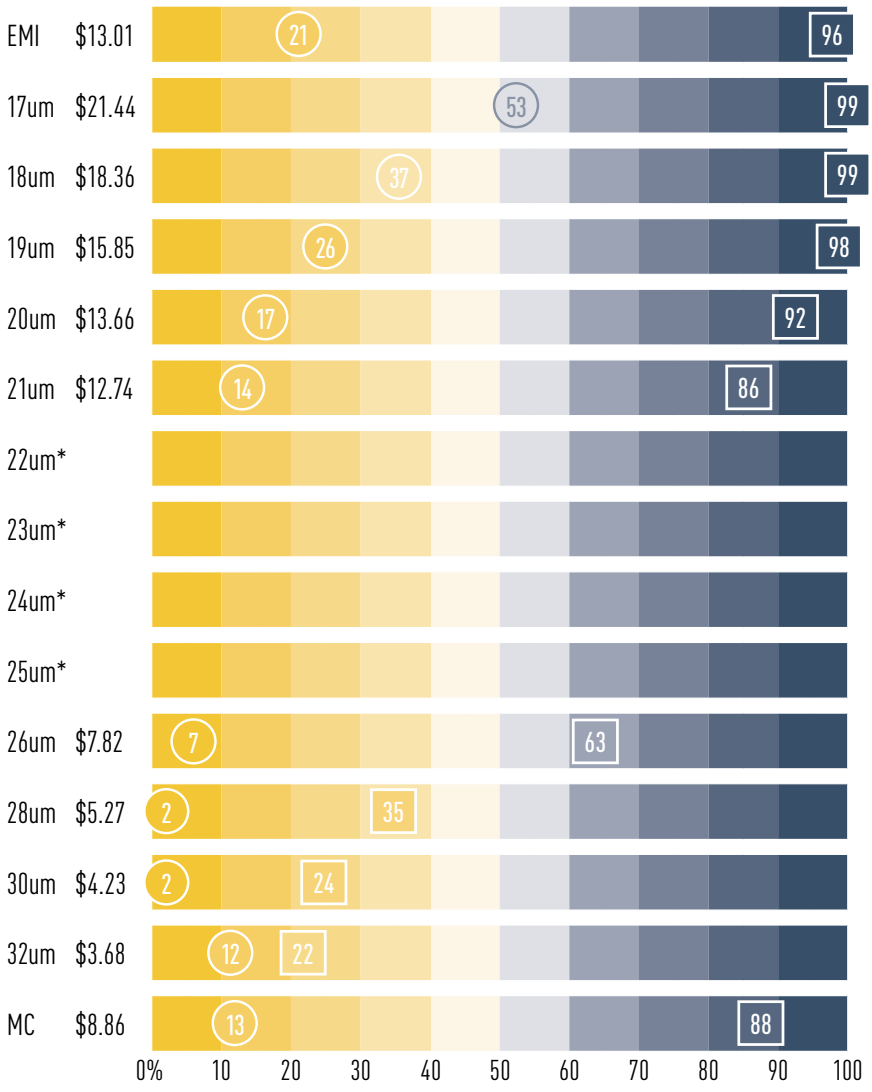
For the past three months, the monthly EMI averaged at $13.01 which is a $1.14 rise from the average for the previous three months, and is tracking at the 21st percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current $13.01 (February 2021 – April 2021) for 21% of the time.

While the EMI is tracking at the 21st percentile over the previous five years, it is tracking at the 96th percentile when compared to the decade February 2006 – January 2016. This means the current EMI of $13.01 (February 2021 – April 2021) is higher now than it was for 96% of that decade.

18 micron averaged at a monthly value of $18.36 (37th percentile for the previous five years and 99th percentile for the decade before that), 21 micron averaged at $12.74 (14th percentile for the previous five years but 86th percentile for the decade before that), and 28 micron averaged at $5.27 (2nd percentile for the previous five years and 35th percentile for the decade before that).

For the past three months, Merino Cardings averaged at $8.86, operating at the 13th percentile for the previous five years and at the 88th percentile for the decade before that. **B**

AVERAGE MONTHLY EMI FOR FEBRUARY 2021 – APRIL 2021 COMPARED WITH
PREVIOUS 5 YEARS FEBRUARY 2016 – JANUARY 2021
THE DECADE FEBRUARY 2006 – JANUARY 2016



*insufficient data

Market intelligence at wool.com

An important part of AWI's Wool.com website is market intelligence information for woolgrowers.

As well as the Weekly Price Reports and Monthly Market Intelligence Reports, there is a graphical display of:

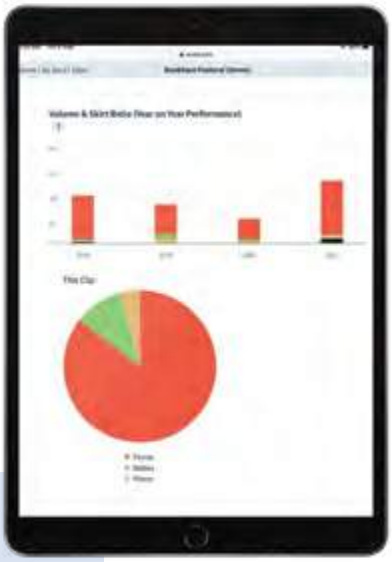
- Eastern Market Indicator – you can select to display AUD, USD, CNY or EUR.
- Offering – displays bales offered and bales sold.
- Currency movements – you can select to display AUD/USD, AUD/CNY or AUD/EUR.
- Forecast of bales sold – displays previous season, current season, current week and forecast.

For the first three 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

Personalised clip insights with My WoolQ



Screenshot from the dashboard of **My WoolQ.**

My WoolQ is the storage area for all your clip information on WoolQ.

The 'My WoolQ' tool on WoolQ provides a central storage point for all your clip information, enables you to see what is happening to your clip from one season to the next, and provides you with its estimation of the current market value of your wool.

My WoolQ is a personal dashboard that provides you with a secure storage of all your clip information in one location for easy access. At the click of a button, you can gain insights into your individual clips as well as long-term year-on-year trends in your wool production. It also provides the current estimated market value of your lots. Broker integration is required to access the full suite of My WoolQ tools.

There are three sections within My WoolQ: Clips, Sale lots and Mobs.

Clips section

The **Dashboard** area of the Clips section displays information regarding your current and previous clips which can help you to identify changes from year to year.

Specifically, the top of the Dashboard section summarises the average micron, bale weight and cut per head for your latest clip. The Dashboard section then displays a series of graphs:

- **Mob breakdown** – the weight or micron values of each mob in your latest clip.
- **Production** – the number of bales for each year of production, or the bales by micron within your latest clip.
- **Volume & Skirt Ratio** – the volume and breakdown of your clip by wool type (fleece, bellies, locks and pieces) for each year of production.
- **Micron** – for each year of production.
- **Staple Strength** – for each year of production.
- **Yield** – for each year of production.

The **Analysis** area provides an estimated valuation of each of your wool lots in the current market, plus the total estimated market value for your whole clip or the portion of the clip that you are selling.

If you input your selling charging (eg transport, insurance, storage, lotting), My WoolQ will calculate your total selling costs. It will also calculate the wool levy you have to pay and how much the testing costs are likely to be. Subtracting these costs from the estimated market value, it provides you with an indicative net return.

My WoolQ estimates your lot value by comparing and getting as close a match as possible to recent actual sale results of lots similar to yours, ie estimates are based on the current market. My WoolQ also displays the degree of accuracy for its estimates.

Sale lots section

This section provides a central archive of all your sold and unsold lot information and test results.

For each lot you can see the micron, VM, SD yield, CVD, wool base, comfort factor, staple length, COV, staple strength, POBT, POBM. When the wool sells, the greasy c/kg, clean c/kg and total value will also be displayed.

You can export all this information from My WoolQ to an Excel or CSV file if you want to.

Mobs section

This is a digital Mob Book, a central archive of information about each of your mobs with simple comparative tools to see what is happening from one season to the next.

For each mob, you can record information including age, breed, sex, mulesing status, wool quality (fine, medium etc), wool growth periods (eg 12 months), average length (mm), VM quantity, VM type, whether the mob is crutched, crutched within 3 months, and mob count. **B**

More information:
Register for WoolQ at www.woolq.com

WIN!!!

If you email or tag a photo that gets published in Readers' Photos, you'll receive from us a paperback copy of the Kondinin Group's *'The Story of Wool'.*

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** or you can tag us *#beyondthebale* on Instagram.

A VERY DIFFERENT YEAR!

Greendale Merinos (@greendalemerinos) at **Cooma** in **NSW**, tagged this composite photo #beyondthebale on Instagram (both photos were taken by **Miranda McGufficke**). The left hand side picture was shot on 10 April last year, while the right hand side was shot exactly 12 months later. Greendale Merinos said: "It's hard to believe these pictures are taken EXACTLY one year apart!! From the paddock blowing away last year to not being able to find the sheep in the long grass this year – it is seemingly one extreme to the next!"

SUPPORT THE LEGO SHEARING SHED!

15 year old **Angus Dohle** of **Tahara** in south west **Victoria** has developed a shearing shed out of LEGO and submitted it as a 'product idea' to LEGO via its website. If the idea gets enough support from the public, it will be reviewed by LEGO's experts as a potential new LEGO product. "I was inspired to build this model because there are few LEGO sets that are oriented around a farm setting, however it would fit in with other LEGO farm sets. This could also be educational to people who are not from a rural or farm oriented background," Angus said. Log your support for Angus's product idea with LEGO via https://ideas.lego.com. Type "shearing shed" in the website's search bar.

THREE GENERATIONS SHEARING

Martina Valentin sent in this photo of three generations hard at work during this year's shearing in their shed at **Swifts Creek** in East Gippsland, **Victoria**. Pictured are **Bill Batty** (80 years), **Jack Batty** (14 years) and **Michael Batty** (51 years).

THE VERSATILITY OF THE MERINO

Two photos shot by **Faye Beswick** on the same location: The Springs in the **Central Highlands of Tasmania**. The first shot shows property owner **Irene Glover** gathering the sheep after summer bushfires. The second was shot in August last year.

MY FAVOURITE TIME OF YEAR

Year 11 student **Grace Peacock** (pictured), whose parents farm at Garison Farms at **Badgingarra** in **WA**, has written this poem, titled 'My favourite time of the year', which captures the feeling of a busy shearing shed very well.

Waking to crisp mornings
Beating the sun out of bed for once.
Barking dogs shatter the stillness,
Ensuring the skittish flock haven't forgotten
who reigns supreme.

Dust on the track.
The team have arrived.
All different shapes and sizes tumble out of
the roo-dented van.
All big. All strong. All with a Durry hanging
out the corner of their mouths.

The important stuff gets unloaded first.
The speaker, the microwave and the fans.
Then the other stuff.

Five minutes to seven.
All the gear is unloaded.

Two minutes to seven.
Jumpers off. Music on.

One minute to seven.
They're out the back wrestling with their
first customer.

Seven o'clock.
The whine of the shears begins,
unleashing the thick lanolin smell that sticks
deep in your palms, under your fingernails,
in the air.

Every movement like a practised dance,
from the first to the final flowing blow
separating fleece from warm trembling beast.

Like clockwork, the team races through the day
Until the ticking clock commands stop
and broken backs uncoil like springs.

I walk with purpose and pride through the sheds,
playing my part in this dance of organised chaos.
We ride on the sheep's back – now it's time to
collect the golden fleece,
just like the Tom Roberts painting that hangs on
our loungeroom wall.

This is the life.

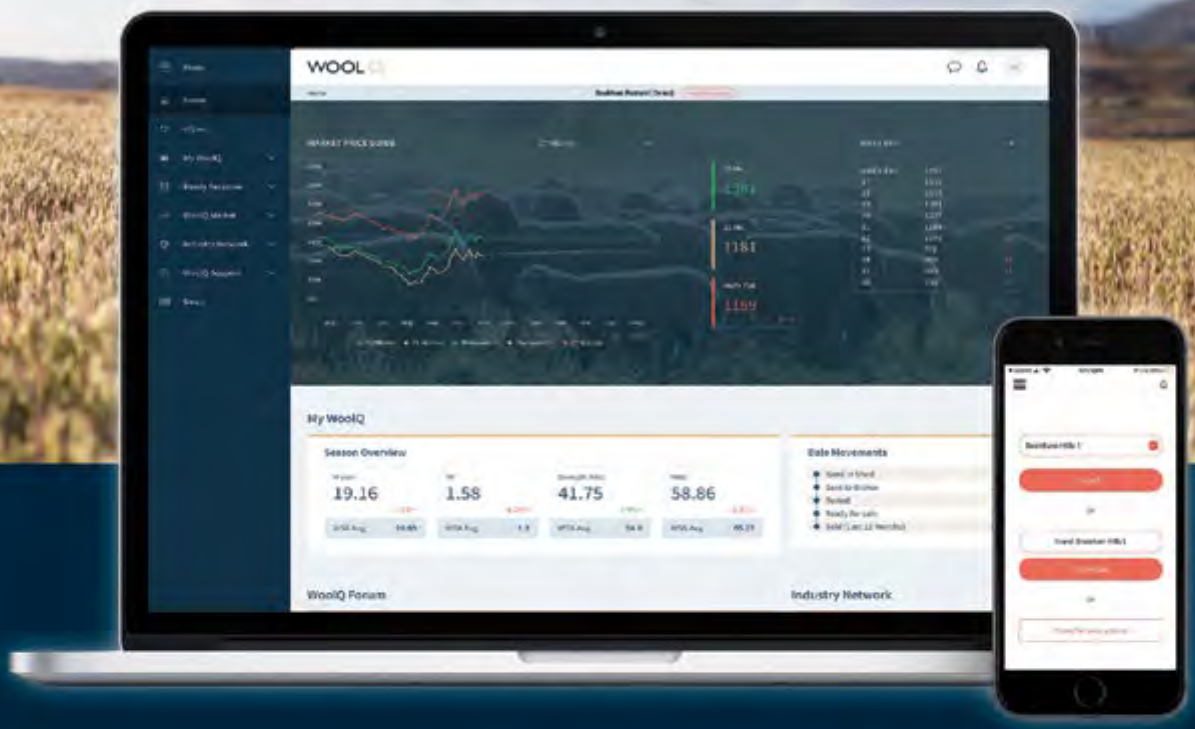
DOG TIRED

Four-year-old **Harmony** of 'Hansen Farms' at **Coomandook**, 140 km south-east of Adelaide in **South Australia**, got worn-out during the last run of the shearing in March. Sharing this cute photo of Harmony, shearing contractor **CJ Shearing** said: "Our little rousy was a little tired, so she had a nap on some wool packs, while Lucy the Kelpie pup kept a look out." We all feel like that sometimes, Harmony!

TRUE BLUE

Sharon Granger (@bushgranga_photography) from the **Riverina** tagged this photo #beyondthebale on Instagram, with the comment: "To receive the trust of an animal is the ultimate compliment!" Very true. Thanks for tagging us, Sharon.

WOOL Q



WHAT IS WOOLQ?

WoolQ is a platform to store data, review wool production, value wool and provide selling choices to woolgrowers, their agents and other industry professionals in a single platform. The key tools of the platform are:

WoolQ Network

A wool industry directory. Allowing woolgrowers to promote their businesses, develop partnerships and learn of new trends and developments.

WoolQ Ready Reckoner

Value your clip. Using the latest market results' real-time pricing to give woolgrowers and brokers an indicative price of wool ahead of sale.

My WoolQ & WoolQ eSpeci

A repository for all clip production information. Allowing woolgrowers to collect and store clip data including sales and test results from multiple brands.

WoolQ Market

Built to complement open-cry auction, it delivers an online alternative venue for the selling of wool. Sell through auction or the set price bulletin board.

Register at www.woolq.com

We can help you set up your WoolQ account. Call us on 1800 070 099 or email info@woolq.com.

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