

Beyond the bale

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Beyond thebale

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FRONT COVER

AWI's marketing arm The Woolmark Company has partnered with the most popular sheep in the world, **Shaun the Sheep**, during the global roll-out of his new movie 'Farmageddon', in a series of initiatives to educate the public about the benefits of wool. See page 10 for further information.

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AWI INVESTMENT STRATEGIES

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

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View *Beyond the Bale* online at <http://beyondthebale.wool.com>



GETTING ON WITH BUSINESS

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



Stuart McCullough
Chief Executive Officer
Australian Wool Innovation

AWI ANNUAL GENERAL MEETING

AWI held its 2019 AGM on Friday 22 November in Sydney, which included votes on several matters and director elections – see next page. At the AGM, I gave a detailed presentation of the activities of the company during 2018/19 and reported on some planning for 2020. Woolgrowers who were unable to attend the AGM in person were able to view the AGM proceedings via webcast. As well as being broadcast live, a recording of the webcast of the 2019 AGM is available to be viewed on the AWI website at www.wool.com/agm.

BECOME AN AWI SHAREHOLDER

As was demonstrated at this year's AGM, AWI shareholders can shape the decision-making process of the company via their right to vote. If you are a wool levy payer (who has paid at least \$100 in wool levies in the past three years) and you are not already an AWI shareholder, I encourage you to apply (which is free). Simply complete the shareholder application form (available at www.wool.com/join) and return it to the AWI share registry at Link Market Services.

REVIEW OF PERFORMANCE TRANSPARENCY

AWI is now 97% through implementing the recommendations of the company's 2018 independent Review of Performance (ROP). To aid transparency with woolgrowers, industry and Government, AWI's online Review of Performance Implementation Portal (ROPIP) has been available for all to view since we launched it in September last year. It continues to provide detailed and up to date information about the progress being made by AWI in implementing the recommendations. See the next page and <http://rop.wool.com> for more details.

CONSULTATION ON WOOL INDUSTRY LONG-TERM PLAN

On 15 November, we held our first Woolgrower Consultation Group (WCG) meeting attended by representatives from 26 woolgrower groups, as well as the Department of Agriculture. The purpose of the WCG meeting was to provide an avenue for AWI to formally consult with broader woolgrower representative groups to ascertain woolgrower and industry priorities. In particular, the WCG discussed the framework for a wool industry 10-year strategy (which would help guide AWI's three-year Strategic Plans). The development of a strategic long-term vision for the wool industry is one of the recommendations from the 2018 ROP and I am pleased to report that the WCG meeting was very positive and productive with much progress made.

DROUGHT RESOURCES

As we move into summer, I continue to be deeply concerned about the effect that the ongoing drought conditions are having on woolgrowers in many rural communities. AWI provides a range of drought planning and management publications, webinar recordings and other resources for woolgrowers going into, enduring or recovering from drought. On our website we also provide links to useful external resources and government agencies that provide drought assistance. View a list of available resources on the AWI website at www.wool.com/droughtresources.

PAIN RELIEF WIDELY ADOPTED

Globally, Australian Merino woolgrowers are leaders in the adoption of practical and effective pain relief for husbandry procedures. However, there are many variables and factors for woolgrowers to consider when deciding which pain relief products are best for their farming system. A 4-page feature article beginning on page

36 provides advice on the matter, including how analgesic and anaesthetic treatments work, the cost of products and some answers to frequently asked questions. You should consult with your local veterinarian to obtain specific advice for your flock.

WOOLMARK LEARNING CENTRE

Education is a key pillar of AWI's strategy to build the demand for Australian wool. In a major new initiative, we have launched the Woolmark Learning Centre – a web-based education platform that contains wool-related coursework and resources, for students and professionals all along the textile supply chain. It aims to educate, build expertise, inspire, and ultimately help increase the use of Australian wool in global textile and fashion markets. Read more about it on pages 30-31.

AWI PODCAST FOR WOOLGROWERS

AWI's free podcast, The Yarn, has gone from strength to strength with now more than 100 episodes released and a growing audience of Australian woolgrowers listening in on their smartphone or computer. All episodes of The Yarn are available at www.wool.com/podcast. I recommend that you take a listen.

FUNDAMENTAL POSITIVES

As 2019 draws to a close, we can reflect on 'a year of two halves' for wool prices. The EMI remained consistently at very healthy levels for the first half, but unfortunately lost some of its value in the latter half. The ongoing trade imbalance dispute between the USA and China and other international trade concerns have had a negative impact on confidence in the industry. However, the industry has weathered uncertain economic conditions before, and I strongly believe that the premium and natural qualities of our fibre and the relationships we have built along the supply chain during the past decade ensures a positive outlook for Australian wool.

AWI 2019 AGM RESULTS

At the AWI 2019 Annual General Meeting (AGM) held on 22 November, AWI shareholders endorsed all changes to the AWI Constitution related to the implementation of the Review of Performance recommendations and elected two new directors to the AWI board.

Shareholders at the AWI 2019 AGM in Sydney voted to approve the changes to the Constitution in a significant milestone in the company's commitment to implement in full the recommendations of the Review of Performance – in consultation with woolgrowers.

The endorsement of the changes takes the overall Review of Performance implementation rate to 97%, with 71 out of 82 recommendations (87%) now implemented in full – see bottom of the page.

AWI expects to implement the remaining recommendations in 2020. The recommendation related to the tenure of directors is the subject of ongoing consultation with the wool industry and is expected to be put to shareholders at the 2020 AGM.

ELECTION OF DIRECTORS

At the AGM, AWI shareholders elected two new directors, **Dr Michelle Humphries** and **Mr Noel Henderson**, and re-elected **Mr David**

Webster, to fill the three vacant board positions on the seven-member AWI board.

Dr Humphries is a highly respected sheep veterinarian with more than 30 years' experience in the Merino industry. Mr Henderson is a first-generation woolgrower and co-owner of Avington Merino, with wife Lyndsay, in Sidonia, Victoria, and has more than 25 years executive leadership and board directorship experience in large private and listed companies.

AWI Chairman Ms Colette Garnsey welcomed Dr Humphries and Mr Henderson to the board.

"We know that Dr Humphries and Mr Henderson are passionate about the Australian wool industry and, like existing board members, are absolutely committed to AWI's mission of supporting woolgrowers," Ms Garnsey said. "They bring a diverse set of skills and experiences to the board – along with fresh ideas and insights – and we look forward to working with them."

The director election process will result in the departure from the board of former AWI chairman Mr Merriman. Mr Merriman has served on the AWI board since 2004 and was chairman from 2008 until his retirement in 2018.

Ms Garnsey thanked Mr Merriman for his long service to AWI and the Australian wool industry.

"As a director and past chairman of AWI, Wal has left an indelible legacy," she said. "He has been a tireless, selfless and passionate advocate for woolgrowers and the industry today is so much stronger and sustainable thanks to his long leadership of AWI."

Ms Garnsey also offered her thanks to outgoing AWI Deputy Chairman, Dr Meredith Sheil, who did not put herself forward for re-election and retired at the end of the AGM.

The full results of the AGM resolutions and a recording of the AGM webcast are available at www.wool.com/agm. **B**

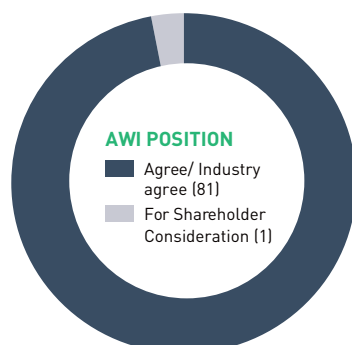
REVIEW OF PERFORMANCE RECOMMENDATIONS AWI'S PROGRESS OF IMPLEMENTATION

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.

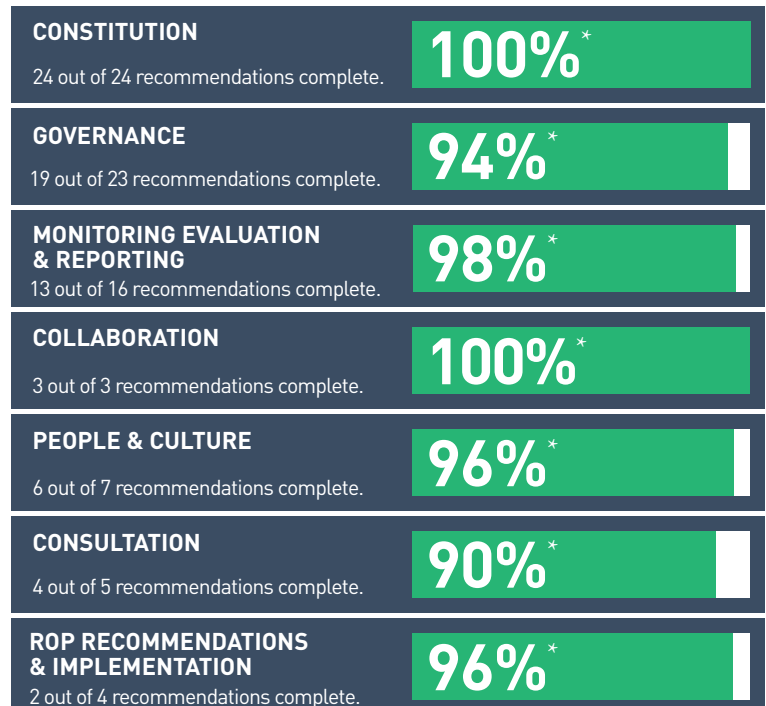
Further information is available at rop.wool.com

97%
OVERALL
IMPLEMENTATION
PROGRESS



(as at 25 November 2019)

THEME IMPLEMENTATION PROGRESS



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



Elite rock climber **Andrea Hah** wearing Wilderness Wear wool T-shirt and Nagnata wool bike shorts while training. Inset: Andrea competing in Ninja Warrior.

ELITE ATHLETES SHOWCASE WOOL

What better way to showcase wool's performance benefits than have the latest wool products tested by a group of top athletes – which is exactly what The Woolmark Company recently did.

A series of photos were shot of three elite Australian athletes wearing head-to-toe wool for their workouts: elite rock climber and Ninja Warrior contestant Andrea Hah, three-time Olympic middle-distance runner Jeff Riseley and former Houston Ballet dancer Rhys Kosakowski.

The photos captured them as they stretched, sprinted and climbed during their daily routines, wearing lightweight commercially available pieces from Australian brands Merino Country, XTM, ioMerino, Nagnata, M.J. Bale, Wilderness Wear and Bluey Merino and international brands including ashmei, Black Diamond, Tracksmith, Outerknown, Smartwool, Aclima, Devold, Ulvang,

OROTOVOX and APL.

The series of photos were rolled out via The Woolmark Company's website, social media channels and WOOL magazine.

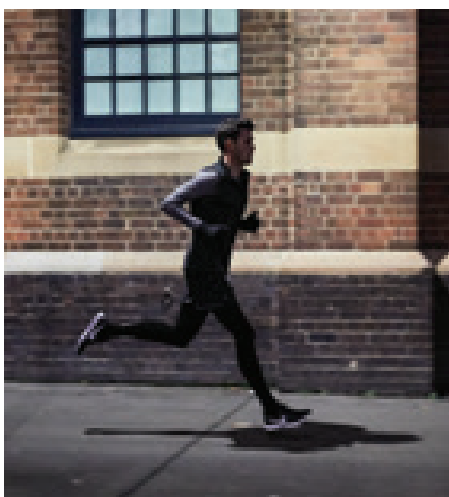
THE ATHLETES' VERDICT ON THE WOOL APPAREL

ANDREA HAH: "There's a fine balance between being too hot while climbing, too cold while belaying, and not wanting to wear too many layers, which can feel restrictive and cumbersome while trying to move freely. The wool I wore was amazing at regulating the temperature. I love that I don't have to do multiple outfit changes

between running on the trails, climbing on the cliffs or training indoors."

RHYS KOSAKOWSKI: "The feeling of the clothes was what really surprised me, because everything was really soft and fine. It almost felt as though I wasn't wearing clothes, which as a dancer is excellent as it gives me the freedom to physically move."

JEFF RISELEY: "I typically find it difficult to find a product that can keep me warm early in a run when I'm still cold, and that can cope once I've warmed up so that I don't overheat or sweat. Wool minimises the need for multiple layers that need to be shed as a run goes on, making it really versatile." **B**



Three-time Olympic middle-distance runner **Jeff Riseley**, pictured wearing ashmei long-sleeve wool shirt, Smartwool wool vest and shorts, Bluey Merino wool leggings and XTM wool gloves.



Former Houston Ballet dancer **Rhys Kosakowski**, pictured wearing Devold wool base-layer leggings and ashmei wool vest.



Elite rock climber **Andrea Hah**, pictured wearing APL wool crop-top and wool sneakers, Smartwool wool racerback bra (worn underneath top) and ioMerino wool compression leggings.

PEARL IZUMI CYCLING WOOL MOVES UP A GEAR

The addition of Merino wool to PEARL iZUMi's cycling apparel has provided superior thermal regulation compared to pure synthetic cycling garments, to keep riders more comfortable.

One of the world's largest and most iconic cycling apparel brands PEARL iZUMi has expanded its use of Merino wool by launching a new range of garments that have been proven to keep riders more comfortable in cold and wet conditions than apparel made from pure synthetic fibres.

To help Australian wool build its presence in the cycling apparel market, AWI's marketing arm The Woolmark Company earlier this year launched its first ever marketing partnership with a cycling brand in the Americas.

PEARL iZUMi was founded in Japan in 1950 but now has its world headquarters in Colorado, USA. It is a company that is well known and respected for its technically innovative road cycling, mountain biking and triathlon apparel.

FOCUS ON USING SUSTAINABLE MATERIALS

PEARL iZUMi recently committed itself to be the most sustainably focused cycling apparel company in the world, with 90% of its product line to be made with sustainable materials by 2022. The company sees Merino wool as the natural fibre that will help it accomplish this goal.

"PEARL iZUMi's social purpose effort is focused on using business practices, products and advocacy to reduce the consumption of oil," said PEARL iZUMi Vice President of Product, Christopher Martens.

"Australian Merino wool has many of the same positive properties of a synthetic yarn or material, but with a much smaller footprint. Merino wool has great attributes such as good warmth to weight ratio, naturally

hydrophobic properties and easy care, but they occur naturally. Integrating this 100% natural fibre into our apparel line is a key part of the strategy to shift toward more sustainable sources."

"Integrating this 100% natural fibre into our apparel line is a key part of the strategy to shift toward more sustainable sources."

Christopher Martens
PEARL iZUMi Vice President of Product

As a result, PEARL iZUMi has created a line of Woolmark-certified Merino wool blend cycling apparel and accessories. The pieces have been proven to keep riders more comfortable in cold and wet conditions than apparel made from synthetic fibres.

The latest Fall 2019 collection consists of 30,000+ units across 14 styles, sold globally in the USA, UK and Europe. The highlight pieces are the men's and women's long and short sleeve base-layers and the long sleeve jerseys. The collection also includes vests insulated with recycled wool, a neck gaiter, cap and hat. The new Merino wool line follows the success of PEARL iZUMi's Spring 2019 release of a Merino T-shirt and long sleeve ¼ zip top.

The majority of the collection uses a unique

fabric construction with Merino wool on one side of the fabric and quick-drying technical synthetic fibres made from recycled water bottles on the other side. By placing the wool on the outside of the base-layer and on the inside of the jersey, these two pieces work together to transfer moisture from the skin to the outside environment.

MERINO BEATS PURE SYNTHETICS IN PERFORMANCE TRIALS

As a company renowned for technical innovation in its apparel, PEARL iZUMi needed to ensure that its new range is not only environmentally friendly but also has the performance attributes that its customers expect.

Under the supervision of PEARL iZUMi's Advanced Development Project Manager Rob Pickels, the apparel was rigorously trialled, and its performance assessed in comparison with a synthetic garment common in the cycling world. The testing was undertaken at one of the largest and most sophisticated climatic wind tunnels in the world, the ACE Climate Wind Tunnel owned by the University of Ontario Institute of Technology, at which PEARL iZUMi was able to control the environment (temperature, humidity, wind speed, solar output etc) to mimic the conditions that riders face outside.

"We expected wool to be very comfortable in the cool damp conditions in which we placed our test subject, but until we see the data, we never know exactly how a system of garments will perform," Rob said.

Throughout the trial, temperature and humidity sensors recorded what was happening in the microclimate between the riders' skin and the garments.

"When analysing the data, we had extremely positive results that showed that the Fall '19 wool product was warmer, it was drier, it had more thermal comfort than the pure synthetic fabrics. And so, for us that was a huge win. It was a great validation of all the hard work that we had put into developing this fabric and creating this product." **B**

MORE INFORMATION

www.pearlizumi.com/PEARL-iZUMi-Merino



Rigorous testing of its new Merino apparel was undertaken by PEARL iZUMi at the ACE Climate Wind Tunnel in Ontario, Canada.

WOOL MAKES A SPLASH AT LAUNCH

The Italian-built Luna Rossa AC75 yacht to compete for the America's Cup was launched in Cagliari in October to the applause of hundreds of VIPS, invited guests and the public.

The **Luna Rossa AC75 yacht** during her first official sail in the Gulf of Cagliari, displaying the **Woolmark logo** on its sail. The AC75 will sail almost entirely in foiling mode: the hull will barely touch the water, allowing it to reach very high speeds.

The Luna Rossa Prada Pirelli team is benefitting from the performance attributes of wool in its new sailing uniform, as a result of a partnership with AWI's subsidiary The Woolmark Company.

The partnership highlights the strong link between the world of sport and the world's original performance fibre: Merino wool. Now in its 36th edition, the America's Cup is the oldest trophy in the history of sport, which sees the participation of the most technologically advanced boats in the world.

The Woolmark Company's commitment to championing innovation sees the development of a Merino wool-rich uniform

to support the entire Luna Rossa team and crew across the regattas, events and activities – during training and sailing. The Woolmark-certified uniform includes: waterproof jacket, soft shell jacket, polo shirt, T-shirt, wet jacket, blouson, wetsuit and base-layers.

The first series of preliminary regattas of the 36th America's Cup presented by Prada will take place in Cagliari 23-26 April next year. Additional World Series events will be held around the world in the lead up to Auckland, New Zealand, where in early 2021, the Prada Cup will decide the challenger who will race in the 36th America's Cup, presented by Prada, scheduled for March 2021.



The AC75 yacht was launched with great fanfare on 2 October in Cagliari, Italy. Pictured are crew members wearing their Woolmark branded Merino wool uniforms.

THE NORTH FACE LAUNCHES WOOL COLLECTION IN KOREA

Well-known and respected outdoor and sports brand The North Face has launched in Korea a collection, called Tech Wool, that comprises 18 styles made from Australian Merino wool.

In collaboration with AWI's marketing arm The Woolmark Company, leading outdoor brand The North Face has launched a 'Tech Wool' collection featuring Australian Merino wool. It is being sold at the brand's 239 retail stores nationwide and its own online store.

The North Face brand in Korea is operated by Youngone Corporation, a leading global manufacturer of sports and outdoor clothing with mills operating in Bangladesh, Vietnam and China as well as Korea. The North Face Korea was launched in 1997 by Youngone

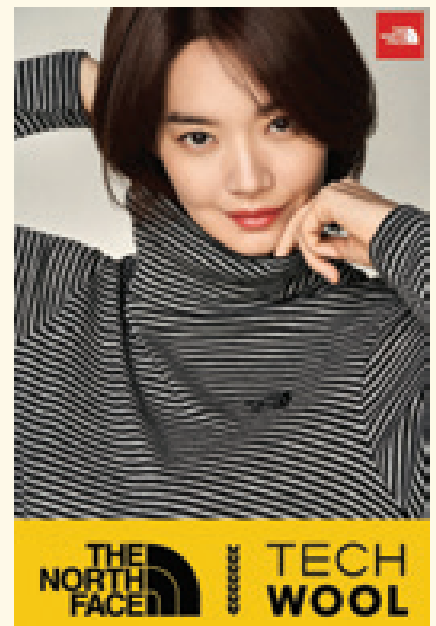
Corporation and is now the top sports and outdoors brand in Korea, posting annual sales of nearly A\$600 million in 2018.

The company mainly sells synthetic and down apparel, but it aims to increase its Merino wool garments to meet the growing market demand for apparel made from natural and eco-friendly fibres.

The Tech Wool collection consists of 18 styles for men and women, including long-sleeve and short-sleeve T-shirts, zipped T-shirts, turtlenecks, button-up shirts, cardigans, sweaters and pants.

The Woolmark Company has assisted The North Face with product development and sourcing; training of its design, production and marketing teams; and marketing of the Tech Wool collection both instore and online.

The collaboration has successfully established an Australian Merino wool supply chain for the outdoor market, and increased demand



Advertising in Korea for the women's long-sleeved turtleneck shirt from **The North Face**, made from Australian Merino wool.

for the fibre in Korea. The partnership will continue with The North Face for next year's Autumn/Winter season.

WOOLMARK PERFORMANCE CHALLENGE

Now beginning its third year, the Woolmark Performance Challenge is an annual design competition for tertiary students, aimed at pushing the boundaries of product innovation in sportswear.

AWI's subsidiary The Woolmark Company last month announced the 2019 winners of its Woolmark Performance Challenge and has also launched the 2020 edition of the competition.

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.

Launched in 2018, the Woolmark Performance Challenge aims to really push the limits of product innovation by inspiring students from a wide range of specialisms – including science, technology and design – to harness the unique natural properties of Australian Merino wool.

The ultimate aim is for the initiative to increase the demand for Australian Merino wool in the activewear sector, the fastest-growing sector of the global textile business. Leading manufacturers and brands in this sector are already promoting the natural benefits of Merino wool as a performance fibre, but there is still further significant potential for the fibre in this sector.

Available for the winners of the competition are a cash prize, an industry internship and ongoing training support, plus the opportunity to sell their idea to The Woolmark Company or that year's competition sponsor.

"The Woolmark Performance Challenge is a very exciting initiative within AWI's product development program," said AWI CEO Stuart McCullough. "It provides an excellent opportunity for young talent to find a place for their exciting innovation on the international stage, whilst pushing the possibilities of Merino wool into uncharted territories."



Finalists took part in a three-day workshop hosted by The Woolmark Company in Shanghai, that included a seminar by Qi Zhang (above), the founder of **Hologarment**, a revolutionary garment design software that uses virtual reality technology.

"The students are encouraged to look beyond existing product offerings and think long-term. They are asked to consider how the impact of technological advances and shifts in consumer attitudes, environmental and/or cultural issues, would affect their concept and its value."

Stuart McCullough, AWI CEO

For the second consecutive year of the competition, The Woolmark Company was proud to partner with leading global sportswear brand adidas to enhance the impact of the initiative in 2019.

The winner of the inaugural competition in 2018, Alicia Ferreira de Sousa from France, said of her experience as an intern with adidas: "Since September I have enjoyed working with the Concept Generator for Footwear Innovation team. Out of all my professional experiences, I think this internship is one of my favourites so far. I have learnt the importance of collaboration, which links all of the competencies of each member in the team to make an innovative concept become real."

STUDENTS TAKE UP THE 2019 CHALLENGE

Open in its inaugural year to tertiary students in Europe and North America, the second year's competition was expanded to include tertiary students from across the world, with the result that registrations more than doubled to 1060 students from 118 educational institutions across 21 countries.

The large and diverse range of applicants for the program highlights the thirst students have for both education and innovation as they plan the early stages of their careers.

The students were provided with an extensive range of educational resources 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.

To kick-start their journey in the competition and stimulate their imagination, The Woolmark Company encouraged all the students who entered the competition to take the online Wool Appreciation Course. In addition, a series of webinars were delivered

to students by industry experts – discussing topics such as the benefits and future of wool, through to the importance of innovation and sustainability.

Once submissions for this year's competition closed in May, judges deliberated hard as to who should be the 10 finalists for the final event held in Munich, Germany, on 14 November 2019. The chosen finalists were from colleges in Italy, the UK, France, and the USA – although the finalists' home countries also included Kazakhstan, South Korea, China, Brazil and Ireland.

"It has been a pleasure for us to see the work from all of the talented applicants, to see so many forward-thinking and problem-solving ideas," said adidas Senior Design Director Tillmann Studrucker.

The Woolmark Company hosted a three-day workshop in Shanghai in September to help develop the finalists' knowledge of Merino wool and their capacity as innovators and creative thinkers. Their itinerary in Shanghai included:

- Seminars at AWI's Wool Education Centre at Donghua University, delivered by designer Kain Picken of the ffiXXed Studios brand; the founder of Shepherd and Hologarment, Qi Zhang; and The Woolmark Company's Technical Manager in China, Junny Zhu.
- A tour of Jiangsu Sunshine, one of the largest vertical worsted garment manufacturers in the world.
- Intertextile trade show, with a tour of The Woolmark Company's and partners' stands.

Five finalists also took the opportunity to attend the Nanjing Wool Market conference (including a tour of the fabric and garment manufacturer Shandong Ruyi) that provided them with an invaluable perspective and insights into the global wool supply chain, along with the chance to establish connections with supply chain partners.

One finalist was unable to attend the workshop in China, and so instead was provided with separate training in Italy, including a visit to the Reda mill in Biella.

2020 COMPETITION

Registrations for the 2020 edition of the competition are now open and tertiary students from across the world, including Australia, are invited to apply at www.woolmarkchallenge.com.

This year's competition partner is Norwegian brand Helly Hansen, which has been at the forefront of technical innovation and high-performance apparel since it was established in 1877.



The 2019 Woolmark Performance Challenge finalists, judges and two winners (centre) **Hyokyung Lee** and **Hope Kemp-Hanson**.

Hyokyung Lee who is studying at the Institut Français de la Mode in France and Hope Kemp-Hanson from the Savannah College of Art and Design in the USA, were announced as the winners of the 2019 Woolmark Performance Challenge at a special event held last month in Munich.

Hyokyung's winning energy-generating Merino wool base-layer is designed to monitor an athlete's body status, allowing transmission of data and, if needed, an SOS. She was awarded the €10,000 prize money to further develop her innovative and commercially viable idea.

"Winning the Woolmark Performance Challenge has made me realise that as a designer I can be part of innovations that can be helpful for the world," she said. "The best part of participating in the challenge is that you can learn about the most recent innovations in different fields – IT, science, fashion and textiles."

"It was my first time really using a natural fibre for what it is. I love to push textiles playing with science and technology, which typically leads to synthetics, but being able to problem solve in a new way with unique boundaries and an unfamiliar playground for exploration was really exciting!"

2019 winner
Hope Kemp-Hanson
Savannah College of Art and Design,
USA

Hope's winning hidden impact protection blends urban streetwear with skateboarding equipment. She was awarded the three-month paid internship with adidas, with the sports giant seeing real potential in the young designer's career.

"It's been such an amazing opportunity not just within pushing the innovation and learning of wool, but becoming a part of this group of people, an incredible, new design family," she said. "I feel so honoured, humbled,

and beyond appreciative to have been a part of this journey."

The award was judged by a highly respected panel of judges:

- adidas Senior Design Director, Tillmann Studrucker
- adidas Talent Acquisition Manager, Louis de Vos
- International Woolmark Prize menswear and innovation awards winner, Edward Crutchley
- Hugo Boss Head of Creative Management, Peter Bona
- Textile Engineering Professor at Hochschule Niederrhein University of Applied Sciences, Ellen Bendt
- Head of Fashion & Technology at knitting machine technology company Stoll, Jörg Hartmann
- *Sportswear International* Editor in Chief, Sabine Kühnl
- *Runner's World Germany* Editor, Urs Weber
- AWI General Manager of Processing Innovation & Education Extension, Julie Davies.

"We are really encouraged by how the competition has grown over the past two years, which affirms our commitment to education and the potential for product developments with wool in new market areas."

Julie Davies
AWI General Manager of Processing
Innovation & Education Extension

"Despite its long history in apparel, the unique natural properties of Australian Merino wool positions it as a leading technical fibre in today's sports and outdoor industry," said AWI's Julie Davies. "We saw that evidenced with the incredible diversity of ideas presented by the finalists." **B**

MORE INFORMATION
www.woolmarkchallenge.com

SHAUN THE SHEEP

PARTNERSHIP WITH WOOLMARK COMPANY

AWI's marketing arm The Woolmark Company has partnered with the most popular sheep in the world to announce the global roll-out of his new movie 'Farmageddon', in a series of initiatives to educate the public about the benefits of wool.

FAST FACTS

- In collaboration with The Woolmark Company, award-winning animation studio Aardman has created a unique short animation film titled 'Super Natural Wool', which complements and coincides with the global roll-out of the new Shaun the Sheep movie titled 'Farmageddon'.
- The Woolmark Company has also developed Shaun-inspired educational materials hosted on a campaign website www.SuperNaturalWool.com and has invested in a global media campaign to amplify awareness of Merino wool's benefits as a 'super natural' fibre.
- The Farmageddon movie has begun showing across the world and will hit Australian cinemas on 9 January.



A clip from the short film **Super Natural Wool** which has been produced in collaboration with The Woolmark Company to complement the global roll-out of the new Shaun the Sheep movie titled **Farmageddon** and explain the benefits of wool to audiences.

Shaun the Sheep is probably the most famous sheep in the world. The British clay-animated character first made his appearance more than 20 years ago in the Wallace and Gromit comedy series, but Shaun went on to have an award-winning television series of his own, based at the fictitious Mossy Bottom Farm in the north of England where he has madcap adventures as the leader of the flock.

150 episodes were produced during a ten-year period (broadcast in 180 countries), which were followed in 2015 by a critically acclaimed feature-length film titled *Shaun the Sheep Movie* that grossed US\$106 million worldwide.

Fast forward to today and the Shaun the Sheep franchise, which is produced by world-renowned animators Aardman, is a global sensation with more than three billion views on YouTube and more than 5.6 million fans on Facebook. The second feature-length film, titled *A Shaun the Sheep Movie: Farmageddon*, has recently been produced and is now being rolled out across the world.

In the film, an adorable alien called LU-LA

crash-lands near Mossy Bottom Farm and Shaun soon sees an opportunity for fun and adventure as he sets off on a mission to shepherd LU-LA home.

To complement the launch of the new film, Aardman created a unique short film with The Woolmark Company called Super Natural Wool to showcase the natural benefits of wool. The short film sees LU-LA need comfort and warmth after the crash-landing; LU-LA quickly discovers the softness of wool and travels back to space with an array of wool apparel courtesy of Shaun and the flock.

The short film is being distributed on social media, featured at premieres of the movie worldwide, and will be included in several of the movie's global Home Entertainment releases in 2020.

PROMOTING THE NATURAL BENEFITS OF WOOL

The director of the short film Super Natural Wool, Richard Webber, says Aardman is proud that Shaun is helping to communicate the

eco-credentials of wool across the globe.

"Shaun the Sheep and the flock must be the most famous sheep in the world, and we loved the idea of an association with The Woolmark Company, using the characters and comedy to encourage people to choose wool," Richard explained.

"We like to think of Shaun and the flock having fun with their natural environment and The Woolmark Company clearly promotes the natural credentials of wool. With the feature having a sci-fi theme, it's fitting to learn that wool is used in space, and we love to think of our inquisitive visitor from outer space, LU-LA, discovering the delights of wool from planet earth."

Hear more from Richard and the creation of the Super Natural Wool film at www.woolmark.com/shaunthesheep which contains information from behind the scenes of the filmmaking process.

Also involved was STUDIOCANAL, a leader in production, distribution and international sales of feature films and TV series.

HEEP OLMARK

l, Shaun the Sheep, during the
e benefits of wool.

EVP International Distribution and Managing Director of STUDIOCANAL UK, Anna Marsh, said: "There couldn't be a greater global ambassador for the sustainable qualities of wool than Shaun the Sheep, so we are proud to be working with The Woolmark Company and our partners at Aardman to help promote this message as part of our wider global campaign for Shaun's highly anticipated return to the big screen."

EDUCATING THE NEXT GENERATION

To support the campaign, The Woolmark Company has developed an educational website for kids to discover where wool comes from and its super-natural benefits such as being 100% biodegradable. Available in English, Mandarin, Japanese and German, www.SuperNaturalWool.com hosts games and a suite of downloadable activity sheets.

"We are always looking for partners who want to engage with our movies in imaginative ways, and The Woolmark Company's multi-territory roll-out really delivers, with a series of fun, creative activations that brilliantly complement our own campaign while delivering their message," Anna added.

The Woolmark Company invests heavily in the education of future generations, with tailor-made programs developed for primary, secondary and tertiary students. The bespoke Shaun the Sheep children activities not only instill a love of wool into this future generation, but all the eco-credentials that come with it.

The Woolmark Company has also partnered with UK educational initiative Into Film to distribute a program (www.intofilm.org/promotions/farmageddon) to help educate children about the benefits of natural products and recycling, teaching them from a young age how they can help care for the environment.

As part of the campaign, Australian fashion brand Double Rainbouu has created Shaun the Sheep-inspired sweaters made of 100% Merino wool of 19.5 micron, sourced from 36 properties from across Australia. The unisex-style sweaters are available to purchase online (with international shipping) via www.woolmark.com/shaunthesheep.



The Woolmark Company's **Super Natural Wool** campaign website at www.SuperNaturalWool.com includes the Super Natural Wool short film, plus **games and downloadable activity sheets** (see below) to educate children about the natural benefits of wool.



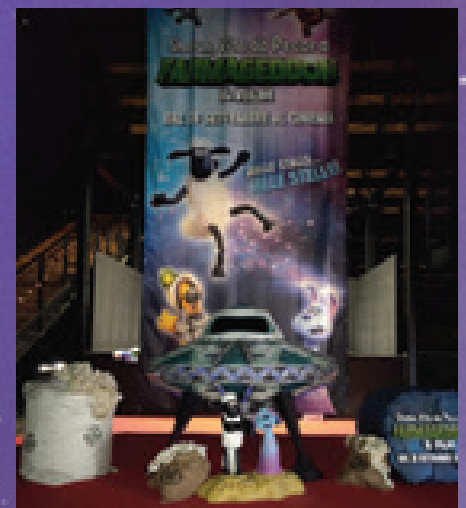
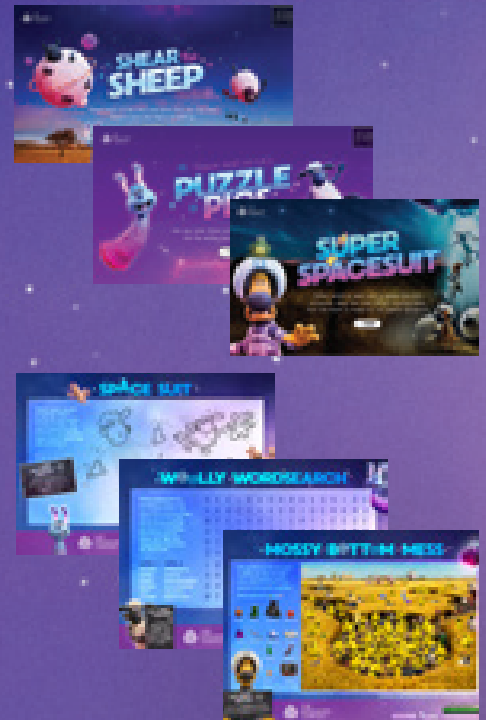
Famous UK children's entertainer and the voice of Shaun the Sheep, **Justin Fletcher**, arrives at the Farmageddon movie's UK premiere at London's Leicester Square in one of several electric taxi cabs promoting the super soft attributes of wool. Guests at the star-studded premiere ranged from legendary model **Jodie Kidd** to high profile astronaut **Tim Peake**.

The Woolmark Company has also partnered with key global retailers, including Amazon in Japan, to promote wool product using Shaun the Sheep intellectual property.

A *Shaun the Sheep Movie: Farmageddon* has already been launched across most European and several Asian countries (including Korea, Taiwan, Indonesia and Vietnam), with launches scheduled soon in many other countries including in Japan, Singapore, Russia and Canada. The film is launched in Australia and New Zealand on 9 January. **B**

MORE INFORMATION

www.supernaturalwool.com
www.woolmark.com/shaunthesheep
www.shaunthesheep.com/movie



Bales of real wool are on show at several screenings of the *Farmageddon* movie, including the Italian premiere in Rome (pictured) that had an audience of 1,300 guests including more than 50 journalists.

HELLO EWE

AUSTRALIAN MERINO WOOL KNITWEAR

Having both been raised on sheep properties, the founders of Hello Ewe keenly chose Australian Merino wool as the fibre for their brand's kids' jumpers, which are timeless and durable enough to be passed down to siblings and friends.



Hello Ewe knitwear is made from 100% Australian Merino wool and is designed to be practical and durable.

Hello Ewe was founded by Kate Bell and her husband Michael de Kleuver following a search for natural, durable and practical knitwear for their own children Eve and George, now aged 11 and 9, for both school and play.

"Looking around our local schools for what was on offer for Eve and George, there seemed to be only two options: expensive designer knitwear, or cheap manmade fibres which don't last and don't keep you warm," Kate said.

"We were keen to start our own business anyway, and so with our background in wool it seemed a natural fit to develop our own Australian Merino wool knitwear brand, Hello Ewe, which we launched in November last year."

Both Kate and Michael are from the land. Kate grew up on a mixed grazing property at Breadalbane in the Southern Tablelands of NSW and Michael spent his childhood on a Merino property near Cooma.

"Michael is the most passionate wool person I know. He lives and breathes every aspect of the industry and is currently the wool manager for Rodwells. My appreciation for wool and the industry really grew after meeting Michael," Kate said.

"We purchased our own 250ha farm near Collector in 2006 and run 500 Merinos along with other livestock. Michael's job is based in Melbourne, so we spend our time between Melbourne and the farm – a short 6½ hours' drive!"

COMMITMENT TO SLOW FASHION

Kate says Hello Ewe is committed to producing sustainable apparel and that

its jumpers are the ultimate quality wardrobe basic.

"Hello Ewe is all about practical and timeless knitwear. We all know kids can be grubby, so our jumpers are soft yet durable and tough enough to handle the washing machine. We want our jumpers to be worn for years and then passed onto siblings, friends and back to the school clothing pool or local op-shop.

"We are very optimistic for the future. With the current conversation around climate change, fast fashion and the need to reduce waste, sustainable natural fibres like wool are in a wonderful position to capitalise."

Kate Bell, Hello Ewe founder

"We only use Australian Merino wool, the perfect choice for today's environmentally conscious consumer. We want our customers to feel good about their purchase knowing there are no polluting synthetic microfibres, the jumpers are robust enough to be passed down, and they are biodegradable when they do come to the end of their days."

All Hello Ewe's garments are manufactured in regional Victoria by a small family run business.

FROM SCHOOLS TO PONY CLUBS

"Our multipurpose garments suitable for schools and weekends are key to the business. For our school range we use a 20.5 micron Superwash yarn, which is durable and machine washable, yet still comfortable to wear," Kate said.

"We can accommodate all major school

colours, yarn weights and have an embroidery service. Designs include but are not limited to a traditional V-neck jumper or vest, a more contemporary crew neck style jumper or vest, a zipped wool jacket or vest, and a hooded wool jersey.

"We are now also branching out into other organisations such as pony clubs and our main focus for 2020 is to build our corporate offering and introduce a limited adult retail range."

Mindful of minimising prices for its customers, Hello Ewe knitwear is sold mainly online or direct to customer (eg school or organisation).

MORE INFORMATION
www.helloewe.com



Hello Ewe founders **Kate Bell** and **Michael de Kleuver**, with their children **George** and **Eve** wearing Hello Ewe knitwear.

LEROY MAC DESIGNS

MADE FROM THEIR OWN WOOL

In 2010, woolgrowers Rod and Rebecca McErvale set up Leroy Mac Designs, which produces baby blankets, scarves and beanies all made from wool grown on their own farm at Lexton in western Victoria. The company has been selected by Facebook as one of the 30 regional businesses to be included in the Facebook Gift Guide 2019 this holiday season!

Rod is a fourth-generation woolgrower while Rebecca was originally a city girl. As well as running their own property, they are also in partnership with Rod's father and, all up, they shear just less than 6,000 Merino sheep from lambs to 6½ year old wethers across the two enterprises.

Rod and Rebecca set up Leroy Mac Designs nearly ten years ago after witnessing a cotton baby blanket being knitted by the tenant of an investment property the family owns. Being Merino woolgrowers and knowing the benefits of wool, their idea was to make products made only from 100% Australian Merino wool.

Within six months, they had designed six different blankets and had samples knitted using Australian wool yarn from a NSW yarn supplier. However, Rod and Rebecca very much wanted to manufacture their products using the wool from their very own farm.

"Right from the start, our original goal was to

be able to use our very own wool to make our garments," Rod said.

But it took four years of searching before they were fortunate to find an Italian spinner, Safil in Italy, that could accommodate manufacturing machine washable yarn in a relatively small batch size.

"A lucky encounter at the wool sales with an old primary school classmate of mine, Brendan Finch who works for Fox and Lillie, put us in contact with the right people, especially Andrew Ross from Bluey Merino, and within a few months our first batch of greasy wool was on its way to Safil in Italy," Rod said.

"They process our greasy wool into the 'Yalong Yarn' that we use in our products. We only use the best of our fleece wool each year to make our Superwash yarn allowing all of our garments to be machine washable.

"By using wool sourced from our own farm, we have full control over our fibre and the way that it is processed to give us the comfort and elasticity we require for our products. Our current batch of yarn is 18.4 micron from some 2/3 and 4-year-old wethers."

Rod and Rebecca McErvale sell their products mainly online via their own website at www.leroymac.com.au and Facebook.

"We've found that by using our own fleece wool (which is nearly double the cost of buying Australian wool yarn) and having all the knitting done locally, our wholesale costs restrict the usual 100% mark-up that retailers want before they will stock products," Rebecca said.

"Having said that, there are a small number of boutique shops that love our story and happily stock our products. We also do monthly

markets, ag shows and have been at Agfest for the past four years, Bendigo Sheep Show and Sheepvention.

"We are also very excited to have been selected to be a part of the 2019 Facebook Gift Guide! It's a unique collection of products from 30 amazing small businesses from regional Australia."

Leroy Mac Designs now has more than 50 different designs in baby blankets, throws and beanies, as well as corporate and work jumpers – and the McErvales see many opportunities for the future.

"We have so many enquiries from fashion designers who just love our yarn and the story behind it that we see a huge untapped market at the high end of the industry," Rod said.

"We have also had enquiries for our yarn to be non-Superwash, so we have classed out a bale of wool from this year's clip to be completely processed in Victoria as part of the new 'Australian Fibre Collective'. This involves production entirely done in Australia – from the growing to the manufacturing of the finished garment – which is very satisfying to be involved in."

For every two blankets ordered from now until Christmas, Leroy Mac Designs is donating a large bale of hay to Rural Aid and its Buy a Bale campaign. The McErvales have been cutting hay in November and aim to have at least a semi-load ready to donate by Christmas. **B**

MORE INFORMATION

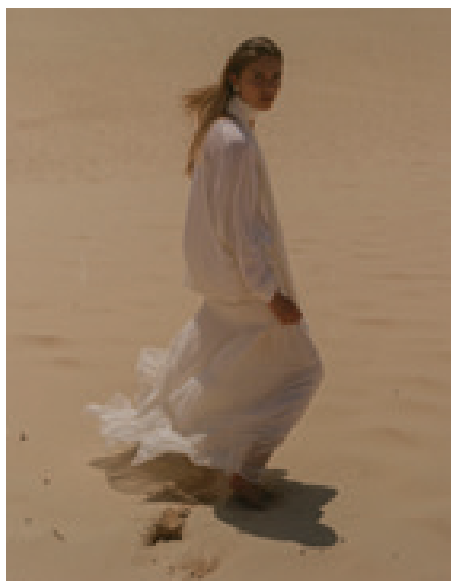
www.leroymac.com.au
www.facebook.com/LeroyMacDesigns
www.australianfibrecollective.org

Rebecca and Rod McErvale with a **Leroy Mac Designs'** baby blanket made with wool from their own farm. PHOTO: Susan Cowie



ALBUS LUMEN'S TRACEABLE TRAVEL COLLECTION

The poncho that is part of new **travel collection** by 2019 International Woolmark Prize finalist Albus Lumen. The collection is made from 19 micron wool sourced from 'Anlaby' in South Australia.



The **Caeli dress**, crafted from soft slubbed Merino wool jersey, from Albus Lumen's International Woolmark Prize **Pura Interna** collection that showcases Merino wool as a lightweight trans-seasonal fibre for summer.

Albus Lumen founder and designer Marina Afonina fell in love with Merino wool as she created her *Pura Interna* collection as part of the 2019 International Woolmark Prize final.

Wanting to continue her journey with the fibre and following a visit to 'Anlaby Station' in South Australia, Marina selected 19 micron wool directly from the farm for the new Albus Lumen travel collection which includes a jumper, 3/4 sleeve T-shirt, leisure pants, poncho, shawl and eye mask.

Australian fashion label Albus Lumen has partnered with AWI to connect with one of Australia's most historic wool-growing properties 'Anlaby Station' to produce a travel collection made of single-origin Australian Merino wool.

"Wool in general is perfect for travel. It keeps you warm in the cold but also keeps you cool in heat and it's resistant to odour and creases. For us, using wool in the travel capacity is a natural progression and wool is a perfect fabric for that," she said.

Each garment in the travel collection contains an interactive NFC chip, allowing consumers to tap their phone on the garment's care label to discover the story behind the product, from sheep to shop, offering traceability in the supply chain.

"I think traceability is so important. People want to know more these days and respect the knowledge of where they buy a product and where the product is made," she said.

"Being a finalist for the International Woolmark Prize gave me so many opportunities and exposure to people like 'Anlaby'."

A heritage steeped in tradition, 'Anlaby Station' near Kapunda is one of the oldest Merino sheep studs in Australia and exported South Australia's first bale of wool.

Celebrating its 180th anniversary this year, 'Anlaby Station' opened its doors to the public as part of its annual Open Gardens weekend in October. The Albus Lumen's

traceable travel collection was unveiled at the event along with an exhibition dedicated to the International Woolmark Prize including pieces from the Albus Lumen *Pura Interna* collection.

"We met Marina last year when The Woolmark Company brought a group of designers here to 'Anlaby Station' and we found there was compatibility in what both our businesses are striving for," said 'Anlaby Station' co-owner Andrew Morphet.

"Marina is meticulous in detail and really interested in natural fibres and we love the integrity of Albus Lumen. She's a wonderful example of a designer who can take a wonderful fibre and make so much more of it with good design and integrity.

"We have our own brand, but the fact that somebody else is interested enough to want to source our product and do their own thing with it is humbling and also helps us have faith that we're doing the right thing. The fact that we get to collaborate is remarkable and we feel really honoured." **B**

MORE INFORMATION

The Albus Lumen *Pura Interna* and traceable travel collections are both available at modern luxury shopping destination www.matchesfashion.com.

INTERNATIONAL WOOLMARK PRIZE WINNERS VISIT AUSTRALIA

This year's International Woolmark Prize womenswear winners Michael and Nicole Colovos, of their namesake Colovos brand, recently travelled from their home country of the USA to Australia to visit the source of Merino wool and launch their winning wool collection at David Jones.

According to talent advisor Floriane de Saint Pierre, a judge at the 2019 International Woolmark Prize, it was Michael and Nicole Colovos' attention to sustainability that made them deserving winners of this year's womenswear award.

"Our goal was to create a luxury, modern collection with a fully sustainable proposition," explained co-founder Michael Colovos.

Given their passionate interest in environmental practices, the husband and wife couple found much in common with the Watson family, who own and run Australian wool-growing property 'Millpost' at Bungendore on the Southern Tablelands of NSW. Having journeyed to Sydney to launch their winning collection at one of the International Woolmark Prize retail network partners David Jones, Michael and Nicole Colovos – along with their children Max, Arlo



Sustainability is integral to the ethos of International Woolmark Prize womenswear winning designers Michael and Nicole Colovos, a value shared at Australian wool-growing property 'Millpost' which they visited on a recent trip to Australia.

and Flynn – made a day trip to the property to better understand the source of the fibre they have learned so much about and become such ardent advocates of.

Millpost is one of the oldest broadscale Permaculture farms in Australia, the system having been implemented there since 1979. Saxon Poll Merinos with 16-18 micron wool are run on the Watsons' 1,100 hectare property, with a portion of their own wool processed into yarn that they then sell locally and online.

The Watson family shared with Michael and Nicole their approach to rotational grazing, land and pasture management, and animal welfare, educating the designers about the significant amount of work that goes into creating a luxury, functional fibre before it has even been sheared from the sheep.

"We always try to work with farmers that are really conscious about how they're producing and we're also working with mills that are part of the Greenpeace detox program, so they're not using a lot of chemicals in the dyeing process," explained Michael.

"We always worked with natural fabrics, but once we started working on the Woolmark project we wanted to make a collection that was 100% sustainable. So, taking ideas from the [Woolmark Prize] capsule collection allowed us to implement things into our own brand at the same time."

Now, the couple proudly guarantees that even garment labels are made from recycled fabrics, and they've radically changed the way that they source and finish their fabrics.

An important aspect of the pair's approach is in traceability, with every garment comprising a scannable QR code, allowing a customer to look up the inspiration behind the design of a garment as well as its material content.

"But it's also for end-of-life," said Michael. "We want garments to last forever, but after wearing something for 10 or 15 years we want people to be able to send their clothes back to us for recycling into new fabrics, or if they on-sell it, the next wearer can understand the provenance and story behind the garment, too."

The environmentally conscious capsule collection that won Colovos the 2019 International Woolmark Prize was launched in September at David Jones along with leading boutiques across the world.

David Jones General Manager of Womenswear, Bridget Veals, said: "We're thrilled to welcome International Woolmark Prize winner Colovos to our designer offering this season. Colovos have created a luxurious, directional collection with strong sustainability attributes that will resonate well with our customers."



The Woolmark Company engaged four Australian influencers (with a combined following of 927,000 Instagram followers) to support the launch of the Colovos collection at David Jones. Pictured is fashion writer and media personality Kate Waterhouse (daughter of Gai and Rob Waterhouse) wearing the rib dress made from 100% Merino wool. Kate told her followers that the "Colovos dress is a great new addition to my closet and it's proven itself to be ultra wearable, and so versatile too".

CAMPAIGN FOR WOOL

WOOL WEEK UK GOING STRONG

The Campaign for Wool's annual Wool Week in the UK recently marked its tenth year with an extended program of events spanning a fortnight in October. With wool being highlighted as a planet-friendly fibre that biodegrades in the land and in the ocean, this year's key message for consumers was: 'Make a difference - choose wool'.

The global Campaign for Wool marked its tenth successful year in the UK with its annual 'Wool Week' held 7-20 October, showcasing innovative and contemporary wool products from this year's brand partners across fashion and interiors.

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

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

"Shoppers can all make a difference by choosing wool to help safeguard the planet for future generations."

Campaign for Wool

COO of the Campaign for Wool, Peter Ackroyd, said Wool Week this year had a strong focus on wool's natural eco-credentials compared to synthetic fibres.

"Wool has inherent biodegradable properties in land and ocean, which can benefit our planet that is choking from waste plastic and man-made micro-fibres," he said.

"Every year, sheep produce a new fleece, making wool a natural, renewable fibre source. The Campaign for Wool invites consumers to 'make a difference and to choose wool'. We can all make a small difference and accumulatively this can only help the plastic issue we are facing globally."

From exclusive exhibitions, screenings and styling events, to limited edition wool sweaters, bed and interior product launches, Wool Week 2019 celebrated the latest product releases and manufacturing experts in the world of wool. Highlighted right are four examples of the many initiatives undertaken during Wool Week. **B**

MORE INFORMATION
www.wolfgangscout.com

SNIPPETS FROM WOOL WEEK UK



Renowned luxury fashion retailer **Brora** was one of many brands to get involved with Wool Week this year. Pictured here is Brora's 100% Merino wool **RESPECT** jumper, which reinforces the Campaign's message of 'Respect the Planet'.

"At Brora we are proud to support the Campaign for Wool's Wool Week and all of the wonderful benefits that come with wearing this natural fibre. Make a difference and choose wool. Compared to synthetic materials, wool decomposes very quickly at the end of its life cycle and releases nutrients back into the earth."

BRORA

Bespoke tailor **Anderson & Sheppard** collaborated with broadcaster, writer and the British Military's chief survival instructor **John Hudson** to launch during Wool Week the ultimate survival sweater made from 100% Merino wool.

"In my world of military survival training, the clothes you wear are your top priority after you've treated any injuries – good garments made from the best materials are that important. So we selected the best wool for this design – it keeps you warm even when it's wet."

John Hudson



UK brand **Smalls** released during Wool Week a Merino wool childrenswear collection in collaboration with New York-based baby and kids brand **Oeuf**. The 'Under Pressure' range features an innovative print of planet earth highlighting the importance of sustainable fashion.

"Sustainable fashion is rapidly becoming a global issue and is very close to our hearts at Smalls. Our hopes are that this 'Under Pressure' line will further raise awareness of the importance of buying less and choosing well when it comes to fashion choices."

Smalls

WOL UK

LIFE'S A BEACH WITH WOOL

The Campaign for Wool showcased the versatility and trans-seasonality of wool at a beach venue in Cornwall this summer. With more than 47 brands displaying products at the Wool Beach Lodge, consumers saw the breadth of wool's applications – from wool garments to interior textiles to some unexpected innovations like a wool-lined wet suit and a sustainable surfboard made from wool and bio resin.

During the recent English summer, the Campaign for Wool created a Wool Beach Lodge on Porthtowan Beach in Cornwall. The Lodge highlighted the latest developments from leading brand partners in the worlds of interiors, sport performance and casual fashion, highlighting wool's role in the next generation of renewable fibre products.

The Wool Beach Lodge opened for the press from 2-3 July and consumers from 4-13 July. The venue provided the ideal space to reference wool's natural ability to biodegrade in the ocean as well as in land, and how wool can contribute to a reduction in plastic use and micro-fibre pollution in marine environments.

The Campaign for Wool collaborated with its brand partners to deck out the Lodge with wool furniture courtesy of Tetrad and Solidwool, along with wool furnishings from labels including Abraham Moon & Sons, AW Hainsworth, Thermafleece, Alternative Flooring and Brintons, through to The Wool Room, Luna Textiles, Harris Tweed Hebrides, Moorswood, Jessica Dance, Raeburn Design, CDBDI and Margo Selby.

The Lodge also housed next generation products and performance wear from the likes of Finisterre, Core Merino, APL, Outerknown and Devold, and fashion

apparel brands including Wool & Prince, McNair, Anderson & Sheppard, Armadillo Merino, Dashing Tweed, Smalls, Celtic & Co, Sheep INC, Brora, Glenbrae and Johnstons of Elgin.

Visitors and holidaymakers were able to also take part in a range of summer beach activities including surfing, yoga, wool workshops and beach movie screenings all hosted by Campaign for Wool supporters, as well as an exclusive hike with author and survival expert John Hudson. Additional activities including beach litter clearing also featured on the program highlighting the eco-friendly nature of wool.

"We were pleased to introduce the Wool Beach Lodge and our program of summertime events which showed off the innovative nature of wool in sporting apparel and equipment, and where better to do it than the beautiful Cornish countryside and coast," said COO of the Campaign for Wool, Peter Ackroyd.

"There is a real misconception that wool is purely associated with cooler seasons and warming benefits, however through this exciting initiative, the Wool Beach Lodge showcased the versatility of wool and helped establish it in consumers' minds as a trans-seasonal textile."

MORE INFORMATION
www.campaignforwool.org



Advocating wool as a simple way to live both stylishly and sustainably, **The British Blanket Company** provided a special discount offer to customers during Wool Week. Their wool blankets are strong and durable, giving warmth and enjoyment for many years.

"As we all become increasingly aware of plastic microfibres choking the oceans and plastic waste lying for hundreds of years in landfill, wool offers a biodegradable alternative. Choosing wool is a simple step that could really benefit the environment."

The British Blanket Company



The Campaign for Wool's **Wool Beach Lodge** in Cornwall this summer showcased the latest wool fashion and performance apparel, interior products and latest innovations.



CAMPAIGN FOR WOOL IN JAPAN

Top decision makers in Japan were showcased the benefits of wool at an event at the British Embassy in Tokyo attended by the Campaign for Wool's patron HRH The Prince of Wales.



The Campaign for Wool's patron **HRH The Prince of Wales** and the **Deputy Prime Minister of Japan** Tarō Asō viewing the wool exhibit at the British Embassy in Tokyo. PHOTO: The British Embassy Tokyo

During his trip to Japan in October for the enthronement of The Emperor, the Campaign for Wool's patron HRH The Prince of Wales visited the British Embassy in Tokyo to attend an event hosted by the British Ambassador. They were joined by 120 top decision makers in Japan: Chairmen and CEOs of department stores, clothing groups, trading companies etc.

The Campaign for Wool was invited to stage a tactile display of wool products at the event to highlight the attributes of wool for health and wellbeing. Research funded by AWI is showing that wool bedding and sleepwear promote a better night's sleep, and medical studies reveal the wellbeing benefits of superfine Merino wool, particularly for eczema sufferers.

Research has also found that wool can improve air quality and also absorb VOCs released from many products found in our homes and offices: solvents, paints, cleaners and disinfectants, air fresheners.

The event was part of an initiative to help build demand for wool in Japan. COO of the Campaign for Wool, Peter Ackroyd, said "We were pleased to have the support of the Campaign for Wool supporters in the creation of the wool wellbeing space at the Embassy. These included Johnstons of Elgin, DAKS, Hotta Carpets, Nishikawa Co Ltd, AW Hainsworth, Smalls, Janie Withers, Abraham Moon & Sons, Joshua Ellis, Smalls, Allbirds, MamaOwl, Wool&Prince, and with special thanks to John Smedley." B

MORE INFORMATION
www.campaignforwool.org

PETA ADVERT BANNED

The UK's Advertising Standards Authority (ASA) has banned a poster advert by PETA that claimed "wool is just as cruel as fur". The ASA ruled the advert was misleading and its claims could not be substantiated.

Animal rights extremist organisation PETA had placed the advert on the sides of 20 buses in the Glasgow city centre in February. The advert showed an image of a woman with the neck of her jumper pulled over her face, alongside the words "Don't Let Them Pull the Wool Over Your Eyes: Wool Is Just as Cruel as Fur. Go Wool-Free This Winter."

However, following complaints about the advert, the UK's Advertising Standards Authority (ASA) has ruled that the advert breached its Advertising Codes, saying the advert was misleading and its claims could not be substantiated. The ASA has told PETA not to use the advert in future.

In its ruling the ASA stated: "We considered people who saw the ad would interpret the claim "wool is just as cruel as fur" as equating the conditions in which sheep were kept and

the methods by which wool was obtained with the conditions and methods used in the fur industry. However, sheep were not killed for their wool as animals were in the fur industry and there were standards in place relating to their general welfare including relating to the shearing process. We therefore concluded on that basis that the claim was misleading and in breach of the Code."

The COO of the Campaign for Wool, Peter Ackroyd, who is also President of the International Wool and Textile Organisation and AWI's Global Strategic Advisor, welcomed the ASA's decision.

"We are pleased that the watchdog has seen sense and realises that there is no correlation between wool production and fur production. The wool industry is governed by strict guidelines in animal husbandry laid

down by the International Wool and Textile Organisation and embodied in the 'five freedoms of animal welfare'."

"This welcome intervention, I believe, stopped PETA from launching an intensive London bus campaign during the Campaign for Wool's recent Wool Week in the UK."

AWI representatives regularly meet with key brands, retailers, retail associations, welfare groups and NGOs in key markets for Australian wool, to inform them about the high standard of Australian woolgrowers' animal welfare practices and the progress of the industry's animal health and welfare R&D. AWI also outlines to them the position of leading animal welfare organisations with which AWI works closely, such as RSPCA Australia and the Australian Veterinary Association. B

CHINA'S DIGITAL WOOL WEEK



AWI's marketing arm, The Woolmark Company, has entered into a two-year partnership with China's most influential e-commerce platform, TMALL, to promote Australian Merino wool. As a result, the inaugural digital Wool Week was launched in China, 10-16 September.



The Woolmark Company partnered with China's most influential e-commerce platform, **TMALL**, to hold a digitally focussed Wool Week.

In June this year, The Woolmark Company signed a two-year partnership with TMALL, the world's leading business-to-consumer e-commerce platform, which is a part of Alibaba Group.

This milestone agreement marks the increasing significance of online retail in China. China's total internet retail sales reached CNY3.9 trillion (close to A\$1 trillion) in 2018, maintaining double-digit annual growth, with clothing and footwear being the largest category (16%).

The partnership with TMALL aims to put Merino wool at the front of digitally savvy shoppers' minds, whilst further championing the wool products of premium Chinese brands and emerging designers. TMALL has established itself as the destination for quality, brand-name goods catering to increasingly sophisticated Chinese consumers and is the most visited business-to-consumer online retail website in China.

The strategic partnership is also a response to the growing demand for high-quality products and highlights the rising importance and awareness of Merino wool in China.

Activities began with the launch of the inaugural digitally focussed Wool Week in China, based around the theme 'Live Naturally and Choose Wool'. Along with leading fashion brands, The Woolmark Company showcased the attributes and natural benefits of Australian Merino wool, including its breathability, next-to-skin softness and versatility.

"AWI is proud to partner on behalf of Australian woolgrowers with China's largest e-commerce platform, TMALL, helping to highlight Australian Merino wool's position as the premier ingredient in luxury apparel to China's discerning, savvy shoppers."

AWI Country Manager for China, Jeff Ma

The partnership will help Chinese brands and emerging designers attract millennial consumers in the online marketplace, offering a range of products made from our 100% natural, renewable and biodegradable fibre and a more responsible path to purchase.

During Wool Week, consumers could log into the TMALL website or mobile App to access

the TMALL Wool Week homepage. Wool Week integrated TMALL's online channel with multiple partner brands' retail stores across China, which together catered to consumers' diverse fashion needs. More than 100 brands took part in Wool Week.

There was a vast array of products recommended by The Woolmark Company. There was also 30 beautifully designed pieces on the Fashionista recommendation page, where key opinion leaders demonstrated the wool outfits and interacted with consumers.

A special area of TMALL also contained original content that provided consumers with a better understanding of the performance benefits of Australian Merino wool. It also showed the on-farm origin of Merino wool in Australia, explained the meaning of the Woolmark logos, and offered a variety of wool care tips.

As the TMALL Wool Week campaign launched online, there were also promotions in retail stores. The two worked seamlessly allowing customers to have an optimised online-to-offline retail experience, bringing about various retail and data touchpoints. **B**

WOOLMARK AND BENETTON UNITED WITH WOOL

In a bright burst of colours, United Colors of Benetton has launched a new range of Woolmark-certified sweaters that embrace the playful aesthetic of Benetton with an environmentally conscious approach.



The windows of Benetton stores were branded with 'Wool So Cool' and the Woolmark logo.

Iconic Italian brand United Colors of Benetton, one of the best-known fashion companies in the world, has partnered with The Woolmark Company to create a vibrant collection crafted from Italian-spun yarns in 100% superfine Australian Merino wool.

The 'Wool So Cool' garments are part of Benetton's Autumn/Winter 2019/20 range, available at the brand's network of 5,000 stores in the most important global markets. The windows of the Benetton stores were branded with the Woolmark logo for two weeks. A 'Wool So Cool' launch event was held in Milan and attended by 150 VIP guests and influencers from the fashion and textile industry and the media.

The collection capitalises on the benefits of Merino wool – its softness, quality and its colour fastness which brings the bright colours that are an iconic aesthetic of the Benetton brand.

The collection is accompanied by a special crew-neck pullover designed by the artistic director of the United Colors of Benetton men's and women's collections, Jean-Charles de Castelbajac. It joins the Benetton base, ranging from turtlenecks to extra-thin sweaters, to under-jacket pullovers.

Green is not just the colour of the United Colors of Benetton brand. It is also a philosophy that has permeated the Benetton Group culture for decades. Born in the 1960s, when the concept of sustainability was in its early days, Benetton has grown in a society in which environmental protection has become the pillar of any successful business.

The company's commitment to the environment continues today, with environmental protection initiatives involving various activities: from the selection of raw materials to improving the efficiency of processes along the entire supply chain.



Editor-in-Chief of *Grazia Italy*, **Silvia Grilli**, with the artistic director of the United Colors of Benetton men's and women's collections, **Jean-Charles de Castelbajac**, at the launch of 'Wool So Cool' in Milan in October.



UNITED COLORS OF BENETTON.

United Colors of Benetton is an Italian clothing brand renowned worldwide for its colours, knitwear expertise and social commitment.



The **Marina Rinaldi B.Wool** collection, made from Australian Merino wool, is available in stores across the northern hemisphere.

The Marina Rinaldi brand was founded in 1980 as part of the Max Mara Fashion Group. The brand started a real revolution in the world of fashion, creating luxury ready-to-wear apparel for curvy women, regardless of their size or silhouette. It is now one of the best known of the Group's brands and has more than 300 stores located in the main streets of cities across the world.

For the northern hemisphere autumn/winter retail season, Marina Rinaldi launched a new 12-piece machine-washable collection of Woolmark-certified apparel made from Australian Merino wool. The collection of classic knits and technical wool outerwear comprises dresses, a trench coat, trousers, skirt, tunic, sweaters, cardigan, poncho and



WOOL COLLECTION FOR CURVY WOMEN

Marina Rinaldi, the Italian luxury fashion brand for plus-size women, has launched a 12-piece collection made from Australian Merino wool, with support from The Woolmark Company.

jumpsuit. Black and white colours dominate the collection, with pink accents.

The collection's name, B.Wool, sums up the spirit of the project: The B in the name symbolises the desire of a woman to *be* who they are; it also stands for *basic*, the search for a simple, sophisticated wardrobe; and it also stands for *black and white*, to emphasise the desire for a timeless style.

The Woolmark Company collaborated with Marina Rinaldi on the development and launch of the new collection. Launch events for the press and consumers were held at flagship stores including Milan, Madrid, Amsterdam and Munich. The company also held training sessions with Marina Rinaldi's

store managers to increase their sales staff's knowledge of Merino wool prior to the launch of the collection.

The B.Wool collection is available in Marina Rinaldi stores across the northern hemisphere. The brand's shop windows are highlighting the machine washable nature of the collection and there are in-store point-of-sale marketing displays, including specially designed swing tickets.

The collection is also available to purchase online at www.marinarinaldi.com, with online and social media promotion helping build demand for the wool apparel. **B**

WOOL WINS GONDOLIERS A GREEN AWARD



Actress **Shailene Woodley** presented the gondoliers with the Eco-Stewardship Award at this year's **Green Carpet Fashion Awards** in Milan.

The gondoliers of Venice were awarded the Eco Stewardship Award at this year's Green Carpet Fashion Awards in Italy for their use of Australian Merino wool in their iconic uniform.

The Green Carpet Fashion Awards – often referred to as the 'Oscars of sustainable fashion' – is a star-studded celebration of the best in sustainable fashion. It is a joint initiative of the National Chamber of Italian Fashion and sustainability consultants Eco-Age.

The iconic gondoliers of Venice were honoured with the award for the reintroduction of wool into their uniforms after an absence of more than a century.

The estimated 60,000 tourists that visit Venice every day now see the natural performance fibre in action on the city's canals. The Woolmark logo is prominently displayed on all the uniforms.

"The Gondoliers have used their extraordinary exposure to international tourists to highlight the use of responsible fabrics. These are the values of the awards," said the Chairman of the National Chamber of Italian Fashion, Carlo Capasa.

The introduction in 2017 of 100% Merino wool uniforms worn by the 433 gondoliers was an initiative of The Woolmark Company together with iconic Venetian brand Emilio Ceccato (owned by Italian retailer Al Duca D'Aosta) and the Association of Venetian Gondoliers.

"Wearing Australian Merino wool, a 100% natural and biodegradable fibre, as the gondoliers used to do at the beginning of the 10th Century, adds value and pride to our profession but, most importantly, enables us to work with higher comfort even in extreme weather situations and gives us the opportunity to contribute to sustainability," said the President of the Association of Venetian Gondoliers, Andrea Balbi.

The iconic blue and white striped Merino wool uniform comprises a polo shirt made using 100% Merino wool fabric, a sweater made from 100% Merino wool yarn and a quilted vest with 100% Merino wool fabric and 80% wool wadding.

The uniforms are available to purchase at Emilio Ceccato stores in Venice and online at www.emilioceccato.com (shipping worldwide). **B**

CASUAL STREETWEAR IN KOREA

To increase awareness of Merino wool amongst young Korean consumers, The Woolmark Company has partnered with influential streetwear brand **Covernat** to launch the label's new Merino wool collection.

The casual apparel market in Korea was worth KRW 6 trillion (about A\$7.5 billion) in 2018 and is expected to grow continuously for some years. To target this important market and Millennials who need to be educated about the benefits of Merino wool, AWI's marketing arm The Woolmark Company is this season collaborating with Korean influential streetwear brand **Covernat**.

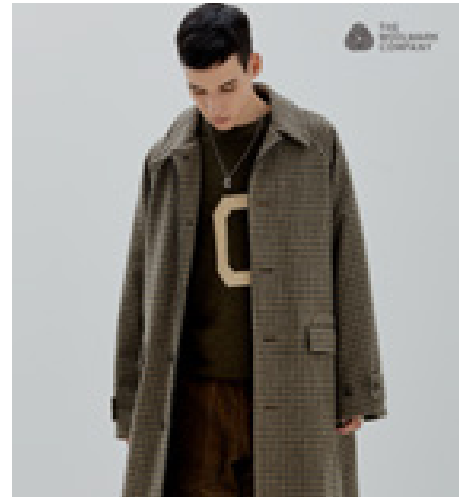
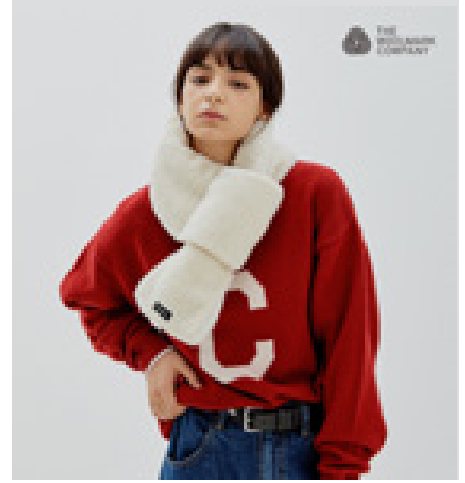
The brand's autumn/winter 2019/20 collection – comprising knits, cardigans, coats and shirts made from Australian Merino wool – is being promoted and sold through the online fashion megasite MUSINSA (which has a membership of 4.7 million customers) as well as **Covernat**'s own online mall and in 30 stores.

Covernat's popular items such as its C logo

knitwear, heavy gauge cardigan and wool mac coat have been enhanced by containing a higher percentage of wool compared to past seasons, while new items, such as the wool duffle coat, wool short coat and 2PK wool shirts, have been created especially for this collection.

To coincide with the collection's launch, a Merino Wool Collection Styling Contest was held for students at fashion schools in Korea.

"Our collaboration with **Covernat** is positioning both brands and Merino wool at the forefront of natural fibres for young customers," said AWI Country Manager for Korea, Hyunwon Lee. "By educating these consumers about the benefits of Merino wool, we are boosting sales of woollen products and increasing consumption of the fibre."



Two classic wool looks from casual streetwear brand **Covernat**.

SUSTAINABILITY FOCUS FOR PHILLIP LIM

Award-winning designer Phillip Lim has once again collaborated with The Woolmark Company to release a new collection that highlights the importance of natural fibres and Australian Merino wool in particular.

Phillip Lim is an American fashion designer who has garnered vast critical and commercial success with his eponymous fashion label, 3.1 Phillip Lim, since its launch in 2005.

The Woolmark Company collaborated with 3.1 Phillip Lim last year on the US brand's highly acclaimed autumn/winter 2018/19 collection, 'The Merino Series'. Building on this success, The Woolmark Company this year once again collaborated with the brand for a new 28-piece ready-to-wear collection. This is the brand's most sustainable collection yet.

"On a personal level, it feels so rewarding to return to nature and rediscover the unlimited potential of the natural materials that exist in our natural world," the designer said.

"[Sustainability] starts small, with the knowledge that we can do the most good when we hold ourselves, and each other, personally accountable. I am looking at what

is possible for my brand and trying to make the changes that I think will eventually amount to a greater shift."

By continuing to work closely with The Woolmark Company, Merino wool has become an integral part of Phillip Lim's sustainability mission. 73% of the collection is made from Merino wool and the label has successfully reduced its use of man-made fibres by 22% since the previous collection.

The new 28-piece collection comprises a diverse range of garments including coats, blazers, sweaters, skirts and trousers that are beautiful, long-lasting, versatile and quality pieces. Working with The Woolmark Company's 'The Wool Lab' sourcing guide, the designer also introduced wool denim and wool sherpa innovations for the first time in a collection.

The Merino Series can be purchased online at www.31philliplim.com and at key retailers across the world including Harrods, Liberty, Lane Crawford, SSENSE and Saks Fifth Avenue.



FROM AUSTRALIA TO AFRICA

The Woolmark Company has partnered with lemler - the Africa-based fashion label created by supermodel, actress, designer and maternal health advocate Liya Kebede - to create a travel-inspired collection, hand-woven in Ethiopia from Australian Merino wool.



An artisan community in **Ethiopia** that made the apparel. lemler is an artisan-driven label that is dedicated to elevating craftsmanship and expanding production and jobs across Africa.

In a series of firsts, lemler represents The Woolmark Company's first brand partner from Africa. Providing technical transfer to the weavers at Muya Atelier in Addis Ababa, Ethiopia, The Woolmark Company shared educational materials about wool - which lemler Foundation translated and delivered as part of a master wool class for women weavers, to diversify their skills and further their professional development.

For this artisanal partnership, lemler selected extrafine Merino wool yarns from leading Italian spinner and Woolmark licensee Zegna Baruffa Lane Borgosesia to create an eight-piece travel collection, that includes a poncho, wrap, blouses and lounge pants in a palette of slate grey, blue, beige and eye-catching pink.

Meaning to 'bloom and flourish' in the Ethiopian language of Amharic, lemler is an artisan-driven label that is dedicated to elevating craftsmanship and expanding production and jobs across Africa.

Women are at the heart of the label, which is committed to helping women in artisan

communities thrive through the work of the lemler Foundation.

"Ethiopia is one of the few places left where traditional clothing is still very much a part of everyday life," explained Liya Kebede. "There are so many interesting and historic design elements incorporated into Ethiopian weaving and we work together with our artisans to include these in our lemler designs.

"Our collections are best-known for summer weather with our light, gauzy handwoven signature cottons; now, we have this incredible opportunity to incorporate wool into a new sustainable travel collection.

"As a part of this collaboration, The Woolmark Company is sharing its farm-to-factory sustainability expertise with our design team and artisans. With their support, we are helping our weavers build skills so they can earn a good, sustainable living doing work they love and at the same time encouraging the fashion industry to look to Africa as a source of incredible high-quality craftsmanship."



Designer **Liya Kebede** from Ethiopia wearing lemler apparel made from Australian Merino wool.

Each lemler x Woolmark garment will include a small NFC chip, allowing consumers to trace their garment from the source of the fibre in Australia, to the spinner in Italy, and all the way to Ethiopia to meet the artisans who craft the collection.

"Following the introduction to Liya Kebede as judge during the 2016/17 International Woolmark Prize, lemler and The Woolmark Company realised both brands shared common values," explained AWI CEO Stuart McCullough.

"This collaboration was an opportunity to upskill lemler's community of weavers by passing on technical skills and education about working with a new fibre. It also provided The Woolmark Company with the platform to highlight the versatility and trans-seasonal nature of wool, and the interactive element made possible with the inclusion of an NFC chip allows us to demonstrate the process behind ethical garment making." **B**

MORE INFORMATION
The collection is available at
www.lemler.com/collections/Woolmark



CHASING CLOUDS FROM AWAYTOMARS

AWAYTOMARS and Harvey Nichols have partnered with The Woolmark Company to deliver the **Chasing Clouds** collection, consisting of ten entirely traceable garments crafted using Merino wool. Pictured is a ribbed-knit T-shirt dress.

In a collaboration with The Woolmark Company, UK-based fashion collective AWAYTOMARS invited designers from across the world to share their ideas and inspire a collection made with Merino wool, which has since been made available at luxury retailer Harvey Nichols in London.

The growth of digital platforms continues to offer new ways for the global fashion industry to collaborate and operate. To help build demand for wool, AWI is determined to be on the front foot and take advantage of the latest opportunities.

Founded in 2015, AWAYTOMARS is the biggest fashion collective in the world, comprising 15,000 registered designers from more than 90 countries. Not only is the game-changing AWAYTOMARS the world's first 100% user-created fashion brand, but it also uses its online platform to provide the means to change fashion's entire production chain, from sketch to sale.

Now, in an exclusive collaboration with leading luxury retailer Harvey Nichols, the brand has partnered with The Woolmark Company to bring to life a 10-piece Merino

wool womenswear collection. The creative theme for the collection, titled 'Chasing Clouds', reflects the versatility and trans-seasonality of Merino wool.

To create the collection, members of the AWAYTOMARS community across the world were asked to submit a design made from Merino wool. Of more than 200 submissions from 43 different countries, the following designers were selected to have their pieces produced: Mariana Escobar (Brazil), Jason Gibson (Australia), Felipe Rocha (Brazil), Helder Silva (Germany), David Cabra (Colombia) and Xi Zhu Zhu (China).

To help create the collection, The Woolmark Company connected AWAYTOMARS with manufacturers to achieve the best-quality Merino wool products.

Transparency is at the heart of the AWAYTOMARS collection. Powered by Provenance blockchain technology, the collection is fully traceable so consumers can track using QR codes where the products were produced and where the fibres were sourced.

The collection was exclusively launched in partnership with Harvey Nichols Knightsbridge in London where an experiential pop-up installation was open to the public 5–26 September and during London Fashion Week. The Woolmark Company co-hosted a press and VIP customer launch event. The collection is also available online at www.harveynichols.com.

"At Harvey Nichols, we are always looking for new talent, and the AWAYTOMARS concept is so rare, I knew we had to do something with them," said Harvey Nichols' Creative & Marketing Director, Deb Bee. "Woolmark is the perfect brand to have on board for this collaboration."

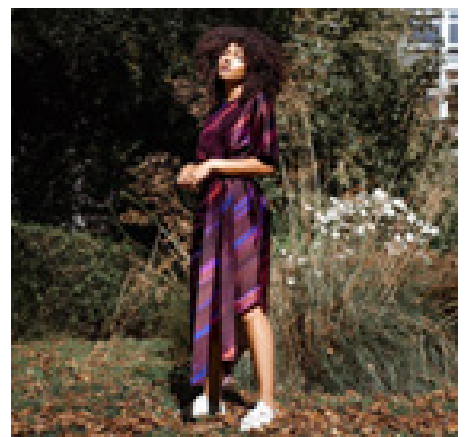
The collaboration of these three companies created a unique opportunity for aspiring designers to have their pieces made available to a global audience and sold in a luxury department store.

"Harvey Nichols is a remarkable brand in constant movement, innovating in every way while remaining connected to its customers' needs and aspirations," explained AWAYTOMARS Founder Alfredo Orobio.

"The Woolmark Company represents a commitment between woolgrowers, brands and consumers on the authenticity and quality of the fibre that connects this collection. Our partnership couldn't be more appropriate for a time of creative democratisation: together we are giving power to new ideas to be co-created in extraordinary pieces, proving that together we can create fashion in a more inclusive and sustainable way." **B**

MORE INFORMATION

www.harveynichols.com/brand/away-to-mars/



As part of the collections' marketing, three British **Instagram influencers** (with nearly 300,000 followers on Instagram) were engaged to incentivise sales within their community. Pictured is **@samioarenelda** from Manchester wearing the multicoloured wool/silk blend midi dress.

EDUCATION HIGHLIGHTS

AWI continues to foster the education and development of tertiary textile and fashion students – inspiring them in the early stage of their careers about the properties and benefits of Merino wool, and encouraging them to continue to use the fibre in their designs as they progress through their professional lives.

SOPHISTICATED WEAVE WINS TOP UK TEXTILE AWARD

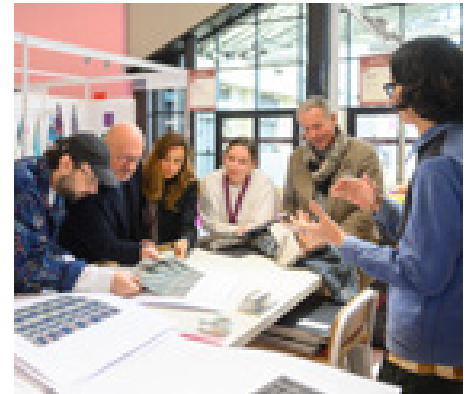
AWI encouraged the use of Merino wool by the UK's textile graduates by sponsoring an award at this year's TexSelect, the UK's leading graduate design prize.

Central Saint Martins' graduate Jaeyong Kim won this year's The Woolmark Company TexSelect Award, praised for the complexity of his designs.

Shining the spotlight on the best emerging textile designers studying at universities across the UK, entrants for the award had to incorporate a minimum of 60 per cent Merino wool into their collections and demonstrate a good understanding of the fibre's qualities and potential application in fabric.

The award was judged by Creative Director of Johnstons of Elgin, Alan Scott, and the 2019 International Woolmark Prize winner Edward Crutchley.

"You look closely at the work and see how different it is, how sophisticated," Alan Scott said. Stacks of stuff, beautifully designed, and with a modern edge. He could be employed in a second, but he's already a designer in his own right."



Talented weave designer **Jaeyong Kim** shows his work to the judges at the **Première Vision trade show** in Paris in September.

FROM ITALY TO AUSTRALIA

A study tour by Italian fashion and textile design students was recently facilitated by AWI with the aim to enhance the students' knowledge of the Australian wool industry and how the fibre is produced.

AWI supported the visit in August to Australia by five Italian students on the Biella Masters Noble Fibre postgraduate course to learn more about Merino wool. Based in Biella, the group examines the entire supply chain, starting from the raw materials through to the final product. The Woolmark Company has supported visits to Australia by Biella Masters' students since 1981 which demonstrates the long-standing relationship between the two organisations.

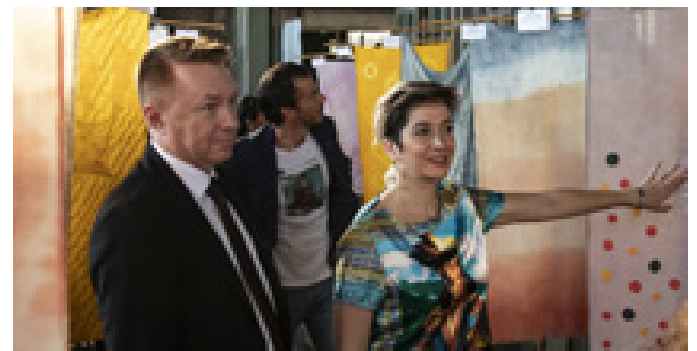
"Our journey around the world of textiles led us to many countries to discover and study the best fibres – especially where they come from, how they are best processed and how you can always improve their qualities and performances," said student Cristina Valli. "As part of our trip to Australia, we had the chance to live three unforgettable days with The Woolmark Company and Australian Wool Innovation, discovering every secret of Australian Merino wool."

The students came out of the experience with very positive feedback and a great appreciation for wool.



The five Italian students discovered the provenance of Merino wool, at **'Markdale'** on the Southern Highlands of NSW.

TURKEY'S AUSTRALIAN PROJECT



Australian Ambassador **Marc Innes-Brown** and his wife viewing the students' Merino shawls at the opening of the **Yarned Across the Ports** exhibition.

Fashion Design students from Istanbul Bilgi University designed Australian themed shawls made from 100% Merino wool for a project supported by the Australian Consul General and Australian Consulate.

Thirteen special designs prepared by the students from Istanbul Bilgi University, in cooperation with The Woolmark Company, debuted at an exhibition titled 'Yarned Across the Ports'.

Australian Ambassador Marc Innes-Brown and Australian Consul General in Istanbul Jeffie Kaine attended the opening of the exhibition which was open to the public for two weeks.

The shawls were prepared with the theme 'Australia from the eyes of students from Turkey' and were woven using Merino wool. The students personalised the shawls with embroideries and drawings, along with natural dyeing techniques.

As part of the project, the students also undertook a Wool Appreciation Course delivered by The Woolmark Company and attended two wool-related workshops.

BAN XIAOXUE'S 'WANDERLUST' TRAVELS BACK TO THE FARM



Ban Xiaoxue's collection is made entirely from Merino wool that can be traced to the exact farm in Australia that grew the fibre, a journey that has been showcased to Chinese consumers. PHOTOS: *T Magazine*

To help showcase the natural credentials of Australian Merino wool to Chinese consumers, The Woolmark Company has partnered with leading designer Ban Xiaoxue to create a knitwear collection with a fully traceable supply chain.

Chinese designer and 2012/2013 International Woolmark Prize Asia winner Ban Xiaoxue continues to show his support to the Australian wool industry, releasing a traceable knitwear collection made from Australian Merino wool for China's autumn/winter 2019 retail season.

The collection features 30 creative and innovative knits, in a mixture of 100% Merino wool and wool blends, and includes dresses, skirts, blouses sweaters and vests.

After establishing his namesake brand in 2012, Ban Xiaoxue received adulation from both the fashion industry and consumers. His commercial success has been unprecedented for a Chinese independent designer, and his brand now has a direct retail network of more than 70 stores throughout China.

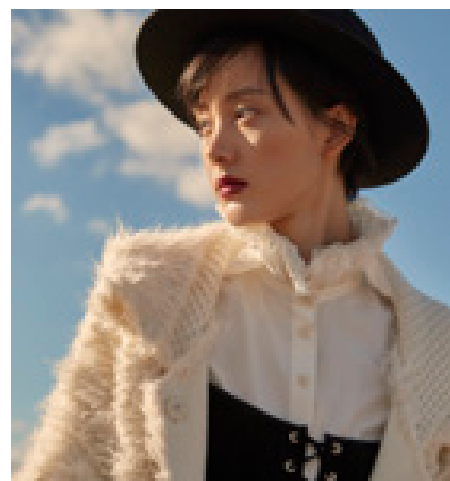
His designs are inspired by nature and its beauty, making Ban Xiaoxue the ideal partner for The Woolmark Company to showcase the

inherent eco-credentials and natural benefits of Merino wool.

Working with yarn supplied by leading spinner Xinao, the Merino wool used in his latest collection can be traced back to the exact farm in Australia where it was produced: 'Windamall', run by the Rae family, north-west of Goondiwindi in Queensland.

Knowing where the Merino wool comes from and selecting yarn from a single spinner enables supply chain transparency – and this is becoming important because consumers are increasingly not only interested in the product itself, but also the source of the fibre in it and how it was made.

"The product itself doesn't uniquely measure its value, but the whole cycle of the product does," Ban Xiaoxue said. "The sale of a piece of clothing is not the end of the cycle but the beginning of its mission. The origins of the product, the realisation of the design and the



after-sale are all integral parts in building the real story of a product."

T Magazine, a high-profile magazine in China with 1.5 million subscribers, visited Australia in July to photoshoot and film Bao XiaoXue's new wool collection at 'Windamall', the very farm on which the wool in the collection was grown. The promotional campaign, produced in partnership with The Woolmark Company, was released in the September edition of *T Magazine* and on the magazine's social media channels. The photos have also been used by Ban Xiaoxue in his stores and online channels.

"Through this partnership, we demonstrated the farm to fashion journey directly to Chinese consumers by showcasing the source of the fibre and yarn," said AWI Country Manager for China, Jeff Ma.

"We have therefore increased Chinese consumers' awareness of the natural source of quality Australian Merino wool products and this is driving new demand for wool in the womenswear market."



The Rae family with the film crew from *T Magazine* at 'Windamall' in Queensland.

WOOLGROWERS SEE SCALE OF CHINA'S WOOL INDUSTRY

A group of 42 woolgrowers from Australia saw wool's manufacturing process first-hand during a recent self-funded study trip organised by Victoria-based wool broker KareeWool to China in September.



Wool broker **KareeWool** hosted 42 woolgrowers on a study tour of China in September, pictured here at large vertical worsted garment manufacturer **Jiangsu Sunshine**.

“We were overwhelmed by the large investments and scale of the wool textile industry and this provided us with confidence that China is now a mature market and will need plenty of our primary sheep and wool products long into the future.”

So says Alister Carr, the owner of KareeWool, which recently hosted the 42 woolgrowers – from as far as Tilpa in western NSW to Bengworden in East Gippsland – on a week-long study to China.

One of the facilities visited by the study group was Jiangsu Sunshine, perhaps the largest vertical worsted garment manufacturer in the world, which allowed the woolgrowers to see every stage of the wool pipeline within the same facility.

“This was a true ‘farm to market’ factory with greasy wool bales coming in and packaged high-end worsted garments going out,” Alister said.

“We also met and toured specialist early-stage wool processors in each of the scouring, carbonising, top making and spinning sectors.

“Our group was surprised at the extent of automation in some of the leading factories but also appreciated that some lower quality processors relied more on lower labour costs for their competitive edge. However, we

learnt that China is not immune to rising labour and other input costs and as a result they are working hard to gain production efficiencies through management and mechanical improvements.

“We also learnt that the Chinese retail and consumer demand is cooling down leading to the recent reduction in demand for Australian wool and subsequent lower prices.”

AWI'S WOOL EDUCATION CENTRE IN SHANGHAI

The trip started with a visit to AWI's Wool Education Centre, which opened in May last year at Donghua University in Shanghai, where the woolgrowers were given a presentation on AWI's key product development and marketing activities in China.

“We had a fantastic overview from AWI's China team. Our meeting with them provided a very positive outlook for the long-term future of wool, with significant progress in new and innovative methods to consume wool in the active, outdoor and sportswear market sectors,” Alister said.

“Our grower group is now more informed about AWI's investment in research and development for growing consumer markets such as China.

“AWI's ongoing trade and consumer education about our Australian grown wool and its natural, sustainable and responsibly grown elements is also vital.

“China is emerging as a leader in online purchasing and AWI's current work to position our fibre in the right place for the future is exciting.”

“Our woolgrowers were overwhelmed by the large investments and scale of the wool textile industry in China.”

Alister Carr, owner of KareeWool

“We also met with MLA in China to research the demand for our mutton and lamb product and what the future holds regarding our meat product. A smaller group also toured a sheepskin tannery that typically processes 60,000 sheepskins per day.

“It was great to also meet AWI's trade consultant Scott Carmody at the end of the trip, who was in China to attend the Nanjing Wool Market Conference, and he provided us with further insights into the current market for wool.”

A LIFE IN WOOL

Alister's life revolves around the Australian sheep and wool industry having grown up on the family farm which continues to operate in north-central Victoria. After studying wool and fibre marketing, he moved into various international trade and wool processing roles allowing him to travel the world of wool textiles.

“This included two amazing years living and working abroad in China in 2006-07 establishing the Michell Suzhou carbonising and loose wool Superwash factory. My first trip to China was 25 years ago so I felt a level of responsibility to provide KareeWool clients with the opportunity of a guided study tour given China buys 75% of our Australian wool.

“I believe our group was the largest Australian woolgrower tour conducted into China with a total of 42 self-funded participants. The trip was booked out within 10 days and due to high demand, we are already planning the next trip.

“All in all, we were all very well received and respected by China's wool textile industry on the study tour, as I believe they can see that their future is linked directly to our ability to continue to produce high quality wool.”

MORE INFORMATION
www.kareewool.com.au



BRIDGING THE GAP WITH WOOL

Neil Harris (centre) of 'Pinegrove' at Costerfield demonstrated the property's high-quality shearing and positive animal welfare and land management practices.

In a further sign of growing interest in our natural fibre, its origin, animal welfare and traceability, a delegation from significant North American and Canadian retailers recently travelled Down Under to see the origins of Australian Merino wool. As a result of the visit, each of the brands expressed a greater appreciation for what it takes to produce Merino wool and were all impressed by the care and dedication woolgrowers have for their animals and the land.

The visiting group included senior managers, fabric sourcing specialists and designers from the Banana Republic and Hill City brands within the iconic US retailer GAP Inc as well as Lululemon, the popular Canadian athletic apparel retailer.

Across a busy week, the group met with AWI senior managers to discuss on and off farm research and development, met with Australian circular knitwear company ABMT textiles, experienced farm life across two farms in north east Victoria, had dinner and open discussions with more than 30 woolgrowers from the Seymour Wool Marketing Group, visited and discussed the process around wool auctions and saw the rigour behind the raw wool testing at the Australian Wool Testing Authority.

Victorian woolgrowers Neil Harris at Costerfield and Alistair Lade at Seymour were crucial to the success of the trip, hosting the delegation on their properties and showing the guests shearing, wool preparation, their commitment towards animal welfare and natural resource management.

Elders staff at the Brooklyn woolstore were also key in explaining the significance of the wool sale catalogue and the vast diversity of production across the industry. The brands have a clear understanding about the National Wool Declaration and were very happy to see that more than 80% of the catalogue showed PR (pain relief) was being used for mulesing.

Banana Republic and Hill City are two of

six brands that fit within GAP Inc which has a \$US 16 billion revenue annually across its 800 stores as well as its significant online presence.

Senior Director Product Development and Strategy at Banana Republic, Breana Teubner said: "We have a very active population that is looking for comfort and moisture management and we are seeing a huge growth in Merino base-layers because of this. For me, seeing the very start of the supply chain was a first and the amount of science, testing, measuring behind the growth of the fibre was game changing together with the deep connection woolgrowers have with their animals and their land. The conversations we've had over this week will be really important in where we go in the future."



Alistair and Isabel Lade (second and third from left) of 'Glenrannoch' at Seymour displayed their property's exceptional eco-credentials and focus on technology and genetics.

Banana Republic's Senior Manager of Fabric R&D, Kristin Schmidt, recently released a successful wool garment care campaign on social media but said the animal husbandry was a point of interest for her.

"We use a lot of wool for sweaters and it was fascinating to see how soil biology leads directly to the length, strength and micron of wool. It's incredible to connect how the grazing patterns, nutrition and timing of the shear changes this fibre dramatically."

The success of bringing such significant retailers to Australia didn't come about overnight, with significant work by AWI/The Woolmark Company staff in the United States, namely Stephen Kelly in San Francisco combined with Kelly McAvoy in Australia.

Ms Teubner agreed the journey was well worth it. "I met Woolmark exploring new product innovation research and development projects taking advantage of the natural properties of wool. This relationship led to a Gap Inc-wide wool appreciation course attended by various functions highlighting the performance capabilities and natural properties of wool. And then earlier this year Woolmark proposed the idea of visiting the origin of the supply chain here in Australia. I'm so glad we came and thankful for the opportunity."

With strong connections made between Australian wool and these significant North American retailers, AWI looks forward to working with the brands on product development, marketing and training initiatives identified during the visit.

A key learning from this successful trip is that whilst woolgrowers and brands/retails are at the opposite end of the supply chain, they each have the same values and goals regarding animal welfare, the environment and traceability.

B

MORE INFORMATION

You can hear more from the trip on Episode 108 of AWI's The Yarn podcast at www.wool.com/podcast.

SURVEY REVEALS WOOL'S LONGEVITY

New international research reveals wool garments are amongst the longest kept, are washed less frequently and tend to live on through re-sale or change of ownership – which is all good news for wool, given that the sustainability impacts of textiles is under more scrutiny than ever before.

With consumers becoming increasingly aware of the need for sustainable fashion, new research by Nielsen for AWI's marketing arm, The Woolmark Company, shows that wool clothes and accessories are the most enduring items consumers can buy.

The survey of more than a thousand 18 to 64 year-olds, conducted in five countries (China, Japan, Germany, UK and USA) in February, which followed on from similar research undertaken in 2012, reveals that wool garments are amongst the oldest and longest-lasting articles of clothing in our wardrobes.

While we're holding onto wool garments for up to ten years, the survey also reveals that these garments live on long after the owner themselves stops wearing them, through re-sale, donations to charity or as hand-me-downs to friends and family.

Encouragingly, the survey also reveals that wool garments have increased their share in both male and female wardrobes during the six years between surveys. Asian markets have the greatest share of woollens in their wardrobe, followed closely by the UK.

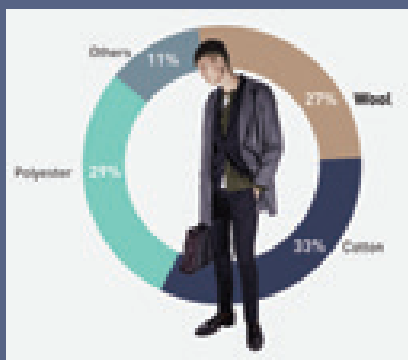
MALE WARDROBES

In the male wardrobe, an increased share of wool items – up from 13% in 2012 to 16% in 2018 – is primarily driven by an increased presence of wool blends and wool-based sports clothing. In fact, the study found that men who own Merino wool items tend to wear these all year round.

While wool items are on the rise in male wardrobes, 100% cotton, silk and denim garments have all seen decreases as men have moved onto blended or synthetic fabrics.

9% of wool and wool blend clothes in male wardrobes were purchased more than ten years ago, compared to only 3% of cotton or polyester clothes.

WOOL IS COMMON IN MEN'S WARDROBES



[% of males who wear clothes made from the fibre several times per week.]

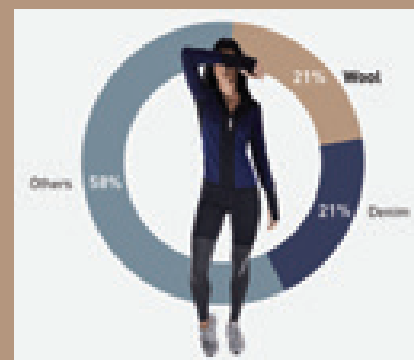
FEMALE WARDROBES

The share of woollen items in a woman's wardrobe has also increased – up from 8% in 2012 to 12% in 2018 – with jumpers, jackets, coats and scarves the most likely to be made from wool or wool blends.

Mirroring the trend seen with males, cotton has seen a decrease in the overall share of women's wardrobes, as women have moved to a wider variety of fabrics. As with men, there has also been an increase in the number of sportswear items purchased in line with the global trend for activewear.

5% of wool and wool blend clothes in female wardrobes were purchased more than ten years ago, compared to only 2.5% of cotton or polyester clothes.

FOR WOMEN, WOOL IS AS POPULAR AS DENIM



[% of females who wear clothes made from the fibre several times per week.]

SURVEY BACKS WOOL'S ENVIRONMENTAL CREDENTIALS

AWI's Fibre Advocacy Manager, Angus Ireland, said the results of the Nielsen research add weight to wool's environment credentials compared to other fibres.

"A longer life and less washing mean a smaller environmental footprint as garments have to be replaced less often and require less inputs (water, energy and detergents) during use," Angus said.

"Wool, particularly Merino, is typically one of the oldest garments you'll find in a wardrobe. A long life means Merino garments are replaced less often, reducing

their environmental footprint and helping counter the trend towards fast fashion.

"The donation rate – whether to family, friends or charity – is high for wool items compared to clothing made from other fibres which are typically destined for landfill. In addition, clothing made from noble fibres such as wool or cashmere was shown to be laundered considerably less often than cotton and synthetic clothing helping ensure these items stand the test of time."

Founder and creative director of sustainability consultancy Eco-Age, Livia

Firth, commented on the findings: "Wool jumpers, coats and scarves are the items that we hold on to for years. They are often wardrobe classics – I still own jumpers and cardigans that I bought 15 years ago and wear them right through from autumn to spring.

"Investing in a woollen wardrobe staple you'll love is like buying a well-made handbag, it will look great for years." **B**

MORE INFORMATION
www.woolmark.com/wardrobe-study

WOOLMARK LEARNING CENTRE

NEW WOOL EDUCATION PLATFORM FOR THE GLOBAL TEXTILE INDUSTRY

The Woolmark Company has launched a major web-based education platform, the Woolmark Learning Centre, which contains wool-related coursework and resources, for students and professionals all along the textile supply chain. It aims to educate, build expertise, inspire, and ultimately help increase the use of Australian wool in global textile and fashion markets.

Education is a key pillar of AWI's strategy to build the demand for Australian wool. AWI works to increase the textile supply chain's awareness and knowledge of wool's attributes and benefits, building expertise and inspiring designers and brands to profitably use the fibre in their products.

In a major new initiative, AWI's subsidiary The Woolmark Company has launched the Woolmark Learning Centre – a web-based hub that houses free world-class educational resources about wool for learners at all levels, including those entering the global textile industry as well as those already in it.

The Woolmark Company has partnered with a diverse and strong network of industry experts to put together the cutting edge, evidence-based coursework and resources – from farm to fashion.

The Woolmark Learning Centre allows learners to complete courses specific to their needs, at their own pace. It provides a personalised dashboard of the learning journey for each user, tracking their progress and prompting relevant future learnings.

The educational platform provides freely accessible content to people right across the globe. Not only catering to the everyday learner, the platform enables teachers to access facilitator notes, lesson plans, presentations and other materials to support the integration of the Woolmark Learning Centre into their teaching.

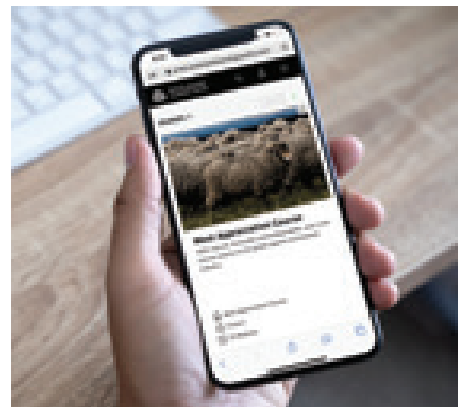


The **Woolmark Learning Centre online platform** has been developed to educate the global textile supply chain about Australian wool and increase demand for the fibre.

On completion of the courses, users gain their own certification from the internationally recognised Credly digital credential platform, which can be displayed on the user's own digital professional portfolio such as LinkedIn. A completion certificate can also be downloaded as a hard copy.

DIGITAL LEARNING

Technology has revolutionised teaching and learning," explained AWI General Manager of Processing Innovation & Education Extension, Julie Davies. "Studies show that online learning increases retention rates by 25% to 60% and by providing free, expert-led digital education, the Woolmark Learning Centre allows knowledge transfer along the global textile supply chain to bridge knowledge gaps within the industry."



The Woolmark Learning Centre is available on **smartphone and tablet as well as a desktop computer** – to enable easy access 24/7 wherever you are in the world.

The web-based Woolmark Learning Centre has been developed in response to this global shift in education towards agile, self-paced, digital learning.

It is optimised for use on a smartphone and tablet, as well as a desktop computer, so it can be accessed on the go, anywhere. Its content is layered and interactive – and the platform is available 24 hours a day, seven days a week, wherever and whoever you are in the world.

Another advantage of the resources being digital is that the content is shareable. If a user loves what they see and wants to share it with like-minded colleagues, they can share it directly with one simple click.


CUTTING EDGE CONTENT

The Woolmark Learning Centre coursework has been developed to deliver education from a fundamental level to an in-depth Masters' level. Content at launch includes:

- **Fundamentals of Wool** – an in-depth look into the fibre and its journey from farm to fashion.
- **Seven science and technology modules** – offering unprecedented access to insights and information on wool fibre science, wool processing, scouring, top making, spinning, fabric finishing and dyeing.
- **Insight series** – interviews with industry leaders including Colovos, Edward Crutchley and Roland Mourtet.
- **Resources** – video content, factsheets etc.

The content of the platform will continue to develop over time with modules in **fashion and design** launching soon, followed by coursework in **innovation** and **sustainability**.

To ensure that the Woolmark Learning Centre meets the full supply chain's needs, it contains two learning pathways:

- **Traditional learning** – which supports users who want to complete coursework from the start to end. This style is designed to be visually immersive and reinforced with diverse learning interactions.
- **Searchable learning** – which is designed to support users who want to jump in and find 'just in time information' of specific relevance to them. This could be applicable for industry working professionals or students completing an assignment. 

MORE INFORMATION

Access the
Woolmark Learning Centre at
www.woolmarklearningcentre.com

WHO IS IT DESIGNED FOR?

The Woolmark Learning Centre caters for a wide variety of needs and levels, whoever they are in the textile industry, and at whatever stage they are at in their education and career. It is free to access for all users.



PHOTO: Hero Images

STUDENTS/TEACHERS

Secondary and tertiary (including fashion, textiles, science, technology and agriculture)



PHOTO: davidf

WOOL INDUSTRY STAKEHOLDERS

Staff, wool industry and woolgrowers



PHOTO: Hero Images

TEXTILE TRADE

Early stage processors, spinners, knitters, weavers, textile and garment manufacturers



PHOTO :filadendron

DESIGNERS AND BRANDS

Designers, sourcing teams, buying teams, quality control and retail training



CONSUMERS

Conscious consumers

SHEEP TO SUIT

QUEST TO WALK DOWN THE AISLE IN HIS OWN WOOL

Inspired by a trip to the heart of wool manufacturing in China, woolgrower Floyd Legge from the Central West of NSW was determined to get his wedding suit made from wool from his very own farm. With only five months to do it, the question was: would the suit get to the church on time?

Floyd Legge alongside his mother and sisters own and operate a self-replacing fine wool Merino flock and the Ridgehaven Poll Dorset Stud at two properties in Cudal and Forbes. The family have been growing Merino wool for more than 100 years and each family member involved in the business has their own role to play.

Keen to learn about the journey wool takes after it leaves the farm gate, Floyd last year participated in a self-funded young woolgrower study tour to China, organised by AWI. However, what he didn't expect was that the trip would change his life in more ways than one, and the adventure he would embark on this year would defy the advice and expectations from industry.

Towards the end of last year's study tour, the young woolgrowers were waiting for their flight in Qingdao airport and Floyd, hungry for western food, wandered into the fast food outlet selling hamburgers and chips. Sitting down at the counter, Floyd's ears picked up the sound of an Australian accent. Striking up a conversation with the man, Floyd discovered he was from Sydney, was a tailor, and worked with superfine Merino wool – what are the odds!

"The man introduced himself as Rami Mikhael from Bespoke Corner Tailors in Paddington, Sydney, and he'd been traveling through China on a sourcing trip," said Floyd. "Rami expressed interest in learning about the source of Australian wool and so when I arrived back home, I invited Rami to visit. Rami accepted the invitation and organised for his photographer to accompany him on this visit to our property during shearing to see where wool production begins."

Floyd had begun to investigate wool manufacturing in Australia after his chance meeting with Rami and Rami's desire to have an Australian-manufactured wool suiting fabric.

He had anticipated that he was thirty years too late and that all wool processing had moved offshore in the early 1990s. But he discovered that there are still some, albeit limited, processing opportunities available in Australia.

"With this discovery, the trip to China and the chance meeting with Rami, I decided to have wool from our own self-replacing Merino flock processed here in Australia and made into wool suits for myself and my groomsmen to wear on my wedding day in September."

With time against him, Floyd planned out the project and embarked on his unique quest.

FROM SHEEP TO SUIT

1. Shearing and classing

On the 5 April, the Merino weaners were shorn on the Legges' property. With three shearers – Fred, Andrew and Adam – working in the shed alongside rousabout Maree and three people skirting the wool – Ruth, Floyd and Graeme – and Robert penning up the sheep and doing other outside jobs, the fleeces were classed into three different fleece lines.

Floyd had spoken to buyers of superfine wool for fabric manufacture in July 2018 which had given him an insight into what the buyers were looking for. With this

knowledge, Floyd made the decision to get the first and second fleece lines tested to ascertain which would be most suitable for the project.

2. Testing

After shearing, Floyd took the wool to Quality Wool in Parkes and the wool received the standard Australian Wool Testing Authority (AWTA) testing. This process was important for learning the details of the wool to evaluate the suitability of the wool for the manufactured finished product.

The certificate told Floyd the details of the wool: strength of 51knt, length of 64mm, fibre diameter of 16.2 micron, and a good coefficient of variation.

3. Scouring

After testing, the wool was sent to E.P. Robinson in Geelong for scouring. Jim Robinson in consultation with Floyd then arranged the scoured wool to be delivered to Cashmere Connections at Bacchus Marsh for top making. To process the scoured wool into top, the wool gets carded and then put into a roving, then it is gilled and combed multiple times.

"To ensure that it was spot-on, Trisha Esson double combed the sliver to make sure the top



was as even as it could be,” said Floyd. “People that visited Cashmere Connections while our wool was being combed into a top, could not believe it was wool as it was so soft and fine.”

4. Spinning

A small-scale Australian spinner had planned to assist with the project. However, due to her ill health she was unable to spin the wool. “We then had to look at overseas spinners, as there were no other Australian alternatives,” explained Floyd.

“AWI was very helpful during this process as most overseas spinning companies only process large quantities of wool. Through the connections I had made on the China trip and the relationship that AWI has with Xinao in China (one of the largest spinners in the world), Xinao agreed to do our small quantity of wool top.

“In the process of exporting wool over to China a lot of experience and connections are useful in knowing what you need to do. AWI were critical in pointing us in the right direction and to the people that could enable it to happen.”

While the staple length was a bit shorter than ideal due to the fact it was only six months’ growth on the weaners, Xinao was still able to process the wool as a special batch. Once the top arrived at Xinao, it was promptly spun so that there was a quick turn-around back to Australia.

5. Weaving and dyeing

The yarn was airfreighted to Geelong Textiles in Victoria where the undyed yarn was woven into fabric. “The staff added invaluable assistance and knowledge into

this stage of manufacturing,” explained Floyd. “We appreciated their assistance and their understanding of our time frame.”

A portion of the woven fabric was sent across to Geelong Dyeing for piece dyeing and finishing. Three small samples were sent to Floyd to confirm the colour and finish for the final product and once confirmed, Geelong Dyeing proceeded to dye and finish the batch.

6. Garment making

The initial goal was to have Rami at Bespoke Corner Tailors create the wedding suit but due to the tight timeframe, they were unable to take the job on. It usually takes them six weeks to create a suit; Floyd only had fourteen days!

A tailor was lined up in Hong Kong to make the five suits for Floyd and his groomsmen. A lady in Orange measured and recorded the measurements of Floyd and the groomsmen and sent this through to Apsley Tailors in Hong Kong whilst the dyed fabric was air freighted to Hong Kong with less than two weeks to go before the wedding. Apsley Tailors were able to make the suits within a week.

7. Delivery

Due to the cost of the return freight and to ensure that the suits arrived in time, Floyd decided to fly to Hong Kong and pick up the suits himself. On the Monday night leading up to the wedding, Floyd caught a flight from Orange to Sydney and was delayed for an hour and a half. Arriving at the Sydney International Terminal 15 minutes before check-in closed, Floyd was only just on time to catch his flight to Hong Kong!

The suits were picked up on the Tuesday morning and Floyd flew back on a return flight that night, arriving in Sydney on Wednesday morning. His flight to Orange landed around 10am and he went straight to the wedding venue to help set up for the reception – suits in hand.

THE WEDDING!

“Our wedding was on the Saturday and it was a truly special occasion, I was overjoyed,” said Floyd.

“The suits looked and felt incredible. Both myself and my groomsmen found them very comfortable to wear. We were not hot through the warm afternoon nor cold during the cool evening.

“As part of our farm photo area we included the steps that the wool had gone through to make it into the fabric we wore on the day.”

But it was not just the suits that carried this unique story. Floyd’s bride Kimberley was also wearing a shawl made using the same sheep’s wool.

“We asked Anne Boyle to hand spin our wool and she was delighted as she had witnessed the combing process before she was asked to make the shawl,” explained Floyd.

Alongside the groomsmen wearing pure wool suits, knitted wool fabric was sourced from Woolerina at Forbes to make the bridesmaids’ dresses. The whole bridal party were wearing wool for the occasion of Floyd and Kimberley’s wedding.

FUTURE OPPORTUNITIES

“Undertaking this project caused a lot of stress and late nights of worrying and waiting to hear on the progression of each stage,” Floyd conceded.

“The process also diverted my focus from my regular farm work and it was only because of my family partnership that I had the time to pursue this venture.

“Many people would say that to complete this process in the short time frame occurred due to a lot of good luck, as many had said from their experience it was not possible. I’m grateful for the support of my family and the connections I made through AWI and its young woolgrower programs.

“Our plan is to continue developing relationships with the processing connections that we have made and to work alongside Bespoke Corner Tailors in Paddington.

“We’d like to open pathways to other tailors interested in our product and that have the desire to sell a product with a provenance story from ‘Sheep to Suit’ for their customers.

“We are also working with our connections within Australia to provide, in the future, a fully Australian-made product. ‘Sheep to Suit’ will be our trademark as we continue on this venture.”



Woolgrower Floyd Legge suited up with wool from his own flock.

POST-FARM BIOSECURITY

AUSTRALIA ON THE FRONT FOOT

The Australian wool industry's strong export orientation places the industry at significant risk should Australia face an outbreak of an emergency animal disease (EAD) transmitted by wool. While Australia's biosecurity framework is already strong by international standards, the Australian wool industry is strengthening its arrangements to control or eradicate EADs should they enter the country.

AWI is continuing its investment in RD&E activities to better prepare the wool industry to respond to an emergency animal disease such as foot-and-mouth disease (FMD).

A new three-year plan, *Protecting the Australian Wool Pipeline: Post-Farmgate Emergency Animal Disease Preparedness RD&E Strategy 2019/20 – 2021/22* has recently been developed by AWI in conjunction with the Wool Industries Australia Emergency Animal Disease (EAD) Working Group.

The main goal of the strategy is to ensure that, in the event of an EAD, the normal business of the wool industry would be resumed as rapidly as possible.

DEPENDENCE ON EXPORTS INCREASES EXPOSURE

The Australian wool industry is highly dependent on exports, and China is by far our biggest customer, buying more than 75 per cent of our wool. Conversely, the international wool trade is highly dependent on Australian supply, which accounts for around 70 per cent of the world's Merino wool.

An economic study in 2013 estimated that an outbreak of FMD in Australia could cost the wool industry \$2.2 billion in lost earnings alone.

"The outbreak of African swine fever in China and other parts of Asia has been a stark reminder of the devastation that can be wreaked by an emergency animal disease," said AWI's Program Manager Sheep Health and Welfare, Bridget Peachey. "It has wiped out around a quarter of all the world's pigs.

"Thankfully, our sheep are not threatened by African swine fever, but there are several other diseases that could cause great damage to the wool industry were they to enter Australia."

For sheep producers, the biggest fear is FMD. The United Kingdom and South Africa are two countries that have experienced the terrible consequences of FMD in recent years.

China suspended imports of raw wool from South Africa in February this year after the disease was diagnosed in the north of the country.

As of late August, there remained considerable confusion about what the South African wool industry needed to do to meet health certificate requirements for China.

China has since confirmed that it requires South African raw wool to comply with agreed international standards in regard to the length of storage time at particular temperatures, to ensure any FMD virus particles have been deactivated. Remarkably, the main warehouse of the largest broker in South Africa has been newly insulated and heated to expedite this process.

POST-FARMGATE EAD PREPAREDNESS RD&E STRATEGY

The activities foreshadowed in the new AWI / Wool Industries Australia three-year RD&E plan are focused on addressing any post-

farmgate gaps in Australia's ability to rapidly provide certified, safe wool to the international market during and after an EAD outbreak.

"EAD outbreaks are chaotic events," said Bridget Peachey. "People are desperately trying to stop a new disease in its tracks, which means tracing infected or exposed animals or materials as fast as possible and trying to get ahead of the disease spread.

"Wool is non-perishable, which is both an advantage and disadvantage. It can be stored until it is considered safe to ship – but for this reason, resuming wool exports may not be a top priority for authorities who are focused on the disease response itself.

"We have to make it as simple as we can to help governments get wool exports flowing again if the worst was to happen."

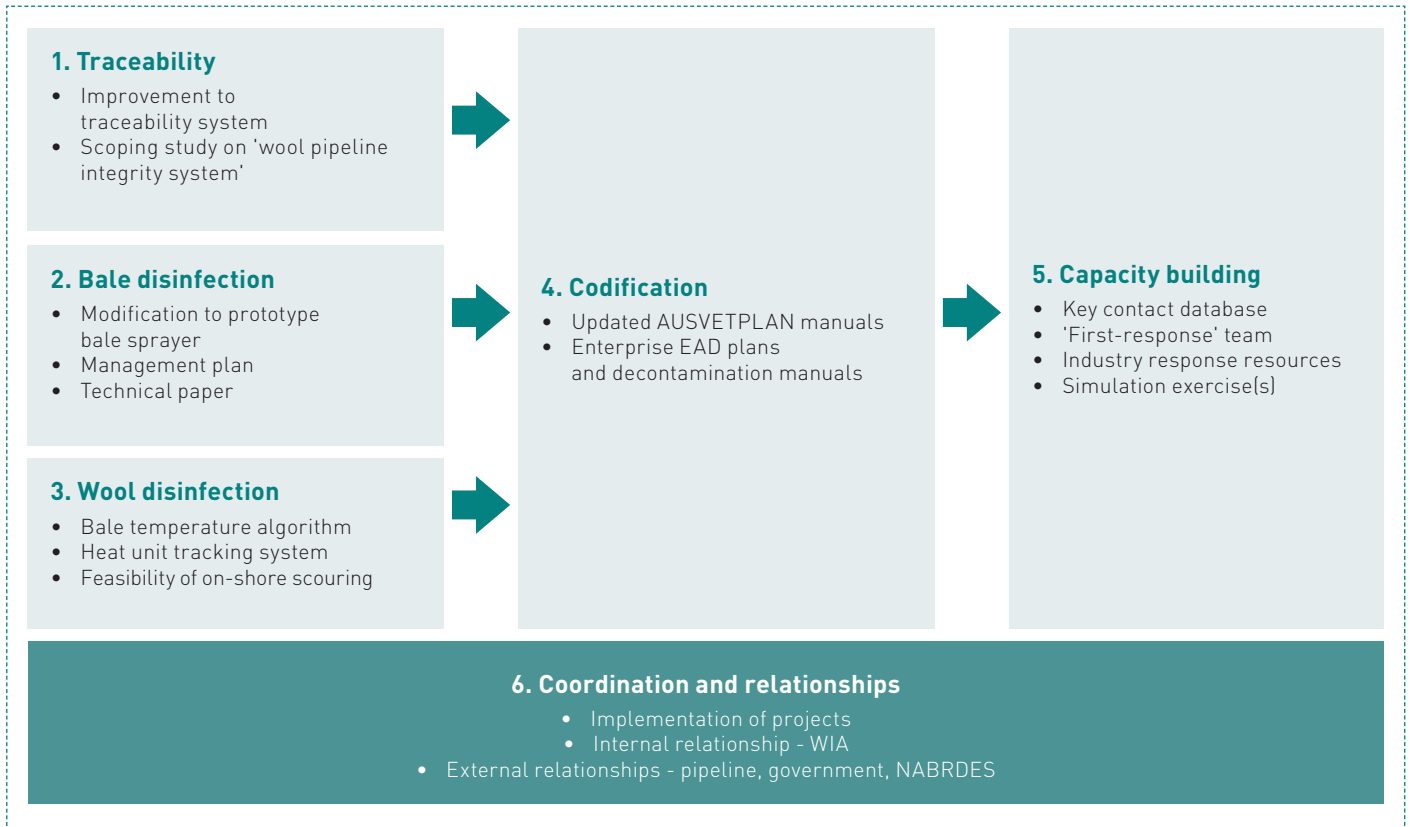
The RD&E plan continues the six programs of work set out in the previous plan (see figure right).

Program 1 (Traceability) is concerned with traceability of wool through the pipeline. A previous study showed that baled wool could be readily and accurately traced through the pipeline from farm to market, but also that some modifications – for example, the linking of the Property Identification Code (PIC) to wool



The Australian wool industry has a robust strategy to minimise the potential trade impacts on the industry if an outbreak of an EAD was to occur in Australia.

Overview of the six programs of work set out in the Australian wool industry Post-Farmgate Emergency Animal Disease Preparedness RD&E Strategy



bales – would make traceability quicker and more efficient. The PIC can now be captured in the classer's specification and transmitted as the wool moves through the pipeline.

"One proposal in the new plan is to look at whether the wool traceability 'system' can be standardised and packaged in a similar way to the National Livestock Identification Scheme, to give it the same credibility with government authorities and trading partners," said David Michell, Chair of the Wool Industries Australia EAD Working Group.

Programs 2 & 3 (Bale & Wool Disinfection) are concerned with ensuring that the external surface of wool bales, and the wool inside them, can be demonstrated to be free of any possible infection.

David Michell says that AWI funding had led to the development of a prototype 'bale sprayer'.

"We have a prototype device that has been shown to allow the rapid disinfection of bales in stores, and detailed engineer's drawings that would allow us to rapidly construct more devices should the need arise.

"AWI has also funded research to look at temperature gradients within wool bales and in relation to the external temperature. This is important work, because we know how long wool needs to be exposed to various temperatures to deactivate (for example) FMD virus.

"This research has captured international attention," said David Michell, "and a collaborative project between Australian and South African researchers, to further

explore the impact of the time*temperature relationship on the survivability of EAD agents in wool is being investigated."

Program 4 (Codification) is concerned with ensuring that all of the plans, processes, procedures and other documentation that come into play during an EAD contain the most up-to-date information. Once again, significant advancements have already been made in this area over the past few years, notably with the publication of a specific Wool Enterprise Manual as part of the AUSVETPLAN EAD response framework, which is managed by Animal Health Australia.

"The Wool Enterprise Manual contains all of the information needed to understand, for example, how wool flows through the value chain, how it can be traced, the various participants in the chain (brokers, testing laboratories and so on) and their roles in a response.

"It will be a very important resource, especially for government officers managing the response to an EAD outbreak."

A priority for the upcoming three years is **Program 5 (Capacity Building)**.

"The best systems, plans and equipment in the world won't help us much during an EAD outbreak if industry does not have well-trained, well-prepared people to put them into practice," said Bridget Peachey.

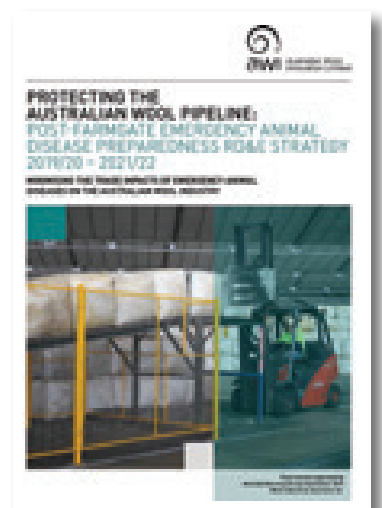
Program 5 will see the post-farmgate part of the wool value chain collaborating closely with WoolProducers Australia, which would have official industry responsibilities during an EAD outbreak.

Activities under the program may include the development of industry response resources such as fact sheets and videos for wool stores and other post-farmgate businesses. Another proposal is to consider establishing a small industry EAD 'first-response' team, from across the industry, which would be trained and regularly updated in EAD preparedness and would play a key role in industry liaison in the event of an EAD outbreak affecting wool.

"The industry has worked very collaboratively to develop this 3-year strategy," said David Michell.

"A lot has been achieved over the last few years to improve our EAD preparedness, and the new plan provides us with a path to make even further improvement." **E**

MORE INFORMATION
The new 3-year strategy is available at www.wool.com/biosecurity



ANAESTHETICS AND ANALGESICS

WIDELY ADOPTED BY WOOLGROWERS

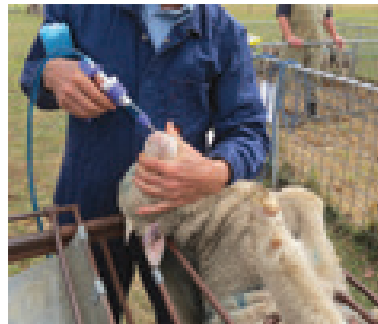
There has been large scale adoption of post-operative pain relief (Tri-Solfen®) during the past 13 years. Newer products Buccalgesic® and Metacam® were released in 2016 and Numnuts® has recently been made available.



Tri-Solfen®, a topical local anaesthetic and antiseptic gel spray.



Metacam 20®, a subcutaneous injection high on the neck behind the ear.



Buccalgesic® being applied to the internal cheek of a lamb.



Numnuts® provides pain relief during tail docking and castration.

PAIN RELIEF WIDELY ADOPTED

The development of effective and practical analgesic and anaesthetic treatments for lambs has been a critical advance in alleviating the pain associated with husbandry procedures such as mulesing, tail docking and castration. Globally, Australian Merino woolgrowers have been leaders in the adoption of pain relief for husbandry procedures.

FAST FACTS

- There are now a number of anaesthetic and analgesic options available for woolgrowers to use to alleviate pain during marking.
- There are many variables and factors for woolgrowers to consider when deciding which pain relief products are best for their farming system.
- Completing the National Wool Declaration, including for the use of pain relief, allows woolgrowers to transparently inform wool buyers of their animal husbandry practices.
- Consult with your local veterinarian to obtain specific advice for your flock.

Tri-Solfen®, a local anaesthetic, was registered 13 years ago, whilst the Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) Metacam® and Buccalgesic® were registered in 2016 and 2017 respectively.

On-farm adoption of these pain relief options for mulesing has been rapid. AWI's 2017 Merino Husbandry Practices Survey of woolgrowers suggests that by 2017 83% of producers who mules Merino ewe lambs provided pain relief, and the 2018/19 AWI Wool and Sheep Meat Survey reported that 87% of mulesed Merino lambs were treated with pain relief.

Woolgrower adoption of these pain relief options will continue to be monitored over the coming years.

Pain relief with a specific claim for ring castration and ring tail docking has also

now been developed. Numnuts® combines a local anaesthetic (NumOcaine® Injectable Pain Relief) and rubber ring applicator, enabling the operator to inject local anaesthetic whilst simultaneously applying the rubber ring quickly, safely and easily – see page 46 for a case study of a producer that has trialed Numnuts. Numnuts® has been approved for release in Australia and has been made available in limited supply in the latter half of 2019 to support a further trial of the technology on commercial sheep properties. A full commercial release will follow in 2020 when it will be fully available throughout Australia. From the AWI 2017 Merino Husbandry Practices Survey, 95% of producers castrated (and 27% tail docked) with rings. This includes 55 to 61% of non mulesed Merinos, which are tail docked with rings.

HOW DO THE PAIN RELIEF OPTIONS WORK?

The currently available pain relief treatments fall into two broad categories – analgesics and anaesthetics.

Short acting anaesthetics

Anaesthetics block pain and sensory function is lost. There are three main types: local, regional and general anaesthetics, with most local and regional anaesthetics taking from under one to 10 minutes to take effect. They typically do not provide long-lasting pain relief.

Two local anaesthetic products are

available for use at lamb marking: Tri-Solfen® and NumOcaine®.

General anaesthetics create a medically-induced coma (a state of unconsciousness). The animal cannot move, feel pain or remember, and breathing may need to be assisted. General anaesthetics are not considered practical for use at lamb marking under Australian conditions and would be highly unlikely to pass the tight use registration requirements of the APVMA for field use.

Tri-Solfen® is a topical pain relief and

COST OF PAIN RELIEF PRODUCTS

Dose and recommended retail prices for Buccalgesic® (Troy Laboratories – 1.0 mL per kg body weight)

CASTRATION AND TAIL DOCKING	TOTAL DOSE	COST @ 48 CENTS PER ML
Lambs Under 10kg	1.0 ml	\$0.48
Lambs 10.1 - 15.0kg	1.5 ml	\$0.72
Lambs 15.1 - 20.0kg	2.0 ml	\$0.96
Lambs 20.1 - 25kg	2.5 ml	\$1.20

Dose and recommended retail prices for Metacam® 20 (Boehringer Ingelheim – 1.0 mL per kg body weight)

ALL PURPOSES	TOTAL DOSE	COST @ 132 CENTS PER ML
Lambs under 10kg	0.50 ml	\$0.66
Lambs 10.1 - 15.0kg	0.75 ml	\$0.99
Lambs 15.1 - 20.0kg	1.00 ml	\$1.32
Lambs 20.1 - 25kg	1.25 ml	\$1.65

Dose and recommended retail prices for NumOcaine® (MavLab)

HUSBANDRY PRACTICE	TOTAL DOSE	COST @ 45 CENTS PER ML
Tail docking	1.5 ml	\$0.67
Castration	1.5 ml	\$0.67
Castration and tail docking	3.0 ml	\$1.34

The Numnuts applicator retails for \$350 plus GST.

Dose and recommended retail prices for Tri-Solfen® (Bayer)

HUSBANDRY PRACTICE	TOTAL DOSE	COST @ 12 CENTS PER ML
Mulesing		
Lambs 5 - 10kg	6.0 ml	\$0.90
Lambs 11 - 15kg	8.0 ml	\$1.20
Lambs 16 - 20kg	10.0 ml	\$1.50
Lambs over 20kg	12.0 ml	\$1.80
Castration		
Lambs up to 10kg	3.0 ml	\$0.45
Lambs over 10kg	4.5 ml	\$0.68
Tail docking (if not concurrently mulesed)		
Lambs up to 10kg	1.5 ml	\$0.23
Lambs over 10kg	2.0 ml	\$0.30
Combined castration, tail dock & mules		
Lambs 5 - 10kg	9.0 ml	\$1.35
Lambs 11 - 15kg	12.5 ml	\$1.88
Lambs 16 - 20kg	14.5 ml	\$2.17
Lambs over 20kg	16.5 ml	\$2.48

Prices used in tables above are the standard retail price at April 2019 for the product alone. They do not include the cost of labour to administer the products.

antiseptic solution that contains two local anaesthetics (a longer and a shorter acting one), adrenaline (which reduces blood supply to the area, reducing blood loss) and an antiseptic. It is applied as a gel spray directly onto the open wound (so is not appropriate for rings) and provides immediate (within one minute) pain relief that lasts up to 24 hours. It also works to seal and protect the wound, reducing the risk of infection and assisting with healing.

NumOcaine® (via Numnuts®) is an injected local anaesthetic for ring castration and tail docking, that provides immediate pain relief, reaching maximum intensity 15-35 min after application.

Longer acting analgesics

Analgesics provide relief from pain whilst retaining most sensory function. Analgesics can take 10 to 15 minutes to reach optimum blood concentration. Some analgesics, for example NSAIDs require pain enzymes to be created at the site of tissue damage (which can take 10 minutes after the initial damage to be created) before they take effect and the release of pain enzymes – hence the logic in providing the analgesic at or before marking. They last for varying times depending on how quickly the active compound is metabolised and excreted.

WHAT TO USE WHEN MULESING

The combination of both a fast and short acting pain relief and antiseptic (Tri-Solfen®) and a longer acting meloxicam pain relief anti-inflammatory product (Buccalgesic® or Metacam®) provides the most effective pain relief and gives the animal the best chance of recovering faster, addressing both the immediate pain and any pain that might occur during the healing process, as well as reducing the possibility of infection (Small *et al.* 2018¹).

However, there are no black and white answers as to what are the best pain relief options for producers when considering their whole flock.

Consult your local veterinarian as there are many variables and factors to consider when deciding to use anaesthetic or analgesic products, including:

- type of husbandry practice and method used
- availability of a product to livestock producers and veterinarians
- availability of veterinary prescription and oversight
- restraint requirements
- time and method of treatment
- time and supervision required post-treatment
- ability of the lamb to mother up
- likelihood of adverse impact to humans
- degree of pain relief provided
- practicality and cost.

¹ Small, A.H., Marini, D., Dyall, T., Paull, D. & Lee, C. 2018. A randomised field study evaluating the effectiveness of buccal meloxicam and topical local anaesthetic formulations administered singly or in combination at improving welfare of female Merino lambs undergoing surgical mulesing and hot knife tail docking. *Research in Veterinary Science*, 118, 305-311.

ARTICLE CONTINUES OVERLEAF

Two NSAID products (Buccalgesic® and Metacam®) are registered for use in sheep in Australia. Both products contain the same active (meloxicam). Meloxicam alleviates pain and inflammation and reduces fever and fluid production caused by tissue damage. Pain relief from meloxicam products take effect within 10 to 15 minutes of application. It is available either orally (Buccalgesic®), where the dose is administered inside the mouth between the gums and cheek, with no needles required, or as a subcutaneous injection (Metacam®) administered high on the neck behind the ear.

NATIONAL WOOL DECLARATION PROVIDES CLARITY TO BUYERS

The supply chains for both wool and meat are increasingly interested in their suppliers' animal husbandry practices. Australian Wool Exchange (AWEX) created a Mulesing Status section of the National Wool Declaration (NWD) in 2007 and the number of bales being declared by woolgrowers is steadily increasing.

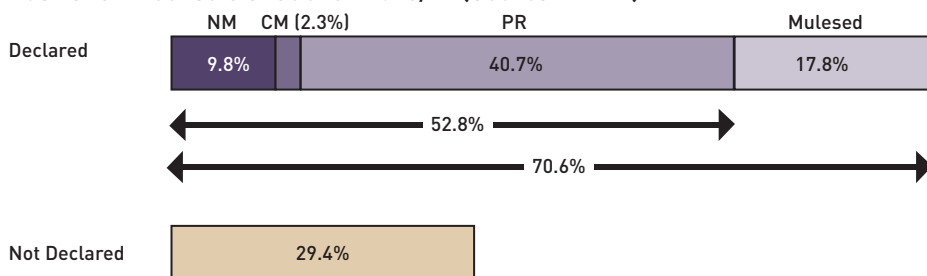
Declaring your use of pain relief on the NWD transparently informs wool buyers of your animal husbandry practices, backed by an independent integrity program. The voluntary NWD is managed and audited by AWEX and is available for all wool sold by auction in Australia. It is relatively low cost and focuses on specific wool contamination and mulesing practices. Increasingly, clients are asking for wools of certain NWD categories, so producers are encouraged to declare their wool regardless of whether they

mules, with or without pain relief, or not. There are variable, small but increasing premiums for all categories compared to Not Declared.

There are other more detailed programs that woolgrowers can also choose, run by wool brokers and businesses providing quality assurance schemes.

By 2018/19, ten years after the Mulesing section was added to the NWD, out of over 1.1 million bales sold, 9.8% were declared **Non Mulesed (NM)**, 2.3% **Ceased Mulesed (CM)**, 40.7% Mulesed with **Pain Relief (PR)**, a total 52.8% of the wool clip. 17.8% were declared **Mulesed** and 29.4% were **Not Declared**. (Ceased Mulesed status means no lambs born on the property in the preceding 12 months have been mulesed and no purchased ewes or wethers are mulesed).

Australian wool sold at auction 2018/19 (Source: AWEX)



SUMMARY OF AVAILABLE PAIN RELIEF PRODUCTS

BRAND NAME:	TRI-SOLFEN®	NUMOCAINE® (WITH NUMNUTS® DELIVERY)	BUCCALGESIC®	METACAM 20®
Type of drug	Local anaesthetic	Local anaesthetic	NSAID	NSAID
Alleviates pain caused by	Castration with knife and tail docking with knife and hot knife, dehorning, mulesing	Castration, tail docking with ring	Castration, tail docking, dehorning, mulesing	Castration, tail docking, dehorning, mulesing
Time to start of effective pain alleviation	< 1 min	< 1 min	From 10 mins	From 10 mins
Application method	Fan spray applicator	Injection with Numnuts® device	Oral with custom applicator	Subcutaneous injection
Availability	S5 - Over the counter	S4 - Vet prescription	S4 - Vet prescription	S4 - Vet prescription
Meat Withholding Period	90 days	0 days	10 days	11 days

*Growers must follow all label directions and veterinary instructions when using pain relief products.

APVMA FORMAL APPROVALS

The Australian Pesticide and Veterinary Medicine Authority (APVMA) has registered products for the following purposes:

- Ilium Buccalgesic® OTM for the alleviation of pain associated with the routine husbandry practices of castration, tail docking and mulesing of lambs.
- Metacam® 20 mg/mL Solution for injection for single dose use in sheep or lambs more than 14 days of age for the alleviation of pain and inflammation (ie a broad pain relief claim for alleviation in all conditions, including mulesing, castration and tail docking).
- Tri-Solfen® Topical Anaesthetic & Antiseptic Solution for Pain Relief in Lambs and Calves for pain relief following mulesing and tail docking and during and following castration.
- NumOcaine® Injectable Pain Relief local anaesthetic injection for sheep and cattle.

FREQUENTLY ASKED QUESTIONS

One of the biggest changes in animal husbandry in the sheep industry in recent years is an increased understanding of reducing and assessing stress on animals and in particular the introduction of pain relief medication for lamb marking husbandry practices. Research has confirmed that sheep do feel pain from some husbandry practices and that this pain can be alleviated using drugs that are now available for use on sheep.

It is important when using pain relief medication to carefully read the label instructions and only apply it in the method and situation described. Medications should not be used at dosages or in applications that are not covered by the label recommendations. If in doubt, consult your veterinarian or animal health consultant.

The following FAQs are offered as a guide only and specific advice should be sought as appropriate from your veterinarian.

What is best practice pain relief for lamb marking?

Research has shown that mulesing, castrating and tail docking lambs are stressful procedures. This can be reduced or alleviated with the appropriate use of a pain relief product(s), whether that be an anaesthetic or analgesic product or preferably a combination to give multimodal effect. Reducing haemorrhage and post-surgical infection are also important animal welfare concerns.

What is the difference between the pre-operative pain relief products (meloxicam) and post-operative pain relief products?

The theory of pre-operative pain relief is based on the concept that given at or before the time of a painful procedure there is already a circulating level of pain relief product within the body of the animal.

Some pain during surgical procedures comes from the release of inflammatory chemicals from the site of tissue damage, ie mulesing wound or tail stump. If circulating levels of anti-inflammatory drugs are present in the body at the time of tissue damage, the amount of inflammatory chemicals that are released from wounds is greatly reduced, resulting in reduced levels of pain.

It takes around 10 minutes post marking for the compounds that cause inflammation to build up and anti-inflammatory drugs to have effect. If given at or before the time of the procedure, the compounds are absorbed and reach therapeutic levels at the same time the inflammation starts to occur.

Anaesthetic products act more quickly. NumOcaine® numbs the site of ring application during castration or tail docking. Tri-Solfen® numbs the surgical site during (surgical castration) and immediately after (mulesing and tail docking) the procedures.

What are the benefits of combining meloxicam (Buccalgesic® or Metacam®) with Tri-solfen® or Numnuts®/ NumOcaine®?

Analgesics and anaesthetics manage pain differently. Targeting different parts of the pain pathway can lead to better overall pain relief than using just one type of product and controlling only one part of the pain pathway. Multi-modal pain relief is commonly practiced across human and veterinary medicine for the management of painful conditions.

The easiest way to think of this is by comparing it to a visit to the dentist. While you are in the dentist's chair, getting your tooth drilled, the local anaesthetic prevents you feeling the pain associated with the procedure because it numbs the area; it stops you feeling sensation in the area. Later, the local anaesthetic wears off and you are left with an ache due to the inflammation which is part of the healing process but generates pain. At this stage, an anti-inflammatory drug will help to take the edge off the pain as the wound heals.

Transferring this analogy to the sheep undergoing husbandry procedures, the local anaesthetic (ie Tri-Solfen® or NumOcaine®) provides relief by stopping pain in the area, NumOcaine® before the tissue damage and Trisolfen® within a minute of it being applied. After the procedure, the anti-inflammatory (meloxicam) dulls the

pain as the wound heals.

Can we use less or more than the recommended dose of a pain relief product and still get an adequate effect?

No. All veterinary medications should be used strictly in adherence with label directions. This includes applying at the recommended dosage and for recommended practices only.

If in doubt, consult your veterinarian or animal health advisor.

Why don't some people mules?

Most Merinos in Australia are mulesed, with 70% of producers reporting they mulesed Merino ewe lambs and 63% Merino wether lambs in 2017, according to the AWI Merino Husbandry Practices Survey.

Of the producers not mulesing in 2017, one third had never mulesed while the other two thirds had chosen to stop mulesing. Over the past 15 years, there have been several specific periods (2005, 2009, 2015) when large numbers of producers have stopped mulesing. Those that have ceased mulesing cited being in low flystrike risk areas, access to chemicals, lack of necessity, breeding less wrinkled sheep, and industry or consumer pressure as the main drivers.

Among producers that do still mules, around half have decreased their mules size in the past 10 years.

Is there a difference in response between animals given pain relief? Is there compensatory gain? If so, how long does it take?

Research has shown that animals treated for pain before or during tail docking return to normal behaviours earlier than animals not treated for pain. While weight gain differences have yet to be recorded, differences in behaviour of animals indicates benefits of treating for pain.

Why don't some people use pain relief?

The AWI 2017 Merino Husbandry Practices Survey reported that 42% of producers used pain relief for tail docking and castration, and that 83% used pain relief for mulesing. Tri-Solfen® is the most widely used form of pain relief, with producers choosing it because it was readily available and found to be effective. The most common reason for producers not using pain relief was that they did not see it as beneficial.

Is meloxicam (Buccalgesic® or Metacam®) a sedative?

No, meloxicam is not a sedative. Meloxicam is an NSAID. It is an analgesic and helps to reduce pain in much the way ibuprofen or paracetamol do in humans; it provides pain relief but is not a known mechanism for sedation.

Can I give meloxicam (Buccalgesic® or Metacam®) to animals with flystrike,

foot abscess etc?

Metacam® has a broad claim for the alleviation of pain and inflammation – this includes any conditions causing pain and inflammation in sheep. So, it can be prescribed by a veterinarian to animals with flystrike, foot rot, shearing cuts, dog bites etc.

Buccalgesic® is approved for the alleviation of pain associated with the routine husbandry practices of castration, tail docking and mulesing of lambs.

Is Buccalgesic® too viscous to use in cold climates?

In cold conditions it is recommended to elevate the bottle to allow a better flow of Buccalgesic®.

What is the best method to apply Tri-Solfen® to knife castration and tail docking wounds?

Hygiene is a very important consideration when castrating and tail docking.

The Tri-Solfen® applicator nozzle should be kept clean; disinfectants such as chlorhexidine can be used to clean the external surfaces of the nozzle between applications when knife castrating. Carefully follow the label directions for the application of Tri-Solfen® during knife castration.

Tri-Solfen® is applied as a spray through the applicator nozzle to tail docking wounds. The nozzle itself therefore does not touch the animal during this procedure; overall hygiene should be kept to a high standard.

Does Tri-Solfen® work with rings?

No. Tri-Solfen® is a topical anaesthetic and needs to be sprayed on exposed nerves to work.

Does Tri-Solfen® work on hot knife docking wounds?

Yes. Tri-Solfen® contains anaesthetic (Lignocaine and Bupivacaine) which numbs the area, adrenaline which restricts bleeding and increases the anaesthetic's effectiveness, and an antiseptic to help prevent infection. It will reduce the pain associated with tail docking carried out surgically or with a hot knife.

What is the status of Numnuts®?

Numnuts® is a new tool developed for lamb tail docking and castration. It combines a local anaesthetic (NumOcaine®) and rubber ring applicator, enabling the operator to inject local anaesthetic and the apply rubber ring quickly, safely and easily.

Numnuts® has completed a successful Australian pilot launch during 2019 with 250,000 doses being used by wool and lamb producers. Full availability of the device including listings of vets who stock NumOcaine® can be found at the website www.numnuts.store.

NUMNUTS GETS THE THUMBS UP IN WA

Numnuts® is a new device that enables sheep producers to castrate and tail-dock their lambs with rubber rings while also injecting a local anaesthetic at the same application – quickly, safely and effectively. Woolgrower Audrey Bird from Wickepin in WA helped trial the device.

Audrey Bird runs a mixed cropping and sheep business at Wickepin, about 220 km south-east of Perth in Western Australia. She has two flocks: a Merino self-replacing flock and a flock of first cross ewes that are bred for prime lambs. As part of the development phase of Numnuts, Audrey used the product during a trial involving 300 of her lambs in May.

Numnuts is a handheld device that includes a banding tool providing fast ring application, plus an operator-safe two-stage injection mechanism that ensures the correct dose of pain relief is dispensed to the right location.

"I was really keen to trial Numnuts on our flock and to see how the applicator and pain relief system would work in a practical setting out in the yards and in the cradle," Audrey said.

"There were three of us using the product and we've been very impressed with the design of the applicator. We're finding it actually easier to get the rings on than the normal elastrator applicator and applying the pain relief is very easy and hasn't slowed us down at all."

Pain relief is the core reason to use Numnuts. In trials by CSIRO and the University of Melbourne, Numnuts substantially reduced the number of lambs displaying pain behaviours by up to 68%.

"It just makes good sense to use pain relief," Audrey said. "I'm a great animal lover and anything I can do to ease the pain is going to improve productivity, which is good for the lamb and good for us farmers, so it's a win-win really."

To determine any obvious differences in lamb behaviour following the procedure, some of the lambs in the trial were treated with Numnuts while others were not.

"We definitely noticed an improvement when using Numnuts, both in the yards and when walking them back to their paddock. In the yards they were visually calmer, and appeared to be experiencing less pain and when they were going back to their mums they weren't squirming around like they can sometimes do. They walked back to the paddock and mothered up easier."

Numnuts began back in 2009, when Scottish design engineering firm 4c Design and Moredun Research Institute in Scotland partnered together to investigate the



Sheep producer **Audrey Bird** from **Wikipin** in WA has trialled Numnuts on lambs from her flock and says it's a great product.

feasibility of a device that would provide pain relief to livestock during tail docking and castration. Recognising the need for an on-farm solution for sheep, AWI and MLA provided initial funding for R&D work. MLA subsequently invested significant additional funds to support commercialisation of the device. The R&D team was enhanced by the involvement of CSIRO at Armidale, which brought an Australian experience and perspective to the project.

"I think it's awesome that Australian producers have contributed towards the research and development of Numnuts. It's really great to see MLA and AWI spending our levies in this way," Audrey said. "Yet again Australia is leading the way in addressing animal welfare issues and has helped to develop this product and get it out there used in the field and commercialised."

Numnuts has had a successful pilot launch

year in 2019 with more than 250,000 doses being administered by Australian farmers, who have been the first in the world to access this new technology.

Numnuts and NumOcaine (the local anaesthetic) will be fully available throughout Australia in 2020. NumOcaine is a prescription only (S4) drug so can be purchased through local veterinarians; there are more than 160 rural veterinarian practices across Australia registered as a stockist. NumOcaine is readily available by giving your veterinarian 3-5 days' notice.

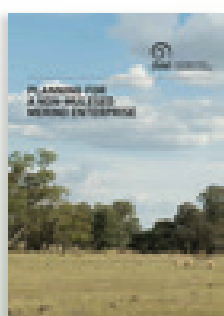
"I'm very excited about the fact that this will be released soon and be available to every sheep farmer to use. I think it's a great product and it's great to see things like this coming along," Audrey added.

MORE INFORMATION
www.numnuts.store

BREECH FLYSTRIKE PREVENTION PUBLICATIONS

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

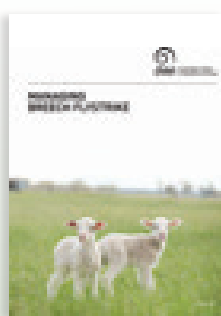
Here is a selection of the available publications:



PLANNING FOR A NON-MULESED MERINO ENTERPRISE

(March 2018)

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



MANAGING BREECH FLYSTRIKE

(June 2017)

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



DEALING WITH DAGS MANUAL AND FACTSHEET

(August 2019)

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



BREEDING LOWER WRINKLE AND DAG

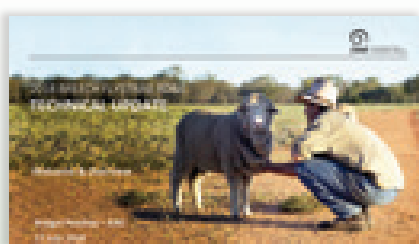
(June 2017)

2-page summary article from *Beyond the Bale*.

ANAESTHETICS AND ANALGESICS

(December 2019)

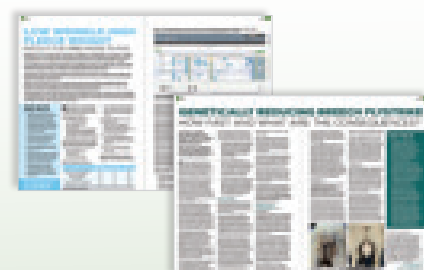
4-page summary article from *Beyond the Bale*.



AWI'S BREECH FLYSTRIKE RD&E TECHNICAL UPDATE PRESENTATION

(July 2018)

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



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

(June 2019)

LOW WRINKLE-HIGH FLEECE WEIGHT PRODUCTIVE SIRES EASIER TO FIND

(June 2019)

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



A FLY IN THE OINTMENT

RESISTANCE IS ALREADY PRESENT

For some producers, there is already a 'fly in the ointment', that is, blowflies on their property are resistant to some flystrike preventative products.

- Resistance is first seen as a reduction in the protection period achieved by the products in a specific chemical group.
- When an insecticide or any form of parasiticide is used there is potential to increase both the proportion of the parasite population that is resistant to that chemical and the concentration of insecticide they can survive.
- Because there are limited chemical alternatives for flystrike, look to manage flystrike in other ways:
 - Breed for flystrike resistant sheep.
 - Crutch or shear sheep before peak fly times.
 - Control breech strike with good worm control, correct tail length and, where still necessary, breech modifications.

Low-level resistance to cyromazine and dicyclanil was initially reported in NSW in 2010, and further cases of low-level resistance to these products were reported in 2012–2014. An AWI/NSW Department of Primary Industries jointly-funded blowfly resistance project is currently investigating the extent of insecticide resistance across Australia to all of the commonly used flystrike prevention chemicals – an increasing number of the samples received are showing resistance.

The grim reality is that no chemical can be used without resistance developing, some more rapidly than others. The Australian sheep blowfly has been resistant to organophosphates for well over 50 years. Cyromazine products have been on the market for 40 years and dicyclanil for 20 years – it is inevitable that some resistance

has emerged, but you can take steps to slow development on your property.

DO YOU HAVE RESISTANT FLIES?

These signs indicate you might have resistance:

- a shortening of the protection period (specified on product labels)
- flystrike in multiple treated sheep rather than just a few.

Before you conclude your flies are resistant, check that:

- the sheep affected were actually treated
- the chemical was applied following the manufacturer's instructions
- the appropriate amount of chemical was applied
- the wool length was adequate to retain the treatment
- wool or dags did not make penetration of the product difficult
- there was not unusually heavy rain following treatment, resulting in chemical wash out.

Once you have eliminated the above common causes for treatment failure and you are sure there has been some shortening of the protection period, it is advised that you contact the product manufacturer who can assist in further investigations.

STRATEGIES TO LIMIT FURTHER DEVELOPMENT OF INSECTICIDE RESISTANCE

1. USE AN INTEGRATED APPROACH TO REDUCE RELIANCE ON INSECTICIDES

- Breed sheep that are resistant to flystrike.
- Shear or crutch at times that maximise protection against flystrike.

Some woolgrowers are reporting shorter duration of protection from some chemical flystrike treatments, and resistance has now been confirmed in some strains of blowflies in a number of states.

Therefore, with the high-risk flystrike time upon us, and with school holidays and cropping reducing the ability to monitor stock, it's time to review whether your treatments are working, how you use them and what other strategies can reduce reliance on chemical treatments so that they remain effective for more years.

Particular tips are provided for those already with resistant flies.

- Dock tails to the correct length.

- Manage scouring.

- Use breech modification if required, until sheep are genetically resistant to flystrike.

2. KNOW YOUR ENEMY

- Understand the time and length of protection you need: when is the flystrike risk highest on your property and how long does it last? If you are unsure, the FlyBoss Tools can quickly show an annual flystrike risk graph for your area, based on historic data.
- The favourable weather conditions for flystrike are warm (17°C–38°C), humid days with wind speeds less than 30 km per hour.
- Flies can travel up to 10 km, but most go no further than 2–3km; you may have bred many of these flies yourself.
- Flystrike often occurs in waves and when it does it hits hard and fast; check susceptible mobs at least every second day during high-risk conditions.
- Provide the best protection and the most regular checks to the most susceptible sheep, eg those with longer wool, more urine or lambing stain, more dag, and young sheep.
- Where feasible, put susceptible mobs in the least-sheltered paddocks, which tend to have fewer flies.

3. KNOW YOUR CHEMICAL GROUPS

It is critical you know which chemical group you are using and not just the brand name if you are to rotate chemical groups and avoid overuse of particular groups (especially if you've noticed a reduced period of protection for the chemical you are using). There are five chemical groups for flystrike prevention, see Table 1 opposite; some of these groups have more than one chemical active.

For example, if you used Vetrazin® Liquid on one occasion and Venus® the next, you would be using the same chemical active, cyromazine,

on both occasions. Also, the chemical actives cyromazine and dicyclanil both belong to the insect growth regulators (IGR) chemical group and have a similar mode of action. This means there is cross-resistance between two different, but related, chemical actives that are within the same chemical group – if resistance to one of these actives develops, it is likely that some resistance to the other could be present or may soon emerge.

Insecticide choice should be tailored to your particular location and management:

- Consider rotating insecticide products from different chemical groups to slow the development of resistance.
 - Use a different chemical group for treating struck sheep to that used for flystrike prevention.
 - Successive treatments within the fly season should generally be different chemical groups (reminder: using dicyclanil and cyromazine one after another does not rotate chemical groups).
- Choose a product with the appropriate protection period and time of application.
 - A product that provides a shorter period of protection may be sufficient in some instances, for example, when sale of sheep or lambs for slaughter is imminent; when sheep are soon to be crutched or shorn; when close monitoring of sheep is not possible for a short period because of other farm tasks or holidays.
- Products with long protection periods can be used to provide protection over the fly season from a single treatment when timed strategically. However, the use of products with long protection periods does not replace the need for regular monitoring for struck sheep, particularly in cases where resistance may be suspected and the expected period of protection may be shortened.

Use the FlyBoss Products Tool to search for flystrike products, determine their chemical

group and make your selection. (www.flyboss.com.au/tools/products.php).

Also, be aware that some products kill both flies and lice, so treatment for lice potentially affects flies and may lead to development of resistance, and vice versa. Ideally, use a different group for treating flies to lice to limit potential for resistance development – better still, eradicate lice so that their ongoing treatment is unnecessary.

Continued use of chemical groups where resistance is evident

If resistance is suspected or confirmed on your property, seek professional flystrike management advice.

Continued use of chemical groups that some flies are resistant to may result in a shorter protection period, but this still may be useful in an integrated flystrike management program. Be aware that the number of resistant flies will likely increase and they may also spread to neighbouring properties, limiting the options of those producers.

If a second treatment in the season is warranted, rotation to a different (effective) chemical group will help to reduce the level of surviving resistant flies.

Applying this knowledge

- If both a spring and autumn treatment are required, use different chemical groups.
- By using crutching or shearing to lengthen protection in the fly season by six weeks, shorter acting products can be incorporated allowing a rotation across different groups.
- If using whole mob treatments where you suspect there are strikes present, use a jetting product. Use ivermectin or spinosad, rather than cyromazine, because the latter takes some days to kill all maggots. Sheep seen to be struck at the time of jetting should be dressed.

ARTICLE CONTINUES OVERLEAF

Table 1. Chemical groups and actives used for flystrike prevention.

CHEMICAL GROUP	CHEMICAL ACTIVE	EXAMPLE PRODUCT	METHOD OF APPLICATION ¹	PROTECTION PERIOD (WEEKS) ²
Insect growth regulator (IGR)	Cyromazine	Vetrazin®	Spray-on	11
		Vetrazin® Liquid	Jetting/Dipping	Up to 14
	Dicyclanil ³	CLiKZiN®	Spray-on	Up to 11
		CLiK®	Spray-on	18–24
		CLiK® Extra	Spray-on	Up to 29
Neonicotinoid	Imidacloprid	Avenge®	Spray-on	Up to 14
Macrocyclic lactone (ML)	Ivermectin	Coopers® Blowfly & Lice	Jetting	Up to 12
Synthetic pyrethroid (SP)	Alphacypermethrin ⁴	Vanquish®	Spray-on	Up to 10
Spinosyn	Spinosad	Extinosad® Eliminator	Jetting	4–6

¹ Always follow label directions.

² Check the label before use as some products may differ.

³ Dicyclanil product protection periods vary due to their different concentrations of the active chemical.

⁴ Registered for the prevention of body strike only.

PARABOSS: BEST PRACTICE ADVICE FOR MANAGING SHEEP PARASITES

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

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

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

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

Join us on Facebook at www.facebook.com/paraboss.com.au to see weekly posts on flystrike, lice and worm control.

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

MORE INFORMATION
www.paraboss.com.au



paraboss

awi Australian Wool Innovation Limited

mla MEAT & LIVESTOCK AUSTRALIA

- When dressing struck sheep:

- Use a different chemical group to that used for flystrike prevention.
- Always shear or clip the struck area, ideally with mechanical, rather than hand shears, to remove more maggots. This is generally as successful at cleaning up the strike as using a dressing, which are mainly used to prevent re-strike.
- Kill maggots in wool shorn from struck sheep by placing them in a sealed plastic bag in the sun. This reduces the number of flies in the next generation and kills maggots that potentially survived a recent preventative treatment to the sheep.

- Continue to check your flock after treatment to monitor the protection period being achieved under your environmental conditions.

4. USE CRUTCHING OR SHEARING AND CHEMICAL TREATMENTS STRATEGICALLY TO PROVIDE PROTECTION OVER YOUR RISK PERIOD

If resistance on your property has shortened the protection periods or you wish to rotate chemical groups with some having short protection periods, there are still a variety of options.

When an insecticide is required (or two in succession), its protection period should ideally be longer than the expected risk period.

Shearing and crutching can be used strategically and will generally give up to six weeks protection from flies. If either can be done at the start of the fly season, a shorter acting chemical may be sufficient to get you through your high-risk fly period. Alternatively, shearing or crutching in the middle of the season could allow you to use two short-acting products from different chemical groups either side.

Crutching or shearing can also be used to minimise development of resistance, similar to giving an exit or 'tailcutter' worm drench after a long-acting drench. When a fly preventative treatment has been applied early in the season, the period of cover may come to an end while there is still fly activity. For a short time, as the product concentration drops, some maggots from resistant flies may survive the low concentration while the maggots from susceptible flies will die; this will increase the proportion of resistant flies in the population. By shearing or crutching prior to the 'tail' period, the remaining low concentration of chemical is removed and the short wool may prevent the need for the autumn treatment. For more information, search FlyBoss for early season flystrike prevention.

Always make sure to observe the wool harvesting interval and trade advice for the product/s used.

5. FOLLOW THE LABEL DIRECTIONS AND KEEP A TREATMENT RECORD

- Follow directions to ensure the right dose is applied using the proper application method and location, and dose rate.
- Record the product used (including batch number), dose rate, date of treatment and mob treated, then use a different chemical group next time. These records are a legal requirement, but are also a useful reference when investigating emerging resistance.

If you want information about what insecticides are effective against blowflies on your property consider participating in the AWI/NSW Department of Primary Industries jointly-funded blowfly resistance project. For further information or to request a postage-paid maggot collection kit please contact Narelle Sales at NSW DPI via email at narelle.sales@dpi.nsw.gov.au or phone (02) 4640 6446. **B**

MORE INFORMATION
www.flyboss.com.au

flyboss

Is your Shearing Shed SAFE?

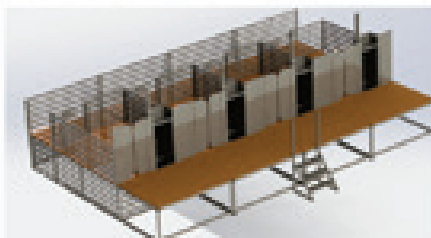
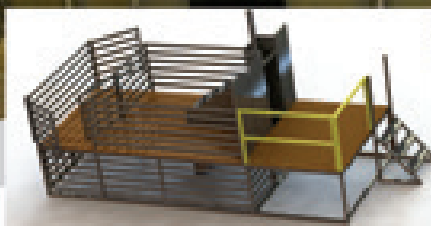
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The focus of the upcoming **Sheep Sustainability Framework** will be on-farm issues, covering both wool and sheep meat.

SUSTAINABLE SHEEP AND WOOL PRODUCTION

The design of the world's first national sustainability framework for sheep and wool is under way, with the appointment of a steering group to identify priority issues related to Australian sheep production.

The initiative is led by Sheep Producers Australia and WoolProducers Australia, with MLA and AWI providing funding together with strategic support.

"Our customers must be confident that the food and fibre they purchase has been produced responsibly," said Professor Bruce Allworth, Chair of the Sheep Sustainability Steering Group.

"This means being transparent about our performance in key areas of interest such as animal welfare, occupational health and safety, environmental impact and economic resilience.

"The Sheep Sustainability Framework aims to celebrate our strengths – those areas of production where we are best practice – and identify areas where improvements can be made. It will enable industry to better understand its opportunities, challenges and impacts, to define sustainable sheep production and track annual performance using a series of indicators.

"If we can measure our performance and provide solid data, we can demonstrate that our farming practices are in line with the expectations of our customers, and build their trust."

The focus of the framework is on-farm, covering both sheep meat and wool.

The skill-based steering group has a strong representation across regions, and the wool and meat value chain. The members are:

- Prof Bruce Allworth (Chair) – Director, Fred Morley Centre, Charles Sturt University, NSW
- Will Barton – CEO, Gundagai Meat Processors, NSW
- Dr Will Bignell – Producer, Thorpe Farm, Tas
- Andrew Blanch – Managing Director, New England Wool, NSW
- Michael Field – Producer, Jugiong, NSW
- Johnny Gardner – Producer, Cavendish, Vic
- Deanna Lush – Managing Director, Ag Communicators, SA
- Emily Stretch – Producer, Kojonup, WA
- Mark Wootton – Producer, Jigsaw Farms, Vic

The steering group has started discussions on priority issues to be included in the framework and a 'concept document' is under development. This will inform a broad consultation process with stakeholders across the sheep meat and wool value chain, and with stakeholders, including customers, government, interest groups, technical experts and investors.

"It is critical that we consider the concerns of all our stakeholders in designing the framework. Close engagement will also support their understanding of what the industry is doing to become more sustainable," added Prof Allworth.

The consultation will be undertaken from December 2019 to February 2020 and the framework is expected to be delivered by June 2020.

PMSG SUPPLY UPDATE

There is now sufficient PMSG in Australia for all of 2020 and the national supply to the Australian market looks to be secure for the foreseeable future.

PMSG is a drug widely used by the sheep artificial breeding industry in the Artificial Insemination (AI) process. However, in 2018 the two key supply organisations decided to cease distributing the product and AI operators indicated that their reserves of PMSG were likely to run out in the spring of 2019.

AWI subsequently held a workshop in December 2018 to discuss the short supply of PMSG and review the current R&D in sheep artificial breeding. The presentations and outcomes of that workshop are available on the AWI website at www.wool.com/artificialbreeding.

In August this year, Alan Smith from Minitube, an attendee of the AWI workshop, announced that he had secured the necessary approvals from the international manufacturer of PMSG along with the Australian importation permits to distribute the product. There is now sufficient PMSG in Australia for all of 2020 and the national supply to the Australian market looks to be secure for the foreseeable future. Breeders with any concerns should contact their AI provider.

As outlined in the workshop, there is an ongoing need to improve the consistency of artificial breeding results, along with a need to further investigate competitive, non-invasive AI methods and alternative AI protocols in the event of future PMSG supply difficulties.

MORE INFORMATION

Minitube Australia:
info@minitube.com.au,
 (03) 5342 8688,
 Alan Smith 0414 432 790

MERINO LIFETIME PRODUCTIVITY PROJECT UPDATE



MLP FAST FACTS

- The AWI-funded MLP project is a \$7 million (plus \$5 million from partners), 10-year partnership between AWI, the Australian Merino Sire Evaluation Association (AMSEA), nominating stud Merino breeders and site hosts.
- The project, which commenced in 2015, aims to increase the understanding of the genetics, environment and economic interactions for a diverse range of Merino types producing wool, lambs and meat during their lifetime.
- The MLP project runs at five sites where sire evaluation trials operate for the first two years and then continue tracking performance of ewe progeny as they proceed through four to five joinings and annual shearings.
- A full suite of assessments will be undertaken during the MLP project including visual trait scoring, the objective assessment of a range of key traits, classer gradings and index evaluations.
- A unique and extensive dataset will result and be used to enhance existing Merino breeding and selection strategies, for both ram sellers and buyers, to deliver greater lifetime productivity and woolgrower returns.

PINGELLY FIELD DAY

The MLP site at Pingelly in WA held the last of four well-attended 2019 MLP field days, with 30 sire progeny groups from the 2016 and 2017 drop F1 ewes on display. Wool and classing results from the previous December 2018 shearing were featured along with current growth, carcase and reproduction results.

A presentation from AWI program manager Geoff Lindon introduced the MLP project and each of the sire progeny groups. Dr Bronwyn Clarke of Murdoch University provided a site overview and walked the audience through the results which included raw data, adjusted sire means, flock breeding values and indexes. Bronwyn's approach to explaining breeding value predictions was refreshing and stimulated questions and dialogue amongst attendees.

A final presentation was delivered by Sarah Blumer of Murdoch University who

outlined the AWI/Murdoch-funded *Genetic Evaluation: Productivity, Efficiency and Profitability (GEPEP)* project which is seeking to identify affordable measures of feed efficiency that could lead to more accurate conversion of per head productivity to per hectare productivity. The project is initially utilising the Pingelly F1 wether progeny, the brothers of the ewes displayed.

Attendees commended the site for having the sheep in good condition and surveys showed that attendees found the day to be enormously relevant, enjoyable and valuable. The attendees had a thirst for knowledge and presenters were involved in answering a range of questions with conversations continuing until the ewes returned to the paddock.

The Pingelly results are available at www.merinosuperiorsires.com.au/mlp-reports

FIELD DAY SNAPSHOT

- The Pingelly MLP site in WA hosted a field day on 25 October at the UWA farm 'Ridgefield', attended by 60 Merino enthusiasts.
- At the field day, more than 940 MLP project ewes were penned for inspection.
- This brings the 2019 MLP field day totals to 3,600 ewes showcased, 89 sire groups penned and more than 500 attendees across the sites.
- MLP Project 2020 scheduled field days:
Macquarie MLP field day March 2020 Trangie, NSW
MerinoLink MLP field day October 2020 Temora, NSW
- Other site details are still to be confirmed.
Updates will be available on wool.com/MLP



A segment of the attentive crowd penside at the Pingelly MLP field day (October 2019) and the 2016 drop ewes. PHOTOS: Bronwyn Clarke

TRACKING EWES ACROSS THEIR LIFETIME



2018 drop MLP ewes at the **Macquarie** NSW DPI site (October 2019).

The 5,500 ewes of the MLP project is each having the following individual assessments taken:

- Annual classing in full wool for an overall Classer's grade as well as individual visual traits such as body wrinkle
- Wool and fleece measurements taken annually

- Scans annually for muscle and fat results
- Condition scored and body weighed at key productions times, eg pre-joining
- Tracked for reproduction results via ultrasound scanning for pregnancy status, and then estimating number of lambs reared from DNA samples of their progeny
- In addition, each ewe is being classed for a number of functional traits including teeth and udder scoring
- All ewes have WEC results monitored.

Results are being collated across year drops and sites into an extensive dataset of approximately 1.6 million records which will be analysed for productivity impacts, along with breeding and selection options. Table 1 below shows the plan for the collection of these results across the sites and years.

Results collected to-date are starting to tell a story about individual ewes and the diversity of ewes within the project. Table 2 below provides a snapshot to-date of raw results from four MLP ewes from the Balmoral 2015 drop. These ewes have results collected up to their fourth wool assessment and second lambing.

These four ewes show some of the variation that exists in the project and demonstrates

how the data will be used to answer many of the questions that the MLP project set out to address. For example, are you better off with a flock of Ewe A types that produce a lot of wool and rear a single lamb every year? Or would a flock of Ewe C type ewes outperform them even though they cut less wool at a higher micron, but rear more lambs on a plainer body? Do these two types both have a role in different environments and production systems? If so, what do they look like?

To answer these questions, the full set of MLP project data, sourced from all five sites and diverse genotypes, is needed to create a unique dataset that can be used to explore the key characteristics of productive sheep under a range of environmental, market and production scenarios.

The MLP data will also be used to identify cost effective and efficient ways to identify and select these productive ewes. All selection approaches will be reviewed and, where necessary, enhanced. This will assist industry to select the most productive ewes with consideration of a range of environments, markets and genotypes.

MORE INFORMATION
To find out more about the MLP project visit www.wool.com/MLP, subscribe to the project newsletter, and join other Merino enthusiasts in attending a field day in 2020.

Table 1: MLP project timeframe across sites

MLP PROJECT TIME LINE												
SITE	F1 EWE DROP AT EACH SITE					LAST LAMBING AT EACH SITE						
BALMORAL	✓	✓		A2		✓					ANALYSIS	PUBLICATION
PINGELLY		✓	✓		A2		✓					
MERINOLINK		✓	✓		A2		✓					
MACQUARIE			✓	✓		A2			✓			
NEW ENGLAND			✓	✓		A2			✓			
YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	

A2 denotes that both drops at a site have had their first adult assessment.

Table 2: Four MLP ewes from Balmoral's 2015 drop – Shearing and Classing results presented alongside Maiden 2017 lambing and 3 year old 2018 lambing results

		EWE A		EWE B		EWE C		EWE D		FLOCK AVERAGE	
CLASSER'S NO. LAMBS WEANED	MAIDEN (2017)	SINGLE SINGLE		SINGLE TWIN		TWIN TWIN		EMPTY EMPTY			
	2018										
CLASSER'S GRADE	2017	TOP TOP		TOP TOP		TOP FLOCK		FLOCK CULL		20% TOPS	
	2019									22% TOPS	
2019 RESULTS FOURTH SHEARING	CFW	4.9		4.5		3.0		3.4		3.8	
	FD / SS	15.8	36	16.1	28	16.2	38	15.9	37	16.9	38.4
	FAT / EMD	3.0	21	2.5	22	3.5	23	5.0	22	2.9	20.5
	BRWR	4		3		2		3		2.8	

Classer's Grade: Top: Top 25%;
Flock: Middle 50%; Cull: Bottom 25%
CFW: Clean Fleece Weight (kg)

FAT: Fat depth (mm) at the 'C' site
FD: Fibre diameter (µm)
EMD: Eye muscle depth (mm) at the 'C' site

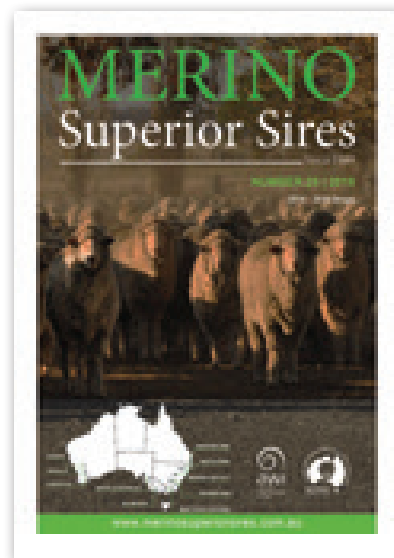
SS: Staple strength (NKtex)
BRWR: Breech wrinkle (score 1-5)

MERINO

SUPERIOR SIRES

2019 RELEASED

The 25th annual edition of Merino Superior Sires, released in October, includes results from 305 sire entrants entered at 10 sites across Australia. An additional feature of Merino Superior Sires is the online publication of the All Time Top 50 sires for each of the main industry Indexes. Sires entered in the past five years dominate the Index rankings.



Merino Superior Sires No.25 was released in October and is available, along with other Merino Sire Evaluation program information, at www.merinosuperiorsires.com.au

The Merino Sire Evaluation (MSE) program has operated in Australia for 30 years and continues to evolve under the management of the Australian Merino Sire Evaluation Association (AMSEA), with support from AWI.

The MSE program is the longest running progeny testing program in the world. MSE compares the breeding performance of a sire through the evaluation of his progeny compared to other sires. Progeny are evaluated for a large number of traits including those measured for wool, carcase and resistance to parasites, as well as a large range of visually assessed traits, including classing grade.

Every year the results of sire entrants from the preceding five years are collated into one report. This year the 25th edition of Merino Superior Sires (MSS) was produced in October 2019 by AMSEA and includes

results from 305 sire entrants entered at 10 sites across Australia.

Results in MSS25 have been collated from across the main wool producing regions of Australia: three sites in Western Australia, one in South Australia, two in Victoria and four located in NSW. The five Merino Lifetime Productivity Project sites are numbered amongst this group with their results also reported within MSS25.

Published results include Australian Sheep Breeding Values (ASBVs) generated from MSE trials and other data submitted to MERINOSELECT, along with visual classing results recorded at all MSE sites.

MSS also reports the Top 50 sires for each of the main industry Indexes along with owner and breeder contact details.

ALL TIME TOP 50

An additional feature of MSS is the online publication of the All Time Top 50 sires for each of the main Indexes. Each Top 50 reports both the Index result and the ASBVs of some of the traits that are included in each Index. These All Time Top 50s draw from all sires ever entered in MSE. This year's All Time Top 50 results are reporting from more than 850 sires who have been entered in MSE and are available for publication since the program commenced in 1989. Each Index has a filter applied to best match sire wool types to the Index.

Sires entered most recently have a MSS25 notation; this denotes the current 25th edition as the first time their results have been published in MSS.

Interestingly, the 2019 All Time Top 50 sires include a significant number of new entrants in Merino Sire Evaluation. This year, eight new sires are listed in the Top 50 for the DP+ Index, five in the MP+ Index, three in the FP+ and five for the WP+ Index. One recently entered sire has topped the WP+ Index ranking, reordering the list of prominent industry sires.

Also, of note is the proportion of sires entered in the past five years (2014-2018) when compared to the proportion of sires entered pre-2014. The MP+ Index list comprises 66% of sires entered since 2014 and the WP+ Index more than 70%. Sires entered in the past five years are dominating the Index rankings. This highlights the increasing genetic merit of Merino sires. **B**

Merino Superior Sires extract: All Time Top 50 Sires ranked on MP+ Index

Sire Name	Owner	Breeder	ASBV	Visual Classing
1. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
2. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
3. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
4. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
5. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
6. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
7. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
8. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
9. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]
10. [Sire Name]	[Owner]	[Breeder]	[ASBV]	[Visual Classing]

MORE INFORMATION

Visit www.merinosuperiorsires.com.au to download MSS25 and the All Time Top 50s, find further MSE information or to subscribe to reports and updates. Site reports using site only data 'Flock Breeding Values' can also be found on the website in the 'Reports' tab.

PASTURE LEGUME VARIETIES TO GROW

A 10-year joint venture between The University of Western Australia and PGG Wrightson Seeds has been launched to provide farmers with better access to advances in seed technology.

The newly established Annual Legume Breeding Australia (ALBA) aims to provide producers with new varieties of annual forage legumes, developed with a focus on producer needs. Key species of interest are subterranean clover, arrowleaf clover, balansa clover and Persian clover.

The joint venture will build on UWA's research and training capacities in pre-breeding and biotechnology and PGG Wrightson Seeds' experience as the largest forage breeding company in the southern hemisphere.

AWI has made a substantial investment in the development of some of the species

that ALBA will be working with and will be supporting ALBA's activities.

ALBA will undertake a combination of activities:

- Selection of superior germplasm of key species to release new superior cultivars to producers.
- Research into how these new cultivars can be best integrated in a range of farming systems.
- Exploring opportunities for new species.

"Annual pasture legumes are important in Australia because they fix nitrogen from the atmosphere and put it back into the soil – adding to farming system sustainability," said Associate Professor Megan Ryan from UWA's Institute of Agriculture and School of Agriculture and Environment.

"Aside from improving soil fertility, they also provide a high-quality source of feed and can be used as a break crop to reduce crop weeds and disease."

The UWA pasture research team is active in multiple areas of relevance to ALBA including annual legume selection and pre-breeding; pasture agronomy, nutrition, disease and physiology; regeneration of pasture containing outdated cultivars of subterranean clover high in oestrogens; and engineering of seed harvest machinery.

PGG Wrightson Seeds General Manager John Stewart said that the company was pleased to be able to bring expertise in product development, production and marketing to what will be a core plant breeding program for Australia's pastoral industries.

"Annual legumes have long been an essential component of sustainable grazing systems and the combination of UWA's strong science capability and PGG Wrightson Seeds' ability to commercialise pasture seed technologies promises to deliver exciting new innovations to pastoral farmers," Mr Stewart said. **B**

Researchers visiting the new **Annual Legume Breeding Australia (ALBA) facility** at the UWA's Shenton Park Research Station. ALBA will yield pasture options for Australian woolgrowers for years to come.



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LIFETIME EWE MANAGEMENT IN THE PASTORAL ZONE

The AWI-supported Lifetime Ewe Management (LTEM) course is currently in its twelfth year with almost 4,000 producers having completed the course. Most are located within traditional sheep/cereal or high rainfall zones. However, producers within pastoral/rangeland areas can also benefit from the course's principles.

The pastoral/rangelands areas of Australia are characterised by perennial shrubs and saltbush with little to no improved pasture, issues with distances, labour and implementation of some of the recommendations outlined within LTEM.

Recognising a need for a pastoral/rangelands specific manual, AWI is in the process of developing a program that will work within these regions. A recently completed LTEM group ('Oxley') in south western NSW has shown that many of the LTEM principles can be applied within these regions but has also provided feedback on the need for 'tweaking' of the pasture base/nutritional needs of the current program.

The 'Oxley' LTEM Group consisted of Shane McGufficke and Bill Ryan (Oxley), Tim Brindley (Magenta), Roger Job (Mossgiel) and Simon Booth (Booligal). The group collectively manage an estimated 189,720 hectares, approximately 41,000 breeding ewes with an average stocking rate of one breeding ewe per 4-5 hectares.

The Oxley group members have shown that it is possible to implement many of the LTEM principles and skills learnt during the course within pastoral/rangeland areas, with all now actively condition scoring ewes, scanning for litter size and supplementary or containment feeding stock when necessary.

Simon Booth, for example, is implementing LTEM principles to manage ewes in containment areas to improve conception rates, ewe condition and survival during the current drought.

Simon, his wife Caroline and their four children manage 'Humewood', a 22,000 hectare property 40km west of Booligal. Principally a self-replacing Merino wool operation with culls/cast for age ewes joined to terminal sires, 'Humewood' normally receives about 300mm of rain annually. In 2017 and 2018, only 270mm and 120mm were recorded respectively. This placed considerable pressure on both their pasture base and ewe flock.

Historically they have supplementary fed during dry periods in an effort to maintain ewe condition, retain ground cover and reduce damage to pastures and topsoil. Preferring pulses over cereal grains, he has found there to be less wastage when trail feeding, fewer health issues (such as acidosis) and it easier to introduce sheep to a full grain ration.

With deteriorating conditions in 2018, Simon constructed a series of smaller containment paddocks for adult ewes and weaners. Approximately seven hectares each, these areas were able to comfortably hold around 2,000 head. With ad lib straw in each pen, stock were trail fed field peas and beans every third day – Simon finding that this reduced poor doers within the weaners in particular as grain was still available for these shy feeders by the second day post feeding.

Despite the considerable cost when confinement feeding, Simon believes that the positives of using these systems far outweigh the potential constraints and negatives.

"Despite difficulties with estimating feed availability, feed quality and what your animals are actually able to use within these pastoral/rangeland areas, Lifetime Ewe Management reinforced the need to regularly monitor your stock's condition and to meet their feed needs. Containment areas have made this simple and cost effective," Simon said.

In a year where pregnancy scanning results were disastrous for many on the saltbush plains, Simon and Caroline found that joining in containment certainly paid. They achieved between 92-96% conception for ewes fed in containment areas during joining compared to 79% for ewes joined in the paddock despite these ewes having also been trail fed.

Post-scanning, single and twin bearing ewes were separated and fed according to their needs up until the point of lambing. Ewes were then boxed and moved to lambing paddocks, with a stocking density of about 4 hectares per lambing ewe. Canola hay was fed early in lambing. They did not trail feed



The Oxley LTEM Group learning the benefits of pasture assessment as part of the course.

during lambing to minimise disturbance and potential lamb loss.

"Although LTEM recommends lambing singles and twins separately we find that remixing single and twin bearers works out here provided you preferentially feed your twin bearing ewes post scanning to give her every opportunity to gain condition. Restrictions in terms of available paddocks, watering points and distances from working yards etc, make it difficult to separate and manage ewes in single and twin bearing mobs – we work with what we can control."

Marking results, although down on long-term 'Humewood' averages, were well above most properties in western NSW last year, with many marking less than 50% to ewes joined.

"We marked 85% overall to ewes joined. Lamb survival was certainly helped by incorporating as many LTEM practices as we can within our program – unfortunately we just had a hot, difficult lambing period.

"At this stage we haven't contained ewes for joining this year. Our paddock feed hasn't been too bad, ewes are in good condition and we continue to supplementary feed corn/peas and vetch hay. We will however reassess things over coming weeks – we've only measured 95mm in 2019 and if we don't have a major rain event soon, they will be brought in and containment fed.

"Although we can't implement all LTEM recommendations, I do believe that the program has merit on the basis of animal care and welfare and financial gain."

An added benefit, according to the Oxley LTEM Group coordinator Geoff Duddy, was that LTEM helps bring producers together who have like-minded goals and aspirations.

"I find that LTEM is a great vehicle for producers to open up about issues they may be facing whether they be production, animal health or general management related. Producers talk and bounce off one-another – the sessions aren't always work, work, work – the social interaction side is fantastic," Geoff said.

“The Oxley Group was a fantastic group to be involved with. They organised to meet between scheduled LTEM sessions in August last year to discuss their likely options in terms of retaining or selling stock, whether to feed or sell etc. They used each other as a springboard and in doing so all gained support during this really tough drought.”



The Oxley LTEM Group learning the benefits of condition scoring.

ABOUT LIFETIME EWE MANAGEMENT

The LTEM course, supported by AWI, aims to increase producers' understanding of the influence of ewe nutrition and management on overall reproduction rates and lamb and ewe survival.


Producers develop the skills to manage their ewes to achieve condition score targets and explore the economics of supplementary feeding and pasture management to review stocking rates.

LTEM groups meet six times in the annual sheep calendar during a period of 12 months. The course is very hands-on, being based in the sheep yards, shearing sheds and paddocks of participating woolgrowers, which enables participants to share and learn from one another.

A recent evaluation of the program's benefits over the 11-year period from 2008 to 2018, showed that on average LTEM participants nationwide

increased whole-farm stocking rate by 9.3% from 8.5 to 9.3 DSE/ha and lamb marking percentages by 7% from 97.3 to 104.3%.

The greatest changes in adoption attributed to LTEM was 'condition scoring ewes' and 'managing ewes to condition score targets' and on average about 90% of producers had adopted these practices after completion of LTEM.

LTEM was developed using research outcomes of the AWI-funded Lifetime Wool project (lifetimewool.com.au), which ran from 2001 to 2008, and involved growers and researchers in WA, Vic, NSW, and SA. 

MORE INFORMATION

For more information, or to set up or join an LTEM group in your local area, call RIST on freecall 1800 883 343 or visit

www.rist.edu.au/lifetime-ewe-management

AWI: www.wool.com/LTEM



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BAITING GUIDELINES

FOR ORGANIC PRODUCERS

The National Wild Dog Action Plan has launched new guidelines (available on the PestSmart website) to help organic producers conduct baiting programs without risking their business' organic status or their access to the United States Department of Agriculture National Organic Program (USDA NOP).

Regional baiting programs involve the use of 1080 baits which is a prohibited substance under the USDA NOP. Therefore, 1080 cannot be applied in areas that are organically certified as USDA NOP. However, processes exist whereby non-permitted substances can be used on an area of land removed from the organic certification. In this case, 1080 products may be used to control feral animals on fully fenced parcels of land removed from the organic footprint.

Information on nationally endorsed, best practice, feral animal management techniques to be used in these excised areas are provided in the new guidelines. Operators should liaise with their certifying organisations to obtain appropriate approval before starting any chemical-based control activities to ensure any accreditations that properties/businesses have are not put at risk.

National Wild Dog Management Coordinator Greg Mifsud says the new resource walks producers through an easy-to-follow checklist of what they must do to successfully implement control strategies using 1080 with the support of their organic certifier.

"We want to help organic land managers have access to as many control tools as possible to ensure their animals' welfare and to improve profitability of their businesses," Greg said.

All land managers are required under state biosecurity legislation to manage feral animal populations. Organic certifiers recognise the need to manage feral animal species and their populations to meet these legislative requirements, but also to reduce environmental damage and the animal welfare impacts of predators on livestock production.

Mark Gower, General Manager of the National Association for Sustainable Agriculture Australia and its subsidiary certification company NASAA Certified Organic, expressed his support for the guidelines.

"NASAA is already working with producers, helping them to use 1080 in a safe,

Are you a certified organic producer and want to know more about successfully managing wild dogs? A new set of guidelines for feral animal control on organic properties has recently been released.

responsible and ethical way that safeguards their USDA certification," Mark said.

"We all want the organic industry to grow and part of achieving this is to support our producers to responsibly manage wild dogs to minimise their impacts on stock."

COMMUNITIES WORKING TOGETHER

Best practice management of feral animal species requires an integrated approach using a variety of techniques aimed to target vulnerable periods of the species' ecology and/or limiting predation on livestock. In the case of highly mobile feral animal species such as wild dogs, foxes and feral pigs, landholders are encouraged to deliver coordinated control and baiting programs at local and regional scales.

"Baiting programs are most effective when as many landholders as possible in the region are involved and their focus is on the 'common problem' rather than attributing ownership of the wild dogs to individual land managers," added AWI Program Manager Vertebrate Pests, Ian Evans.

"As well as the participation of 'regular' livestock producers, it's important that organic producers, non-livestock farmers, absentee landholders and public land managers in the region are also involved in baiting and other wild dog control activities.

"AWI-funded wild dog control coordinators in each mainland state are available to help woolgrowers and other stakeholders – including organic producers – work together to strengthen their rural communities' efforts to achieve sustained on-the-ground control of wild dogs. They also help coordinate on-ground wild dog control activities."

The National Wild Dog Management Coordinator is funded through the Centre for Invasive Species Solutions by AWI, MLA, Animal Health Australia, WoolProducers Australia, Sheep Producers Australia and Cattle Council of Australia. **B**

MORE INFORMATION

View the guidelines at www.pestsmart.org.au/guidelines-feral-animal-control-organic-properties The contact details of the AWI-funded wild dog control coordinators are at www.wool.com/wilddogs



South Australia's AWI-funded wild dog coordinator Marty Bower explaining to pastoralists and organic producers at a recent workshop how Canid Pest Ejectors or CPEs are great tools for defending livestock against wild dogs and foxes in sensitive areas, such as around homesteads or land excised from organic certification.

ORGANIC PRODUCER COMMITTED TO WILD DOG CONTROL

The 112,000ha 'Plevna Downs' in far south-west Queensland produces one of Australia's largest organic Merino wool clips and the property's owner Stuart Mackenzie is very much committed to best practice wild dog management.



Stuart Mackenzie with his son Sandy on their organic wool and beef property 'Plevna Downs' at Eromanga in far south-west Queensland. PHOTO: Leonie Mellor/ABC

When Queensland organic producer Stuart Mackenzie talks about wild dogs, it's easy to see how a man might get depressed.

Successive drought years in the state's south-west have not only driven hungry and thirsty dogs towards his sheep flock but have also changed the social and economic landscape around him, making wild dog management tougher than it's ever been.

"A lot of family farms in the region have sold to corporate entities investing in carbon trading," Stuart said. "These properties are deserted, there's no business activity, they sit there like national parks and any money generated is invested elsewhere, creating an economic downturn here.

"Many of them have major problems with dogs – they don't fence, they don't bait and they don't care."

While the situation on 'Plevna Downs' is challenging, it's not all despair. Stuart and his son, Sandy, now the fourth generation on their 112,000ha organic wool and beef property, are deeply committed to best practice wild dog management.

The best news on their horizon of late has been the National Wild Dog Action Plan's launch of new guidelines for the use of 1080 on organic-certified properties. Supported by industry, these guidelines enable producers to use 1080 baits on their properties in areas excised from organic certification.

In practical terms this means even producers accredited with the stringent USDA NOP, one of Australia's most discerning organic markets, can now bait around watering points and other strategic locations on their properties, to minimise wild dog impacts on livestock.

Stuart, who has "zero tolerance for sheep losses caused by wild dogs", said being able to excise strategic pockets of land from their organic certification program and bait inside those areas will give him, and other organic producers, more effective management tools.

"This will give us another alternative control measure," he said. "Dogs naturally gravitate to water so it's a logical place to trap but sheep and kangaroos also using the same

watering point make trapping problematic."

Stuart estimates that dogs can reduce his lambing percentages by up to 10% and while they don't usually bother his organic beef herd, he says young stock have been bitten during exceptionally dry periods.

"Thanks to our cooperative neighbours, we're able to bait along our boundaries twice a year to try and keep those attacks to a minimum.

"We also use exclusion fencing, inside the wild dog barrier fence, to help protect the sheep."

Stuart, who founded the non-profit, charitable public company Outback Gondwana Foundation, is a keen conservationist. He worries about the effects an unchecked wild dog population can have on biodiversity as well as livestock welfare and farm production.

"Taking ownership of the dog problem is the answer, if we don't do anything about them, they get completely out of control," he said.

"We're seeing this now around Charleville where producers have got massive problems with calf losses and I've talked to people in WA in areas where wild dogs are the only things left alive – there's no livestock, no native animals, nothing."

Learn more about the new guidelines for managing wild dogs on organic properties at www.pestsmart.org.au/guidelines-feral-animal-control-organic-properties. **B**

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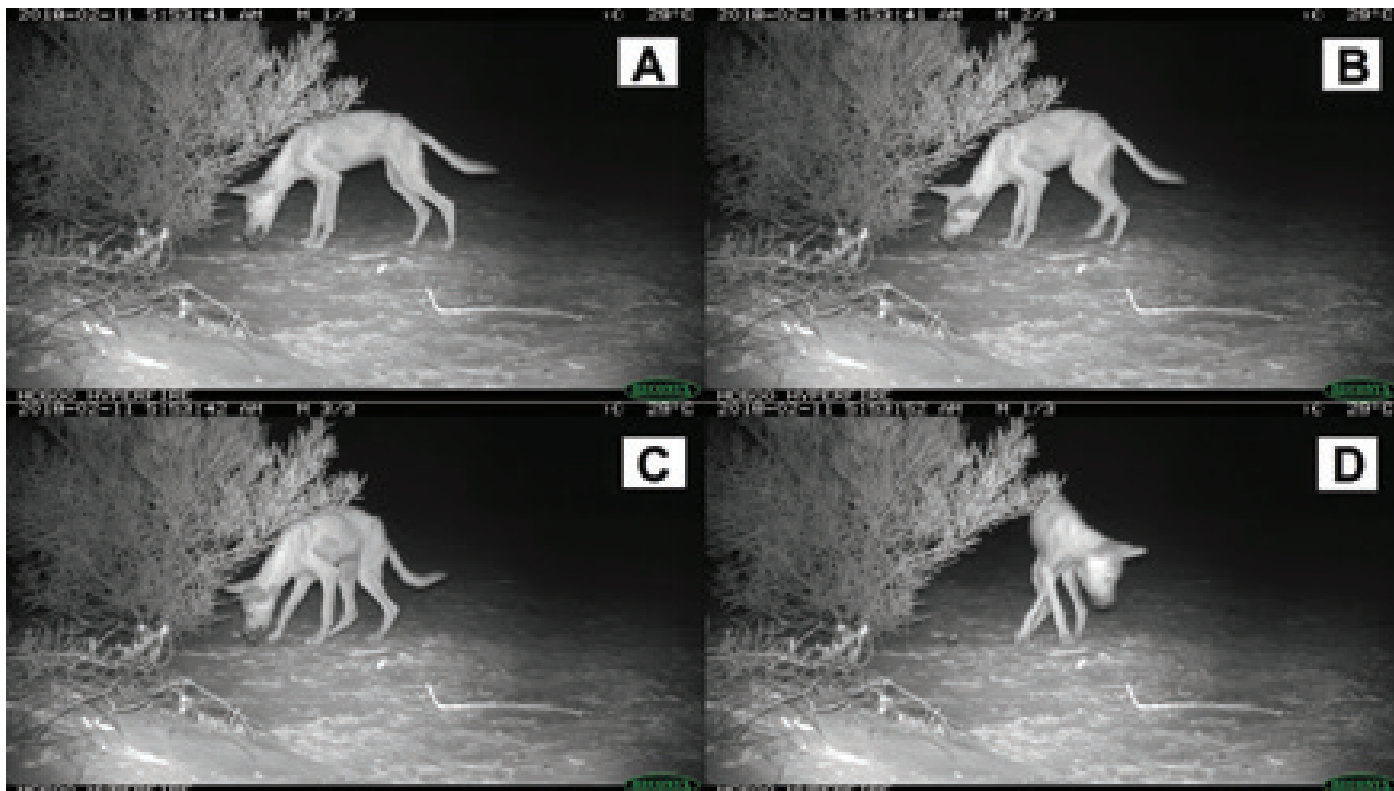
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A wild dog locating and taking a bait from a **Canid Pest Ejector**. PHOTO: Ben Allen.

PAPP CAN NOW BE USED IN **CANID PEST EJECTORS**

The APVMA has approved using baits containing PAPP toxin with Canid Pest Ejectors. This is another tool in a range of options that woolgrowers can use to combat wild dogs and foxes. PAPP was developed by Animal Control Technologies Australia Pty Ltd (ACTA) with funding support from AWI, under the Invasive Animals CRC.

An additional baiting option for reducing wild dog and fox numbers is now available to woolgrowers and other landholders across Australia, following the recent approval by the Australian Pesticides and Veterinary Medicines Authority (APVMA) of the use of PAPP in Canid Pest Ejectors (CPEs) which are specifically targeted at wild dogs and foxes.

Para-aminopropiophenone (PAPP) is a chemical (toxin) that has been manufactured and sold in baits by Animal Control Technologies Australia Pty Ltd (ACTA) since 2016 under the product names DOGABAIT® for wild dog control and FOXECUTE® for fox control.

In 2018, an ACTA-contracted study by the University of Southern Queensland showed that 10 of 11 wild dogs died within three hours of PAPP ingestion with an average time to death of 84 minutes. Carcasses of wild dogs were found between 30m and 200m from the CPE, averaging a distance of 96m.

The CPE is an easy to use mechanism that restricts access to the chosen toxicant (1080 or now PAPP) to target species. As the units can't be moved when positioned and installed correctly, operators know exactly where the live sets are and can see when they are triggered.

CPEs offer an additional alternative, especially in peri urban situations where other options are not available, although use restrictions are very similar to those currently pertaining to responsible 1080 use for wild dog and fox control.

In Australia, wild dogs, foxes and cats are the animals most susceptible to PAPP. However, PAPP is known to affect some native animals, particularly goannas, if ingested. The material used to make PAPP baits has been shown to have extremely low palatability to herbivores.

Once the bait is eaten and the PAPP is absorbed into the bloodstream, it is converted to a secondary compound that stops effective oxygen transport to the heart

and brain. The affected wild dogs and foxes become lethargic and sleepy before quickly becoming unresponsive and dying. Poisoned animals do not exhibit signs of pain.

DOGABAIT® and FOXECUTE® are available in pails of 10 or 50 baits for DOGABAIT® and 10 or 40 baits for FOXECUTE®. The baits, as well as CPEs, can be purchased from local rural merchant stores or land protection groups; however, regulations vary between States and Territories for products that contain PAPP or 1080. Always check with your local supplier or regulatory body.

ANOTHER OPTION IN THE PEST CONTROL TOOLKIT

AWI Vertebrate Pests Program Manager Ian Evans says the launch of PAPP in 2016 after some 10 years of R&D was the result of a major investment in R&D by AWI, the Australian government through the former Invasive Animals CRC, and ACTA.

"The baits are an example of how woolgrowers' and other industry R&D funds have worked collaboratively with a commercial provider to bring a product through to market," he said.

"The recent APVMA approval for its use with

CPEs is an important progression for wild dog and fox control and we anticipate an increase in adoption and use of PAPP by landholders.

“However, PAPP is not a silver bullet,” Mr Evans cautioned. “It is an additional control method – along with 1080, trapping, fencing, guardian animals and shooting – that woolgrowers have the option of choosing. The success of control also relies on a co-ordinated effort of all landholders working co-operatively with private and government wild dog controllers.

“As with other control techniques, PAPP has its limitations but the ability to now use it with CPEs will allow greater flexibility and strategic management of pests across a much broader range of landscapes.

“PAPP baits enable more comprehensive regional control by ‘filling the gaps’ in areas where 1080 use is restricted or not

serviceable, or for land managers who would prefer not to use 1080. PAPP will have particular benefits on the urban fringe.”

ANTIDOTE FOR PAPP FOR WORKING DOGS

Since PAPP is lethal to wild dogs and foxes, it is also highly toxic to all working and domestic dogs, depending on the dose ingested.

“If a working or domestic dog eats just one wild dog bait, it will die unless treated. This means that where the PAPP baits are placed requires careful consideration. The PAPP dose in fox baits is less, meaning an average-sized working dog will be at lower risk after eating fox bait(s) but treatment should still be sought immediately,” Mr Evans said.

“The good news is there is an antidote for PAPP. The chemical methylene blue can

help reverse the effects of PAPP poisoning, with recovery usually occurring within one hour.”

However, at present, due to the need for intravenous administration, methylene blue can only be purchased and administered by a veterinarian. As PAPP acts quickly, it will be imperative to intervene as quickly as possible in an emergency. This means that it might not be possible to get the affected dog to a veterinarian quickly enough in remote areas.

It is strongly recommended to use muzzles whilst working dogs or to restrain working dogs and pets if they are near a baited area regardless of the toxin being deployed. **B**

MORE INFORMATION
 Animal Control Technologies Australia
www.animalcontrol.com.au
 (03) 9308 9688



DOGABAIT® is available in pails of 10 baits (total 600g) or 50 baits (total 3kg). FOXECUTE® is available in pails of 10 baits (total 350g) or 40 baits (total 1.4kg). They are available from traditional suppliers of 1080 baits in all states. Also pictured is the Canid Pest Ejector from ACTA.



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ELECTRONIC IDENTIFICATION (EID) RESOURCES

Electronic identification (EID) in the sheep world is still in its early stages, but with Victoria implementing mandatory EID for sheep, it might be part and parcel of the future landscape sooner than we think.

One feature of EID is traceability, but it also provides an opportunity to gather useful data on your production. However, it is important that the data is easy to collect, cheap to process and applicable to decisions on your property, in order to be relevant to your business.

In June last year, AWI's grower network in Queensland, Leading Sheep, organised a series of workshops focussing on the practical use of EID ear tags in commercial sheep flocks. These workshops were held at Longreach, Cunnamulla and Goondiwindi and focussed on topics most relevant to each region.

Attendees saw practical demonstrations on how to use EID tags with scanning and weighing equipment to collect data. This data, such as fleece weight, fleece micron, pregnancy status, lactation status and body weight, allows many commercial producers to make more informed decisions.

Due to the practical and useful nature of the information collected at these workshops, a 13-page booklet has been produced, titled 'The Practical Use of Electronic Identification', which is a collection of information and examples from producers and presenters who attended these events.

The booklet includes an overview from two producers and two presenters on the commercial uses of EIDs, producers' take-home points from the workshops, answers to

frequently asked questions, prices of various products, and examples of some of the equipment needed. While the booklet was produced with Queensland woolgrowers in mind, it would be of interest to woolgrowers across all states of Australia.

Other EID information that Leading Sheep has published includes:

PRODUCER CASE STUDY OF ROD AVERY, 'BURGORAH', ST GEORGE

The key points:

- Measuring lambing traits and fleece weights through EID tags has helped Rod fine tune flock management.
- Recording 'measurable' traits enables informed decisions to be made about retaining or culling breeding stock.
- It also means you have critical information available for agents and potential buyers when it does come time to sell.

PRODUCER CASE STUDY OF BIM GOODRICH, 'WAROO', INGLEWOOD

The key points:

- EID tags have improved stud flock record keeping of weight, micron, breeding history and classing records.
- EID has enabled selection for performance and genetic gain.

- It has resulted in production gains from 5kg/head of broader wool to 4.5kg/head of quality 17-18 micron wool.

WEBINAR RECORDING: 'THE USE OF EID IN SHEEP FLOCKS'

This webinar recording begins with Phil Holmes introducing objective measurement and EID. Then producer Anthony Uren of 'Congi Station' in NSW explains why they introduced EID, the benefits of using EID, the equipment and how they use the data, and the progress they have achieved with fibre diameter, wool cut and net profit. **B**

MORE INFORMATION

Access the booklet and other EID resources at www.leadingsheep.com.au



Producer John Cowley of 'Munda' at Goondiwindi explaining how he uses Electronic Identification (EID) and an autodrafter, to the attendees at the EID workshop organised by AWI's grower network in Queensland, Leading Sheep. PHOTO: Jed Sommerfield



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CONTROL YOUR OWN DESTINY WITH EID

As well as operating a commercial farm, 'Jaffa', at Cootamundra in southern NSW, Anthony Shepherd runs his consultancy business Sheepmatters, which has clients across Australia representing more than 1.3 million breeding ewes. Here Anthony gives advice on making the most out of electronic identification (EID).

TOP TIPS FOR USING EIDS

- Know your goals. Where do you want your sheep operation to be in three, five or ten years' time?
- Learn to swim. Start with EIDs on a small scale, eg on maiden ewes, and learn how it works.
- Don't invest in expensive equipment. Until you know what you need, employ a service provider and use their knowledge.
- Only collect traits that matter. Make sure what you're collecting is useful for your operation.
- Be subjective. Assume all sheep are on the same playing field. Just because a ewe is six years old, it doesn't mean she's not productive.

In the past four years, high wool and meat prices have sparked a steep growth curve in the use of technology to measure the performance of ewes.

"We go to lots of ram sales where there's plenty of performance data available on the sires, then we go home and breed from them. But without measuring the ewes those rams are joined to, and the lambs from that joining, how do we know we're getting the type of sheep we want?" Mr Shepherd said.

Mr Shepherd says the most common misconception about EIDs is that they involve extra work.

"In fact, when sheep are in the yards anyway for shearing, pregnancy scanning, lamb marking or weaning, it's about opportunity. The EID system enables us to digitally record relevant commercial traits of the individual sheep and rank it on performance, not age.

"I advise producers to start small because it's a big investment with RFID tags costing \$1-\$1.60 and hardware and software up to \$30,000. They may only need to spend 10-20% of that money to get what they need from EID."

Mr Shepherd recommends his clients set a longer-term breeding objective to know which data to collect, and EIDs can improve the ease and accuracy of this.



Consultant **Anthony Shepherd** wants to improve commercial woolgrowers' awareness of the benefits of EIDs in sheep.

Once producers are measuring and collecting data, the key is understanding it. Producers can work out a three-year rolling average clean fleece value by combining specific traits. These traits could include a ewe's ability to conceive, rear a live single lamb or twins, body weight, and condition score at scanning and weaning. These can then be ranked alongside wool production traits, such as greasy fleece weight and micron.

Mr Shepherd shows his clients how to combine the data with subjective classing to ensure the right conformation. Following that, ewes are ranked to decide which are kept in the breeding program and which are sold or joined to a terminal prime lamb sire.

"The Merino ewe needs to be a lifetime ewe, so we gather information about her progeny as well – the lamb's weaning weight, weight gain, whether they're born in a single or twin mob – and all of this is mapped on the EID tag, like the relevant information you see on the resume of a potential employee," Mr Shepherd said.

"We've found that 28-33% of all commercial twin lambs have a higher weight gain than single lambs, and there's high repeatability and heritability. With good management, those twins that are ewes are more likely to get in lamb and more likely to have twins."

"Similarly, I've followed maiden ewes that don't get in lamb the first year, but get in lamb the second year. Of the flocks where

we've tested these year two maiden ewes, 70-72% of their ewe lambs also didn't get pregnant until the second joining. So you're breeding slow ovulating, slow maturing sheep."

By following 5,500 maiden ewes owned by 11 clients, he found a similar outcome with maiden ewes that have a live lamb but fail to suckle it.

"We followed those ewes for five years. Compared to 5.8 lambs on average from a maiden that raised live lamb(s), we found that these maidens that lost their first lamb(s) had an average of 2.3 lambs, so there is high repeatability of that inability to raise a lamb," Mr Shepherd said.

"When some of those ewes died, I did autopsies and found many had hard colostrum in their teats, meaning they got pregnant every year but didn't have the ability to milk, due to not passing that milk as a maiden.

"These ewes need to be sold to the meat processor, not kept."

He says the key to successfully using EIDs is following through on the data.

"It's not about running the most sheep you can. It's about getting rid of the bad performers and spending your time on improving productivity." **E**

MORE INFORMATION

Anthony Shepherd, 0418 132 864,
anthony@sheepmatters.com.au

PICKING PERFORMER EWES WORKSHOPS

The AWI-developed and funded Picking Performer Ewes (PPE) workshop is designed for woolgrowers aiming to lift the lifetime performance of their Merino ewes. PPE identifies key practical actions for commercial enterprises to implement on-farm to achieve this performance aim. PPE assists the commercial self-replacing Merino production sector in recognising and placing appropriate importance on the total lifetime productivity potential and value of their Merino ewes. For more information, visit www.wool.com/workshops

Tom Hooke with his wife **Sarah** and daughter **Philippa** at the family property at Wanganella in NSW. Tom has received an **AWI-funded Nuffield Scholarship** to research rotational grazing that can be applied to for sheep enterprises in Australia's pastoral zones.



REGENERATIVE AGRICULTURE

IN THE PASTORAL ZONE

Tom Hooke from Wanganella in the Riverina of NSW has been awarded a 2020 Nuffield Scholarship supported by AWI and will research regenerative agriculture principles that apply to Australian pastoral sheep enterprises.

Tom, together with his brother Marcus, run the family's 25,000-hectare property comprising 10,000 commercial Merino ewes, 1,000 stud Merino ewes (East Loddon SRS Merino Stud) and 200 Angus cows across predominantly open pastoral country.

The Hookes' business is structured like many other family businesses with Tom and Marcus' parents Bill and Diane still involved but gradually stepping back as the two sons take over the running of the business. Tom and his wife Sarah have a young daughter Philippa.

"Working within a business that spans the generations drives me to think strategically and beyond just the short-term profitability. Regenerative agriculture really excites me because of the focus on long term production benefits," Tom said.

"I believe there has never been a more important time than now for sheep producers across Australia to explore regenerative farming practices.

"The recent drought has highlighted the difference in production outcomes between well managed land versus land that has been degraded over time. Given Australia's variable climate, it's important to look at ways to run sheep with less risk and greater

confidence – to be better prepared to handle the next drought and the one after that.

"Furthermore, the demands on world agriculture to produce more food and fibre are ever increasing, along with the expectation that farmers should do so in an environmentally conscious and sustainable manner."

Tom says he is particularly keen to explore and extend the principles of rotational grazing to sheep enterprises in Australia's pastoral zones. Pastoral enterprises tend to already rely on very low input systems and minimal chemical intervention.

"Regenerative agriculture is an exciting space, but many of the current examples in Australia tend to be either sheep enterprises in different environments to ours, or cattle enterprises.

"My research seeks to unearth leading examples from across the world of improved grazing management practices in rangeland environments, from which Australian sheep producers in the pastoral zones can learn.

"Applying the basic principles of rotational grazing to this environment comes with a number of challenges. I'm not expecting a perfect fit or any silver bullet models, we'll just take what we can, and apply it as best as we can."

Tom plans to visit Africa, as well as North and South America as part of his studies.

"My introduction to this topic was originally during my Bachelor of Agricultural Science degree at LaTrobe University where we learnt of the holistic grazing management work done by Alan Savory in Zimbabwe and other African countries. This essentially mimicks the way big mobs of African animals migrate and regenerate the soil and the ecosystem.

"The uptake of these practices has been very strong in the US rangelands. There are also some great examples of large-scale sheep enterprises in South America being run under very different management systems than is the norm in Australia.

"After the completion of my studies, I aim to help pass my knowledge on to peers across the sheep production industry and the wider agricultural sector."

By supporting the Nuffield Scholarship program each year, AWI is increasing farming knowledge and management skills in the Australian wool industry. **B**

MORE INFORMATION

Information on previous AWI Nuffield woolgrower scholars and their reports are available at www.wool.com/nuffield

DIVERSIFICATION IN PASTORAL ENTERPRISES

As the recipient of a 2017 Nuffield Scholarship supported by AWI, Felicity McLeod from Wentworth in western NSW has investigated how pastoral wool enterprises can potentially increase income through diversification.

Felicity McLeod was motivated to investigate approaches to enterprise diversity after prolonged drought on her family's 121,000-hectare beef, sheep and rangeland goat enterprise near Wentworth, NSW.

"If ever there was a time to study diversification in the rangelands then now is that time. However, the drought was not the only driver for my studies; it was also about managing for the future and improving long-term economic viability and sustainability in an unpredictable climate," Felicity said.

"I returned from my Nuffield research to mustering stock for trucking out. Normally, the task would have been lamb marking and crutching, but in the previous 18 months a large portion of our ewes and lambs and nearly all our cattle had been sold due to a lack of rain.

"Unreliable rainfall is of course not new in the Western Division of NSW. Management of ground cover and the availability of water for livestock use are the main limiting factors facing pastoralists in the region.

"At times, goat sales make up more than 50% of the annual income for our business. We also have sections of Popiltah and Popio lakes, which fill following flood events in Queensland and we capitalise on the moisture in the deep clay soils by planting crops on the lake beds.

"I wanted to use my Nuffield Scholarship to explore possibilities for these and other types of enterprise diversification, and to find out the viability of various approaches back home."

Felicity travelled to Brazil, Denmark, India, New Zealand, South Africa, Qatar, United States and the United Kingdom. She met with farmers who had diversified their livestock enterprises and her report (released in October) details what they considered critical factors for success, along with several challenges and pitfalls.

The report details novel approaches to multi-



In Texas, a Nubian ibex breeding buck and kids bred for the abundant hunting market.



In New Zealand, glamping-style tourism adds extra income to a farm business. PHOTO: brians101

species diversification including deer, goats and more exotic species. It concludes that while feed and water availability are the first considerations, market access and evaluation of animal behaviour along with the suitability of particular breeds to country type and topography are also key factors.

"In Texas I visited properties where goats complement the grazing of Merino sheep and Angus cattle. Goats fit well into their Merino production system given goats' browsing habits and palate for trees, shrubs and rougher vegetation. They can also reduce vegetable matter in fleeces and control weeds and brush allowing better grass growth for the Merinos.

"In the Juazeiro region of Brazil, I met a farmer whose in-depth understanding of the local desert plants and interrelationships between livestock species led to successful diversification for his business. Amazingly, his goats remove the thorns from rope cactus, allowing his sheep to benefit from the flesh of the plant, which has a protein content of 8%.

"I met a farmer in Texas who, as well as a running a more traditional enterprise, has also been raising a desert adaptive goat antelope – the Nubian ibex – which are sold into Texan game parks for hunting. The kids at six months sell for US\$2,500 to \$US4,000, while adults can



In Brazil, goats remove the thorns from rope cactus allowing sheep to eat the plant's flesh.



In South Dakota, tallow from a farm's sheep is used to make soaps and skin products.

make \$8,000 a head. At another ranch I visited, hunting licences make up at least 50% of the business income, supplementing its sheep, goat and cattle operations."

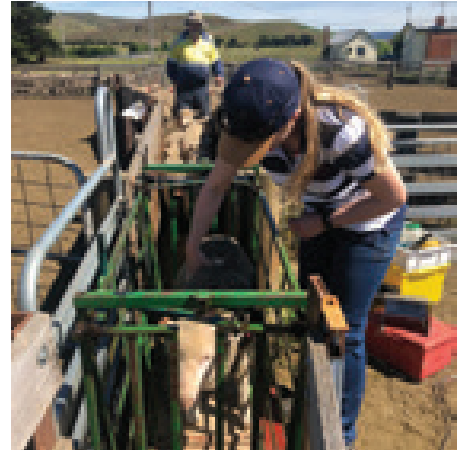
The report also details a range of approaches to value-adding, which have allowed producers to turn what was once considered waste product into an alternative revenue stream.

"In South Dakota, USA, I met a sheep meat producer who had started using tallow from sheep to make soaps and skin products, as well as toys and rugs from wool and skins. While a modest revenue stream, the concept of turning waste into a money-making product is appealing and has wider application across a range of businesses," Felicity said.

The report also explores examples Felicity saw for improving on-farm efficiencies and how to manage predation.

"Ultimately, there are many options when investigating enterprise diversity, and many considerations that must be taken into account prior to commitment. The opportunities are there, but success depends on a well-researched approach which is tailored to the individual's farm, business, and resource availability," Felicity added. **B**

MORE INFORMATION
www.wool.com/nuffield



Tasmanian Institute of Agriculture student **Lauren Rowlands** has researched whether irrigated or dryland pasture is best to optimise Merino wether performance. She was inspired to choose this wool-related topic following her experience at AWI's 2018 National Merino Challenge.

INSPIRED MERINO WETHER RESEARCH

Taking part in AWI's 2018 National Merino Challenge influenced Tasmanian Institute of Agriculture student Lauren Rowlands to choose an honours research topic on how to optimise the production of Merino wethers.

Lauren Rowlands grew up in a small rural town in the Southern Midlands of Tasmania and farming was an integral part of her childhood. Her grandparents have a family sheep farm and her father is a shearer and runs Merino and Merino cross sheep.

"I have always looked forward to lambing season and helping with lamb marking and shearing ever since I was big enough to catch a lamb," she said.

However, it was attending a college careers fair and hearing about the diverse opportunities in farming that first put agriculture on her radar as a university and career pathway.

Lauren has gone on to study agricultural science at the University of Tasmania's Tasmanian Institute of Agriculture (TIA). While there she has been exposed to a wide variety of topics, from livestock to cropping to grapevines.

NATIONAL MERINO CHALLENGE 2018

In May 2018, Lauren attended AWI's National Merino Challenge event in Adelaide, along with more from 120 other tertiary and secondary students from across the country.

This two-day educational initiative connects students with industry professionals, highlighting an array of careers which involve working with wool. The students are educated and then assessed on their skills across a wide range of wool-related topics. Lauren was the overall champion of

the tertiary division in 2018 and was also a member of the TIA team that won the tertiary team competition.

"The National Merino Challenge is a fantastic opportunity to become more aware of the practical skills that may be expected of an agriculture graduate entering the sheep industry – and the competition can help open your eyes to the countless opportunities the wool and sheep industry can offer the next generation," Lauren said.

"I liked that it had skill components that covered the whole spectrum of wool production from on-farm decisions like feed budgeting, body condition scoring and ewe management, sale skills where we would have to select rams based on breeding objectives, and right through to typing wool.

"It was also a great opportunity to be around a new network of young people who were passionate and enthusiastic about the future of wool in Australia."

Back on her course at TIA, Lauren decided to choose a wool-related topic for her honours research, a decision which she says was influenced by attending the National Merino Challenge.

"The competition made me more aware of the many management decisions and tools that are required to achieve a sheep farm's goals and to really deliver a wonderful wool product. This made me want to do a project that I knew would directly help on-farm practices in the local area whilst still giving

me the opportunity to learn more about wool as a product and how management decisions can influence its production."

"The experience of the National Merino Challenge opened my eyes to the research and career opportunities in the Australian wool industry."

Lauren Rowlands

RESEARCHING MERINO WETHER PERFORMANCE

For her university honours research topic, Lauren chose to investigate which pasture diet is best for meat and wool production of Merino wethers: irrigated Lucerne and Clover or non-irrigated dryland pasture. The research was supported by a scholarship from the Australian Wool Education Trust and the trials were carried out at 'Stockman Stud' which is a large-scale commercial property running Merinos at Melton Mowbray.

"Traditional sheep management practices used in the Southern Midlands have the potential to be modified or replaced by irrigation systems, so this was very relevant and useful research for my local area," Lauren said.

Two groups each of 50 sheep were incorporated into the commercial-sized flocks and allocated to a dryland or irrigation pasture rotation for five months from weaning to shearing (December 2018 – May 2019). Live

weights, body condition scores, mid-side fleece samples and rectal faecal samples were collected at weaning and again at shearing when final fleece weight was also recorded.

“The trial identified the irrigated system as the system which was better able to deliver increased productivity, without compromising wool quality or animal health,” Lauren said.

“The irrigation system sheep had significantly heavier mean fleece weights at shearing and a greater change in body condition score in comparison to the dryland system sheep.

“There was no significant difference between systems for the fibre diameter of the wool at shearing and no significant difference in worm burden as measured by faecal egg counts.”

A gross margin analysis was also conducted by Lauren for each system.

“While the dryland system had a higher final gross margin compared to the irrigation system, the alternatives to stocking Merino weaner wethers bred on-farm to maximise the livestock potential of the irrigation system would have greater financial and biosecurity risk. With the changing Tasmanian climate, the irrigation system may be better suited to providing feed security into the future too.”

Lauren presented her findings at the Tasmanian edition of the Ag Institute’s National Student Awards in October and received an impressive second place out of all the Tasmanian entries.

Lauren will graduate from university this

month with plans to continue to learn as much as she can about sheep and animal production.

“I feel like there is still so much to learn and experience in the industry, so I am going to strive to continue learning and building up my skill set.”

For any other young people unsure about what direction they want to take, Lauren advises them to “have a go at everything”, whether it be work experience or initiatives like the National Merino Challenge.

“By experiencing different aspects of different industries, you can really help yourself work out what direction you want to head in. Even if you have no idea how you might feel about that industry, you may surprise yourself and, like me, really enjoy what you learn,” Lauren added. **B**

THE YARN PODCAST

FOR WOOLGROWERS ON THE GO



THE YARN PODCAST IS AWI’S WEEKLY FREE AUDIO REPORT

- Hear the latest news, market intel and stories from woolgrowers and stakeholders along the global wool supply chain.
- Learn more about AWI’s projects from the people at the cutting edge of R&D and marketing.
- Each episode averages about 20 minutes in length.
- It can be listened to on a smartphone, tablet or computer.
- There is an archive of more than 100 episodes.



Researcher Amy Lockwood from Murdoch University was featured in **Episode 103**. Reducing mob size of twin lambing ewes is a strategy to implement in addition to the existing other guidelines for lifting reproduction.



Representatives from wool producing nations attended the 2019 Nanjing Wool Market Conference in China. Hear some of them in **Episode 104** discuss the current state and future of the wool market globally and in their respective regions.

RECENT EPISODES HAVE BEEN ON TOPICS INCLUDING:

- **No.108:** Major North American retailers travelled Down Under to see the origins of Australian Merino wool.
- **No.107:** Biometrics R&D to help minimise shearers’ injuries + Study into rotational grazing in the rangelands.
- **No.106:** AWI Chairman Colette Garnsey – her background and her priorities for AWI.
- **No.105:** Why iconic brands like Gucci and Versace choose wool – hear the brands’ thoughts.
- **No.104:** Wool producing representatives at September’s Nanjing Wool Market Conference discuss the future for wool.
- **No.103:** Best practice twin lamb management + Smart tag technology + Broad wool marketing.
- **No.102:** Innovative shearing shed design + Pushing superfine wool into the skin health market.
- **No.101:** Making sheep easier – hear from farmers Chris Patmore and Zac Roberts, and Phil Barrett-Lennard.
- **No.100:** Australian wool manufacturer ABMT textiles + Reducing wool’s reliance on China and the push into Vietnam.

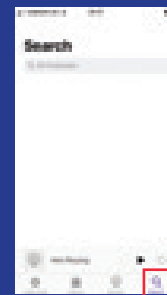
HOW TO ACCESS THE PODCAST

You can simply listen at www.wool.com/podcast OR

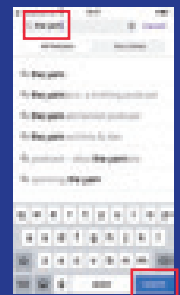
Download the Podcast to your iPhone. You can do this by following these simple steps:



1. Click on the Podcasts icon on your iPhone (or if it isn’t on there, download it first from the **Apple App store**).



2. Select Search (in the bottom-right of the screen).



3. Type in **The Yarn** in the search field and then press the Search button.



4. Press AWI’s The Yarn icon.



5. Press the **Subscribe** button... and away you go!

‘ARROW PARK’ SHEARING SHED DESIGN

YOUR QUESTIONS ANSWERED

The innovative shearing shed design that featured in the September edition of *Beyond the Bale* has generated lots of conversation. While plenty of people acknowledged the great design, there were also some questions, such as why a raised board wasn't used and why the pen doors are so low. Here we answer those and other questions.

BACKGROUND

- With support from AWI, shearing contractor and woolgrower Hilton Barrett of 'Arrow Park' at Dubbo, NSW, has designed a shearing shed aimed at improving the efficiency of workers and the flow of livestock – while optimising worker safety, animal welfare and the quality of wool preparation.
- The design was developed following extensive industry consultation with some of the most experienced shearers, wool handlers, classers and woolgrowers from across Australia.
- A national survey was also conducted in which respondents rated the level of impact of different in-shed design features.
- The working group toured six different sheds to evaluate specific design features and then design, prototype and test them.
- Multiple trials led to refinements and a final design. The blueprints for the design are freely available on the AWI website.
- The internal fit-out, incorporating the stands and yards, has been designed to have its own structural integrity so it can be built within any suitable pre-existing shed.
- The builder or contractor will be able to build as it is designed or extract certain elements of the design to suit specific on-site requirements.
- More than 500 people have attended two open days held at Hilton's 'Arrow Park' shed that was built based on his designs.



A core working group of some of the most experienced shearers, wool classers, wool handlers and woolgrowers was involved in the designs behind Hilton Barrett's shed at 'Arrow Park', Dubbo. A builder or contractor can use the freely available designs to build the shed as it is designed or extract certain elements of the design to suit specific on-site requirements.

Q. How does the design work with a raised board – why wasn't a raised board used?

Over the course of the project it was consistently found that the question of raised versus flat boards ranked as having a low impact when compared to other design features, especially with a whole of shed approach.

Opinions do differ, and they can differ across different roles in-shed. It is often not a matter of right and wrong, but a balancing act of many criteria for those who are building a shed. Personal preference and experiences will influence their decision. Below are some of the key opinions raised through the research in relation to the board:

- Raised boards have advantages for wool preparation as wool handlers do not have

to handle or pick up off the ground each time they prepare or retrieve a fleece. Though flat boards mean that wool handlers have to kneel down each time to pick up the fleece, quality wool preparation and wool handler wellbeing can still be addressed through in-shed training and bending the knees.

- Raised boards potentially increase safety concerns with shearers working at raised heights. Handrails can mitigate this issue; however, they present an obstacle between wool handlers and shearers. For example, when a shearer is having trouble restraining a sheep (especially when large sheep and rams are being shorn), wool handlers can't easily get onto the board to assist the shearer or similarly pull the cord (which can be mitigated by stop buttons under the board).

- Some wool handlers expressed reservations in handling wool on raised boards, as their upper body and head are working at the height of a moving animal and handpiece. Additionally, raised boards had differing pros and cons for people of different heights, often taller people end up with bruised thighs and sore lower backs from bending at the hip to get harder to reach wool at the back of the board. Wool handling paddles can mitigate this; however, that can be seen as an additional task to do and manage.

While all the different aspects were discussed, considered and evaluated as part of the project, the bottom line in terms of build came down to the decision of the owner of 'Arrow Park', Hilton Barrett, who ultimately paid for the construction. **There is however no reason why this design could not incorporate a raised board if it was wanted.**

Q. Why use one rectangle wool table and not two round tables?

So far, the 'Arrow Park' shearing shed has only required the use of one rectangle table. However, the board has been designed wide enough to allow for a second rectangle table to be put in if required.

A lot of feedback has generally identified rectangle tables for most situations are the preferred design compared to circular tables, however both have their advantages and disadvantages which should be considered.

Circular tables are designed for one-man operation. Advantages of round tables are that handlers do not have to walk around the tables, fleeces can be thrown from any direction, they are often height adjustable and one person can operate two tables. Comparatively though they require a change in fleece throwing technique, larger tables may be required for larger fleeces and rolled fleeces cannot be held at one end.

Rectangle tables typically require two handlers and allow for fleeces to be fully spread given the longer length of the table and still have space for a rolled fleece at one end. As this table has corners, the crutch, legs and neck land in the same position. For two handlers this is effective as they both know where one another has started, typically at the crutch and move around to the neck, which helps to ensure that all wool that should be skirted is not missed.

Q. How does the design suit smaller or larger sheds, with less or more stands?

The internal fit out has been designed to be repeatable, with the catching, fill, laneway pens and board layout being the same for each stand. The individual stand profiled on the back page of the 'Arrow Park' floor plan can be duplicated to the desired number of stands be it two, four or six. By keeping the design repeatable, it allows for a curved board and continued logical pen sizes, where the catching and fill pen will hold for



A **straight drag** from the middle of the pen to the shearing station and the **pen doors clear of impact** below the shearer's elbows.

your average shearer enough sheep for one run and the laneway pen behind it another run, totalling more than 70 head.

The maximum number of stands with this design has not been tested. The curvature of the board as it goes on will eventually become impractical and close the circle, cutting itself off. It is hoped that industry can pick up this design, its core principles and improve upon or adapt it into other designs as desired.

Q. Can left hand shearers be catered for?

Yes, left hand shearers can be catered for. When looking at the 'Arrow park' floor plan, a left handed stand would be best added as an addition to the existing catching pen first from the left. An additional catching pen door and chute can be added to the left hand side of this catching pen, this will allow for the same drag path and chute angles for a left hander.

Q. Why are the pen doors low and does it create any issues filling up?

The pen doors are low for multiple reasons. However, the main reason is so it is low enough to avoid impact with shearers elbows (this becomes a larger problem with heavy or steel doors). Apart from the impact, a higher and heavier door causes shearers to bend and use their bottom to take the first impact when dragging out sheep. By doing so the back angles created exert an additional stress load through their back.

The door height has not been an issue when filling the catching pen, this is due to it being a front fill pen. To avoid this for shearers in other sheds, if a catching pen is back filled, a third 'barn style' door could be added above dual lower doors, with it held open whilst shearing and shut to assist when back filling a catching pen.

Key features of the 'Arrow Park' shearing shed catching pen doors:

- High enough to baulk sheep, low enough to avoid contact with shearer's elbows
- Dual catching pen doors, lightweight timber to reduce noise and impact
- Double action swing for ease of entry and exit
- Gap below the doors to stop feet getting wedged (sheep and people)
- Rounded corners
- Right hand chute door is clear of impact with the handpiece and releases before the sheep and shearer reach the shearing position.

Q. What would be done differently looking back?

Hilton Barrett has said there are a few things that he would do differently looking back on the build. Firstly, tongue and groove timber would go further than the board area and would go right through to the wool handling area (the wool handling area currently has plywood flooring).

The shed currently has two emergency stops at each end of the board, Hilton would have preferred if he had put one at each stand.

There are a few things that could have been done to slow the sheep at the bottom of the chute, either a tapered finish narrowing the chute towards the bottom to provide support to stay upright and/or a horizontal finish to the end of the chute. **E**

MORE INFORMATION

Go to www.wool.com/sheddesign to find the designs (technical drawings for a six-stand shearing shed and the floor plan for Hilton's 'Arrow Park' shearing shed), plus a video about the design process.

DROUGHT RESOURCES

For woolgrowers going into, enduring or recovering from drought, AWI provides a range of drought planning and management resources, plus links to useful external resources. View a list of some of the available resources here or visit www.wool.com/droughtresources for further information.

AWI DROUGHT RESOURCES



MANAGING SHEEP IN DROUGHTLOTS

A best-practice guide that highlights the purpose, benefits and experiences of woolgrowers managing sheep in confined areas during drought.

STOCK WATER – A LIMITED RESOURCE

A fact sheet that helps calculate stock water budgets, especially when droughtlotting sheep.

LIFETIME WOOL FEED BUDGET TABLES

Feed budgeting for ewe flocks in the dry season.

FEEDING AND MANAGING SHEEP IN DRY TIMES

This publication provides producers with practical guidelines and examples on feeding and managing sheep during dry seasons and

drought years. While it focuses on dry times and confinement feeding systems, it also has useful information on getting through the normal summer/autumn feed gap period.

MANAGING FODDER PRICES FOR DROUGHTS

A guide to strategies that help manage fodder prices and supply risks during droughts.

WHICH SHEEP DO I KEEP?

A guide to help determine whether to sell or supplementary-feed all, some or none of the flock.

DROUGHT FEEDING AND MANAGEMENT OF SHEEP

This booklet is a practical guide on sheep feeding and management during a drought to help producers break down into manageable steps the daunting planning phase, and see the plan realised as a successful way of combating the drought.

PLANNING FOR PROFIT

A practical guide offering a series of step-by-step, cost-effective breeding and pasture management options for producers to consider post drought.

All these publications are available at www.wool.com/droughtresources.

DROUGHT RESOURCES ON GOVERNMENT WEBSITES



DEPARTMENT OF AGRICULTURE

www.agriculture.gov.au/drought

BUREAU OF METEOROLOGY

www.bom.gov.au/climate/drought

NSW DPI

www.dpi.nsw.gov.au/climate-and-emergencies/droughthub

QUEENSLAND DAF

www.daf.qld.gov.au/drought

PIRSA

www.pir.sa.gov.au/drought

AGRICULTURE VICTORIA

www.agriculture.vic.gov.au/drought

WA DPIRD

www.agric.wa.gov.au/climate-land-water/climate-weather/drought-and-dry-seasons

AWI STATE NETWORK WEBINAR RECORDINGS



SHEEP CONNECT NSW

www.sheepconnectnsw.com.au/tools

- Livestock water requirements during drought
- Confinement feeding

- Drought feed budgeting 101
- Taking stock – making sound decisions during drought
- Animal health considerations for grazing failed crops and during dry times
- Managing livestock nutrition in dry times and beyond
- Pastoral livestock nutrition for dry times
- What's your plan? - preparedness for dry times
- Funny feeds

- Taking the guess work out of feeding or selling sheep during drought

LEADING SHEEP (QLD)

www.leadingsheep.com.au/category/recordedwebinars-videos/

- Weaning in dry times
- How to have a successful lambing in dry conditions
- Drought feeding to minimise ewe and lamb losses – a producer case study

LIVESTOCK SAFETY DURING BUSHFIRES

If the past few weeks are anything to go by, this bushfire season could be long and intense. Here we reproduce guidance prepared by PIRSA about how to ensure the safety of your livestock during bushfires. Whilst caring for livestock and other animals before and after a bushfire is essential, personal safety should be considered as a first priority on all occasions. Be sure to get your Bushfire Survival Plan up to date and to hand.

PLAN AHEAD

If you own livestock, part of preparing a Bushfire Survival Plan for your family should include preparing options for how to deal with your livestock. Planning should start well before the bushfire season and is part of on-going property management.

Livestock such as sheep, cattle, goats, alpacas or horses are affected in bushfires by radiant heat from the fire, smoke inhalation, burns from walking over hot ground and other injuries that might be caused by panic, eg getting caught in fencing. Being prepared with a plan and ensuring other people are familiar with the plan will make it easier to deal with your livestock when fire threatens and you will know what to do if animals are injured.

It is important to act well before a fire starts. Making a choice when a bushfire threatens your property is too late – ensure personal safety first.

Practicing your plans will make it easier to do if fire threatens.

BEFORE THE BUSHFIRE SEASON

For sheep, cattle, goats, alpacas or horses, preparing one or more 'safe paddocks' prior to the bushfire season is a good option.

A 'safe' paddock is one that:

- has adequate water supply without relying on electric pumps
- is easy to access, is well fenced and has adequate space
- is either irrigated or hard grazed to reduce the fuel load, and
- is not surrounded by other combustible material like thick vegetation, tree lines or haystacks.

Your options will depend on the size of your property, the number of livestock and where your animals are kept. If you prefer to relocate individual animals of high value to a low fire risk property in another area:

- plan where you will go
- understand what will trigger you to leave (eg high fire risk rating, emergency warning)
- prepare an emergency kit that can go with the animal(s)

- make an agreement with the property owner about conditions of agistment
- know alternative routes to get there in case the main pathway becomes blocked.

Key actions:

- Review and practice your plan.
- Establish 'safe paddock(s)' or identify the safest areas for your livestock.
- Prepare an emergency kit.
- Ensure your Property Identification Code (PIC) is current.
- Ensure all stock are identifiable to your property PIC.
- Ensure animal housing has sufficient area free of combustible material.
- If needed, establish contingencies for water, feeding, milking, ventilation should power be cut.

ON HIGH FIRE DANGER DAYS

Key actions:

- Enact your plan – this may be to relocate animals to a safer paddock or safer property.

DURING A BUSHFIRE – IF A FIRE THREATENS

Key actions:

- Enact your Bushfire Survival Plan.
- Only move livestock to 'safe paddock(s)' or an open space with the least vegetation if there is time, don't leave it too late – ensure personal safety first.
- Making a choice to move livestock when a bushfire has already started may be too late. Stock may be unsettled and consequently moving paddocks may take longer than normal when a fire is in progress. Enacting plans on high fire risk days before fires start is the safest option.
- Monitor and assess the fire's progress through ABC radio or the website of your state rural fire authority (see right).

AFTER THE BUSHFIRE HAS PASSED

Key actions:

- When it is safe, inspect livestock for burns or injuries.

USEFUL RESOURCES

PIRSA WEBSITE

www.pir.sa.gov.au/emergency_management/bushfires

- [The farming guidelines for the reduction of bushfire risk.](#)
- [Bushfires and livestock: a checklist for before, during and after.](#)

NSW DPI AND LLS

- Fire affected landholders in NSW requiring emergency fodder can call the NSW Government's Agricultural and Animal Services Hotline on 1800 814 647.
- www.dpi.nsw.gov.au/climate-and-emergencies/bushfires
- www.lls.nsw.gov.au/emergency/bushfires

AGRICULTURE VICTORIA

www.agriculture.vic.gov.au/agriculture/emergencies

- [Livestock in emergencies.](#)
- [Farm recovery after bushfire.](#)
- [Livestock after an emergency.](#)
- [Assessing sheep after a bushfire.](#)

STATE RURAL FIRE AUTHORITIES

For help or information about bushfires, state rural fire authorities should be contacted directly:

- NSW Rural Fire Service: www.rfs.nsw.gov.au
- Queensland Rural Fire Service: www.ruralfire.qld.gov.au
- South Australian Country Fire Service: www.cfs.sa.gov.au
- CFA (Country Fire Authority) Victoria: www.cfa.vic.gov.au
- Bush Fire Service WA: www.dfes.wa.gov.au
- Tasmania Fire Service: www.fire.tas.gov.au

- Seek veterinary advice – injured animals may need to be humanely destroyed.
- Enact your plan for backup water, feeding, ventilation, milking, etc if the power has failed.
- Provide surviving livestock access to good quality clean water, fodder and shelter.
- Monitor livestock for several days.
- Dispose of dead animals in a prompt and environmentally safe manner.

Information sourced from https://pir.sa.gov.au/emergency_management/bushfires/livestock_safety_during_bushfires

AVERAGE MONTHLY EMI COMPARISON

EMI'S PERFORMANCE SLIPS BUT STILL HISTORICALLY HIGH

The chart opposite provides a snapshot of how well the AWEX monthly Eastern Market Indicator (EMI) and a range of microns have performed for the past three months (August 2019 – October 2019) in Australian dollar terms compared with the previous five years August 2014 to July 2019 (circles) and the decade previous to that, August 2004 – July 2014 (squares).

For the past three months, the monthly EMI averaged at \$15.23, tracking at the 53rd percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current \$15.23 (August 2019 – October 2019) for 53% of the time.

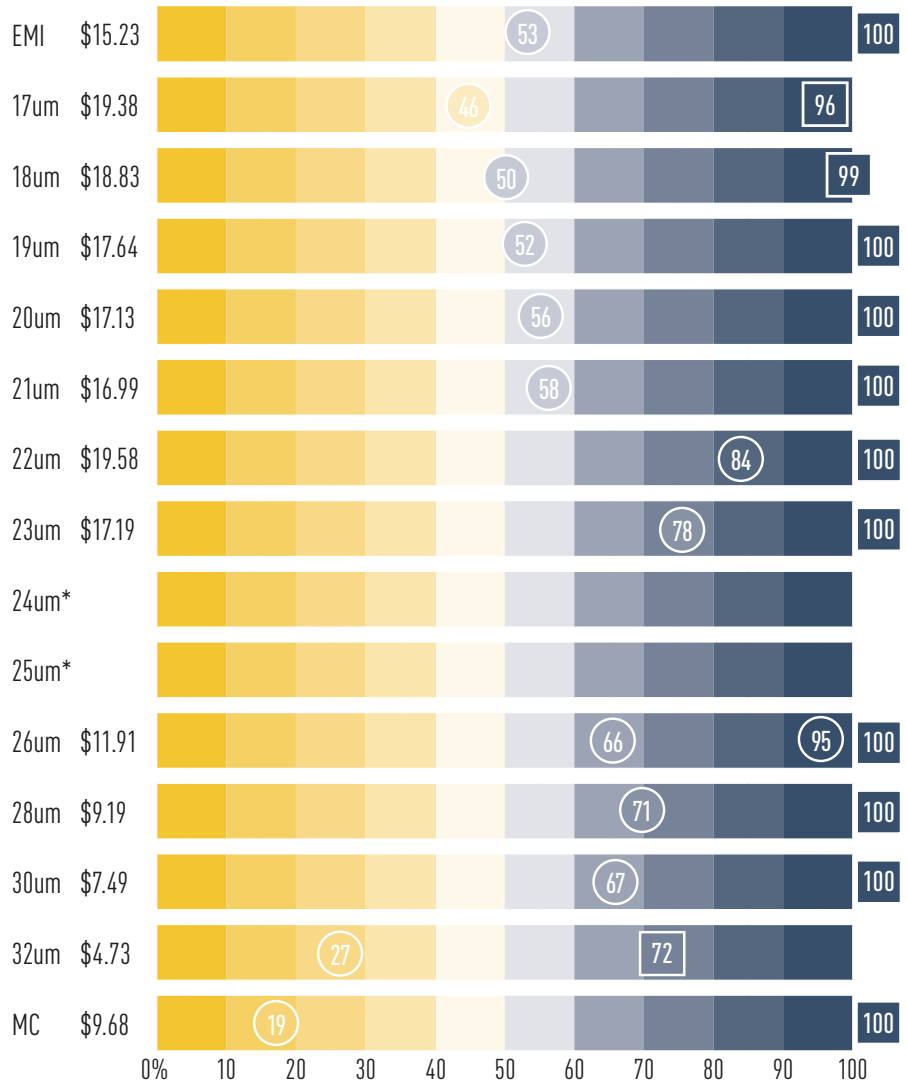
While the EMI is tracking at the 53rd percentile over the previous five years, it is still at the 100th percentile when compared to the decade August 2004 – July 2014. This means the current EMI of \$15.23 (August 2019 – October 2019) is higher now than it was for all that decade.

All microns have weakened during the past three months.

18 micron averaged at a monthly value of \$18.83 (50th percentile for the previous five years and 99th percentile for the decade before that), 21 micron averaged at \$16.99 (58th percentile for the previous five years and 100th percentile for the decade before that), and 28 micron averaged at \$9.19 (71st percentile for the previous five years and 100th percentile for the decade before that).

Merino Cardings (MC) have slipped further from the record prices received in the previous few years. For the past three months, Merino Cardings averaged at \$9.68, operating at the 19th percentile for the previous five years but still at the 100th percentile for the decade before that.

AVERAGE MONTHLY EMI FOR AUGUST 2019 – OCTOBER 2019 COMPARED WITH
 ● PREVIOUS 5 YEARS AUGUST 2014 – JULY 2019
 ■ THE DECADE AUGUST 2004 – JULY 2014



*insufficient data

MARKET INTELLIGENCE: FREE VIA SMS

In an initiative launched in 2017, AWI is sending wool prices and market intelligence direct to about 5,000 woolgrowers' mobile phones.

The woolgrowers receive the latest movements in the EMI in a simple text message (see left image), including a link to a full price report that provides more detail about price movements (see right image).

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 by replying to the AWI SMS message.

MORE INFORMATION
www.wool.com/sms



CAPTAIN OF WEST COAST EAGLES TACKLES WOOLQ

Shannon Hurn, captain of AFL team West Coast Eagles, recently went home to his parents' property in South Australia to help out at shearing time. While there, he saw WoolQ being used for the second time at the property and scoring some pretty big goals.

Shannon Hurn, captain of the West Coast Eagles, came home recently to help out with shearing at the property owned by his parents William and Sandi Hurn. 'Springhead' is located in the Barossa town of Angaston, South Australia, more than 2,500km away from the West Coast Eagles HQ in Perth.

"It's great to be back home in the shearing shed and it's fantastic to see technology finally entering the wool industry," Shannon said.

WoolQ Field Officer, Andrew Dennis, was assisting in-shed. "The Hurns are using the WoolQ eSpeci for the second time with zero issues. With more than 2,000 users and 18,000 bales, the eSpeci has been well and truly field tested," Andrew said.

The eSpeci is an alternative to the current paper speci and allows woolgrowers and their classers to accurately and efficiently capture in-shed data at the time of shearing. By capturing this data electronically, not only does it reduce errors, it also enables easier sharing of documentation and a richer collection of information from multiple contributors.

William Hurn is a woolgrower and a classer. "I think you're always going to have concerns in taking up new technology, especially at the start of shearing when there's so much going on," he said. "But to my surprise, the system is really easy to pick up and fast to use. Everything's pretty logical."

Andrew Dennis has been helping woolgrowers adopt the WoolQ eSpeci.

"Growers do express concerns about learning something new at such a busy time.

I'm sympathetic, I know what it's like in the shed, especially at the start of shearing. But I'm happy to report that all the growers I've helped have saved a lot of time having things done digitally," Andrew said.

"I know the software could be perceived by growers as adding time to tasks. But the eSpeci doesn't complicate things; in fact, I have seen it simplify the process in all sheds."

Once the eSpeci is complete, it can be simply uploaded and sent electronically to your broker and can be easily shared with any other key contacts you wish. This electronic record of data will be stored in your own, secure dashboard on WoolQ and will enable rich and easy analysis of your clip specs, comparisons versus prior year(s) and much more.

'Springhead' is a mixed farming property. "We don't have a big clip, so I started the eSpeci on the last day," William said. "Ten minutes after weighing the last bale, the speci was sitting in the broker's system. I'm really impressed with the level of accuracy and efficiency WoolQ has brought into the shed."

Andrew says most people get comfortable with the eSpeci pretty quickly, regardless of age.

I recommend to woolgrowers that they don't start the eSpeci until the second or third day. At that point, you've got the shed running smoothly. It doesn't take long to catch up and you have time to work through any speed bumps," Andrew said.

"You don't even need the internet at the shed. Once it's set up, the eSpeci works without a connection. You only need to connect after shearing to send the data. You do this when you get home."

The WoolQ team supports woolgrowers with adoption through presentations and in-shed assistance. But first, the WoolQ team recommends talking your broker. Brokers can help woolgrowers get set up on the platform. The majority of brokers have now been enabled to accept the eSpeci directly into their systems.

You can learn more about the eSpeci and other WoolQ tools at www.woolq.com. WoolQ supports all key stages of the growing and selling cycle, enabling woolgrowers to store and easily access a digital record of all their shearing information, from clip data through to test and sales results.

MORE INFORMATION
www.woolq.com



Captain of the West Coast Eagles Shannon Hurn with WoolQ Field Officer **Andrew Dennis** at Shannon's parents' property 'Springhead' at Angaston in South Australia.

WOOL MARKET ST GLOBAL ECONOM

Over the past six months since July 2019, extraordinary global events have conspired against the sustenance of the wool price. There are not just price related concerns at retail but also there are the unpredictable volumes of sales should the interferences remain in play. “Uncertainty and confusion” is the most common heard catchphrase at the most recent of conferences and textile trade fairs.

The ongoing trade imbalance dispute between the USA and China has certainly been the predominant negative impact upon confidence in the industry.

The issue of exporting wool textiles to the US is not the major negative on wool manufacturers. It is the sentiment, will and choice of Chinese domestic consumers to continue to spend as they have grown accustomed to during the past decade. The Chinese resident buys far more wool product now than any other single nation and outstrips by far the purchasing at retail of the US consumer.

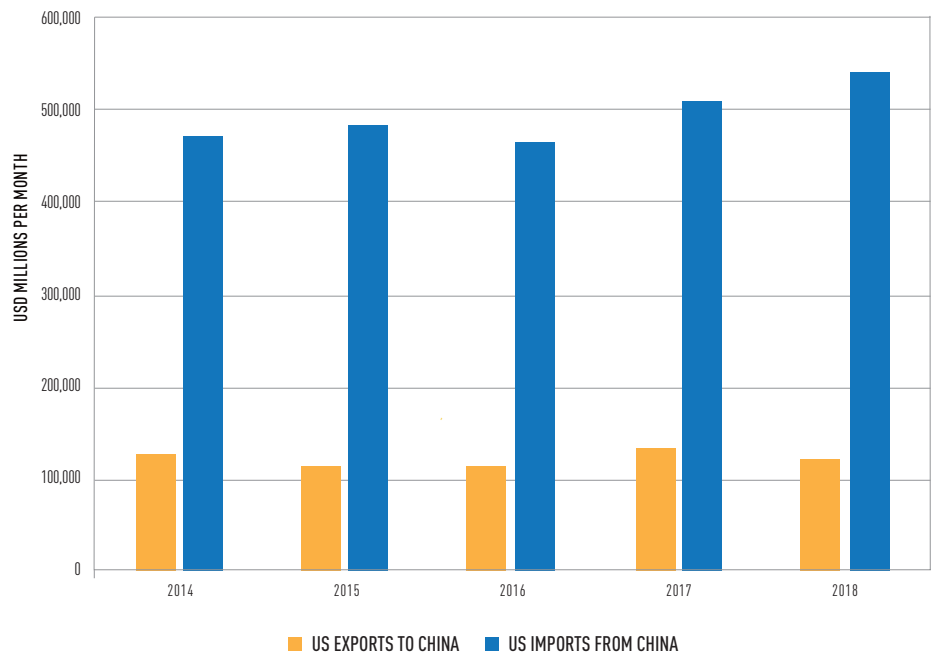
Brexit is causing concern for the traditionally good wool retail country of the UK and other European nations. Inverted bond yields also are also an issue. The South African (RSA) foot and mouth disease ban produced an effective eight month ban on RSA wool entering China. Since September, that backlog of wool has exited South Africa in volume, assisting manufacturers in their machinery demand needs.

The rising political concerns of Hong Kong and their economic woes has also been problematic as is the continuation of the tensions in the Middle East. This all impacts the mindset of the customer, who then tends to be cautious and more frugal in their discretionary spending.

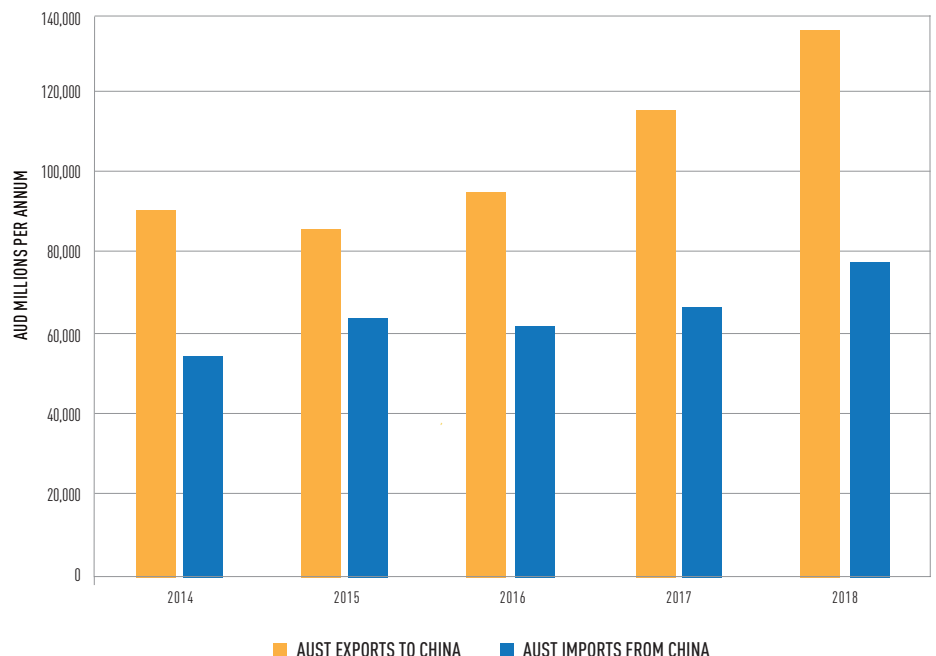
Somewhat adding to the confusion and perhaps paradoxically to the UK and China situation is the extremely strong retail figures out of the retail powerhouses of USA and Germany. The USA in August 2019 reported an increase of US\$13 billion retail spending for the year which is a 3.1% year on year growth. The current annualised growth is 7.77%, well above the long-term average of 4.21%. Germany reported a 3.9% increase in retail sales in June 2019.

Gold prices have dropped 2% which usually indicates a return to normality of trade and greater risk taking for higher return potential and away from the traditional safe-haven that is gold assets.

WHY THE FUSS? HERE IS THE TRADE IMBALANCE CHINA V USA



IN COMPARISON HERE IS THE AUSTRALIAN V CHINA TRADE BALANCE



TRUGGLES IN THE Y DOWNTURN

OVER CAPACITY ASSISTED LARGER THAN EXPECTED PRICE DROP

Over the years, new wool products were developed alongside products from the traditional manufacturing sector. All were held in high esteem and high in value compared to other textiles. Wool textile manufacturing was an attractive and highly profitable business at relatively low-cost entry points at the first stage compared to the high-tech industries which spend massive amounts of money on R&D. This encouraged expansion in wool processing. The consistent price gains of the past ten years though hid the looming danger of overcapacity.

Many companies were competing for the top spots. They invested in new, but also purchased old machines as they fought for the market share to go their way by building capacity. While the products were still valuable in comparison to non-wool yarns and garments, the product of those factory's output sale value decreased as competition for sales of the same products intensified to satisfy machinery demand. Acceleration of innovation and the cycles of that innovation leads to shorter and shorter cycles that decrease the value of things. This is particularly relevant and true to the modern fast paced world we live in.

Over the years this created massive overcapacity in the Chinese manufacturing sector and inevitably when things turn to the negative, dumping of product at cheap prices occurs, particularly when some were manufactured under hidden loss structure businesses.

But the more companies invested, the more competition grew for market share. While competition up to a certain level is good and encourages innovation, too much is too much. The overcapacity in wool textile manufacturing is massive and it is thought that there is enough machinery in China to process the Australian wool clip three times over each year. The first casualties among the wool supply chain operators are more than likely going to be the first stage manufacturers.

It's critical for manufacturers to shed the overcapacity before the market values for all textiles tumble further. In many cases they also own the real estate the mills sit

on which is also devaluing as the economy slows. Reductions in staff and operational costs are being addressed on an industry wide basis, and efficiencies in production are being implemented. The shrinking supply situation will see only further competition for the raw material, but at the cheapest possible point to aid in the adaptation to the new operating conditions. Darwin's theory though will eventually rule, and only the strongest will survive.

SUMMARY

- High wool prices and a global economy slump stifled demand.
- Trade war, Brexit, Hong Kong etc killed confidence.
- Overcapacity of machinery is responsible for the exaggerated magnitude of the fall. Individual businesses were unable to see the volume of potential business necessary to be the support mechanism of the daily market price. As business dilution across many companies occurs, market control is lost, hence the inability of any single buyer/ or buyers to halt the fall or sustain a rise.

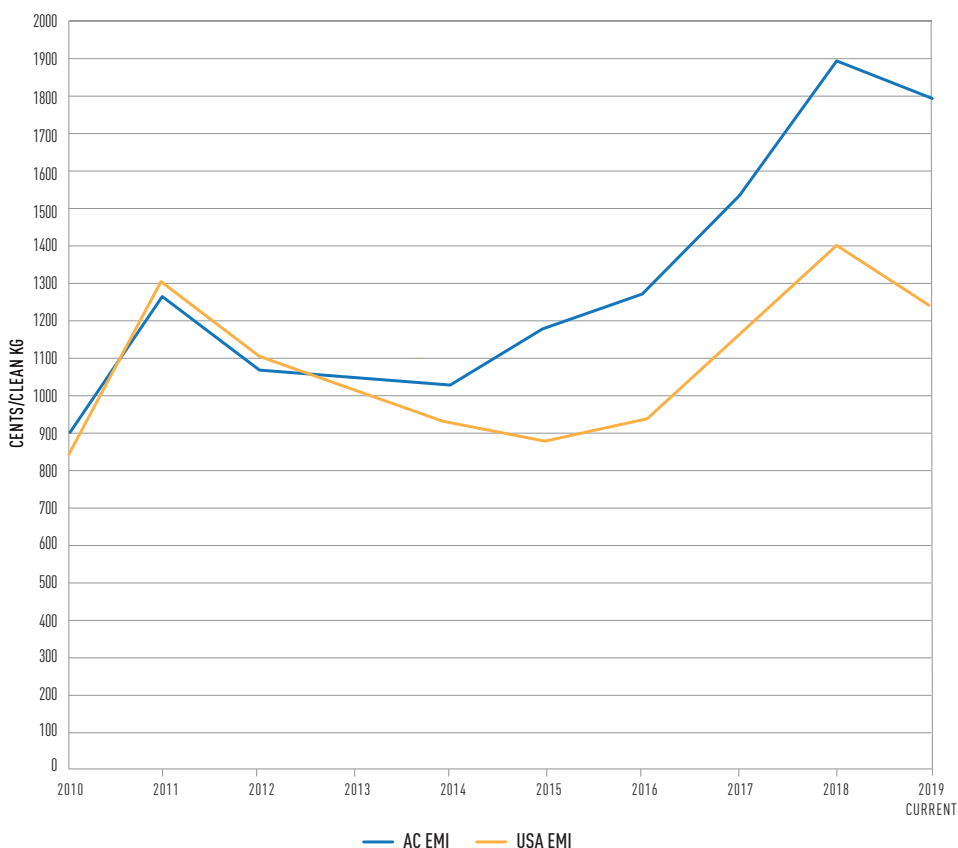
Despite all the negativity surrounding the global economy, the wool price has remained strong in relative and historical terms. Despite the heavy hits taken on the market recently, just where does the current levels fit?

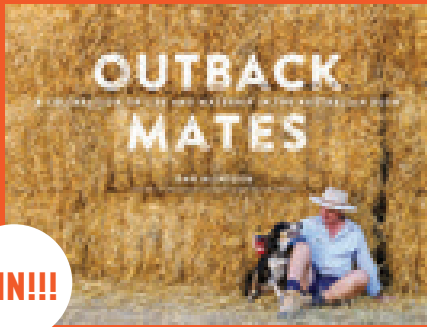
The close of October selling saw the AWEX AC EMI at 1594ac clean/kg. The five-year AC EMI average is 1550ac when most of that period was reported consistently along the lines of "good times for wool". The ten-year average AC EMI is currently 1316ac clean/kg. Over the same period, the US EMI is currently at 1104usc. The five-year US EMI is 1145usc whilst the ten-year average is 1099usc clean/kg.

Demand remains the key driver. Restoring confidence and building those demand levels back up is paramount to keeping wool forefront as part of landholders' production choices.

Until that true demand returns, instability and volatility will be in play across the raw material pricing sector.

10 YEAR EMI BY CALENDAR YEAR AVERAGE





WIN!!!


If you submit a photo that gets published in Readers' Photos, you'll receive a copy of Dan McIntosh's *'Outback Mates'*.

This 208-page hardback book is a celebration of outback Australia and the bonds of friendship that are forged living and working on the land.

READERS' PHOTOS!

Have you got any interesting photos that you'd like to share with other readers of *Beyond the Bale*?

If so, please email the image and a brief description to the editor of *Beyond the Bale* Richard Smith at richard.smith@wool.com.

 **Beyond the Bale has its very own Instagram account.** You can follow [@beyondthebale](https://www.instagram.com/beyondthebale) on Instagram and also tag us in your photos for your chance to be featured. We will also be showcasing on Instagram some photos emailed in to Readers' Photos (we'll ask your permission first), so you can keep emailing them in.

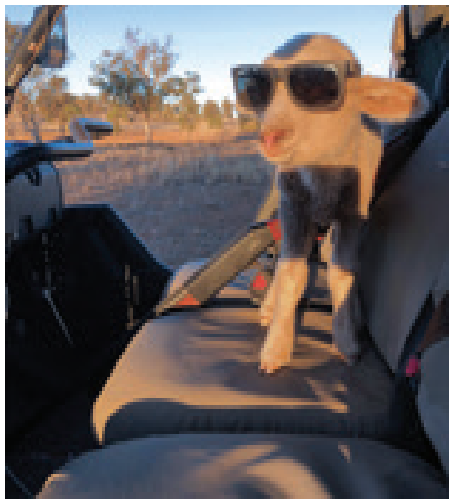
IT'S SHAUN THE SHEEP!

This photo was taken a few years back by famous rural photographer **Chantel McAlister** (@chantelrenaephography) on her farm in **Queensland**. It shows her nephew, **Jake**, giving his **Shaun the Sheep** doll its first shearing under the instruction of his **Uncle Jas**. Chantel says the blows were a little wild and he left a bit on, but the job got done! You can view more of Chantel's work at www.chantelrenaephography.com



COOL WOOL

Sam Tourle (@sam_tourle) of 'The Springs' at **Toongi** near Dubbo in **NSW** took this great photo of a lamb who Sam suggests could be Ray-Ban's new Instalamb model!



A SHEARER'S GRANDDAUGHTER

Brianna Carter Moore keeping warm in a fleece from a 13-year-old wether named 'Brocky' after the late Peter Brock. The photo was sent in by Brianna's mum **Jennifer Carter** from **Oatlands, Tasmania**.



BROLGAS AND BIODIVERSITY

Susan and David Rowbottom of '**Rowensville**' in south western Victoria are well known for their commitment to safeguarding the environment on and around their property, and this photo of brolgas at play perfectly illustrates the harmony that exists between wool-growing and the local wildlife.



PASTURE PROTECTION USING DROUGHT PENS

Award winning professional photographer **Rachel Gordon** (@the17thphotographer) grew up on a Merino sheep property in south-west NSW and today lives with her family on a small farm near Millthorpe, in the Central Tablelands of NSW. This picture was taken at nearby **Vittoria**. Fine art prints of Rachel's photos are available. She is available for commercial work and can also visit you on your property to create an album that records your life on the farm. Visit www.rachelgordon.com.au for details.



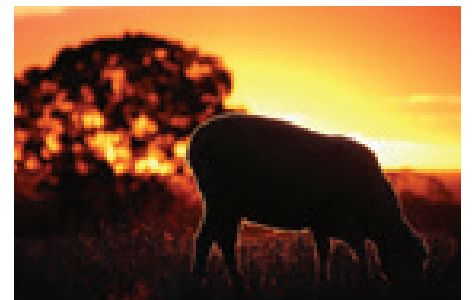
FANCY KNITTING A WOOL JUMPER FOR A PENGUIN?

Do you fancy knitting a wool jumper to help the famous little penguins at **Phillip Island** in **Victoria**? When oiled penguins are rescued and admitted to the Phillip Island Wildlife Clinic, knitted penguin jumpers are temporarily placed on the penguins. These act as a barrier to prevent the penguin from reaching its oily feathers with its beak and ingesting the oil, before **Phillip Island Nature Parks Wildlife Rescue staff** are able to wash it clean. These jumpers need to be knitted (not crocheted) to a specific pattern/size so that they fit the penguins properly and are safe to use – the pattern is available at www.penguinfoundation.org.au/penguin-jumpers. 100% pure wool jumpers are preferred as it's a more breathable material.



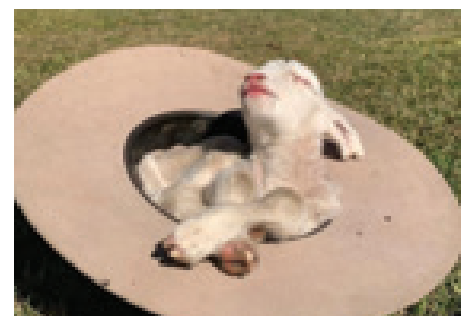
A SUNSET SILHOUETTE

Mixed farmer **Peter Waterhouse** sent in this photo taken at sunset on his farm 'Udale' at **Maya** in the Mid West of **WA**. Peter says they have run sheep for 48 years at Maya and it will be good to get to the half century running sheep, despite constant wild dog attacks.



A NAP IN A HAT

You've heard of a slouch hat; well this lamb is doing more than slouching! **Shanae Zammit** sent in this photo of a newborn lamb having a nap in a farmer's hat at **Greendale** in central **Victoria**.





WOOL

WoolQ is a secure online platform where woolgrowers, classers, brokers and buyers can access digital tools to support all stages of the woolgrowing and selling cycle.

- 2,000 registered users**
- 650 businesses**
- 18,000 wool bales recorded**

It's time to join the Q.

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.