

Beyond the bale

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PROFIT FROM WOOL INNOVATION
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HIGH PERFORMANCE MERINO JACKET



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**POLICE CHIEFS
TARGETTED**



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**WEATHERING DROUGHT
WITH REGENERATIVE AG**



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**NUMNUTS NUMBS
NUTS (AND TAILS)!**

Beyond thebale

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

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FRONT COVER

Pictured is the new range of Woolmark Optim WR jackets. The 100% Merino wool fabric used in the jacket is water and wind resistant; the fabric has been commercially launched and is being used in both the fashion and outdoor markets. The Woolmark Optim WR jacket has been produced exclusively to enable wool levy payers to experience the benefits of Merino wool in an innovative way - see page 9 to find out how you can purchase it.



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A LETTER FROM THE NEW AWI CHAIRMAN



Colette Garnsey OAM
Chairman
Australian Wool Innovation

MS COLETTE GARNSEY OAM

My name is Colette Garnsey, and I have recently been appointed as the new Chairman of AWI. I would like to take this opportunity to provide you with an update on the changes under way at AWI to strengthen your company by ensuring you, our woolgrowers, are at the forefront of everything we do.

Firstly, let me thank and acknowledge the immediate past Chairman Mr Walter Merriman for his leadership and contribution to the industry. Mr Merriman's vision for the industry was pivotal in increasing the global demand and market access for Australian wool.

I step into the role of Chairman knowing the global demand for wool is stronger than ever, with our nation's natural fibre desired by processors, retailers and customers in all parts of the globe. This gives me a great sense of pride as I represent domestic woolgrowers to our international processors and retail brand partners.

My commitment to AWI's goal is unwavering. I am committed to listening and to ensuring your views are heard at Board level. As AWI enters a new phase, my and the Board's focus is on addressing your concerns, on doing the right thing by you, our levy payers, and on building a stronger company for the benefit of the wool industry.

As a priority, we will do this by responding to, and actioning, the 82 recommendations of the Review of Performance commissioned by the Federal Government and to working through the changes required. The Board and the executive team are committed to making these changes a reality.

Prior to AWI's AGM we announced the results of WoolPoll 2018; Australian woolgrowers have voted in favour of a wool levy of 1.5 per cent. We respect our woolgrowers' decision of 1.5 per cent and see that they believe a 1.5 per cent levy is

the appropriate levy rate to be paying on their wool sales at this time. However, we are encouraged – indeed humbled – that more than 90 per cent of woolgrowers see the value in AWI's work and are prepared to contribute towards our research, development and marketing efforts on your behalf.

The 1.5 per cent levy vote does not change AWI's resolve to working in the best interests of woolgrowers. We have the reserves to manage the balance sheet and our operations will be managed to match our funding. As woolgrowers adjust to the seasonal conditions, so will AWI adapt to the democratic choice of our levy payers. In doing this, we will make certain our operations continue to be transparent, lean and efficient.

We understand the drought conditions are affecting much of the industry and we acknowledge this will affect production going forward. Let me reassure you there is no more important time for a strong AWI working to support woolgrowers.

Our industry has a positive and prosperous future. As your Chairman, I look forward to continuing to support woolgrowers here in Australia and to taking their wool to the world by continuing to build demand and positioning our beautiful fibre as the natural fibre of choice for processors, retailers and consumers around the globe.

MS COLETTE GARNSEY OAM, AWI CHAIRMAN

Ms Garnsey was elected by AWI shareholders to the AWI Board on 8 November 2011 and has been Deputy Chair since 2017. She was appointed as Chairman of the AWI Board on 9 November 2018 following Mr Merriman's resignation as Chairman.

Ms Garnsey – whose early childhood was spent on sheep properties in western NSW – has 39 years of retail, wholesale, distribution and marketing experience with Australia's top brands in multiple geographies. Currently she is Non Executive Director of Flight Centre Travel Group and until recently was a Trade, Tourism and Investment Policy Advisory Council advisor to the Federal Government.

Previously Ms Garnsey was executive director at Premier Investments' The Just Group, and in senior executive positions at David Jones and Pacific Brands. She has had over 30 years' experience in department stores and has dealt with globally successful brands and designers bringing many to Australia.

Ms Garnsey has also been Advisory Board member of CSIRO 1997-2001; Advisory Board member Australian Government Innovation Council 2010-2012; Director Australian Fashion Week 1998-2009; Judge Veuve Clicquot Business Women of the Year 2008-2014.

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

WOOLPOLL 2018

Australian woolgrowers have voted in favour of a wool levy of 1.5% on wool sales to fund research, development and marketing. Of the 13,506 votes received, following the allocation of three rounds of preferences, 52.82% voted in favour of a 1.5% wool levy. On first preferences, 88.28% of woolgrowers had voted for a levy option of either 1.5% or 2%, demonstrating continued support for AWI's role investing in R&D and marketing on behalf of woolgrowers.

AWI will continue to be prudent in managing its balance sheet and will adjust its operations to match available funding as part of the next three-year strategic plan, which commences in 2019-20. The company will endeavour to ensure no loss of momentum in the marketing of wool in Australia and overseas - and will continue its targeted investment across sheep health and welfare, reproduction, vertebrate pests, genetics, fibre advocacy, farm automation and software development.

I thank the WoolPoll Panel and its Chairman Sydney Lawrie for their contribution and for encouraging participation and ensuring the voting process was conducted in compliance with the regulations.

AWI ANNUAL GENERAL MEETING

AWI held its 2018 AGM on Friday 23 November in Sydney - see opposite page. At the AGM, I gave a detailed presentation of the activities of the company during 2017/18. Woolgrowers who were unable to attend the AGM in person were able to view the AGM proceedings via webcast. This was the seventh time that AWI has webcast its AGM. As well as being broadcast live, a recording of the webcast of the 2018 AGM is available to be viewed on the AWI website at www.wool.com/2018agm

BECOME AN AWI SHAREHOLDER

AWI shareholders are able to shape the decision making process of the company

via their right to vote at the company's Annual General Meetings and Extraordinary General Meetings. AWI has more than 22,000 shareholders. It's important to note that paying wool levies does not automatically make a levy payer a shareholder of AWI. To become a shareholder, a levy payer must apply (which is free). I encourage all eligible wool levy payers, who have not already become an AWI shareholder, to apply. To be eligible to become an AWI shareholder, applicants must have paid at least \$100 in wool levies in the past three years.

To become an AWI shareholder, levy-paying woolgrowers should complete the shareholder application form at www.wool.com/shareholders and return it to the AWI share registry at Link Market Services. Enquiries should be directed to Link Market Services on 1800 113 373 (free call).

REVIEW OF PERFORMANCE IMPLEMENTATION PORTAL

In October, AWI detailed its Review of Performance (ROP) implementation plan for all 82 recommendations in the independent ROP. The implementation plan specifies how the organisation will address all 82 recommendations included in the ROP. To aid transparency and information flow with woolgrowers and industry, AWI has launched a Review of Performance Implementation Portal (ROPIP) that reports on our progress implementing the 82 recommendations. The ROPIP is available on the AWI website at <http://rop.wool.com>

REGISTER NOW FOR WOOLQ

The final piece of WoolQ functionality, WoolQ Market, will soon be released, completing the suite of tools on the platform. The WoolQ Market aims to be a centralised, online marketplace for Australian wool. The two-tiered platform will provide both a bulletin board of buying and selling interest accessible

on a 24/7 basis as well as an efficient, easy to use online auction operating outside the Open Cry market hours. With extensive benefits for buyers, brokers and growers, the WoolQ Market will serve as a complement to the current Open Cry auction markets. A pilot of the WoolQ Market will commence at the end of the year, with full roll out anticipated early in 2019. To use WoolQ's current functionality and to ensure you are kept informed of the further developments, ensure you register at www.woolq.com.

HIGH PERFORMANCE JACKET: OFFER FOR WOOLGROWERS

Using the latest Optim™ technology, Merino wool is able to be woven into an immensely dense fabric that is more resistant to water and wind, while retaining all of Merino wool's fine properties, such as breathability. The 100% Australian Merino wool fabric was commercially launched a few years ago and is now being used in both the fashion and outdoor markets. To enable wool levy payers to experience the benefits of Merino wool in this innovative way, at cost price, we have produced an exclusive jacket - the Woolmark Optim WR jacket - that is now available for purchase online at www.wool.com/store. This is similar to the popular jacket that we made available to woolgrowers two years ago.

POSITIVE PRICES DURING 2018

As 2018 draws to a close, we can reflect on another very positive year for woolgrowers. Due to improved demand, the EMI has been very healthy for the entire year, especially the second half - with the EMI reaching above the \$20 mark for the very first time. This consistently high EMI has been very rewarding to watch during the year and, more importantly, very rewarding financially for many woolgrowers.

We hope that 2019 continues on this positive note. And with this in mind, I wish you a very happy Christmas and prosperous New Year.



AWI Chairman **Colette Garnsey OAM** addressing the AWI 2018 AGM in November.

"I am delighted that in 2017-18 growers were able to reap the benefits of an increase in the average EMI of 23% from the previous year," Mr McCullough said.

"We recognise the drought conditions facing many woolgrowers, and we are committed to investing your levies effectively and efficiently to deliver results for all woolgrowers.

"Investment in research and development, and extension by AWI in its Sheep Production and Woolgrower Services portfolios, increased by 27% last year, delivering a range of outputs to help woolgrowers improve their on-farm productivity and profitability. This includes ongoing investment in Lifetime Ewe Management training, which has resulted in more than 4,300 growers undertaking the hands-on course.

"In the off-farm R&D area, we have added to the growing number of research findings supporting the health and wellbeing benefits of wool products. And we are working with leading brands such as adidas and Max Mara in new product developments.

"Our Marketing portfolio has continued to partner with premium brands and strategically invest in targeted campaigns – through both digital and traditional channels – to help create demand for Australian wool amongst consumers in key markets globally.

"The sports, outdoor and athleisure markets are especially exciting markets that are helping drive up demand for Merino wool. We have been increasing collaboration with leading manufacturers and brands in these sectors to promote the premium natural benefits of wool as a performance fibre."

Mr McCullough reiterated the comments of AWI's Chairman, reaffirming the company's commitment to consultation with growers and to continuing to be transparent, lean and efficient in their operations.

"AWI is acutely aware of its direct accountability to woolgrowers. We are committed to listening to woolgrowers, to hearing and actioning their feedback and to working together to build a stronger industry for everyone in the supply chain," Mr McCullough outlined.

"We will continue to work hard to build resilience into our research, development and marketing investments. AWI will continue to work hard to put the interests of woolgrowers first."

AWI shareholders 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 2018 AGM is available to be viewed on the AWI website at www.wool.com/2018agm

NEW ERA BEGINS AT AWI

At the 2018 AWI Annual General Meeting (AGM) on 23 November, newly appointed AWI chairman Colette Garnsey signalled a new era for the peak wool industry body, telling AWI shareholders the company is committed to greater engagement with Australian woolgrowers.

New AWI chairman Ms Colette Garnsey used her speech at last month's AWI AGM to signal that it was a time of change at AWI.

"Our priority is to be a company that is engaged with all of its stakeholders – woolgrowers and shareholders, of course, but also the Government, farmers' groups, the media, our supporters and, yes, those who hold a more critical view of our performance," Ms Garnsey told the meeting.

"All have a stake in the future of the company, all want the very best for the wool industry – and all deserve a say and to be heard."

Ms Garnsey told the meeting one of AWI's highest priorities is responding to, and actioning, the 82 recommendations from the Review of Performance commissioned by the Federal Government.

"We are already 33% of the way through the implementation process," she said.

"For example, since the Review, we have introduced a board skills matrix in the 2018 Annual Report that will help ensure we have the right mix of skills and experience on our board. And we have appointed a general manager of operations – a new role that will allow our CEO to focus on more strategic activities.

"Of the 82 recommendations in the Report, there are 75 which we have accepted and actioned. Of the remaining ones, there are two that are the subject of continued negotiations with the Department. There are also five we expect to put to shareholders at a general meeting in mid-March after a period of consultation."

Turning to the results of WoolPoll 2018, Ms Garnsey said AWI was encouraged and humbled that the vast majority of woolgrowers saw the value in AWI's work and were prepared to contribute towards the company's R&D and marketing efforts on their behalf.

"But do not doubt for a minute that we have not heard the message that we must do more to earn and retain the trust and confidence of our shareholders," Ms Garnsey told shareholders.

"We are determined to maintain the momentum in our international marketing efforts and in our investments in R&D.

"We must give you the confidence that your levies are being invested effectively and efficiently. AWI must continue to run lean, with every dollar spent wisely and every dollar accounted for.

"All stakeholders can expect to see and hear more from me and my AWI colleagues as we seek to unite the wool industry behind a common goal: to help woolgrowers be their best and get the best returns for their hard work.

"Consultation, of course, is pointless without transparency and I want an AWI that is open and accountable and today is a step in that process."

CEO HIGHLIGHTS A STRONG YEAR

In his address to shareholders, AWI CEO Mr Stuart McCullough pointed to the record highs hit by wool prices in the recent months.

MORE INFORMATION

View a recording of the AGM at www.wool.com/2018agm

LIVE & BREATHE



PURE NEW WOOL

LIVE & BREATHE CAMPAIGN

AWI's Live & Breathe campaign set out to educate a new generation of consumers about the technical performance benefits of Australian Merino wool.

In addition to the rollout of the short campaign film, AWI also ran an outdoor advertising campaign and partnered with leading media and influencers across the world to promote Merino wool.

In September, AWI's marketing subsidiary The Woolmark Company unveiled its first direct consumer marketing campaign in nearly 10 years, championing the technical benefits of Merino wool. The overarching message of the campaign is that wool is breathable, making it the perfect fibre for performance and athleisure.

Importantly, the campaign set out to not only drive awareness of the fibre but also influence the purchasing decisions of global consumers.

The campaign film was initially rolled out across social media, and more than **eight million people across the world have seen the film**, with 877,000 shares and reactions across social media channels. The USA was

the most engaged market, with San Francisco the most engaged city followed closely by New York City. The film won a prestigious gold award at the World Luxury Awards held in Monaco.



An example of the **Live & Breathe** campaign advertising in **San Francisco**.

OUTDOOR ADVERTISING

There were more than 325 instances of outdoor advertising across the world. In the USA, billboards and bus stop adverts were focuses in New York City and San Francisco. Tube stations in London were taken over by wool, and billboards championed wool's message across Tokyo. These locations were strategically selected with the latest heatmap technology to identify high-traffic commute areas. **About 20 million people have seen this outdoor advertising.**

Research shows that millennials – our target audience – commute to work on public transport or by foot and it was our aim to disrupt the commuter journey. We were able

#LIVEANDBREATHE WOOL ADVOCATES

As part of AWI's Live & Breathe global consumer campaign, a broad range of key influencers across the world championed the natural performance benefits of wool.

From hiking a national park in Colorado, to climbing in the French Alps, or practicing yoga in Japan, these key opinion leaders tagged #LiveandBreathe on Instagram and shared their experiences of wool with their fans.

Here is a small selection of their Instagram images...



LAURA WHITMORE
ACTRESS AND TV HOST

@thewhitmore
549K Instagram followers

"Mornin! Friday vibes in Merino wool which is a sustainable alternative to synthetic fabrics making it better for the environment and me! And The Woolmark Company works with Australian woolgrowers who ensure the highest standards of animal welfare."



JAKE GUZMAN
OUTDOOR LIFESTYLE PHOTOGRAPHER

@jguzmann
101K Instagram followers

Hiking throughout the Pacific Northwest of the USA:

"I've teamed up with The Woolmark Company on a recent adventure to test out clothing made of Merino wool – the breathable fabric was extremely comfortable."



Well known exercise coach **Roger Frampton**, pictured wearing wool on a trek up **Mount Snowdon** in Wales, was one of more than 52 top tier influencers throughout the world promoting wool during the Live & Breathe campaign.

MEDIA PARTNERSHIPS

The Woolmark Company also partnered with leading media outlets – both traditional and online – including *Elle* China, *The New York Times*, *LADBible* and *T Magazine*, reaching nearly two million readers worldwide. **B**

“I’ve been wanting to write a wool sports story for so long. I tried a few years ago but there just weren’t enough big brands doing it yet. Not the case anymore.”

Courtney Rubin, Freelance Journalist for New York Times and Fast Company

“I never knew that wool had so many benefits until I learned about it from the Woolmark team. Who knew that the fabric you wore could make such a difference during a workout.”

Sam Todd, Social Media Editor for GQ

to identify commuters who passed by our outdoor advertising and then target them with the campaign film, which resulted in three million views of the film.

INFLUENCING THE KEY INFLUENCERS

An influencer campaign of some of the world’s leading fitness stars helped connect commercial wool product to consumers in an approachable, authentic way. These influencers and key opinion leaders drove consideration for product by validating the message of wool. See below for a small selection of how these influencers championed #liveandbreathe on Instagram.

Altogether, there were **52 top tier influencers and 25 media working out in wool**. The influencers were engaged to host events and wear-test commercially available

wool product, reaching **45 million people across social media**.

Nine events were held for influencers and media across the USA, UK, China and Tokyo. From outdoor fitness classes in Shanghai and Beijing, to summiting Mount Snowdon in the UK and trail runs in Colorado, participants were given wool-rich outdoor-wear to experience first-hand the performance benefits of the fibre.



amazon.com

The Woolmark Company partnered with Amazon to create a hub of shoppable wool products. The Amazon.com display banners drove consumers to the Amazon landing page whilst consumers were driven to the wool hub from other sources, such as email newsletters and online advertising. See www.amazon.com/adlp/woolmark

MORE INFORMATION

www.woolmark.com/liveandbreathe



KIRA STOKES CELEBRITY TRAINER

@kirastokesfit
268K Instagram followers

Embracing nature in Hudson, NY: “Natural fibers in a natural environment: win win. From bootcamp, to yoga, to hiking, my Merino wool gear kept me comfy, cozy, warm and stylish. Needless to say I’m totally STOKED on working out in wool.”



ANTON KRUPICKA MOUNTAIN ULTRA-RUNNER

@antonkrupicka
144K Instagram followers

On the summit of Aiguille de l’M in Chamonix, France: “For long days in the mountains, I find wool’s natural fibers to be the best at moisture management and sustained comfort.”



MORGAN TYLER YOGA INSTRUCTOR

@findingmorgantylor
497K Instagram followers

“Feeling extra thankful to have warm, cozy and breathable clothes after partnering with The Woolmark Company this autumn. Easy to go straight home, to hiking, to popping into yoga poses in this Merino wool athleisure wear.”



ERIC UNDERWOOD THE ROYAL BALLET

@ericunderwood
66.5K Instagram followers

“Merino wool activewear is naturally elastic, making it ideal attire to get the best out of your workout. The fabric reacts to your body temperature, absorbing sweat whilst remaining odour free.”

ELITE ATHLETES PUT WOOL TO THE TEST



What better way to showcase wool's performance benefits than have commercially available wool products tested by a group of top athletes – which is exactly what The Woolmark Company did as part of its Live & Breathe marketing campaign.

High jumper **Amy Pejkoic** wearing the latest P.E Nation leggings and crop (see page 10).



Three-time Olympic middle distance runner **Jeff Riseley**, pictured wearing Merino Country shorts and XTM long-sleeve shirt.



Accomplished high jumper **Amy Pejkoic**, pictured wearing adidas T-shirt, Merino Country leggings and Røjk Badland Jacket (made using the same fabric technology as the Woolmark WP Optim jacket – see opposite).



2018 Commonwealth Games 100-metre semi-finalist **Rohan Browning**, pictured wearing an adidas T-shirt and Wilderness Wear leggings.

With its unrivalled breathability, moisture management properties and odour control, there's no denying that wool is the ultimate performance fibre. To prove it, AWI's marketing arm, The Woolmark Company, put wool to the ultimate test – as part of the company's Live & Breathe consumer marketing campaign – with three Australian athletes wearing head-to-toe wool for their workouts.

A series of photos, and video, were shot of three elite Australian athletes: three-time Olympic middle distance runner Jeff Riseley, 2018 Commonwealth Games 100-metre semi-finalist Rohan Browning, and accomplished high jumper Amy Pejkoic.

The photos captured them as they sprinted

and stretched, climbed and crunched at Sydney's historic Carriageworks, wearing lightweight commercially available pieces from the likes of adidas, XTM, ioMerino and Ibex.

The series of photos were rolled out via The Woolmark Company's social media channels, and each athlete also championed the photos and the fibre to their own highly engaged audience, via their own channels.

THE ATHLETES' VERDICT

"I think that people hold the misconception that wool can be cumbersome and itchy, which couldn't be further from the truth," said Rohan of his experience. "High

performance in elite sport is all about being in a comfortable mental and physical space. When you're behind the start line and all the work has been done, the only thing you can change is what you wear."

Jeff agrees, noting in particular wool's ability to regulate body temperature and minimise moisture. "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."

Amy commented: "Breathable, lightweight, durable and 100% Australian Merino wool – perfect for summer workouts too." **B**

WOOLMARK OPTIM WR JACKET

100% Merino wool fabric
Water and wind resistant

The **WOOLMARK OPTIM WR JACKET** has been produced exclusively for this woolgrower offer, to enable wool levy payers to experience the benefits of Merino wool in an innovative way.

The fabric used in this Woolmark certified jacket has been commercially launched and is being used in both the fashion and outdoor markets.

UNIQUE, HIGH PERFORMANCE FABRIC

- Resistant to water and wind, while retaining all Merino wool's fine properties, such as breathability.
- Uses the latest Optim™ technology – the Merino wool is pre-stretched and spun into yarn before being woven.
- An immensely dense fabric, due to the combination of a dense weave and fine yarns.
- Made from 100 per cent Australian Merino wool of 16-micron.

AVAILABLE IN 6 COLOUR COMBINATIONS



Red with white trim

Navy with red trim

Blue with red trim

Navy with yellow trim

Beige with navy trim

Red with navy trim

HOW TO PURCHASE

The jackets can be purchased only online at: www.wool.com/store

Payment by only Visa or Mastercard is accepted.

* Prices include GST and shipping; shipping is only available within Australia.

UNISEX STYLE
AVAILABLE IN S, M, L, XL, XXL



Hood with adjustable elasticated drawstrings – which can be folded away in a zipped hood pocket.

PURE NEW WOOL (with the Woolmark logo) printed down the right-hand sleeve, and the Woolmark logo printed on left chest

Front zip

Zipped side pockets

Lightweight fabric (190gsm)

NFC chip on the cuff enabling smart phone app user to discover the production process of the jacket, an augmented reality experience and other information about the jacket

Cuffs are adjustable with Velcro

\$185*
for wool
levy payers
(\$245* for the public)

P.E NATION

RUNS WITH WOOL

Leading Australian sportswear label P.E Nation has released a premium Merino wool activewear collection, in collaboration with AWI, championing Merino wool as the original performance fibre.

Australian street-inspired luxury sportswear label P.E Nation has turned to Merino wool to give its latest offering the natural, innovative advantage its customers seek.

Collaborating with AWI's marketing arm, The Woolmark Company, P.E Nation has created a six-piece premium, high-performance womenswear collection, made from technical Merino wool fabrics.

Certified by The Woolmark Company – which guarantees quality assurance – the collection includes high-rise seamless leggings and a crop top with an innovative compression knit structure along with a series of Merino wool knits.

"It's here where the perfect synergy lies – quintessentially Australian brands coming together to champion the notion of natural strength, grace and femininity – for all women, every day," explained P.E Nation co-founder Pip Edwards.

This new six-piece collection marks the second time P.E Nation has worked alongside The Woolmark Company, aligning their belief in authenticity, quality and technical innovation to ensure the latest cutting-edge wool fabrics and yarns were sourced for the collection.

AWI CEO Stuart McCullough said the collection demonstrates how P.E Nation continues to reimagine how the market sees activewear and pushes the boundaries on design and construction of high-performance fabrications.

"Staying true to P.E Nation's street-inspired sportswear aesthetic, this collection offers global consumers the opportunity to experience the natural best in sports and activewear," he said.

The collection was launched during New York Fashion Week in September and is available for

consumers to buy on www.pe-nation.com. The collection is also stocked online at www.net-a-porter.com and www.farfetch.com.

In recent years, the activewear market's understanding of, and appreciation for, wool has grown exponentially, with recent innovations – particularly in the seamless space – contributing to this significant growth.

Seamless apparel – such as items from P.E Nation's wool-rich collection – is unique because it allows for a combination of different patterns and knit structures, in different colours, on a single piece of fabric. By engineering a garment to have features such as compression and breathability points on a single structure, it allows for next-level performance and a new level of styled comfort.

Fronted by international supermodel Jess Hart, the P.E Nation campaign images remain completely un-retouched and are a true reflection of working with the 100% natural, renewable and biodegradable Merino wool fibre and capture the love of natural beauty.

Jess is well known in the fashion industry, having modeled for brands including Victoria's Secret, Louis Vuitton, Dolce and Gabbana and Max Mara – and she has graced the covers of *Vogue*, *Cosmopolitan*, *Harper's BAZAAR*, *Marie Claire* and *Elle*. She was born in Sydney and went to school in Melbourne before she was discovered and became a model. **B**

MORE INFORMATION

www.pe-nation.com



The six-piece collection is available to buy on www.pe-nation.com

International supermodel **Jess Hart** fronts the new P.E Nation x Woolmark performance collection.

ACROSS MONGOLIA WITH MERINO

And they're off! Competitors on their 1,000km race across the Mongolian steppe. During their whole journey they didn't pass through any gate and they saw less than 5km of fencing.

Four cousins from country NSW took part in this year's Mongolian Derby – racing on horseback for eight days across a thousand kilometers of the Mongolian steppe – all while wearing Merino wool base-layers.

The Mongolian Derby is known as the longest and toughest horse race on earth – navigating a course that recreates the horse messenger system developed by Ghengis Khan in 1224.

Riders square up to 1000km of Mongolian wilderness on semi-wild horses, changing steed every 40km. The terrain includes high passes, huge valleys, wooded hills, river crossings, wetland, dunes and of course open steppe.

Riders navigate and survive on their own wits and skill, living among the herders. There's no marked course, no packed lunches, no beds to sleep in. This is no pony trek or guided tour – only half the competitors entering the race complete it.

This might seem daunting to the average person. But for four cousins, hailing from Breadalbane and Gundy in NSW, it was a challenge that paled in comparison to the Multiple Sclerosis (MS) that afflicts their father and uncle Rob Bell every day.

Henry Bell (Rob's son) and his three cousins Rob, Ed and Jack Archibald decided to dedicate their Mongolian Derby challenge to Rob, and raise funds for Kiss Goodbye to MS, the MS Research Australia's fundraising initiative. The initial goal for their 'Ride for a Cure' campaign was \$100,000.

MERINO A MUST

As it came closer to the start date, the team realised they were going to need gear that could keep them cool as they rode all day, warm at night and water and wind resistant if they were going to get through the volatile Mongolian storms.

Merino wool was the only thing that would be able to get them through the varying climate, keeping in mind, no showers or baths would greet them at the end of the day.

AWI facilitated a partnership for the team with performance wear brand Helly Hansen who kitted out the team with base-layer performance Merino sportswear.

"We could only pack a couple of items to keep under the weight limit, so we took a Merino base-layer long-sleeved shirt, short-sleeved shirt and full-length tights. We rode in the short sleeve shirt every single day and slept in the long-sleeved shirt and tights each night," explained Ed.

"We found that wearing wool kept our body temperatures balanced throughout the day whilst at night when the mercury dropped we were grateful for the long-sleeved Merino shirt; it was like a second skin."

GREAT SUPPORT

Being impressed by the performance of the Merino wool gear was not the only welcome surprise that met the team. The donations, large and small from across the country went above and beyond their imagination.

One sheep producer donated the profit raised from selling 100 lambs. Elders, the producer's broker, matched this and donated its share in these proceeds whilst the transport company Goulburn Livestock donated the cost of freight of getting the lambs to market.

Another woolgrower from NSW, Richard Walker, donated the proceeds of two of their best superfine wool bales to the cause, and hundreds of family, friends and complete strangers generously donated to the Ride for a Cure cause.

Henry said that the team had been truly humbled by the overwhelming support they had received.

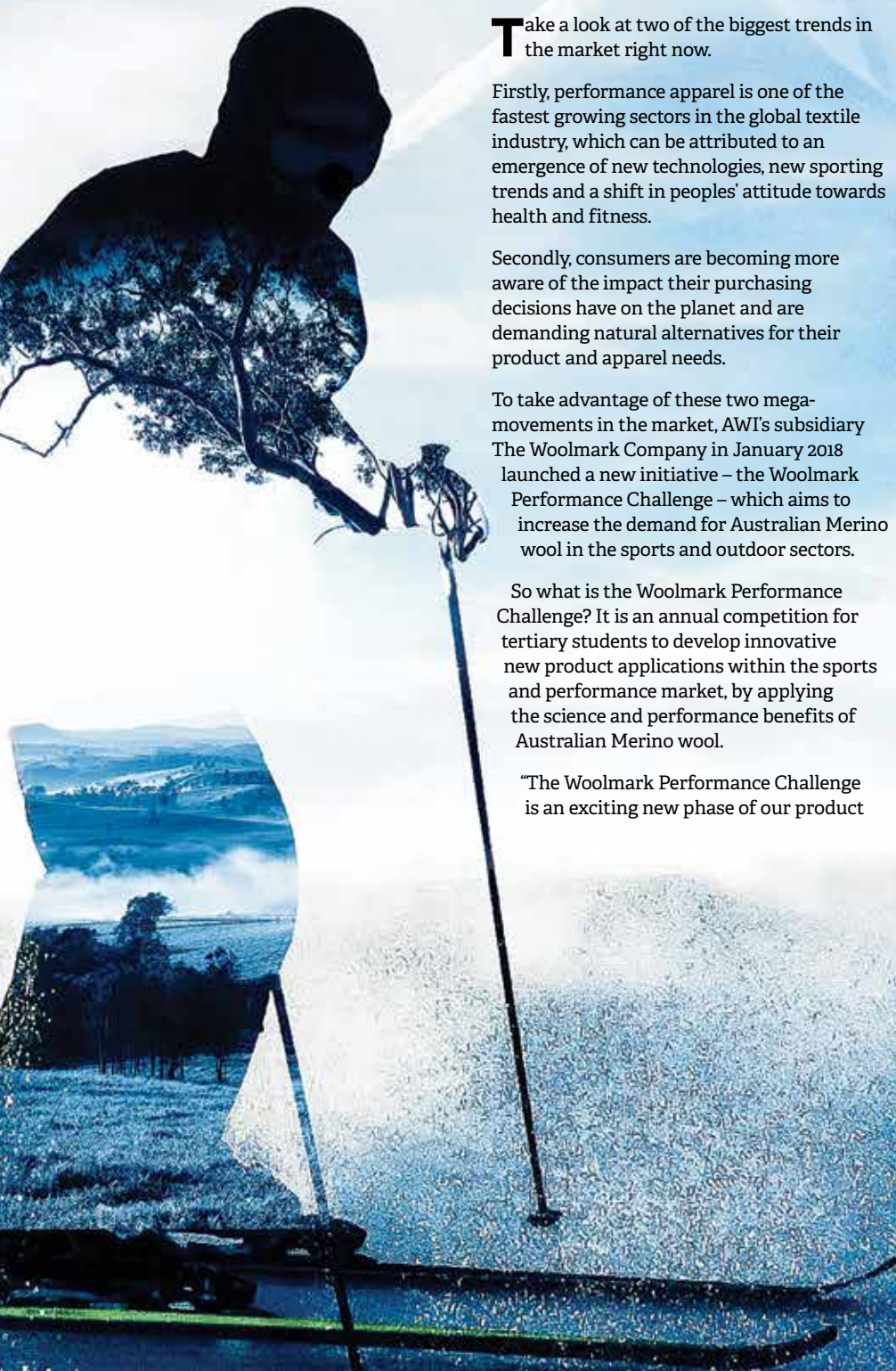
"To date, we have raised more than \$189,000 for MS Research Australia. Thank you to everyone who donated, supported us in the lead up to the race and cheered us on as we rode across the steppe. The support we have received is a testament to the generosity of the community around us."

MORE INFORMATION

Read more about the team's race, and to donate, visit www.arideforacure.com



Henry, Jack, Ed and Rob wearing their Helly Hansen Merino wool base-layers, with two local herders during a break in the race.



Take a look at two of the biggest trends in the market right now.

Firstly, performance apparel is one of the fastest growing sectors in the global textile industry, which can be attributed to an emergence of new technologies, new sporting trends and a shift in peoples' attitude towards health and fitness.

Secondly, consumers are becoming more aware of the impact their purchasing decisions have on the planet and are demanding natural alternatives for their product and apparel needs.

To take advantage of these two mega-movements in the market, AWI's subsidiary The Woolmark Company in January 2018 launched a new initiative – the Woolmark Performance Challenge – which aims to increase the demand for Australian Merino wool in the sports and outdoor sectors.

So what is the Woolmark Performance Challenge? It is an annual competition for tertiary students to develop innovative new product applications within the sports and performance market, by applying the science and performance benefits of Australian Merino wool.

“The Woolmark Performance Challenge is an exciting new phase of our product

development program,” explained 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.”

To enhance the impact of the initiative, The Woolmark Company is proud to partner with leading global sportswear brand adidas for the competition. Both companies believe that exciting innovations with wool – such as smart textiles; nano-technology; and design, finishing, and production developments – will create solutions that meet and surpass consumers' new expectations and values for activewear.

STUDENTS TAKE UP THE CHALLENGE

The inaugural competition that ran through 2018 was open to students in Europe and North America and attracted 510 student registrations from 58 universities. The second year's competition, again in partnership with adidas, has expanded to include tertiary students from across the world, including Australia.

Students studying a wide range of specialisms – from product design, industrial design, advanced materials, and performance/

WOOLMARK PERFORMANCE CHALLENGE

The Woolmark Performance Challenge – in partnership with adidas – is a new annual design competition for tertiary students, aimed at pushing the boundaries of product innovation in sportswear.



The finalists of the inaugural Woolmark Performance Challenge.

product engineering, to textile futures, innovation and new applications – are all invited to take part in the competition.

“We need to develop an alternative to the massive use of man-made fibres used in sports apparel. With the newest innovations within Merino wool we can now create high-performance products with low environmental impact.”

2018 finalist Christel Thue Høgsted,
University of Oregon, USA

“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 said.

“The Woolmark Performance Challenge not only provides a unique learning experience for the students to push the limits of product innovation, but also provides the winner with a financial reward and potential for further collaboration with The Woolmark Company and adidas.”

A LEARNING EXPERIENCE

The students are 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 510 students who entered the 2018 competition to take the company's online Wool Appreciation

Course. In addition, a series of monthly 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. The chosen finalists were from universities in the UK, France, Germany, Netherlands, Switzerland and the USA.

The Woolmark Company hosted a two-day workshop in London in September to ensure each of the finalists was ready to present their ideas to the judging panel at the finals event in Denver in November. The two-day workshop brought together experts from the sports, textiles and fashion industries, including former Topman Creative Director, Gordon Richardson; Eco-Age founder and creative director, Livia Firth; outdoor apparel company Finisterre's founder, Tom Kay; and head of fashion and technology at Stoll, Joerg Hartmann.

“I don't feel like this is a competition at all. We've formed a community to share knowledge for shaping the future of sports.”

2018 finalist Youngmi Kim
Institut Français de la Mode, France

AND THE WINNER IS...

Alicia Ferreira de Sousa from L'École de la Maille de Paris was announced the winner of the inaugural Woolmark Performance Challenge at a special event during last month's Outdoor Retailer trade show in Denver, Colorado.

The award was judged by a highly respected panel of judges including Senior Design Director at adidas, Tillmann Studrucker; Talent Acquisition Manager at adidas, Louis de Vos; Special Projects Editor at *Sports Illustrated*, Jamie Lisanti; Editor in Chief of outdoor industry news publisher SNEWS, Kristin Hostetter; Chief Innovation Officer at Future Tech Lab, Amanda Parkes; Creative Director & Owner of Dyne (winner of this year's International Woolmark Prize Innovation Award), Christopher Bevans; and AWI's General Manager of Processing Innovation & Education Extension, Julie Davies.

“My main goal was to make a textile that connects and communicates with the body; and Merino wool supports the wearer's needs in any situation or environment to enhance performance.”

2018 winner Alicia Ferreira de Sousa
L'École de la Maille de Paris, France

Given the possibility of the winning entry being taken up for further commercial collaboration, we can't reveal the details of the entry just yet. But the judges' comments might give you a hint of what the entry offered.

“As an aerobic gymnast, Alicia brought her knowledge of the body's movement and combined it with science to highlight the functionality and benefits of Australian Merino wool's properties. She found a way to bring this together with a unique and technical innovation, that is applicable to many sports,” said judge Jamie Lisanti of *Sports Illustrated*.

Fellow judge Tillmann Studrucker of adidas commented: “It is incredible how many great innovations we saw from students in this open collaboration between adidas and The Woolmark Company. It was not easy to

nominate the final winner. In the end, we went for the person who shared the number one principle of our founder Adi Dassler – ‘only the best for the athlete’ – helping them to perform better in their sport using the benefits of wool. I want to thank everyone involved in making this competition a success and for giving these students a platform to show their talent.”

As well as the opportunity to sell her winning idea, Alicia will receive a cash prize of €10,000, a three-month internship with adidas, along with ongoing industry and training support from The Woolmark Company. **E**

MORE INFORMATION

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



Former Topman Creative Director and British Fashion Council member **Gordon Richardson** mentors the 10 finalists as part of a two-day workshop hosted by The Woolmark Company in London.



The inaugural Woolmark Performance Challenge winner **Alicia Ferreira de Sousa**. Photo credit: Scott Martin/Hed Hi Media

AUSTRALIAN WOOL-GROWING RECEIVES ECO AWARD

Australian woolgrowers have been awarded with the inaugural Eco Stewardship Award at this year's Green Carpet Fashion Awards held as the conclusion of Milan Fashion Week. The award recognises the commitment to the environment demonstrated by the tens of thousands of woolgrowers across the country.

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, headed by global sustainability champion Livia Firth.

In Milan to accept the Eco Stewardship Award on behalf of Australia's woolgrowers were Matt and Vanessa Dunbabin from 'Bangor' at Dunalley in Tasmania, alongside Richard and Jenny Weatherly from 'Connewarran' at Mortlake in Victoria. To add to the prestigious honour, the award was presented by Oscar-winning Australian actor Cate Blanchett.

"It gives me particular pleasure to present tonight's Eco Stewardship award to a group of people from my native Australia who are genuinely leading the sustainability charge, and in an aspect of the fashion industry

that is foundational – the production of Merino wool," said Blanchett during the award's presentation.

"An ambitious program of reform has seen the best Australian woolgrowers set new benchmarks for producing this most precious natural fibre. Of course, nobody tells this tale better than those working to progress this critical movement."

Both the Dunbabins and the Weatherlys have actively demonstrated their efforts to regenerate the land and increase the biodiversity of their properties across the years – see opposite page.

"It is an honour to be awarded the Eco Stewardship Award," explain the Dunbabins. "This award not only recognises our work at 'Bangor', but also shines a light more broadly on world-leading sustainable wool production happening right across Australia.



Australian woolgrowers **Richard and Jenny Weatherly** (left) and **Vanessa and Matt Dunbabin** (right) accepted the inaugural Eco Stewardship Award on behalf of all Australian woolgrowers. The award was presented by **Cate Blanchett** (centre) at this year's Green Carpet Fashion Awards that were held in front of a packed house of celebrities and fashion industry icons at La Scala opera house in Milan.

Every day, woolgrowers across the country are caring for their animals and the land in a passionate and sustainable way, ensuring that when you are wearing wool, you are also caring for the environment. Woolgrowers have always known this is the case – and it is fantastic that this has been recognised by the fashion industry."

The Weatherlys echoed this sentiment, saying: "We are very honoured to be representing other woolgrowers, who have shown remarkable stewardship of their country and to some degree to be representing Livia Firth's innovative and brilliant work as well as The Woolmark Company's commitment in this regard."

Despite being a new addition to the fashion calendar, the awards have established themselves as one of the world's foremost sustainability and fashion events. This year's event attracted the biggest names in fashion and entertainment, including Colin Firth, Elle Macpherson, Cindy Crawford, Julianne Moore and Alison Brie. **B**

MORE INFORMATION

www.eco-age.com/green-carpet-fashion-awards

FOREVER TASMANIA SCREENED DURING MILAN FASHION WEEK



As part of Milan Fashion Week, sustainable fashion consultancy brand Eco-Age held a screening of its short documentary titled *Fashion-Scapes: Forever Tasmania*, supported by AWI's marketing arm The Woolmark Company.

Over the past decade, Eco-Age has become known for championing sustainable production and for telling the ecological and human stories behind the clothes we wear. The *Fashion-Scapes: Forever Tasmania*

(Top) Eco-Age's **Livia Firth** with **Matt Dunbabin** on 'Bangor' in Tasmania – pictured in the eco-documentary 'Fashion-Scapes: Forever Tasmania'. (Bottom) **Matt and Vanessa Dunbabin** chatting with Eco-Age's **Livia Firth** and her husband, actor **Colin Firth**, after the special screening of the eco-documentary during Milan Fashion Week.

documentary follows the journey to Tasmania of Creative Director and Founder of Eco-Age, Livia Firth, for a first-hand look at where and how Merino wool is produced.

"In Tasmania I found growers producing fine wool for the global apparel industry with a deep understanding of the need to work within the earth's biological capacity," Livia said.

"They were clear that their role was not just as fibre producers, but equally as custodians of this incredible landscape. When someone has changed over 20 years to embrace sustainability so deeply, that is very moving – not to mention, instructive." **B**

MORE INFORMATION

www.eco-age.com/news/fashion-scapes-forever-tasmania



MEET THE GROWERS WHO REPRESENTED AUSTRALIA AT THE AWARDS



Jenny and Richard Weatherly

RICHARD AND JENNY WEATHERLY **'Connewarran', Mortlake, Victoria**

Situated near Mortlake in western Victoria, Richard and Jenny Weatherly have produced a flourishing property, one built on respect for the land and its natural inhabitants. The importance of the environment has always been at the forefront of their, and their son and business manager Hamish's, minds. The couple established one and a half million trees and added pastures, wetlands and drainage – and their Merino flock happily shares the land with a flourishing abundance of wildlife including emus, koalas and a quarter of all bird species in Australia.

WHAT DOES IT MEAN TO YOU TO BE RECOGNISED FOR THE ECO STEWARDSHIP AWARD?

It means a huge amount. We are very honoured and very proud. Personally, it has been a fascinating and educative journey developing 'Connewarran', with the assistance, mentoring and advice of some extraordinarily well-informed and generous people to whom we owe a great deal.

HOW DID YOU START TO RESTORE CONNEWARRAN?

Initially, we grew trees from seed that we collected locally from the scarce remnant

vegetation, planted them out, guarded them against pests and fenced them against larger grazing animals. This was very time consuming and very expensive. Together with a group of like-minded farmers, we developed a machine which would sow the seed directly where it was to grow, which enabled us to sow many kilometres of seed-line in a day, establishing good shelterbelts of mixed species and good understory at minimal cost.

WHAT HAS BEEN YOUR EXPERIENCE WITH MERINOS AT CONNEWARRAN?

When we started farming, we were strongly advised not to try breeding Merinos, that they had been tried in the 1930s and had failed to be productive. However, no other breed was going to cut sufficient wool of high enough quality to be profitable. Our intention was to breed a Merino that could utilise the environment and to create an environment that supported the Merino. We saw it as managing an ecosystem and harvesting production from the ecosystem, so they were never seen as separate entities. They would each be diminished if they were. **E**

MORE INFORMATION

Richard and Jenny were featured in a short film by AWI telling in their own words how they built a thriving Merino wool-growing farm based on respect for the land. View the video at www.youtube.com/thewoolmarkcompany



Vanessa and Matt Dunbabin

MATT AND VANESSA DUNBABIN **'Bangor', Dunalley, Tasmania**

'Bangor' is a 6,000 ha property that includes 5,100 ha of native forests and grassland, 2,100 ha of permanent forest reserves and 35 km of coastline. The Dunbabins run a flock of 5,000 superfine Merinos, which produce some of the world's finest, softest and brightest wool. The extensive areas of native pastures at 'Bangor' are ideal for growing this type of wool. They provide even nutrition year-round, which in turn allows the wool fibre to grow evenly and strongly. Native

plants covering the soil also reduce dust and dirt contamination of the fleece, ensuring wool remains bright and lustrous.

WHY IS LAND AND ENVIRONMENT CARE SO IMPORTANT?

Most farms in Australia are family farms, and farmers have a long connection with their land. Growing up on a farm gives you a deep care and understanding of the land, and its health is critical to the success of the farm. We know that we are just the current custodians of our special part of the world, which has been cared for by the people who have come

before us. And we hope to give our children the opportunity to continue living and working at 'Bangor'. Every decision we make on the farm is viewed through a long-term lens.

WHAT LAND CONSERVATION HAVE YOU DONE AT BANGOR?

At 'Bangor', we have voluntarily placed more than 2,000 hectares of native forest and grassland into conservation covenants. These are permanent reserves, protecting our most precious plants, animals and historic sites forever. As a farmer, caring for our land is paramount – and for farmers, this comes naturally. We rely on our land as our home, workplace and livelihood. Looking after our patch of the world means it will look after us, and we can continue to produce great wool for people to wear.

WHY IS IT IMPORTANT TO PROTECT TASMANIA'S NATIVE FLORA AND FAUNA?

'Bangor' has a diverse range of habitats, including coastal wetlands, native forests and grasslands. These have always been home to Tasmanian native animals and plants, including many endangered species. As land owners, it is our responsibility to manage our land so that wildlife and plants can thrive. It is part of what makes 'Bangor' such a special place to live and work. **E**

YARNS FROM MILLPOST MERINO



Judith Turley and David Watson with their eldest son Harry in the lush surrounds of Millpost.

Millpost is a family farm that has been in David Watson's family since 1922 and now has three generations in residence. They currently run about 2,000 Saxon Poll Merinos with 16-18 micron wool on the 1,100 hectare property.

Millpost is one of the oldest broadscale Permaculture farms in Australia, the system having been implemented there since 1979. The family, including sons Harry, Roy and Murray, takes a stewardship approach to the land and prefers to work with, rather than against, nature. Their challenge is to

demonstrate that it's possible to live off the land while improving it at the same time.

"Our goal is to produce a high-quality, high-value fibre by utilising planned grazing methods and landscape regeneration strategies," David said.

Features of the Permaculture system that have been implemented over forty years at Millpost include: gravity-fed water supplies for domestic and stock use, repair of erosion gullies, soil improvement, establishment of approximately fifteen kilometres of windbreaks by planting and direct seeding native trees and shrubs, home-grown vegetables, fruit, meat, dairy produce and eggs, and installation of a 10KW solar panel array.

MILLPOST MERINO YARN

As perhaps with other wool-growing families, it has been a disappointment to the Watsons that, once shearing was over, their last glimpse of their wool clip would be at auction before it was shipped away overseas.

"Millpost Merino is an exciting new direction for our family farm."

Judith Turley, Millpost

Because of this, and also to align with the Permaculture philosophy of local self-reliance, the family decided to value-add by starting to produce Millpost Merino yarn.

"Millpost Merino is an exciting new direction for our family farm. After more than thirty years of selling all our wool at auction, we took the plunge and sent the best of our clip off to be processed and spun into colourful balls of wool and hanks of natural-coloured yarn," Judith said.

The yarn is available to buy on the Millpost Merino website and at a selection of retail outlets in NSW and Victoria.

While the majority of the wool grown at Millpost is still sent to Sydney for auction, the family is hoping to extend their range in the future to include garments made from Millpost wool.

MERINO FLOCK IS CENTRAL TO PROFITABILITY

The quality of the wool of the Millpost Merino flock is central to the profitability of the farm. More than 90% of farm income is from the sale of wool and surplus sheep. Millpost has light, shaley, sedimentary soils which support native pasture suitable for sheep and fine wool production.

The Watsons are doing their best to match their grazing program to the available perennial native pastures that thrive on Millpost, using Holistic Management. HM, which was developed in Africa by Alan Savory, mimics the natural grazing systems of the vast grasslands where large herds of herbivores intensively graze, trample and fertilise the pasture for a

Woolgrowers David Watson and Judith Turley of 'Millpost' near Bungendore on the Southern Tablelands of NSW have recently started retailing superfine Merino yarn sourced from their family farm.



Millpost's Saxon Poll Merinos grazing perennial native pasture on the property.

GROWER SPOTLIGHT



AWI'S MARKETING ARM, THE WOOLMARK COMPANY, IS HIGHLIGHTING TO CONSUMERS THE ECO-CREDENTIALS OF WOOL BY PUBLISHING CASE STUDIES ABOUT THE ENVIRONMENTAL STEWARDSHIP OF WOOLGROWERS ACROSS AUSTRALIA.

Ethical and environmentally-sensitive farming can be as important for today's discerning customers as the quality of the clothing itself.

Therefore, AWI is creating a series of 'Grower Spotlight' case studies that highlight the positive environmental and community impacts that are achieved through wool-growing. The case studies are located on the new Woolmark.com website with some of the case studies also featuring in The Woolmark Company's *WOOL* magazine.

The articles and accompanying photo shoots are presented in a style that engages with eco-conscious consumers that aspire to a lifestyle of health and sustainability,

particularly consumers in large premium Northern Hemisphere markets.

The Woolmark Company showcases how woolgrowers from the high rainfall areas of the eastern seaboard to the drier pastoral areas of the west work to preserve, protect and improve the natural resources of their farms – the waterways, valleys and hills, native plants and animals – and how they aim to leave their land in a better state than when they arrived. **E**

MORE INFORMATION

View the woolgrower case studies at www.woolmark.com/spotlight

If you are a woolgrower who is interested in promoting the eco-credentials of your business then upload your photos to Instagram and tag @beyondthebale

short period of time, quickly moving on and leaving those grasslands to recover, reseed and regenerate.

"Our sheep produce beautiful superfine wool in a low-input system which could possibly endure in perpetuity."

David Watson, Millpost

"Our current grazing management has the whole flock consolidated into one mob of 2,000 sheep and they are rotated around

the farm," David said. "Ideally each paddock is only grazed after full recovery of the pasture, which might take six months or more, depending on conditions."

This grazing program provides the sheep with fresh pasture, consisting of a wide variety of plant species, all year round, while improving the health and resilience of the pasture and helping to quell weed infestations. The perennial native pastures also respond well to rainfall after periods of drought.

"Our sheep produce beautiful superfine wool in a low-input system which could possibly endure in perpetuity, regardless of Peak Oil. The same claim could not be made for cotton or synthetic yarn production."

AWI's marketing arm, The Woolmark Company, published an article about Millpost Merino in *WOOL* magazine and also on the Woolmark.com website (at www.woolmark.com/spotlight) to highlight to consumers the positive environmental impacts achieved through wool-growing – see article right. **E**

MORE INFORMATION

Millpost Merino yarns, plus a book of the permaculture journey at 'Millpost' from 1979 to today (including plenty of lessons learned), are available at www.millpostmerino.com



Millpost Merino yarn is produced using the best wool from the Millpost clip.





RMIT student **Danielle Herbert's** design that won the Australasian Young Designer Wool Award at Sheepvention in Hamilton, Victoria.

Celebrating 40 years of Hamilton's Sheepvention, this year all eyes were on the runway as the best young designers from across Australasia presented their best wool fashion designs, in hope of winning a trip to the fashion capital of Milan.

WOOL IN BLOOM AT SHEEPVENTION

A Melbourne-based fourth year honours student at RMIT has taken out the prestigious Australasian Young Designer Wool Award at Hamilton's Sheepvention. Danielle Herbert won the AWI-sponsored award with her evening wear entry.

AWI supports the Australasian Young Designer Wool Award to encourage a new generation of Australian fashion design talent to use wool in their creations, now and in their future careers.

This year's competition attracted 38 entries, designing to the theme of Wool in Bloom. The award was judged by AWI Australia & New Zealand project officer Clementine Hurley, Warrnambool fashion designer Erin Grigg and event organiser Jackie O'Brien.

"Danielle's design showed the potential of renewable and sustainable fashion production practices and heroes Australian Merino wool as the luxury fibre of choice in the emerging designer market," said Miss

Hurley. "Her wearable wool designs are beautifully cut and she shows clever and unique draping skills."

Danielle designed a three-piece Merino wool outfit, comprising wide-leg black pants made from recovered wool fabric she sourced from a Melbourne op shop, a classic tailored jacket with a detachable collar that could be worn in a variety of ways – such as a scarf – and a superfine white knit top with lace trims around the cuffs. **B**

AN ENDURING RELATIONSHIP WITH WOOL

The International Woolmark Prize aims to imbue the participating designers with a long-term knowledge and love of wool that continues through their professional lives – which is exactly what is happening with Australian brand **STRATEAS CARLUCCI**.

Having a longstanding relationship with AWI after winning both the men's and women's Australia regional finals of the International Woolmark Prize in 2015, Australian fashion label STRATEAS CARLUCCI has continued to champion Australian Merino wool in its collections each season.

The brand recently unveiled its latest collection, which is available via one of the world's leading online stores, Farfetch.com, which has more than 17 million monthly views and more than nine million fashion-forward consumers in all corners of the globe.

With more than 60 pieces, the expansive collection was developed in partnership with AWI's marketing arm The Woolmark Company and includes an extensive amount of Australian Merino wool.

The collection, titled 'UNEXPECTED NATURE', explores the concept of breaking

down stereotypes and disrupting first impressions and was inspired by pushing technology and fabric innovation with wool.

"Often there is a pre-conceived idea from a customer's point of view about wool, and what garments are made from wool," explains co-designer Mario-Luca Carlucci. "This capsule collection challenges the notion that wool is only used for traditional tailoring and knitwear by creating interesting hybrid-like garments and meshing sportswear with more traditional tailored pieces."

From working with local Australian knitter Aklanda, to Italian and Japanese mills, the collection sees a variety of interesting knitted and woven Merino wool fabrics in unique interpretations. It includes sportswear-inspired pieces, from hoodies, sweaters, anoraks, bombers and trenchies, to classic tailored shapes including coats, outerwear, trousers and suiting to unique hybrid garments such dress-shirt variations and more. **B**



Crew neck jumper from **STRATEAS CARLUCCI** is one of many wool items from the brand available to buy on **Farfetch.com** – a luxury online retailer which has more than nine million customers across the world.

INTERNATIONAL WOOLMARK PRIZE WINNER VISITS AUSTRALIA

This year's International Woolmark Prize womenswear winner Ruchika Sachdeva of Bodice Studio, from India, recently visited Australia to see the source of Merino wool and launch her winning wool collection Downunder.

2017/18 womenswear winner Ruchika Sachdeva visited Australia to launch her winning collection at stores including David Jones in Sydney and luxury fashion boutique Parlour X in Paddington, Sydney.

While in Australia, Ruchika also visited a wool-growing property to discover the source of Merino wool, conduct a retail training session with Parlour X, attend the David Jones Spring/Summer runway show (which featured Bodice Studio and marked the first time the International Woolmark Prize has been included in this show) and participate in a Q&A panel with fashion students studying at the Whitehouse School of Design.

"It was a wonderful experience and I think one of the best experiences I have had throughout working on the Woolmark collection," Ruchika said of her visit to the farm. "Just the serenity and where it comes from is really humbling – and the amount of work and time that it takes, it's really special. I feel really emotional being here."

Available through the International Woolmark Prize Retail Partner Network, the Australian Merino wool collection from Bodice Studio is also available globally at Boutique 1 (London and Dubai), Takashimaya (Tokyo), Tata Cliq Luxury (India), as well as online at Farfetch and Mytheresa.

"While I already had exposure in India, since winning the International Woolmark Prize I've received a lot more and it has really given me a foot in the door and helped me understand how the market works and expose me to western stores, which has really helped the brand," Ruchika added.

Earlier this year, the International Woolmark Prize judging panel that selected Bodice Studio as the womenswear winner praised Ruchika for her technique and manufacturing process. Collaborating with hand weavers

Bodice Studio's winning wool collection for sale on the **Parlour X** website.

and encouraging them to take an unorthodox approach to traditional techniques, Ruchika produced an elegant collection honouring Australian Merino wool and the artisans of her native country, India.

Parlour X owner/founder Eva Galambos is so enamored with Bodice Studio – having been introduced to the label when she sat on the judging panel of the competition – that she has not only purchased the International Woolmark Prize winning collection to stock in her boutique, but the label's forthcoming collection as well.

"Ruchika is an inspiring individual," explained Ms Galambos. "She is a phenomenally eloquent communicator and such a considered intellectual and an absolute inspiration. She has a philosophical approach to design and thinks about techniques from start to finish which embodies what she's trying to convey through her brand."

"I hope to educate a lot of my clients who will value artisanal production and appreciate the fact that she is globally aware; she's trying to make a difference and make consumers more environmentally friendly."

With support from The Woolmark Company, Ruchika has also hosted international media from

American Vogue, *British Vogue*, *Grazia Australia* and *Elle.com* in India, allowing the journalists to discover her design process and journey into the heart of India's traditional handloom villages. **B**

MORE INFORMATION

Hear more about the visit in Episode 62 of The Yarn podcast, available at www.wool.com/podcast.



Ruchika Sachdeva talking at the launch of her collection at the luxury fashion boutique Parlour X in Sydney, with Parlour X owner/founder **Eva Galambos** seated right, and Sustainability Editor of *Vogue Australia* **Clare Press** and Fashion Editor of *The Australian* **Glynis Traill-Nash**.



Geelong Cats AFL Star **Tom Hawkins** on his property in Barrabool, Victoria.

Rodd & Gunn brand ambassador **Tom Hawkins** sports the brand's latest Merino wool apparel.



TOM HAWKINS SCORES A GOAL WITH RODD & GUNN

Geelong Cats full-forward Tom Hawkins and his family earlier this year highlighted their connection to Australian wool in a photoshoot to promote the wool apparel of Woolmark licensee Rodd & Gunn.

Geelong Cats AFL player Tom Hawkins has a long association with Australian wool. From a wool, cropping and rice property at Finley, NSW, the full-forward said he was very proud to have grown up on a farm that produces wool and his fondest childhood memories were working with his father on the farm – and of course playing junior football for the local Finley Football Club.

In addition, Tom joined AWI's highly successful Fibre of Football campaign in 2014 and has been instrumental in promoting the importance of wool and wool-growing to the Australian community, along with supporting country football given it is at the heart of many communities.

"My upbringing on my parents' farm meant that I've been around sheep for the most part of my life and was able to witness each stage in the process of wool – from breeding, marking, weaning and shearing. There is still something nostalgic about walking into a shearing shed," Tom states in an interview on the Rodd & Gunn website.

"Wool is the livelihood of so many people throughout Australia, and is an industry that supports more than just the grower. Fine wool is a huge player in the Australian farming economy."

Tom, alongside his wife Emma and daughter Arabella, earlier this year invited menswear

brand Rodd & Gunn to their farm in Barrabool, Victoria, for a photoshoot that recognised the longstanding relationship formed between AWI's marketing subsidiary The Woolmark Company and Woolmark licensee Rodd & Gunn.

It's no surprise that Tom aligns himself with brands such as these, especially with 80% of the wool for Rodd & Gunn's tailored range sourced from a nearby Geelong sheep station.

"I've always made an effort to align myself with brands that share similar values as I do, that are authentic and most importantly, that I'm passionate about. Both Woolmark and Rodd & Gunn align perfectly with the above," Tom said.

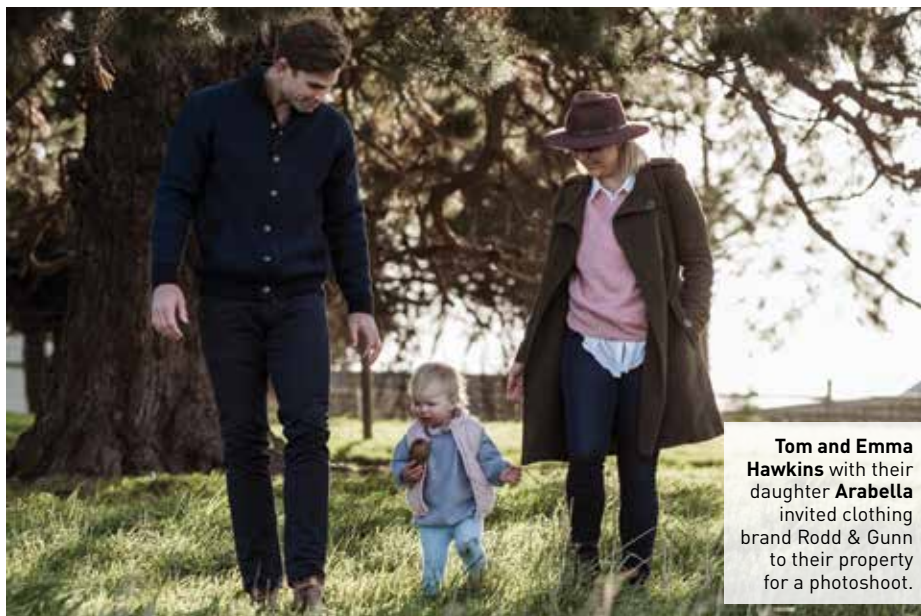
The photoshoot's concept – of which wool was the hero – was built around a day on the farm. Roaming shots of Tom's rugged

farming lifestyle allowed the brand to capture wool not only in its most natural state, but also the versatility of it across Rodd & Gunn's collections. By choosing to also involve Emma and Arabella in the photoshoot illustrates the importance of family at wool properties and highlights the next generation of farming.

"Merino and wool in general are the foundation of every Rodd & Gunn Autumn/Winter collection," explained Rodd & Gunn Creative Director John Prikryl. "The natural properties and endless iterations of Merino, as well as the innovation and technologically advanced processing available these days, makes wool absolutely essential to our brand. Merino is like the 'alpha and omega' of natural fibres."

B

MORE INFORMATION
www.roddandgunn.com



Tom and Emma Hawkins with their daughter **Arabella** invited clothing brand Rodd & Gunn to their property for a photoshoot.

FARAGE CELEBRATES 20 YEAR ANNIVERSARY

Based on the heritage of quality and Australian craftsmanship, the Farage signature has evolved over the past 20 years into one that exudes unapologetic sophistication fused with fine tailoring and urban confidence.

Renowned Australian fashion label and Woolmark licensee Farage is this year celebrating its 20th anniversary. Founded in 1998, Farage has established itself for pushing the boundaries of sartorial style and craftsmanship. Achieving an enviable balance between minimalism and sophistication, over the years Farage has become synonymous for classic tailoring with a modern twist.

"Twenty years ago a lot of suits that were available were a little boxy, a little loose and the majority of Australian men looked like they had borrowed dad's suit," reflects Founder/Director Joe Farage.

"I remember travelling to Paris to buy all these beautiful fabrics and I was sitting there thinking 'God, I've travelled 24 hours to find the raw material that came from my home in Australia.'" That material was indeed Australian Merino wool – the natural, renewable and biodegradable fibre which lies at the heart of Farage's collections.

Farage was recently chosen to dress the Australian Defence Force's VIP pilots and crew.
Photo: Nick-D, Wikipedia



"Right now, we are really inspired by the innovation that is coming through with regards to technical and performance fabrics. With the evolving lifestyles of our customer we find that they have more expectation of versatility from their suiting; the mills are embracing this and in turn there is so much development in this space.

"For Farage though it's about finding the balance between the traditional elements of 100% Australian wool and the modern elements of durability and performance... It's exciting and we're really embracing the challenge."

Since gaining a reputation for its cutting-edge tailoring, quality and craftsmanship, Farage continues to attract a growing number of loyal customers both in Australia and abroad.

For the past eight years, the brand has been the official tailor to AFL team the Sydney Swans and more recently the Woolmark licensee was approached by the Australian Defence Force to design and manufacture a new uniform concept for the VIP Flying Crew, known as 33/34 Squadron.

"The Defence Force was seeking a uniform solution that not only meets the durability demands of their work but also something that the Airforce could be proud of amongst their international peers," said Joe. "It was imperative that we worked closely with the Airforce to understand their requirements in order to offer a solution that was not only beautifully tailored but also practical, durable and up with high performance. Our outcome was to deliver a modern uniform that honours the heritage of the military/air force signature styling."

The resultant Australian Merino wool-rich collection delivered a complete wardrobe for the men and women of the 33/34 Squadron, which was wholly produced here in Australia. The uniform comprises a coat, jacket, trouser, shirt, skirt, dress and waistcoat along with accessories including a scarf, tie and belt.

"It is such a great honour to be selected to deliver this uniform on the eve of our 20th anniversary. VIP flying crew is a dedicated fleet servicing our Prime Minister, top ministers and international delegates, and so it is a huge compliment to the quality of our work to have it showcased amongst such an elite calibre." **■**

MORE INFORMATION
www.farage.com.au



The Farage men's and women's wear collections offer an array of styles suitable for business, formal wear and leisure, each exuding the traditional and timeless heritage of fine tailoring. Pictured is the **June Tuxedo Red** and **Richmond F Tuxedo Black** from Farage's Spring/Summer 2018/19 collection, available now.

Founder of menswear retailer Hackett, **Jeremy Hackett**, at the Wool Week installation in Covent Garden that highlighted the versatility and careability of wool.



CAMPAIGN FOR WOOL

WOOL WEEK UK

The Campaign for Wool's annual Wool Week in the UK recently marked its ninth year with an extended program of events spanning a fortnight in October - with this year a key message being 'careability', allaying consumer fears that caring for wool is difficult.

The global Campaign for Wool marked its ninth successful year in the UK with its annual 'Wool Week' held 8-21 October.

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.

Highlighted at this year's Wool Week UK, the Campaign for Wool compiled and highlighted 'Five Wonderful Wool Facts' that show consumers why wool should be their first choice for the home and the workplace:

1. Wearing and sleeping with wool products helps you sleep
2. Wool is environmentally friendly
3. Wool is good for your skin and can even help with adult and children's eczema
4. Wool can be invisibly repaired
5. Wool is replacing leather for seats in luxury automotive brands and first-class cabins in planes.

"'Take care of wool and wool will take care of you' is the message promoted at this year's Wool Week," said the Campaign for Wool.

"Wool really is a wonder fibre. It's really easy to look after and it will give back lots in return - not just in terms of comfort but it's also good for your health and for the health of the planet. It's no surprise that NASA uses it for their astronauts. It really is out of this world and we want everyone to know."

"'Take care of wool and wool will take care of you' is the message promoted at this year's Wool Week."

Campaign for Wool

THE 'CAREABILITY' OF WOOL

Centring around an interactive pop-up in London's iconic Covent Garden, Wool Week showcased retailer collaborations and educated consumers about the ease of owning, caring for and cleaning wool products. It highlighted that the purchase of a wool product is an investment that will stand the test of time to look as good as the day it was bought.



At the installation, **Jeremy Hackett** showcased a special limited-edition Aston Martin fitted out in the same Prince of Wales fabric for the interior as Jeremy's suit woven by Somerset-based Fox Brothers and Co.



The unique wool week selfie section at the pop-up installation enabled the public to get a photo with **AEG** wearing a beautiful wool **Johnstons of Elgin** scarf and tag AEG #aegcare for their chance to win an AEG 9000 washing machine.



Founder of British brand Brora, **Victoria Stapleton** wearing a limited-edition wool sweater, designed exclusively for Wool Week.



In the front of the cameras at the Wool Week installation, designer **Patrick Grant** (left) talks wool with some of the 'wool gurus': Global senior product manager at adidas, **Patrick Reinhardt**, and managing director of clothmaker Fox Brothers, **Douglas Cordeaux**.

The wool care installation consisted of two fitted-out containers – decked with wool furniture, carpets and garments – highlighting the versatile and innovative ways in which wool is used across different industries and applications. The public could enter on a wool carpet and then see the products with a different uniqueness – traceability back to the farm, luxurious sleep wear, wool sneakers, hand knitted jumpers, wool wadding, wool furniture and much more.

There were live stain removal demonstrations for both carpets and garments, at which the public was encouraged to get involved.

The containers were fitted with colourful AEG washing machines showcasing in a captivating way how easy wool is to care for. Visitors had the opportunity to interact with AEG experts, and a line-up of activities, demonstrations and initiatives designed to show the best ways to care for wool. The public were encouraged to partake in live art experiences, tackling common stains found in the home from coffee to red wine.

MEET THE WOOL GURUS

Visitors to the installation at Covent Garden had the opportunity to meet retailers and industry experts through a 'Meet the Wool Gurus' series. The series of talks was hosted by the broadcaster and British designer Patrick Grant, who is well known

in the UK as a judge on the television series *The Great British Sewing Bee*. The gurus included:

- Global senior product manager at adidas, Patrick Reinhardt
- Founder of menswear retailer Hackett, Jeremy Hackett
- Managing director of clothmaker Fox Brothers, Douglas Cordeaux
- Managing director of knitwear company John Smedley, Ian Maclean
- Founder of luxury retailer Brora, Victoria Stapleton
- Founders of Merino babywear brand Smalls, Emma-Jane Adams and Catriona Pharo
- Product director of sustainable apparel company Finisterre, Deborah Luffman
- Wool expert, Dr Paul Swan
- Author of leading British blog on tailoring and luxury *Permanent Style*, Simon Crompton
- Leeds University textile expert, Dr Mark Taylor
- Director of Creative & Marketing at Alternative Flooring, Lorna Haigh
- Owner of wool bedding and homewares company The Wool Room, Chris Tattersall

- Global marketing director of carpet cleaning company WoolSafe, Steve Bakker

- Owner of carpet retailer Clarkes Floors and Furniture, Tim Clarke.

WOOL IN THE SHOPS

Key retailers and designers once again threw their support behind the Campaign for Wool through in-store activities and shop window displays across the UK.

The Campaign for Wool collaborated with retail partners and brands including Brora, Jack Wills, Hackett, Pringle of Scotland, Vivienne Westwood, Marks & Spencer, John Smedley, Walker Slater, Hobbs, Finisterre, Johnstons of Elgin, DAKS, Smalls, Brintons, Harris Tweed Hebrides, Axminster, Alternative Flooring, Abraham Moon & Sons, Headlam Group, Brockway and more.

In addition to retail consumer promotions and events taking place around the UK, there were also a series of craft workshops taking place at various locations across the country.

For example, with more than 200 years of hand knitting history, Pringle of Scotland opened its doors for an exciting wool week workshop at which participants learnt techniques and traditions of hand knitting from Pringle's experts; and Stitch Up craft school in Leeds held two macramé workshops, at which participants made beautiful wool wall hangings.

SHOWCASING CHINA'S NEW WORLD WOOL

As part of its commemoration of 50 years of successful wool trade between China and Australia, AWI collaborated with six of China's most exciting fashion designers to create collections made from Australian Merino wool – which were showcased at a gala event in Shanghai.

In a series of initiatives this year, AWI has marked more than half a century of a cross-cultural partnership between Australia and China – spanning the wool trade through to design creativity.

By not only looking back at China's astonishing growth, but more importantly looking to the future, AWI aims to secure Merino wool's position as the fibre of choice for China's burgeoning middle class and thereby increase awareness and demand for the fibre.

In the latest initiative, AWI's subsidiary The Woolmark Company utilised its strong position in the market to present at a special event in Shanghai six of China's established designers who have achieved success and recognition, locally and internationally.

Their collections (below), which utilised innovative wool fabrics from manufacturing partners in China, were launched at the 'New World Wool' gala event on 25 October – with an exhibition and a digital runway presentation at the iconic Shanghai Fosun Art Centre.

The presentation incorporated a four-minute film, directed by the globally acclaimed fashion film director Tim Richardson and featuring supermodel Xiao Wen Ju, showcasing the Merino wool collections in a cutting-edge cinematic experience

The event was attended by key supply chain partners including the President of National Textile and Garment Council, Sun Ruizhe; Australian Ambassador to China, Jan Adams; key media such as Editor in Chief of *Vogue* China, Angelica Cheung; Editor in Chief of *Elle* China, Xiao Xue; Editor in Chief of *T Magazine* China, Feng Chuxuan; as well as celebrity guests including supermodel Xiao Wen Ju; fashion it girl Chen Ran and actress Kimmy Tong.

"The gala event in Shanghai showcased Australian Merino wool in a dazzling way to the cream of the Chinese fashion and textile industries as a modern and innovative fibre used by the most important designers of the new world," said AWI CEO Stuart McCullough.



"As China has consolidated its position as one of the essential engines of the global economy, so too has the country cemented its relationship with Australian Merino wool. The natural fibre has become a pillar of China's apparel industry, both in the manufacturing and the consumption of garments, and the relationship between Australia and China continues to deepen."

As the long-term strategic partner of The Woolmark Company, premium retailer Lane Crawford was the exclusive partner to present the New World Wool capsule collections. The collections were displayed from 26 October to 7 November at Lane Crawford Shanghai Times Square with an artistic pop-up installation. Customers were able to pre-order these exclusive collections in store. **B**

MORE INFORMATION
www.woolmark.com

MERINO WOOL PIECES FROM THE SIX DESIGNERS' COLLECTIONS



Ms Min



Ban Xiaoxue



Vmajor



Uma Wang



Xu Zhi

(Left) AWI CEO **Stuart McCullough** at the opening of the New World Wool gala event, with supermodel **Xiao Wen Ju** and Editor in Chief of *Vogue* China, **Angelica Cheung**.
 (Below left) Fashion designer **Lu Yan** of Comme Moi at the gala event with Australian Ambassador to China, **Jan Adams**.
 (Below) AWI's Country manager for China, **Jeff Ma** at the exhibition with the President of China's National Textile and Garment Council, **Sun Ruizhe**.



Woolgrowers **Chris and Max Price** from Victoria and **Coral and Max Caldwell** from NSW receive their trophies from Nanshan Chairman **Jeremy Song** (far right) and AWI CEO **Stuart McCullough** (behind).

NANSHAN WOOL SUPREMACY TROPHY

One of China's leading wool textile enterprises, **The Nanshan Group**, has presented its inaugural **Nanshan Wool Supremacy Trophy**, awarded for wool with the best processing ability.

The inaugural Nanshan Wool Supremacy Trophy award winners were announced at the end of August, with Max and Chris Price from 'Glenwood' at Cavendish in the Western District of Victoria, and Max and Coral Caldwell from 'Barkers Lake' at Bungarby on the Monaro of NSW, jointly taking out the top honour for the overall quality of their wool.

The Nanshan Wool Supremacy Trophy is a new award for the processing ability of wool purchased by Nanshan. In conjunction with AWI, Nanshan has developed a points-based system allocated for qualities that can affect the overall final product.

"The fleeces were judged against criteria that included position of break, greasy staple length, staple strength, vegetable matter, coefficient of variation of hauteur, coefficient of variation of fibre diameter and the dry combing yield," outlined Nanshan's Kevin Xing.

"The winners may not have the finest wool in terms of micron, but their wool is judged as best value for Nanshan producing the best possible fabric. As such, we decided that micron would play little part of the marking criteria.

"Both winners grow 19 to 20.5 micron, which is very pleasing to us as quite often the

established Australian industry awards are almost exclusively the domain of superfine and ultrafine growers.

"That is not to say that those categories are not able to successfully compete, as Nanshan also buys wool as fine as 14.5 micron as part of their new ultrafine program under co-development with AWI R&D assistance."

This year there were 987 farms from across Australia eligible for the Wool Supremacy Trophy. It is the intention of Nanshan that it will become a highly sought-after annual award for all woolgrowers who supply Nanshan.

The inaugural award was this year held in conjunction with the second annual wool forum hosted by Nanshan. The event showcases Nanshan's ongoing support and appreciation for Australian woolgrowers and highlights the strong relationship there is between Nanshan and the Australian wool industry and AWI.

As well as the prestige of winning the award, both winners received two business class return tickets to China courtesy of Virgin Australia, an airline of which Nanshan is a 20% shareholder. During their China visit, the winners' representatives will tour the fully vertical weaving mill and other assets as guests of Nanshan.



Two stills from the film shown at the gala event featuring supermodel **Xiao Wen Ju** wearing the Merino wool garments from the six Chinese designers.



Yang Li

PHILLIP LIM'S MERINO SERIES IN STORES NOW

Award-winning designer Phillip Lim's collaboration with The Woolmark Company recently came to fruition with his fashion label's new Merino collection hitting stores across the world.

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

The highly anticipated 'The Merino Series' unveiled earlier this year by 3.1 Phillip Lim at New York Fashion Week is now available to buy at retailers across the USA, Europe and Asia – suitably in time for the northern hemisphere's winter months.

The 24-piece collection comprises a diverse range of silhouettes including wool-rich coats, blazer, sweaters, skirts, trousers, short and long-sleeved tops as well as the label's first production of a wool puffer coat.

By working closely with AWI's marketing arm, The Woolmark Company, the designer was able to source a selection of the world's most innovative fabrics and yarns to produce The Merino Series.

"I am proud to collaborate with companies that are true innovators – it makes my job exciting because we are able to constantly push boundaries. So the partnership with The Woolmark Company was a natural one," the designer said.

"I love that Australian Merino wool is a sustainably conscious, renewable fibre, as today, we must all do our part to protect our planet. Yet the real magic for me was in reimagining the possibilities of this material – romanticising wool with colours, finishes and silhouettes that lend a tactile and feminine touch to a traditionally utilitarian fabric."

To coincide with the collection's launch, two events were held at luxury retailers Lane Crawford in Shanghai and Saks Fifth Avenue in Boston, where the designer met with key media, influencers and customers, to present the collection and talk about the inspiration behind it. **B**



New York-based fashion label **3.1 Phillip Lim** has created a 24-piece collection titled The Merino Series, which is now available to purchase in store and online. Pictured is a model wearing one of the looks at the collection's launch at luxury retailer **Lane Crawford** in Shanghai.

MORE INFORMATION
www.31philliplim.com/the-merino-series.html

SPORTS-LUXE MEETS MERINO WOOL

Renowned Belgian designer Tim Coppens, who has secured his eponymous brand's place amongst the upper echelon of menswear collections, last month launched a new Merino collection at the third annual ComplexCon festival at Long Beach, California.

The six-piece, highly-shoppable, innovative outerwear collection uses Australian Merino wool as the core ingredient and was developed in collaboration with AWI's subsidiary, The Woolmark Company.

The collection marks the first time Coppens has used a significant amount of Merino wool in his collections and is the first luxe streetwear brand's use of technical fabrication and innovation in the USA.

The collection blends the highest degree of craftsmanship and tailoring with athletic-inspired innovation. Each piece is



meticulously crafted utilising the newest Merino wool material innovations and garment construction techniques.

"The innovation and richness of Merino fitted perfectly with the DNA of my brand, and this project has been a way to combine my aesthetics with a selection of Merino wool innovations," the designer said.

AWI CEO Stuart McCullough said the company was delighted to work with Tim Coppens who has been on the forefront of redefining menswear.

"He has gained consistent recognition from the fashion industry since he established his label in 2011 and we are very pleased that he has chosen to work with Merino wool, a fibre that is being recognised for its versatility and naturally inherent style by the leading lights of the industry," Mr McCullough said.

"While it's clear that Coppens is inspired by the dynamic natural properties of Merino wool, it's also instructive to see that he has utilised the latest textile technology and

innovations to further enhance the fibre's inherent style."

Some of the key Australian Merino wool innovations in the collection includes: a 120's water-repellent three-layer Merino wool, 120's Merino wool padding, 120's Tech Merino wool waffle knit, 120's ultra-light Merino wool shirting, 120's Merino wool micro pile waffle knit, and a Merino wool double cavalry twill. **B**

Designer **Tim Coppens** said working with the "diversity and luxe appeal of Merino wool" had been productive for him as a designer.





Bergdorf Goodman's men's department store in New York showcased the latest luxury Merino wool garments, as part of 'The Future of Merino' initiative.

The iconic New York department store helped promote Merino wool by decorating the **street windows** of its store located at the 'crossroad of fashion' in Midtown Manhattan. Photo credit: Kevin Foy/Alamy Stock Photo

ICONIC NYC DEPARTMENT STORE SHOWCASES 'THE FUTURE OF MERINO'

Iconic New York department store Bergdorf Goodman this season invited its customers to experience the latest Merino wool offerings from luxury fashion brands, in an initiative by AWI to increase demand for the fibre in luxury US markets.

landscapes, the space was anchored by a giant sheep standing upon a pastel pasture, representing the innovative nature of the fibre.

Each of the four street windows highlighted the use of Merino wool in luxury fashion while creating a showcase for the Fall 2018 men's collections.


The Future of Merino wool looks were also available to purchase online at bergdorfgoodman.com with promotional material about the wool apparel emailed to more than 750,000 Bergdorf Goodman subscribers.

"We are really excited about the partnership between Goodman's and The Woolmark Company as we see more and more innovative uses of Merino wool by the fashion community," said Bergdorf Goodman Men's Fashion Director, Bruce Pask.

"Designers as varied as Mike Amiri, Dries Van Noten, Junya Watanabe, and Virgil Abloh at Off-White have all created eye-catching looks using the versatile fibre in their Fall collections that we have featured here in this innovative installation."

AWI CEO Stuart McCullough said the company is delighted to be working with such an icon as Bergdorf Goodman to showcase some of the best Merino wool pieces across this season's men's collections.

"We want the world to appreciate Merino wool the way we do – and see how adaptable the fibre is to create diverse and luxurious fashion pieces," he added.

Bergdorf Goodman ships internationally. 

MORE INFORMATION
www.bergdorfgoodman.com



A New York landmark since 1901, premium department store Bergdorf Goodman represents the global pinnacle of modern luxury, style and service. With its rich history of showcasing leading and emerging designers, the iconic store at 5th Avenue and 58th Street in Midtown Manhattan – the crossroad of fashion – is a singular destination for discerning customers across the world. Across 5th Avenue, Goodman's Men's Store is an unrivaled standalone luxury speciality store.

Bergdorf Goodman recently partnered with AWI's marketing subsidiary The Woolmark Company to showcase Australian Merino wool as one of the ultimate natural fibres and premier ingredients in luxury apparel.

Named 'The Future of Merino', the multifaceted collaboration resulted in this season's best wool apparel being promoted in a specially curated pop-up at the Goodman's Men's Store that offered shoppers an assortment of sports and streetwear made from luxurious Merino wool. Framed by walls featuring colourful psychedelic



Modern Merino wool looks were also available to purchase online at bergdorfgoodman.com – with promotional material about the wool apparel emailed to more than 750,000 Bergdorf Goodman subscribers.

PARIS WOOL PROMOTION

With support from AWI, **TV network France 24** has gone behind-the-scenes of Paris Fashion Week to meet and promote the world's biggest designers working with wool.

In the international calendar of ready-to-wear fashion shows, Paris is one of the fashion world's key capitals and remains a symbol of creativity, invention, independence and modernity.

As part of Paris Fashion Week, AWI's marketing arm The Woolmark Company partnered with France 24 – a Paris-based TV and online channel – to take viewers behind-the-scenes of some of the biggest shows and meet the world's most important designers working with wool.

Having dedicated fashion segments, Paris 24 broadcasts to 325 million TV households in 183 countries around the world and has more than 30 million followers on social media networks.

Filmed backstage and from the front row of designers' runway shows – including JACQUEMUS, Koché, Zadig & Voltaire, Yohji Yamamoto, Chanel, Saint Laurent and Christian Dior – five short films in the 'Paris Fashion Series' were produced with support from The Woolmark Company.

A Merino wool piece on the runway show of French label JACQUEMUS (see story below), as broadcast on the **France 24** in collaboration with The Woolmark Company.



The films have already reached 1.22 million viewers, telling the story of how wool is a key element in the standout garments for Spring/Summer 2019.

The 'Paris Fashion Stories' partnership with The Woolmark Company will continue for the February edition of Paris Fashion week, with another nine episodes scheduled to go to air.

B

MORE INFORMATION

www.france24.com/en/tv-shows/fashion

MERINO'S MEDITERRANEAN VIBES FOR SUMMER

Continuing to showcase Merino wool as a fibre for all seasons, **French fashion label JACQUEMUS** highlighted the natural fibre in his latest collection as a key ingredient for summer apparel.

Credited with bringing freshness to the French fashion scene and considered by many as its brightest new star, celebrated French fashion designer Simon Porte Jacquemus, of the label JACQUEMUS, has always been passionate about working with pure, natural materials.

JACQUEMUS' strong positioning as a young, fresh, edgy and contemporary French brand aligns with AWI's desire to position wool as an innovative and premium fashion fibre. Following the success of their first three womenswear and menswear collaborations, JACQUEMUS once again partnered with The Woolmark Company to present its Spring/Summer 2019 womenswear collection, reinforcing the trans-seasonal properties of lightweight Merino wool.

"These past few seasons, I've been lucky enough to collaborate with The Woolmark

Company for the development of the use of wool in my collections, even for summer," explained the 28-year-old designer.

"My studio and the The Woolmark Company teams challenge each other to find innovations and manufacturers who fit the JACQUEMUS creative and commercial ethos: a quality product at a reasonable price, so that as many people as possible may afford my clothes. We've had fun creating wool pieces that were young, exciting, colourful."

Amongst a sea of oversized straw bags, the designer unveiled his 'La Riviera' collection at the Italian Embassy in Paris, during Paris Fashion Week, held in September. Plunging necklines mixed with Cool Wool tailoring and second-skin knitwear strutted the garden catwalk – in colours far removed from the classic hues often used in tailoring.



A summery **Cool Wool** look from the latest collection of French designer label **JACQUEMUS**.

B

Another successful collaboration by AWI with contemporary **French label Zadig & Voltaire** has resulted in a boyish, laid-back luxe aesthetic that exudes ease, assurance, and energy – all made possible by the luxurious feeling of Australian Merino wool.



Zadig & Voltaire Artistic Director **Cecilia Bönström** (centre) with models wearing lightweight woolen tank tops that were key pieces in the brand's latest collection, created in collaboration with AWI.

ZADIG & VOLTAIRE'S JOIE DE VIVRE

Zadig & Voltaire is a contemporary and creative fashion label made in Paris, with a French mindset and Voltairian spirit. Founded in 1997, the brand aims to bring women closer to freedom, ease and autonomy.

The hero pieces of the brand's latest collection are a series of lightweight wool tank tops emblazoned with the names of the brand's three muses: Eva Herzigová, iconic model of the 90s; Sasha Pivovarova, of the new generation of fashion; and Freja Beha Erichsen, living image of the androgynous and sublime model.

These Woolmark-certified tank tops, which were presented during Paris Fashion Week, are the result of another successful collaboration with AWI's marketing arm The Woolmark Company.

"Wool is one of the first materials Zadig & Voltaire used for their knitwear collections," explained Zadig & Voltaire Artistic Director Cecilia Bönström. "For us, wool is a true inheritance and a material that is important as it expresses quality, nobleness and nonchalance at the same time. We have always admired the Woolmark trademark as it is so authentic and linked to high quality."

The Spring/Summer 2019 collection follows the success of last year's Zadig x Woolmark collection, which presented a series of lightweight Merino wool sweaters.

"While Paris is world-renowned for its luxury couture, there's an edgy undercurrent of sub-cultures particularly with millennials which has seen a fusion between fashion and rock & roll," said AWI CEO Stuart McCullough.

"Zadig & Voltaire's collections speak to a new generation of consumers, highlighting Merino wool's versatility and positioning the fibre as an accessible luxury to a younger generation." **B**

ENTHUSIASTIC RESPONSE TO KOCHÉ'S NEW COLLECTION



Bold and colourful, French label **KOCHÉ** returned to wool with its Spring/Summer 2019 collection launched at Paris Fashion Week.

The crowds at the launch of **French label KOCHÉ's** latest collection at Paris Fashion Week very much liked what they saw – in no small part because of the collection's distinctive Merino wool pieces.

With its apparel sold in 15 countries across the world and in luxury stores such as Selfridges in London and Barneys New York – and having also been shortlisted for the LVMH Fashion Prize and the ANDAM Fashion Award – the Paris-based brand KOCHÉ has certainly made its mark on the fashion scene since it was launched in 2014.

AWI's marketing arm The Woolmark Company has once again partnered with KOCHÉ with the aim to extend the reach of wool to the Y-generation and Millennials who follow the flourishing brand. The initiative is also helping promote Merino wool as the

luxurious and technical fabric of choice for a young and innovative generation of French designers.

Woolmark-certified Merino wool apparel returned as the hero of the label's latest Spring/Summer 2019 collection, with designer Christelle Kocher highlighting the lightweight, trans-seasonal properties of the fibre and its versatility for the warmer months.

"Thanks to the support of The Woolmark Company, I was lucky enough to be able to meet a few months ago with partners in the Japanese region of Bishu, which is famous for the wool manufacturing," said the designer. "This trip was very inspiring for me and it was the opportunity to collaborate with high-quality partners such as Nakaden. This season, I wanted to work this exceptional material in a female/male spirit. The collection also offers hand-made wool sweaters."

AWI CEO Stuart McCullough says KOCHÉ stands at the crossover of high fashion, street culture and contemporary art.

"Its intense and distinct attitude offers a very casual, yet highly luxurious approach. Modern, elegant and refined, KOCHÉ proposes an intriguing new angle to fashion, of which AWI is very proud to be a part," he said. **B**

TOKYO'S VFNO LOVES WOOL



Eye-catching flags promoting wool during Vogue Fashion's Night Out, on the main street of the Omotesando fashion district of Tokyo which is often referred to as Tokyo's Champs-Élysées.

More than a quarter of a million shoppers took part in Tokyo's Vogue Fashion's Night Out (VFNO), throughout which the message 'VFNO loves wool' was widely promoted.

The Woolmark Company's high visibility installation at Vogue Fashion's Night Out in Tokyo was visited by thousands of people, including key influencers like this Japanese celebrity who received more than 16,000 likes for this single Instagram post.



This year marked the 10th time that Vogue Fashion's Night Out was held in Tokyo – it was attended by more than a quarter of a million premium shoppers.

Vogue Fashion's Night Out (VFNO) is a global initiative of *Vogue* in which cities across the world hold a premium one-night-only fashion and shopping festival, and participating retailers and brands host special events.

On 15 September, VFNO was held in Tokyo for the tenth year in a row – and for the first time AWI's marketing arm, The Woolmark Company, took the unique opportunity to be a main sponsor of the event. The Woolmark Company's aim was to reinforce the position of Merino wool and the company in the high fashion segment.

VFNO is one of Japan's largest fashion events and has proven a hugely popular format in Japan, in particular with the affluent fashion-conscious crowd. More than a quarter of a million people visited VFNO in Tokyo, with each spending on average about AU\$500.

As part of VFNO in Tokyo, The Woolmark Company presented a highly visible installation, inspired by Merino wool, below the main staircase at the Omotesando Hills shopping complex in central Tokyo, the main venue of VFNO.

The installation, which had the theme 'VFNO Loves Wool', was a hub where fashionistas could gather to discover the style and charm of Merino wool. Five influential celebrities visited the installation – as well as partner brands – and they posted photos of their visits on Instagram with the posts receiving thousands of likes.

A digital campaign was held at the installation in which participants had the chance to win a 100% Merino wool T-shirt. 'Wool' cotton candy was also gifted to about 700 campaign participants.

Importantly, leading labels including FACETASM, Zadig & Voltaire and Helen Kaminski featured wool items in their stores.

"The objective of our presence at VFNO was to leverage the extraordinary location and massive traffic of the event," said AWI Country Manager Japan, Samuel Cockedeey. "It was a unique opportunity to position Merino wool as the natural and innovative fibre of choice for the highly relevant crowd of premium Japanese female consumers that attend the event.

"By being a major sponsor of VFNO, we also positioned The Woolmark Company at the forefront of the Japanese women's fashion scene by associating the company with the iconic *Vogue* brand."

The Woolmark logo appeared in a range of



VOGUE FASHION'S NIGHT OUT 10th 2018 TOKYO

MERINO GETS EDGY IN JAPAN

AWI has partnered with premium department store Hankyu Men's Tokyo in a campaign to promote Merino wool as the ingredient of choice for edgy and quality designer brands.

Retailing products from the world's big-name brands to labels by Japanese designers, high-end men's department store Hankyu Men's Tokyo is the only specialty men's fashion store in Tokyo's upmarket Ginza shopping district. It is one of the largest speciality men's fashion stores in Japan and has annual sales of nearly AU\$80 million.

In September, Hankyu Men's Tokyo and AWI's marketing arm, The Woolmark Company, collaborated with 12 Japanese designer brands to each produce an apparel piece exclusively for sale at the Hankyu store in Tokyo. The promotion took place for two weeks from 26 September through to 9 October.

The participating brands were Yohji Yamamoto, Issey Miyake Men, Wacko Maria, Neighborhood, Y-3, Markaware, Coohem, wjk, Sise, Deluxe, White Mountaineering and Billionaire Boys Club.

Hankyu had run similar projects four times previously, but the focus for this season was on wool, with each of the designer brands producing their garment from 100% Merino wool.

"This project was an excellent opportunity to work with one of the biggest and most prestigious retailers in Tokyo and to connect with 12 edgy designer brands – while combining excellent visibility in the upmarket Ginza shopping district with a solid sales campaign," said AWI Country Manager Japan, Samuel Cockedeey.

"It is worth mentioning this project came to fruition following the investment made by The Woolmark Company in October last year to sponsor the Ginza Fashion Week."

Key co-branded marketing activities included a pop-up shop in the store's entrance for one week, instore displays for each of the 12 brands, co-branded swing tags on collection items, and large adverts on the outside of the store and on the store's main entrance. There were also magazine advertorials, and brochures mailed to customers and distributed in store. Digital marketing included a targeted Instagram campaign and promotion on Hankyu Men's Tokyo and The Woolmark Company's digital channels.



Leading labels, such as luxury womenswear brand **Zadig & Voltaire**, featured many wool items in their stores during Vogue Fashion's Night Out in Tokyo.

VFNO media including tens of thousands of copies of *Vogue Japan's* print edition, the VFNO guidebook and map, as well as the official poster and flyer, and eye-catching flags on the main street.

The Woolmark Company's message that 'VFNO Loves Wool' was amplified through *Vogue Japan's* digital channels. *Vogue Japan's* website alone has nearly 40 million page views each month; while on social media, *Vogue Japan* has more than 350,000 followers on Facebook, nearly 750,000 on Twitter and more than a million on Instagram.

"Given the limited number of well-positioned, high impact fashion events in Japan, our participation in VFNO was a great decision that was well-aligned with our ongoing strategy in Japan to promote Australian wool," added Samuel.



Large adverts showcasing the wool promotion at the entrance of the high-end department store **Hankyu Men's Tokyo**.



Merino wool garments on display inside Hankyu Men's Tokyo.

Screenshot from 5.11 Tactical's video promoting the Poly/Wool uniforms.



Innovative wool-rich uniforms were promoted to the 15,000 attendees at the International Association of Chiefs of Police (IACP) Annual Conference and Exposition in Florida, in an initiative by AWI with North American company 5.11 Tactical to gain a significant market share for wool in the uniforms sector.

The IACP Annual Conference and Exposition is the largest and most important event of the year for law enforcement professional across the USA and the world. More than 15,000 professionals gather to learn new techniques and knowledge – and equip their departments with uniforms and equipment.

This year, the high-profile week-long event was held in Orlando, Florida, in October, and was even visited by the President of the USA, Donald Trump.

Service apparel and gear manufacturer 5.11 Tactical – a North American company with which AWI's marketing arm The Woolmark Company has partnered – attended the IACP Exposition to promote the wool/polyester blend Class A (formal) uniform collection made using Flex-Tac® fabric, a specialised proprietary blend engineered to provide extreme durability and performance.

The Flex-Tac® Poly/Wool line was developed with assistance from The Woolmark Company and contains Australian Merino wool. It is the first ever Class A uniform with mechanical stretch that also has a Teflon® finish and is home laundry friendly.

The Poly/Wool collection, which is available to purchase now, has Woolmark certification and includes men's and women's short-sleeve and long-sleeve shirts and pants.

5.11 Tactical also launched at IACP a Merino wool base-layer range comprising long-sleeve and short-sleeve T-shirts, tights and briefs, plus Merino wool socks.

AWI CEO Stuart McCullough says the initiative by AWI, to help 5.11 Tactical develop and market the innovative wool-rich uniforms, aims to increase wool's share of the uniforms sector.

5.11 TACTICAL

INTRODUCING
**CLASS A
POLY/WOOL
UNIFORMS**

An example of 5.11 Tactical's advertising of the Poly/Wool uniforms, all of which included the Woolmark logo that is owned by Australian woolgrowers.

- Flex-Tac® fabric with mechanical stretch
- Teflon™ finish for stain and soil resistance
- Fine Australian Merino wool

FLEX THE WOOLMARK COMPANY

SIGN UP FOR A WEAR TEST

POLICE CHIEFS TARGETED WITH WOOL

"Our alignment with 5.11 Tactical not only highlights the versatility of Australian Merino wool, but is also a nod to the fibre's heritage," Stuart said.

"Traditionally, wool has been used in a variety of uniforms, so it is nice to see the fibre return to this important sector. Highly breathable with superb thermoregulation properties and resistance to odour, Merino wool should be the natural choice for police and service personnel."

Vice President of 5.11 Tactical's Professional Division, David Hein, said the Poly/Wool range merges fabric innovation with the trusted performance of fine Australian Merino wool.

"Merino wool helps manage moisture, controls odours and is naturally stain resistant," he said. "With the addition of the

5.11 Flex-Tac® fabric for increased stretch and Teflon® finish for stain and soil-resistance, 5.11 Tactical with support from The Woolmark Company has produced a Class A Uniform that is a step above the rest."

MARKETING THE UNIFORMS

The promotion of the Poly/Wool uniform range has been accompanied by a variety of marketing collateral, all of which included the Woolmark logo. Imagery of the uniforms for the marketing collateral, along with a 1½ minute promotional video, was created by 5.11 Tactical at a photo/video shoot in northern California.

At the IACP Exposition, the interior and exterior of the 5.11 Tactical booth included marketing graphics, as well as tradeshow postcards, handouts, brochures and mailers.

Eight-second adverts on nine digital signage screens at the Exposition ran every four minutes, plus digital advertising on screens at Orlando International Airport.

Two popular promotional events, including a presentation and demonstration of the uniforms, were held at the 5.11 Tactical booth at IACP. The events were also a good opportunity for the company to collect sign-ups for a wear-test of the uniforms by officers, who try out the garments and then provide feedback to their police chiefs (the purchasing decision-makers). There has been five times the anticipated number of sign-ups, which demonstrates the interest in the uniforms.

Other promotion of the uniforms included advertising in:

- Police Magazine: including a full-page advert, advertising insert, and uniform sponsor in the 'Well Dressed Patrol Officer Contest'
- PoliceMag.com: including website and mobile banner adverts, Facebook posts, dedicated email, e-newsletter insertions in the 'Hot Product' and 'IACP sponsor' sections, and custom landing page
- PoliceOne.com: including a dedicated email, two e-newsletter insertions, and Facebook posts.

"IACP was one of the best and most well attended shows we have had in years and the new 5.11 Poly/Wool uniform was certainly a highlight of the show," David Hein said.

"We had thousands of chiefs and other representatives of law enforcement from across the world stopping by the 5.11 booth and inquiring about the new uniform and its performance. There were a lot of great comments around the product with how good it looked, how light and comfortable it felt while maintaining its professional look.

"We anticipate based on our partnership with Woolmark and the success of the show to see hundreds of agencies and departments request to wear test the products." **E**

MORE INFORMATION
www.511tactical.com/woolmark-polywool-uniforms



Vice President of 5.11 Tactical's Professional Division, **David Hein**, with **Glen Tilley** of 'Hillcott Grove', Tarlee in the lower Mid North region South Australia, during a visit to Australia in September to learn more about the source of Merino wool.



Indian brand **Neeman's** is the latest to include Merino wool in footwear – a growing trend which highlights the performance benefits of the fibre in a unique, innovative way.

RUNNING WITH WOOL

Merino wool is increasingly being used as the key ingredient in footwear, with the high performance fibre giving consumers the natural edge over its synthetic rivals.

As the sports and outdoor industry continues to grow, leading brands are extending their use of wool from activewear into footwear. However, the success of wool in footwear lies not only in the fibre's natural properties, but also in its ability to be constructed in a way that aids performance.

AWI's technical team has been working to create shoes that not only allow the foot to breathe, wick away moisture and are resistant to odour, but importantly are comfortable to wear. For example, by combining yarns together and using three-dimensional knitting, the entire upper of the shoe can be seamless, free of cutting and sewing.

By working with the world's most innovative spinners, AWI has developed wool and wool-rich yarns specifically for footwear and has been showcasing them at the world's most important trade shows across the world.

"Due to consumers' more active lifestyle and casual approach to dressing, sneakers are undoubtedly one of the most popular items in today's global market," explained AWI General Manager, Processing Innovation & Education Extension, Julie Davies.

"By working closely with our supply chain partners, AWI has been able to

develop technically advanced yarns to be incorporated into the upper, inner and liner for a range of machine washable footwear."

adidas, Baabuk, Giesswein, Le Mouton and Z Zegna are just some of the popular brands on the market today. The most recent brand to hit the ground running is Neeman's – the first brand to come out of India to include Merino wool in footwear.

Designed in London, the shoes are made from some of the finest Merino wool from Australia, with the insoles made from plant-based castor bean oil and recycled rubber, which offers comfort through all seasons in India. The sock-free, odour resistant, flexible and lightweight shoes inherit all the eco-credentials of Merino wool.

Neeman's founder Taran Chhabra said that Neeman's shoes are a result of his own personal struggle to find a shoe that could truly provide all-day comfort.

"This led me to look beyond synthetic fibres and my search ended with the naturally versatile Merino wool fibre," he said. "Neeman's has created a path-breaking collection of shoes by using Merino wool from Australia, which is superfine and lightweight, moisture-wicking and breathable, naturally odour resistant and keeps skin cool and dry even in extreme temperatures." **E**

EDUCATION

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.

BOLD DESIGNS WIN TOP UK TEXTILE AWARD

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



The Woolmark Company TexSelect judges **Eda Karadogan**, **Natasha Lenart** and AWI's **Birgit Gahlen** with winner **Matthew Briggs** at the Première Vision trade show in Paris.

Royal College of Art graduate Matthew Briggs won this year's The Woolmark Company TexSelect Award, praised for his boldly patterned and graphic knitted designs in strong contrasting colours, with a quirky take on the theme of the 'Pearly Queens' of London.

Shining the spotlight on the best emerging textile designers studying at colleges across the UK, entrants for the award must incorporate a minimum of 60 per cent Merino wool into their textiles and demonstrate a good understanding of the fibre's qualities and potential application in fabric. The Woolmark Company has supported this special prize for eight years.

The award was judged by fabric and knitwear development manager at Victoria Beckham, Natasha Lenart, and by Eda

Karadogan of international luxury fabrics manufacturer Ipekis.

"Matthew is able to apply his technical knowledge to designs that have forethought, that have production potential," explained Natasha. "He has developed a quintessential British concept which in itself is marketable for another brand or for himself. Kids these days really put us to shame! His work, objectively, doesn't relate to my aesthetic and yet I am drooling over it."

Matthew said he felt "completely overwhelmed" by winning the award and that it's "a huge boost" to his confidence. By winning the award, Matthew will receive ongoing support from The Woolmark Company and opportunities to learn about developments, innovations and the supply chain of wool.

INTERNATIONAL STUDENTS VISIT AUSTRALIA

A study tour by international 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 by Italian students on the Biella Masters Noble Fibre postgraduate course, Spanish students from the IED Institute of Design and Japanese students from the Bunka Fashion Graduate University, to learn more about Merino wool.

A group of Biella Masters postgraduate students visit Australia each year, as part of their studies. Based in Biella, the group examines the entire supply chain, starting from the raw materials through to the final product.

The Spanish and Japanese students were in Australia after they each won a wool fashion design competition prize involving an Australian farm visit.



John Cheshire from the Australian Wool Testing Authority (AWTA) showing international fashion and textile design students sampling, and fibre length and strength testing.

Students visited the wool auctions at Yennora, the Goulburn Wool Store, The Big Merino and stayed the night at 'Markdale' in the Crookwell area, three hours south of Sydney.

Students also saw a shearing demonstration at 'Hillcreston', Bigga, and came out of the experience with very positive feedback and a great appreciation for wool.

Biella Masters Noble Fibre Director, Giovanni Schiapparelli, wrote on behalf of the school's chairman Luciano Barbera and the members of the board to thank AWI staff for the "excellent organisation of the internship of our students in Australia".

"They were very impressed by the efficiency and cordial atmosphere at AWI and found their visit interesting and useful," he said.

HIGHLIGHTS

AUSSIE FASHION AND TEXTILE STUDENTS VISIT THE FARM

AWI's Student Education team organised a trip for fashion and textile students to Belgenny Farm on the outskirts of Sydney, to give them a real life experience of a working Merino property, and expose them to the very beginning of the wool supply chain.

About 50 tertiary students from Whitehouse Institute of Design, Raffles College, University of Technology Sydney and TAFE NSW joined the trip to Belgenny Farm. Many of the students had previously attended a Naturally Inspiring seminar in Sydney hosted by AWI, at which they learnt the benefits of using wool in their textile work. The visit to the farm very much complemented the seminar and gave them a rounded education about wool.

At Belgenny Farm, the students were shown working dog and sheep shearing demonstrations, plus given a tour of the historic farm, which is part of the original 2,000 hectare Camden property granted to John Macarthur in 1805.

Ranked among Australia's great agricultural pioneers, John and Elizabeth Macarthur and their descendants were at the forefront of the wool industry. While they were not the first to breed or grow sheep in Australia, the Macarthurs were one of the first to export quality wool in commercial quantities.



Fashion and textile students at Belgenny Farm being shown a Merino fleece that has just been shorn.

TALKING TURKEY TO STUDENTS

As well as having a stand at the **Première Vision trade show in Istanbul**, AWI also promoted Australian wool to fashion and textile students during seminars at the event.

AWI's marketing arm The Woolmark Company debuted at Première Vision Istanbul, showcasing the latest innovations in wool as well as the best commercially available wool yarns and products as shown in the latest The Wool Lab sourcing guide.

The Woolmark Company also organised seminars for fashion and textile students during Première Vision Istanbul. The Woolmark Company's Key Account Manager Marta Amat spoke about the

many features of Australian Merino wool and the trends of the Autumn/Winter 2019/20 season.

Turkey already boasts a relatively strong manufacturing base – aided by its proximity to both the east and the west – and so AWI has spent the past few years working closely with Turkish manufacturers. Added to this, there is a growing importance for retail – with an increasing number of international brands exploring Turkey.



The Woolmark Company's Key Account Manager Marta Amat educating students about the benefits of Australian wool.

NATURALLY INSPIRING SEMINAR IN MELBOURNE

AWI's Naturally Inspiring seminars have become a must-attend event for tertiary students, with the seminars being held in key textile education hubs across the world – the latest being in Melbourne.

Naturally Inspiring seminars not only offer students the chance to learn about wool and the numerous ways to work with the fibre, but also give exclusive insights into the fashion, retail and textile industries from experts in the field.

August saw Naturally Inspiring head to Melbourne for the second seminar for the year. Hosted by AWI's Global Strategic Advisor Peter Ackroyd, the seminar also included AWI's Education Extension Program Manager Kelly McAvoy and consultants Roy Kettlewell and Carol Stubbs educating students on the characteristics and benefits of wool.

Industry leaders and experts took part in a panel discussion focusing on the versatile qualities of Merino wool, particularly for fashion garments and textiles. The speakers included Mario-Luca Carlucci of Strateas



Fashion and textile students at the **Naturally Inspiring** seminar in Melbourne.

Carlucci (see page 18), Rong Jake Chen of AMXANDER, designer Jonathan Ward and International Woolmark Prize mentor Natalie Skubel.

GIEVES & HAWKES BY ROYAL APPOINTMENT

Gieves & Hawkes' wool-rich **Autumn/Winter collection** takes inspiration from Britain's rich naval heritage.



(RIGHT) Deputy Store Manager of Gieves & Hawkes, **Joseph Waving**, at No.1 Savile Row holding open the first edition of its newly launched publication called *No.1*, with a centre-spread feature on Australian Merino wool titled 'Shear Class'.



Royal tailors since 1809, Gieves and Hawkes this autumn/winter highlighted Australian Merino wool as part of its latest collection, partnering with AWI to promote the natural benefits of the fibre to consumers.

Gieves & Hawkes is an iconic men's bespoke and military tailor and menswear retailer, with its flagship store located at the most prestigious of addresses: No.1 Savile Row, in London. Founded in 1771, Gieves & Hawkes is one of the oldest continual bespoke tailoring companies in the world.

The company has a strong history of both service to the military, and hence to the British royal family. Hawkes & Co. was granted its first Royal Warrant in 1809, during the reign of King George III, and has continuously enjoyed the patronage of British royalty, thereby reinforcing the company's unparalleled pedigree and international status.



In 1953 Gieves & Hawkes was commissioned by **HM Queen Elizabeth II** to make her a wool 'boat cloak', in which she has been photographed throughout the subsequent decades.
© Cecil Beaton/
Victoria and Albert Museum, London.

In 1953 the company famously made Her Majesty The Queen's wool boat cloak, photographed through the decades by the likes of Cecil Beaton in 1968 (see below left) and Annie Leibovitz in 2007. Other British royals have been dressed by Gieves & Hawkes including the Prince of Wales, the Queen's father and grandfather, George VI and George V, as well as the royal Princes William and Harry. Gieves & Hawkes presently has all three main Royal Warrants, appointed to HM The Queen, The Duke of Edinburgh and The Prince of Wales – a recognition of unrivalled quality and service.

Gieves & Hawkes has also had a longstanding association with Australian wool throughout its history.

Helping continue this tradition, Gieves & Hawkes and AWI's marketing arm The Woolmark Company undertook a marketing collaboration together this year, to showcase 100% Merino wool across the retailer's Autumn/Winter collection and reaffirm Merino wool's position as the ultimate luxury fibre for menswear.

The collaboration saw a series of in-store events and marketing collateral displayed in the high-traffic location of the No.1 Savile Row store, including bespoke wool care guides, *WOOL* magazine and samples of

wool. There was also a double-page feature in Gieves & Hawkes' new publication *No.1*, which was also distributed in the 16 September edition of London's high profile *Sunday Times* newspaper.

The Woolmark Company also hosted retail training seminars, ensuring all Gieves & Hawkes staff are well educated in the benefits of Australian wool. Training sessions such as these play a vital role in the marketing of the fibre and selling wool and wool-rich apparel to both loyal and new customers.

A key highlight of this autumn's new collection – which was inspired by the company's association with Britain's illustrious naval heritage – was a chunky sweater with a knitted pattern based on boat rigging. The Merino wool-rich fabric has allowed Gieves designer John Harrison to create a sweater with a rugged appearance but a lightweight and a soft hand feel.

"The brand has been using wool throughout its 250-year history, and Mr Harrison reminds us of the long-ago days when the presence of lanolin (natural oil) in wool gave it a very welcome water resistance for which Gieves' nautical customers would have been grateful," states *No.1*. "In an era when men's clothes had to work considerably harder than they do today, wool was the original performance fabric. Today the material's ability to regulate the temperature of the wearer, resist bacteria and allow the skin to breathe remains a unique set of attributes." **B**

MORE INFORMATION
www.gievesandhawkes.com

ROYAL VISIT'S WOOL CONNECTIONS

On Prince Harry and Meghan's first royal visit to Australia, they learnt first-hand the harshness of the lives of rural people coping with drought – and their resilience.

As part of the recent Royal Tour of Australia, Prince Harry, Duke of Sussex and Meghan, Duchess of Sussex visited some drought-stricken sheep farmers, the Woodleys of 'Mountain View' near Dubbo.

Prince Harry and Meghan learned first-hand what it is like to work in one of Australia's most iconic industries and be at the mercy of

Mother Nature. The Woodleys' 3,000-hectare farm 'Mountain View' has had to de-stock its White Suffolk sheep due to the drought. The 1,400 they were running before the drought is now reduced to 250 stud ewes.

The visit to Australian sheep farmers was timed with a letter sent by HRH The Prince of Wales to all Australian woolgrowers, reassuring them during the current dry conditions. The Prince of Wales expressed his sadness at the impact the drought has had on woolgrowers throughout the country.

"I cannot begin to imagine the anguish that those of you who have been affected by this climatic tragedy must be facing," wrote The Prince of Wales. "I wanted you to know that you are very much in my thoughts at this difficult time."



Prince Harry and Meghan visiting sheep producers, the Woodleys, on 17 October in Dubbo, NSW.



Meghan wearing an Australian Merino wool dress, at an event on 18 October at Government House in Melbourne.

"Please be assured that my Campaign for Wool will continue to do everything it can to support the Australian wool growing community, not only throughout these difficult times but perhaps more importantly, in the future when the growing conditions return to normal."

The day after the visit to the Woodleys, Meghan stepped out at a Melbourne function in an Australian Merino wool dress, designed by Australian designer Dion Lee.

Dion Lee, whose long-standing relationship with AWI dates back to 2012 when he participated in the prestigious International Woolmark Prize, said the classic design was made at The Duchess's request after seeing another of his designs she admired.

The Folded Sail Dress in navy Merino wool is available for pre-order via the designer's website and will be part of Dion Lee's Resort 2019 collection. It is crafted from 94% double-weave Merino wool and includes a single lapel fold constructed into the bodice and an A-line asymmetric fold in skirt. **B**

MORE INFORMATION
www.dionlee.com

TAMBO TEDDY GIFTED TO ROYAL BABY

The Queensland Premier presented Prince Harry and Meghan with a hand-made Tambo Teddy for their first child, when she joined them on their official visit to Fraser Island on 22 October.

Tambo Teddies are 100% wool sheepskin teddies, which have recently become Woolmark-certified, crafted in the outback town of Tambo.

The inspiration for Tambo Teddies began in 1992: wool prices had crashed, the district was in the grip of a drought and the community of Tambo was challenged to come up with new industry to sustain the economy of the little town.

A brainstorming session during a workshop developed the idea that Tambo

could assist the wool industry, encourage tourists and create employment by making unique teddy bears from wool pelts and stuff them with wool. Since the first Tambo Teddies were made in 1993, more than 45,500 teddy bears have been sold.

Premier Palaszczuk said giving Harry and Meghan a Tambo Teddy was a reminder of the importance of Queensland's fine wool industry and how much the western parts of Queensland have suffered from years of drought.

Tambo Teddies is currently run by Tammy Johnson and Alison Shaw, who say the impact and enthusiasm of the public over the years has been overwhelming, with the business now employing 11 people.

"We're keeping the Royal Tambo Teddies tradition going. Prince George and Princess Charlotte have one, now



The Tambo Teddy that was presented to Prince Harry and the Duchess of Sussex by the Queensland Premier, Annastacia Palaszczuk.

Prince Harry and the Duchess of Sussex's new bub will get one too," they said. **B**

MORE INFORMATION
www.tamboteddies.com.au

AWI GRADUATE TRAINING PROGRAM

WELCOMING OUR NEW GRADUATES

After a successful inaugural year for the AWI Graduate Training Program, AWI has selected the next intake of graduates for the 2019 program who in March next year will embark on their career in the Australian wool industry with AWI.

The AWI Graduate Training Program provides successful applicants with a thorough understanding of the wool supply chain from fibre to fashion.

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

The program is aimed at graduates from a broad cross section of disciplines who have a background in or connection with the Australian wool industry. The inaugural program began in March this year.

With a 50% increase in applications from last year, the competition for the 2019 program was extremely high. Once again, the calibre of candidates that AWI received was outstanding, and it was an extremely rigorous process for the graduates to get through to the final stage.

AWI is delighted to announce the graduates that have been chosen to take part in the 2019 AWI Graduate Training Program, who will begin the program in March 2019.

MILES BARRITT

Miles comes from Broomehill in the Great Southern region of Western Australia where he was raised on his family farm. Living on a sheep and grain farm, he was exposed to sheep and wool at very early age. He went to study at the University of Western Australia where he graduates this year with a master's degree in commerce. Miles is no stranger to the shearing sheds, having spent some time on a shearing team at Boyle's Shearing Service, which is run by one of the most well-known shearing families.



EMMA MURPHY

Emma grew up on a commercial mixed farm 'Yamagalli' in Galong, north west of Yass in NSW. During her childhood, Emma had extensive exposure to wool production helping her family out on the farm. With this foundation, Emma went on to study Agriculture Economics at the University of Sydney where she is a member of the Ag society. Emma has spent a lot of time volunteering overseas for various organisations across many countries including several in Africa, India, and Cambodia.



REFLECTIONS OF THE INAUGURAL GRADUATES

The graduates on the inaugural 2018 AWI Graduate Training Program are now half way through their time with AWI.

Here they tell us their experiences of the program so far, in their own words...

ELLIE BIGWOOD

Ellie was born and raised on a Merino sheep farm in the Great Southern region of WA. She graduated with a Bachelor of Science, majoring in Animal Science and Biological Sciences at Murdoch University.

My first three months at AWI started out with the Research team, developing essential skills in project management. I was responsible for managing a monitoring and evaluation project and contributed to projects in wild dog control, breech flystrike research and reproduction. I helped install the prototypes of the SmartTag ear tags on farm and was also involved with the Realising Performance Potential and Winning With Weaners workshops in Dubbo.

My second rotation was with the Woolgrower Services team, with my main responsibilities in shearer and wool handler training and AWI grower



Ellie Bigwood at a RAMping Up Repro workshop at Gulgong, NSW.

networks across the country, which included supporting the RAMping Up Repro workshops with Sheep Connect NSW. One of the highlights was the Fibre of Football campaign back in the West with Fremantle Dockers' captain Nat Fyfe and West Coast Eagles' (premiership) captain Shannon Hurn, sporting their woollen AFL guernseys with two handsome rams. As country lads themselves (Fyfe and Hurn, that is), it just highlighted how many people are connected to our industry and it was an absolute pleasure to have a yarn with them for AWI's podcast 'The Yarn'.

With 98% of our wool exported, it's hard to comprehend the size of the supply chain we are dealing with beyond our shores. Only until visiting the raw wool processing plants in China and being exposed to the fashion world in Asia, did I realise how oblivious I had been. Some snippets of my experiences in Shanghai include meeting several of the 60 brands that AWI collaborates with in Greater China, learning about the international wool trade at the Nanjing Wool Market Conference, and promoting the Live & Breathe campaign to endorse Australian Merino wool in activewear, which included a Chinese yoga class with ElleFit Magazine (or EllieFit, you might say!). In Hong Kong, the Wool Resource Centre is a truly remarkable centre for showcasing the latest and greatest fabrics from The Wool Lab sourcing guide, product developments and Australia's best natural fibre.

The wool family at AWI has been nothing short of welcoming and supportive since day dot and I've met so many incredible people along the wool supply chain who've shared their years of experience and advice with me, for which I truly appreciate. The Australian wool industry has offered me so much and I look forward to returning the favour at the end of the program

BLAKE CHANDLER

Although not from the land, while completing his Bachelor of Agriculture Economics degree at the University of Sydney, Blake immersed himself in agriculture, spending time in rural NSW working on Merino farms.

When I first received and accepted the offer to be a part of AWI's inaugural Graduate Training Program, I was in equal parts excited and nervous. Freshly graduated from the University of Sydney, working for a Research & Development Corporation was something that had not been on my horizon until I saw AWI's call for graduates.

On paper, the program, consisting of six rotations through AWI's main departments including six months abroad in London, Hong Kong and China, excited me. Developing hands-on knowledge across the supply chain from Australian farms to Chinese mills and European fashion houses would provide a unique in-depth learning experience. What could not be conveyed through the program's brief description was how welcoming all those involved in this program – AWI staff, woolgrowers, and industry partners – would be and how eager they are to share their knowledge and experience.

My first project with AWI was assisting with organising the sixth annual National Merino Challenge which introduced me to more than 150 secondary and tertiary students eager to learn about the wool industry. Skilled woolgrowers involved in the event were motivated not just to interact with the future of the wool industry, but myself as well.

My time spent in Hong Kong and China was no different. Industry partners across the supply chain took the time and effort to educate me on what they do, why they do it and how they fit in the bigger picture of wool's story. Seeing wool being scoured, combed and eventually spun into yarn illuminated Australian wool's importance in a long, global supply chain. Appreciating and understanding the varied facets and unique challenges of all the processes that combine to produce woollen products has been a challenging but rewarding experience.

Despite having lived in cities my entire life and having touched my first sheep half a year before applying for this program, I felt I had something to offer Australia's woolgrowers but wasn't exactly sure what it was – and I am not quite sure I know what it is yet. However, now half way through the 18-month program, the wool industry has opened more doors than I could have imagined.

BEN MADGWICK

Before graduating from the University of Sydney with a Bachelor of Design Computing, Ben grew up on properties throughout the Liverpool plains of NSW and spent his formative years assisting his family in wool production.

My AWI graduate program started on the other side of the fence to Blake and Ellie, with the first six months of the program devoted to assisting the Marketing, Fashion Communications, Digital and Process Innovation & Education Extension teams. The time spent across these teams was an excellent introduction into the variety of projects that AWI executes across the supply chain. Conducting experiments to show the biodegradability of wool in soil, editing and featuring on AWI's podcast 'The Yarn' and redesigning trade show stands are just a few examples of projects I was able to assist on, with each exposing me to a different facet of the organisation.

The past three months have been spent working out of The Woolmark Company's London office, where the team works with esteemed brands across the UK and Europe to ensure Australian Merino wool is present in the windows of high street retailers year-round. Aside from the marketing partnerships, the London office also directs the UK and European educational programs, manages the International Woolmark Prize and the Woolmark Performance Challenge, all of which I was able to support. I have also been fortunate enough to spend time in Europe, assisting the French office with the Première Vision trade show and touring Italian mills with which The Woolmark Company works closely. These travels have given me invaluable exposure into the global supply chain and the knowledge to contribute to the industry in coming years.

On my return to the Sydney office in December, I will jump the fence and join the Sheep Production team, turning my hand to the unfamiliar territory of agricultural sciences. Before learning of the AWI graduate program, I would not have imagined a graduate program so diverse within one company, but now I find myself half way through it, equally excited about the remaining time and the prospects beyond it.

INTERESTED IN JOINING THE 2020 PROGRAM?

AWI will be present at The Big Meet career events taking place across the month of March in Brisbane, Perth, Melbourne, Adelaide and Sydney. Here, AWI will be showcasing the program and speaking to upcoming graduates about the program in preparation for the 2020 intake.

Applications for the 2020 AWI Graduate Training program open on 1 April and close on 30 April 2019. To apply, please select the AWI Graduate Training Program at www.wool.com/careers or apply through Seek or LinkedIn.

WEATHERING THE DROUGHT WITH REGENERATIVE AGRICULTURE

The property of woolgrower and pasture cropping pioneer **Colin Seis from Gulgong in the Central Tablelands of NSW** is coping with the drought better than a lot of other farms in the region, which he attributes to his perennial grassland and regenerative agricultural practices.



Colin Seis in early October on his farm, with plenty of feed for his Merinos.

Colin Seis and his son Nick run 3,500 Merinos, grow cereal crops and harvest native grass seed on the family's 840 ha property 'Winona' 20km north of Gulgong. The property also runs the 'Winona' Merino stud, and is one of the largest breeders of Kelpie dogs.

The average annual rainfall is 650mm, but they have seen less than half that for the past two years due to the drought conditions that have affected many farms across eastern Australia.

While many properties in NSW have been relying on fodder from interstate and handfeeding of stock, Colin has been supplementary feeding grain and minerals to his sheep, but most of the feed has come from his native perennial grassland pastures for sustaining his flock during drought.

"It's been very dry here this year, just like many parts of the state, and while the farm isn't going as well as it normally would, our grassland pastures have been very resilient and responded well when we have had the little bit of rain," Colin said.

"Following a storm in February, we had green pasture in summer and autumn; when the summer-growing native grasses became dormant in winter it became standing dry feed. This pasture feed is good quality and the sheep are doing well on it – while we are supplementing with a bit of protein, some urea and a little bit of grain, leading up to lambing."

The benefit of native grassland has been shown in this year's September shorn wool clip. The sheep cut around the same amount of wool as previous years. Its yield was around seventy percent, and tested sound, with results of 40-45 Nkt.

A BIT OF HISTORY

The Seis family has farmed at Winona since the 1860s. Ranging from valley floors and gentle slopes rising to granite outcrops on hilltops and ridges, the predominant soils on Winona are well-drained coarse and fine sands derived from granite.

From the 1930s to 1980, the farm was used for wheat, oats, wool and sheep production. Pastures of introduced grasses, mostly annual species (sub clover, rye grass, small areas of lucerne), were established. Set or continuous stock grazing practices were used. Crops were sown every three to five years by ploughing and working the soil up to five times. Crop yields during this period were good, with more than three tonnes per hectare being achieved.

However, Colin says to sustain agricultural productivity it was necessary to apply high rates of fertiliser to correct phosphorus, molybdenum and calcium deficiencies.

"While superphosphate was cheap and subsidised by government during the 1950s and 1960s this high input method was very productive," he said. "However, as superphosphate became more expensive and the government subsidy was removed, this high input system was no longer affordable."

Colin goes further and says the management of Winona from 1930 to 1980 turned out to be an ecological disaster.

"Loss of land to salinity, declining soil structure and quality, soil carbon loss, dead and dying trees, insect attack, fungal and animal diseases, plus the high cost of fertilisers, herbicides and other inputs showed the suffering of an unhealthy system."

In 1979 a devastating bushfire ran through the property destroying the farm's infrastructure

and livestock, which meant that a lack of income prevented him re-establishing the previous high input cost cropping method. Colin was left with no choice but to change the way farming was done on Winona.

PASTURE CROPPING

During the next 20 years, Colin and his neighbour Daryl Cluff developed a new technique they call 'pasture cropping' that involves sowing crops into living perennial pastures and growing them in combination, so that the cropping and grazing benefit each other.

"Pasture cropping enables integration of sheep and crop production, optimising production of both while minimising chemical inputs and machinery use and improving soil structure and fertility," Colin said.

"While conventional cropping methods require that all vegetation be killed prior to sowing and while the crop is growing, with pasture cropping there is no need to kill competing ground cover vegetation, and yet adequate productivity can still be achieved.

"Groundcover is maintained at all times which makes the paddocks more resilient to drought, wind and water erosion are avoided, soil structure is not destroyed by cultivation, and chemical input requirements are only a fraction of those used in traditional crop production methods."

Sowing a crop using the pasture cropping method also stimulates a diverse variety of perennial grass seedlings, which had sat dormant in the soil, to grow in high numbers. This then produces more stock feed after the crop is harvested and totally eliminates the need to re-sow pastures.

"Economically, this technique provides good potential for profit as input costs are substantially less than conventional cropping methods. The added benefit in a mixed farm situation is that up to six months extra grazing is achieved with pasture cropping as no grazing time is lost due to traditional ground preparation and weed control requirements."

Colin has spent many years perfecting this technique and can now grow many different types of winter and summer growing crops on Winona, without destroying the perennial pasture base.

He now sows commercial crops into the dominant pasture by direct drilling to minimise soil disturbance. Sheep are used to prepare paddocks for the pasture crops and then the crops are sown, usually with no herbicide and 70% less fertiliser than conventional methods. Only relatively small amounts of liquid organic fertiliser are added at the time of sowing, using the same machine, so that tractor costs and soil compaction are minimised.

This vertical stacking of enterprises enables three uses of Colin's native perennial grassland in each paddock: grain cropping (oats and wheat), grazing sheep for wool and meat, and native seed harvesting.

Wool and sheep production volumes have remained about the same as pre-1979 bushfire times, however wool tensile strength has improved markedly and vegetable matter such as burr and seed in the wool has declined significantly making both the wool and sheep more valuable.

"Importantly, while Winona now produces similar volumes of wool and grain to that achieved under previous management methods, annual costs have decreased significantly and the condition of the land is improving, not degrading," Colin emphasised.

"It's hard not to make money using this system!"

Pasture cropping



Emerging green grain seedlings in dormant perennial pasture.



The grain crop growing in the pasture.



Harvesting the grain crop, showing the green and growing perennial pasture.

ROTATIONAL GRAZING



Colin's sheep grazing the **ample pasture** in February 2016.

Sheep are an intrinsic part of Colin's pasture cropping system on Winona. They are managed in two main mobs – one comprising 2,000 ewes and the other 1,500 hoggets – rotated around 70 paddocks in a time-control rotational grazing technique.

Before sowing, when perennial pasture species are dormant, short term time-control grazing with a large mob of sheep (100-150 per hectare) is used to graze and trample perennial pasture down to a height of around 100mm. This practice prepares the paddock for cropping by reducing the starting biomass and physically breaking down weeds, creating a litter and mulch layer and adding nutrients from manure and urine.

"Once the crop is harvested, sheep are reintroduced for a short period to take advantage of the native pasture that has been re-growing while the crop was maturing. Grazing-tolerant native grass species such as red grass and spear grass are gradually being replaced by more productive species such as warrego summer-grass and wallaby grass. Significant areas of winter active species such as common wheat grass and weeping grass are returning."

Introducing time-control grazing necessitated a denser pattern of fencing to increase the number of paddocks from 10 to 70. A central laneway across the length of the property provides an efficient way to move sheep around the property.

More than 70 small dams supply stock water as there are no creeks or rivers on Winona. These dams are maintained mainly through lateral underground flow.

Colin recognises that trees provide stock with shelter and so has planted more than 2,000 single paddock trees, aiming to restore the original 1860s cover, estimated to be about two trees a hectare.

HEALTHY LAND

Overall, the implementation of pasture cropping has restored the landscape health on Winona.

The property was once dominated by annual weeds like Capeweed and Paterson's curse, but they have been drastically reduced. Winona is now a diverse, functioning native grassland with more than 60 native species. As Colin points out, this change was created, not with herbicides, but with groundcover.

"Providing the conditions for perennial pasture species to thrive will steadily suppress the

weeds. Using herbicides can help in some circumstances but can also kill desirable species, such as the perennial pasture species."

Tree health has improved and the remaining naturally established trees are regenerating. In addition, around 15,000 local native trees and shrubs have been planted in belts to form wildlife corridors and to link areas of remnant native vegetation.

A large increase of spiders in pastures has delivered a more stable balance to the insect populations and provided biological control of problem insects like red legged earth mite.

By applying regenerative forms of cropping and grazing, Colin has more than doubled soil carbon and significantly improved the soil water holding capacity in just ten years. The vast majority of the soil carbon is highly stable, meaning it is significantly less subject to degradation, and carbon is being built and measured to a depth of 500mm.

All soil nutrients increased, including phosphorus, by an average of 172% in available and total amounts, except for aluminium, iron and sodium, which have decreased.

In addition to being able to pass on a productive and sustainable farm to the next generation, Colin feels a well-deserved sense of achievement at having developed an innovative farming method that is being adopted by thousands of other farmers in similar climates and soil landscapes all across the world.

"With pasture cropping it is now possible to produce an annual crop like wheat and a perennial grain crop for human consumption off the same area within a twelve-month period. Added to this is the grazing value of sheep meat and wool as well as native grass seed, carbon sequestration and a landscape resilient to drought," he said. **E**

MORE INFORMATION:

For more information about pasture cropping visit www.pasturecropping.com or view a case study at www.soilsforlife.org.au/case-studies/winona. Colin can be contacted on (02) 6375 9256 or 0428 759 256 and email at colin@winona.net.au

Soil from a time-controlled rotationally grazed and pasture cropped paddock (left) and from a conventionally grazed and cropped paddock (right). The soil on the left contains significantly **more microbial life, soil carbon** and subsequently **greater water holding capacity**.



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WOOLGROWER INNOVATIONS DURING DROUGHT

Have you got any tips and tricks that you've been using during the drought that you'd like to share to help your fellow woolgrowers? If so, please let us know what it is (ideally with a photo) and AWI will share it on.

Farmers are a resourceful bunch. They have to be, especially during drought. AWI has seen and heard of simple, innovative and often cheap ways that woolgrowers have been tackling some of the challenges of drought. Here are a few tricks that have been seen being used regarding feeding and watering stock.



FEED TROUGHS USING REPURPOSED MATERIALS

In confinement areas, feed troughs are necessary to control the amount of feed animals consume, and to prevent feed wastage and animal health problems. However, troughs need not be expensive and can be designed relatively easily with materials on-hand. Examples of materials we've heard being used include repurposed conveyor belt matting, tarpaulin and shade cloth (pictured).



POLY WATER TROUGH

Pictured here, a 150mm poly water trough in a containment area is very effective and cheap to make. The size of water trough is not as important as replenishment rate of trough. An 8 foot trough can water 800 sheep if the replenishment rate is very good. Small troughs with good replenishment rates do not get as hot and take less time to clean.




REMOTE CONTROL HAY TRAILER

Daniel Rogers from Ward Hill on South Australia's Yorke Peninsula posted on Twitter (@dan_rogers96) a video of a hay trailer that he made which pushes a portion of hay off the back of the trailer, via remote control. It saves the driver having to get out of the ute to distribute the hay and therefore makes feeding the sheep easier for the farmer.

If you have been using or seen a new or interesting way to tackle some of the challenges of the drought that you think other woolgrowers might benefit from, then let AWI know. It might be simple tip, or a product that you've produced – we're interested in all your input.

Please send in your tips, and any (high resolution) photos, via email to drought@wool.com. Include your name, property name, address and phone number in your email. Also include a brief description of what each photo depicts.

AWI will then compile the tips to distribute them via its Wool.com website, e-newsletters, *Beyond the Bale* or via Twitter. We look forward to hearing from you. 

MORE INFORMATION
www.wool.com/drought

DROUGHT RESOURCES FOR WOOLGROWERS

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.

BANKING ON MERINOS

Western Queensland grazier Ben Banks has long known the value of a Merino ewe. So much so, that even throughout the past 20 years of unpredictable and extreme weather patterns of northern Australia, Ben and his family have done everything within their power to hold onto their core breeding ewes.

If holding on to their Merino ewes meant agisting them to far flung areas of other states, or installing 75km of dog-proof fence using their own funds, the Banks family did it.

They have strived to continuously breed Merino ewes on their 40,500 hectare Blackall property since the 1940s, representing precisely the type of Merino operation required to maintain and boost Australia's ewe flock, which is the primary focus of the Australian Association of Stud Merino Breeder's (AASMB) 'Breed More Merino Ewes' campaign, supported by AWI.

The campaign aims to highlight the exceptional profitability and performance of the Merino across three key areas – best natural fibre, great tasting meat and the most profitable breed – to encourage producers to increase their ewe numbers.

It is those three specific components of wool, meat and dual-purpose profit that

Ben Banks says makes his Merino operation both challenging and extremely rewarding.

"I used to want to be a cattle man, but Merino sheep are a bigger challenge, in the best kind of way," Ben said.

"With both cattle and sheep, you're looking to breed animals with great constitution and the conformation to survive in our environment, but Merinos have that added benefit of breeding good wool too.

"We are always looking for ways to expand our Merino operation and grow our numbers, but seasonally it's not been as consistent as we would like.

"The seasons over the past 20 years have been horrific. We've experienced the three driest years on record, as well as the wettest year on record, and such extremes are exasperating.

"But despite that, we have managed to hang onto our core breeding ewes one way or another."

MERINOS RUN IN THE FAMILY

The Banks family remain a true family operation, with Ben, wife Oona and their two children Zara and Wally, farming together with Ben's parents Jack and Rhonda, in addition to his sister Megan and husband Dominic Mohr, and their one-year-old daughter Ella.

There are four different properties grazed as one by the Banks clan, spanning 40,500 hectares of prime sheep breeding country near Blackall, Western Queensland, with the potential to run more than 20,000 Merino sheep fully stocked. Average annual rainfall is 430mm.

At their height in 2013, the Banks' had shorn 22,500 sheep and ran 3,000 head of branded cattle, but less than two years later, severe drought had forced every single animal off the place by early 2015.

"We saved as many breeding ewes as we could, about 5,000 of them, and sent them all around Australia on agistment just so we could hold onto our own genetics," Ben said. "The following year we leased a property at Inverell, NSW, and have been sending our surplus sheep there over the past two tough years.

"We rely on summer rain up here and this year were staring down the barrel of our sixth failed summer in a row, so we sold all of our Inverell stock.

"Nine days later, we had 127mm of rainfall, followed by another 50mm a fortnight later.

"We don't need a lot of rain up here, it just needs to be timed well."

Those two saving grace rain events meant the Banks' remaining 14,000 Merinos, including 6,000 scanned breeding ewes, 2,000 wethers and dry or maiden ewes, could stay right where they were, with plenty of grass on offer.

MERINOS A PROFITABLE ENTERPRISE

Based on current sheep values and wool prices, Ben estimates their Merino ewes generate \$20 profit per ewe, and \$30 profit per hectare for their business.

As a direct result of these favourable prices, profitability and timely rain, Ben said they purchased another 2,500 Merino breeders from NSW earlier this year, where the current dry season presented the Banks family with the opportunity to purchase large lines of quality sheep.

If the seasons continue to be favourable in Ben's home patch, he hopes to get back to their full ewe breeding capacity by 2020.

Queensland woolgrower Ben Banks from Blackall – with his two children, Wally and Zara – believes Merinos are perfectly suited to their country and environment.





BREED MORE MERINO EWES

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Working as a qualified sheep scanner for the past 10 years has also been beneficial for Ben to recognise the importance of ewe fertility and breeding viability.

Every ewe in the Banks family's flock is pregnancy scanned, electronically tagged and separated into single and twin mobs at the beginning of January.

Having previously been spring lambers, Ben has re-worked their breeding schedule to start lambing in early March, after joining occurs over a six-week period in early October.

The Banks family's shearing schedule has also been adjusted and they are currently shearing every ten months to shift it from May to late August/early September.

This coincides with the new joining period, giving the ewes a month off the board to improve their condition before joining in October. In an average to good year, the Banks' Merino flock produces an average of 5kg of wool from mature sheep, 2.5kg from lambs and filling anywhere between 4-500 bales per year.

Based on current wool values, this brings a gross of \$60 per head on 10-month shearing. Traditionally, they produce wool around 18-19 micron, but the recent droughts have caused Ben to adjust that also.

"Following the recent dry years, we have had to buy in so many different genetics that has prompted us to do some corrective mating, with the aim of breeding a 20-21 micron ewe," he said. "I want to straighten all that out by breeding more Merino ewes with a consistent wool type."

WILD DOG EXCLUSION FENCING A GAME CHANGER

It wasn't only the Banks family who came close to losing their Merino flock two years ago, as the devastating combination of drought and wild dogs was taking a widespread toll on all Western Queensland sheep producers.

In 2015, Ben and his family made the decision to protect their sheep by spending almost \$400,000 of their own funds to install 75km of wild dog-proof fences along their property, and since then other producers and the government have joined the fight, establishing more than 1,000km of fences.

In the initial lambing periods since the fence was completed in mid-2016, Ben has seen a huge increase in lamb survival, with a minimum of 10% increase attributed to less predator deaths.

They have marked 4,000 lambs already this year, and with this minimum increase of 10%, or 400 lambs, working on current values of approximately \$75 per head, the fence attributes an instant \$60,000 additional return.

It's the first proper lamb marking the Banks family has had in six years, with another 3,000 lambs to be marked, out of imported ewe lines that lambed later in the season. Ben believes the fence has become a lifeline for livestock producers in their area, with the benefits immediately evident, and he hopes it only continues to grow and strengthen local flock numbers.

"We would be out of sheep by now if we hadn't put our fence up, it's as simple as that," he said.

"The wild dog problem was so bad it was all anyone could talk about for a couple of years. But now with the help of government funding for the fences, there's been an immediate shift.

"It's been a game changer for the sheep industry here, only two years ago sheep were almost extinct in Western Queensland due to drought and dogs.

"But now, after travelling around with my scanning business, I have seen an instant improvement, with more sheep flowing back into Western Queensland.

"Our sheep are happy and content again without a fear of dogs, and now with a bit of grass and water around, all things are pointing towards a positive outlook for our Merino flock." **B**

MORE INFORMATION
www.merinos.com.au

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WILD DOG COORDINATORS

SHARE KNOWLEDGE AND EXPERIENCE

AWI-funded wild dog coordinators across the country recently got together to share with each other how they work with woolgrowers and other stakeholders to help strengthen their rural communities' efforts to assist with sustained on-the-ground control of wild dogs.



State and territory wild dog coordinators at a recent workshop in Queensland. Left to right: **Marty Bower**, SA; **Lucy-Ann Coby**, Vic; **Michael Freeman**, Vic; **Wendy Allen**, National Wild Dog Action Program (NWDAP); **Brett Carlsson**, Qld; **Greg Mifsud**, Centre for Invasive Species Solutions; **Riccarda Brindley**, NWDAP; **Meja Aldrich**, WA; **Bruce Duncan**, NSW; **Ian Evans**, AWI; **Isabel Martin**, AWI; **Skyela Kruger**, Qld; **Huw Nolan**, University of New England; **Rhys Arnott**, NT; **Dave Worsley**, NSW.

AWI funds and co-funds wild dog coordinators in each state to help landholders and communities work together – locally and across shires – to combat wild dog attacks.

The coordinators themselves also regularly liaise with each other – and they met up in September, along with other state and territory coordinators, in Toowoomba, Queensland, for a three-day workshop and skills update.

At the workshop, the coordinators shared regional/state updates, developments in R&D, communication and community engagement skills – and their knowledge and experience of developing, implementing

and evaluating local and regional pest animal management plans.

COLLABORATION

Although each region has their specific challenges, across the country the biggest challenge for controlling wild dogs is the sustained engagement of landholders and the community.

Greg Mifsud, the National Wild Dog Management Coordinator with the Centre for Invasive Species Solutions, who is part-funded by AWI, said that a sustained, collaborative approach was needed.

“It is the cooperation between groups involved in the issue that ensures the success of wild dog control.

“This includes the collaboration between landholders, whether they be livestock or other, with government, council, and the community and industry groups in the region.

“By creating and fostering this network of engaged and active participation, wild dog control can be achieved.”

Ian Evans, AWI's Program Manager, Vertebrate Pests, said the three-day workshop in Toowoomba was designed to build capacity within the team of wild dog coordinators across the country.

“AWI has a long-term outlook on wild dog control. Part of this outlook is to facilitate the professional development of the AWI-funded and co-funded coordinators,” Ian said.

“Wild dog attacks have decimated sheep numbers in many parts of Queensland and the problem is widespread across Australia, but with the support of coordinators, landholders and groups, we are able to get on top of the problem.

“Having coordinators in these crucial areas is strengthening our approach in protecting the nation's sheep flock and supporting communities who are emotionally and financially affected by wild dog attacks.

“By bringing together these professionals, the workshop provided the opportunity for people to learn from the experiences of others and facilitate collaboration between local, regional, state and national control initiatives.”

AWI-FUNDED WILD DOG COORDINATORS

- **Queensland (south-west):**
Skyela Kruger 0429 232 089
- **NSW (north-east):**
Dave Worsley 0429 638 078
- **NSW (western):**
Bruce Duncan 0409 515 471
- **Victoria (Gippsland):**
Brian Dowley 0408 436 600 and Lucy-anne Cobby 0488 712 616 (shared position)
- **Victoria (north-east):**
Michael Freeman 0477 358 061
- **Western Australia:**
Meja Aldrich 0417 622 780
- **South Australia:**
Marty Bower 0419 835 120

B

AWI FUNDING AVAILABLE

Funding is available under AWI's 'Community Wild Dog Control Initiative' to individual groups to undertake wild dog control activities. Funding can be directed by groups to fill gaps they have identified in their control plans. Particular emphasis is placed on assisting groups to become self-sufficient in the longer term.

To apply, groups should download and complete the application form at www.wool.com/wilddogs and submit it along with a plan, a map and a project budget to wilddogs@wool.com.

Applications are open to new groups as well as those groups that have previously received funding from AWI. If you need clarification or assistance please contact AWI Program Manager Vertebrate Pests, Ian Evans, on 0427 773 005 or ian.evans@wool.com



Wild dog pulling at a **Canid Pest Ejector**. PHOTO NSW Office of Environment and Heritage.

COMMUNITY-WIDE WILD DOG CONTROL BRINGS RELIEF

A coordinated community baiting program involving several adjoining landholders has reduced wild dog activity in and around sheep properties in Glenaladale in Victoria.



Two wild dogs on a neighbouring property in the Glenaladale community group area. The front dog is visiting a bait station (baits funded by AWI). PHOTO: Trevor Howden

Coordinated community-wide wild dog control has enabled woolgrower **John Boyd** from south east Victoria to focus on producing quality wool, rather than worrying about wild dog attacks that were once devastating his business. John (left) is pictured talking to the Community Wild Dog Control Coordinator for the Gippsland region **Brian Dowley**, whose role is funded by AWI.

John Boyd breeds Merino sheep and Angus cattle at the base of the foothills of the Great Dividing Range, 20km north of Stratford in Victoria.

Undulating sandy country with an annual rainfall of 28 inches, John's property 'Stockdale Park' was the perfect environment to grow Merino sheep and for many years John had great success producing quality fine Merino wool.

But in 2010 breeding Merinos became an unviable option for their enterprise.

In May 2010, John began to find healthy sheep drowned in dams around the property. John had never seen this before and it was a mystery to which he could not find an obvious answer.

After close and extended observation, John spotted a female wild dog and identified the canine as the culprit of the attacks.

"The initial problem started in the autumn of 2010 with around twenty sheep being found in dams," explained John.

"This escalated to a year-round issue and we were losing sheep each night.

"The pack of dogs wouldn't kill for feed, it was the thrill of the chase and they would force mobs into corners, flattening the fences and leaving sheep with gashes in their sides and intestines dragging on the ground."

The damage the wild dogs were doing affected not only the sheep and the viability of John's business, but also the emotional stress had a huge impact.

"It was a problem we thought we could never get on top of. We decided that if we couldn't do any better than a 20-30% lambing rate then we couldn't keep the Merino side of the business.

"At the worst period, we lost 1,500 sheep. 80% of these were lambs. In one particular mob of 200 ewes, we marked 120 lambs and only two weeks after marking not one lamb was left alive."

TURNING THE SITUATION AROUND

At the start of 2011 John was supported by a Government trapper to address the immediate issue at Stockdale Park. This tackled the immediate problem of these particular wild dog attacks.

Then John and his neighbours initiated a community approach.

Through their local Landcare group, John and his neighbours contacted the Department of Environment, Land, Water and Planning (DELWP) and were put into contact with Brian Dowley, the Community Wild Dog Control Coordinator for the Gippsland region in Victoria, whose role is funded by AWI.

With guidance from Brian, the group applied for funding from AWI to assist in their wild dog baiting program.

Brian says that the Glenaladale Landcare group was proactive from day one.

"John was committed to growing wool. Although his enterprise was being decimated

by the attacks from wild dogs, John and the Glenaladale group's determination to get on top of the problem was the deciding factor in their success," said Brian.

From 2011 to the present John has had 600 baits distributed on Stockdale Park and the neighbouring property.

John emphasises the importance of a community approach.

"Without a coordinated approach across the region we would not be where we are now."

Each year since the initial attacks in 2010, John, the Glenaladale Landcare group and neighbouring landholders have been addressing the issue of wild dogs through a planned approach that combines trapping and baiting.

"If you want to get on top of your wild dog problem, you need the whole community's support. Dogs don't limit themselves to one property and whether you're in sheep, cattle, cropping or forestry, supporting your neighbours is the most important community contribution you can make," emphasises John.

The current program rolls out in autumn and spring with community baiting, and when a dog is identified landholders feed this information back to the trapper straight away.

The last attack on Stockdale Park was in March. One wether was attacked but the dog was spotted and the local trapper came straight out to deal with it.

"The most important thing is to keep on top of it," says John.

"The problem won't go away but with this coordinated effort our lambing percentage has increased to a level that is viable for our business and we are again producing great wool." **E**

COLLABORATION COMBATTING INVASIVE SPECIES

Woolgrowers will have more tools in the fight against pest animals thanks to a suite of new and innovative projects launched by the AWI-supported Centre for Invasive Species Solutions.



AWI's General Manager Research, **Dr Jane Littlejohn**, spoke at the launch of the Centre for Invasive Species Solutions' first RD&E portfolio, emphasising the importance of national collaboration to achieve a significant impact on invasive species.

The Centre for Invasive Species Solution is a national collaborative research, development and extension (RD&E) organisation, formed to tackle the ongoing threat from invasive species, such as wild dogs, foxes, rabbits, wild pigs and feral deer. It is the successor of the Invasive Animals Cooperative Research Centre (IA CRC).

The Centre has established a powerful member and partner collaborative RD&E platform that has initially brought together state, territory and federal government agencies, industry Research and Development Corporations (namely AWI and MLA), CSIRO and universities to focus on the development of improved tools and strategies that will strengthen management of vertebrate pests.

The Centre is taking the best of the former IA CRC forward and is focused on ensuring transformational and on-farm outcomes for the agriculture sector. A total of 21 projects have been developed in the Centre's first RD&E portfolio, in consultation with members and partners, and will focus on key invasive species problems.

The portfolio was launched on 18 September by the Federal Minister for Agriculture, David Littleproud, at Parliament House, where he and other key agricultural and environmental stakeholders acknowledged the importance of continued investment in new tools and technologies to manage invasive species.

"Farmers face huge costs, productivity losses and the spread of diseases at the hands of pests and weeds and keep fighting to stop them in their tracks," Minister Littleproud said. "The 21 projects target pest animals in

particular and will look at new management tools, better strategic decision making as well as community engagement and education."

The initial portfolio is worth a combined \$48 million of direct investment and in-kind support, including a \$20 million investment from the Australian Government – and \$3.1 million of direct and in-kind funding from AWI to support the Centre's continuing work on rabbit biocontrol, wild dog management strategies and community engagement and digital extension programs.

AWI's General Manager Research, Jane Littlejohn, emphasised at the launch that the vision for AWI is vertebrate pest management as a social norm in rural and regional Australia and all sectors strengthening their own commitment to the shared problem.

"The Centre's program will deliver more people, in more communities, accessing real time information on best practice and so making better decisions on-ground to keep the impact of pest animals at acceptable levels – and this is why we are supportive of and investing in the Centre's activities," Dr Littlejohn said.

MORE INFORMATION
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Researchers say that calcium and magnesium supplements can be recommended as a low-cost risk management strategy for pregnant ewes, especially for twin bearing ewes or when ewes are being grain fed or grazing grass dominant pastures or cereal crops.

MINERAL SUPPLEMENTS FOR PREGNANT EWES?

AWI-funded research has shown that increasing the calcium and magnesium intakes of pregnant ewes that don't show any visual sign of calcium or magnesium deficiency puts the ewes into a better metabolic state, improves the immune response in twin newborn lambs and increased their weights at four weeks of age. Although mineral supplementation alone may not result in significant increases in lamb survival in individual flocks when ewes are grazing common pastures, it is recommended as a low-cost risk management strategy for pregnant ewes (especially twin bearers) to improve lamb survival.

As reported in the June edition of *Beyond the Bale*, an AWI-funded project at the Graham Centre for Agricultural Innovation at Charles Sturt University has been looking at whether more widespread supplementing of lambing ewes' diets with calcium and magnesium can improve lamb survival.

When a ewe goes down with metabolic disorders such as hypocalcaemia (milk fever) or hypomagnesaemia (grass tetany) the effects are very obvious. But what this project was more interested in is *subclinical* metabolic disorders, which is when there are *no visual signs* that the ewe is in trouble but her magnesium and calcium levels are actually below requirement.

To recap the June article:

- 1. A literature review** was initially carried out, which indicated subclinical calcium and magnesium deficiencies might reduce lamb survival.
- 2. Monitoring of 16 commercial lambing flocks** grazing typical pastures across NSW, SA, Vic and WA was then undertaken in 2016, which demonstrated that two-thirds of flocks had 20% of ewes deficient in either calcium or magnesium a week before lambing, indicating a risk of subclinical metabolic disease.
- 3. An intensive pen study** with twin-bearing ewes was then carried out, which showed that mineral supplementation with calcium and magnesium improved energy balance regulation in the ewe, which should reduce

the risk of the ewe developing complications such as twin-lamb disease. Furthermore, mineral supplementation improved the immune response in both ewes and lambs, proving a mechanism through which lamb survival might be altered. Lamb weight at four weeks of age was also improved by supplementation.

However, the pen study did not contain sufficient ewes to determine if supplementation significantly improved lamb survival. Therefore further field trials were carried out to assess the impact on lamb survival of supplementation in grazing ewes on commercial properties.

THE NEW FIELD TRIALS AND THEIR RESULTS

In 2017, a study used five flocks (across NSW, SA, and WA) with control and supplemented groups. The supplement offered provided calcium, magnesium and sodium, but in a form ('anionic salts') designed to improve calcium metabolism. However, the mineral supplement was only consumed in amounts that could be effective by two of these flocks, and mineral supplementation did not improve lamb survival in either flock.

The study was repeated in 2018 on another flock, comparing both standard (1:1:1 lime, Causmag and salt) and the previous 'anionic' supplement, to test whether the form of the supplement was an issue. In this study, both supplements were readily consumed near the target level, but their consumption did not improve lamb survival.

The researchers suggest this lack of improvement in lamb survival might have been due to variability in ewes' intake of the supplement during the field trials, or that other factors were of greater importance in affecting lamb survival in these commercial flocks.

RESEARCH CONCLUSIONS

A key research finding from the project was that many late pregnant ewes in Australian grazing flocks are *subclinically* deficient in calcium and magnesium, so woolgrowers should manage these risks to prevent clinical forms developing which could cause numerous ewe losses and high lamb mortality.

When twin-bearing ewes consumed higher levels of calcium and magnesium (in the pen study), there was an improvement in the energy regulation of late pregnant ewes, the immune status of the lambs, as well as twin-lamb early growth rate – which can all be expected to reduce the risk of clinical metabolic disorders and other contributors to lamb mortality.

Given the low cost of calcium and magnesium supplementation used in this project (<\$0.02/hd/day), the researchers say that provision of such supplements can be recommended as a low-cost risk management strategy for pregnant ewes, especially for twin bearing ewes or when ewes are being grain fed or grazing grass dominant pastures or cereal crops – because supplementation is likely to assist in prevention of some metabolic disorders and improve lamb immunity and early weight gains. **B**

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

DROUGHT: WHAT HAPPENS TO WORMS?

What actually happens to worms during long dry periods or drought? And how are they best controlled during these times in those (normally) moderate to high rainfall regions where worms are normally present?

Many livestock producers are surprised to find sheep severely affected by worms during a drought, or are dismayed when sheep succumb to worms soon after it rains.

In regions where drenching is normally required, worms will still be present in drought, and lighter sheep will be far more susceptible. Regular worm egg counts indicate when drenches are required, preventing losses, especially of poorer sheep.

In the normally lower rainfall areas, regardless of drought, it is usually sufficient to monitor worm egg counts about 6 weeks after there has been enough rain to generate a green pick (new green pasture). Recommendations for the moderate to higher rainfall areas are detailed below.

WORMS IN THE SHEEP

The first source of worms is the sheep themselves; they carry worms into a drought, and can suffer the ill effects many months after conditions have turned dry.

WORMS ON THE PASTURE

The second source is worm larvae, which live for many months on the pasture, despite dry conditions.

IN THE FIRST 6 MONTHS AFTER THE RAIN STOPPED

Larvae not ingested with pasture die, not because it is dry, but because they run out of stored energy, as larvae do not eat. The majority – about 90% – die in about six months under cooler conditions, three months under hotter conditions, and even faster when extremely hot. Very few survive more than one year.

Therefore, larvae that hatched in wetter conditions before the rain stopped may be on the paddock for many months despite lack of rain. When the sheep eat the contaminated pasture, especially as they graze lower and lower, the larvae are ingested and some establish in the sheep. Worm burdens in the sheep can rise quite quickly when they lose condition, because under-nutrition reduces their immunity to worms.

But by about six months from the last significant rain (10–15 mm or more over a few days) that source of larvae has declined to very low levels.

WormTest each 1–2 months, in both normal years and the first 6 months of drought:

- Barber's pole worm areas: 4-weekly in warm months; 6-weekly in cooler months
- Non-barber's pole worm areas: 5–6 weekly for young sheep; up to 2-monthly for adult sheep in good body condition on better feed.

AFTER THE FIRST 6 MONTHS SINCE THE RAIN STOPPED

Once most of the worm larvae that developed prior to dry times have died, new worms can only originate from new contamination, that is, from the worms living in the stock during drought.

The question is: will the worm eggs being passed in dung that is landing on a dry paddock survive, develop to infective larvae, and become available for ingestion by the stock?

Generally, all nematode worm species will hatch and develop into larvae within a moist faecal pellet and then move out onto the pasture. However, the brown stomach worm (*Teladorsagia*) and black scour worm (*Trichostrongylus*) are able to survive within the faecal pellet for weeks during very dry times, except with extreme summer heat. Barber's pole worm (*Haemonchus contortus*) has less ability to do this and will generally die within a week or so if there has not been about 10–15 mm of rain.

If sufficient rain dissolves the dung pellet, any living scour worm larvae are released onto the surrounding ground and they can move onto the new pasture and be ingested by stock.

But while it remains dry the risk is low.

There is some concern that sheep eat dirt with pulverised dry dung when eating grain trailed on the ground and will gain a worm infection under these conditions. However, there is no evidence of significant pick up of these larvae from the ground when the paddocks are dry with little or no pasture. It's not until some green pasture has developed that the new larvae that were



Sheep that are stressed by drought conditions may have reduced immunity and show the effects of worm infestation.

still in the faecal pellets start to move out. In practice, significant re-infection of sheep is usually some weeks later, once green pasture is well established.

When there has been no rain, but areas of green grass continue to grow along creekbanks, channels and drains, in soaks from springs, or even where a trough or pipe is continually leaking into a large area, there is potential for eggs to develop to infective larvae. Stock will concentrate on this looking for any available feed, therefore there will also be a concentration of dung dropped there. The sheep that continue to graze there can then become infected with worms. Unless these areas are very extensive, they are not likely to lead to heavy worm burdens, however worm egg counts are a wise precaution.

After 6 months of no rain, if sheep have continued access to large moist areas with growing grass, continue to monitor worm egg counts about every 6 weeks. If there is no green grass and there have been no falls of 10–15 mm rain (over a few days) for more than 6 months, extend monitoring to 2-monthly in barber's pole worm areas and 3-monthly in non-barber's pole worm areas. Check earlier if you are concerned.

WORMS AFTER IT RAINS

Drought-breaking rain is **not** required to cause a large increase in worms. Worm eggs develop and are released from the faecal pellets after about 10–15 mm of rain falling across a few days, although in hotter areas some follow up rain will be required.

Green pick resulting after rain is a good indicator that worm eggs have been able to hatch and develop, and larvae are available on pasture.

Monitor worm egg counts 5–6 weeks after rainfall that results in green pick, and continue monthly testing as the pasture comes away.

SUMMARY

Extended periods of dry weather do decrease the ability of worms to develop on pasture. However, drought does not afford sheep protection from worms, as they are likely to go into a drought with worms and even moderate occasional showers can fuel worm hatching.

Drought-stricken stock that are poorer in condition are more susceptible to worms.

Worm egg counts are a simple and affordable method to monitor stock during drought to give peace of mind and the knowledge of when to drench. **B**

MORE INFORMATION
www.wormboss.com.au

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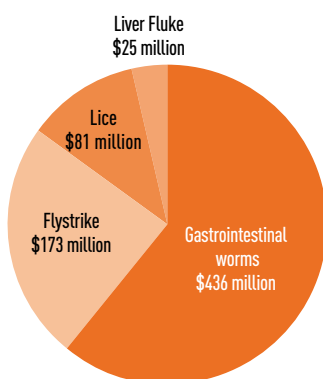
*Cameron Munro,
Egelabra General Manager*



WHAT'S BUGGING YOU?

Help us to help you. Australian sheep producers will soon be surveyed regarding how they manage sheep worms, liver fluke, flies and lice on their properties. This AWI-funded research will ensure that research, advice and information can be tailored to producers at a regional, state or national level, addressing the issues that are currently of greatest importance.

Sheep parasites top the list of economic costs to producers – with sheep worms, liver fluke, flies and lice collectively costing the Australian sheep industry \$715 million annually in lost productivity, treatment and prevention costs.



Annual costs of parasites to the Australian sheep industry. Source MLA, 2015

AWI is funding a survey of Australian sheep parasite control practices undertaken by producers in 2018. The survey, which is being managed by researchers at the University of New England (UNE), will be available for producers to complete in February 2019.

This new survey follows on from similar previous surveys carried out by researchers for the 2003 and 2011 years.

The results of these previous parasite control surveys have proved very useful. For instance, they identified and confirmed the need for regional worm control programs and drench decision guides, which have been popular tools on the WormBoss website. The results also informed content for the FlyBoss and LiceBoss websites which contain valuable tools for managing flystrike and lice infestations.

WHY THE NEED FOR A NEW SURVEY?

Control measures have changed in the seven years since the last survey. The sheep industry was in the early years of a new drench active (monepantel) and two more drenches were approved for use in sheep (derquantal

and praziquantel). There are now new lice chemicals and a long-awaited vaccine against Barber's Pole worm is available.

There has also been an increased market requirement for knowledge of the provenance of wool and meat products, which has applied pressure to the industry to change practices. This has resulted in a decrease in the use of mulesing and better tools for genetic selection to reduce sheep parasite burdens.

As a result of all these changes, some of the areas that AWI and researchers are interested in learning about include:

- what sheep parasite control options have been adopted by producers
- how chemical resistance has changed; and
- how producers monitor and manage their sheep parasite challenges.

Queensland sheep producer and veterinarian Noel O'Dempsey, who runs fine wool sheep and prime lambs at 'Linallie' in the Traprock country between Texas and Inglewood, is on the Steering Committee for the project. He encourages all sheep producers to complete the survey.

"This is an important survey for producers and they should take the time to complete it as accurately as possible," he said.

"The results of the survey will not only allow industry to benchmark current parasite control strategies and get a feel for what changes have occurred since the previous survey, but it will ultimately enable producers to fine tune their on-farm parasite control, be it for worms, flies or lice."

HOW TO GET INVOLVED

All Australian sheep producers are encouraged to complete the new survey. It will be conducted online; there is therefore no limit to the number of participants completing it, which will hopefully result in a broader selection of Australian sheep producers represented.

WHAT DID THE PREVIOUS TWO SURVEYS REVEAL?

The two previous AWI parasite control surveys (2003 and 2011) showed major changes to producers' parasite management practices.

The average number of treatments for worms increased from 2.1 treatments/year in 2003 to 2.7 treatments/year in 2011. The highest average number of treatments per year was in New England (5.6 treatments) which is a region endemic to Barber's Pole worm. There was a greater use of combination drenches used in 2011 (43%), however there were still a large number of single active drenches given (57%).

In 2011, drench resistance testing was conducted by 29% of producers. Of those, 55% had resistance to benzimidazole drenches and levamisole, 28% to abamectin, 21% to moxidectin and 12% had resistance to ivermectin. 48% of farmers said they didn't know their drench resistance status.

There was a low use of genetic selection for resistance to worm infection (13%) in 2011 with paddock spelling, cropping and cattle/sheep rotations being the most utilised methods of worm control.

Regarding lice, 23% of producers reported lice infestations in 2011, with 27% reporting rubbing. More than 50% of producers reported no evidence of lice. Lice prevention rated highly with sheep producers but 22% reported no treatment for lice. Backliner treatments were the most frequently used for both short wool and long wool treatments. **B**

MORE INFORMATION
The **Benchmarking Australian Sheep Parasite Report** from the survey of 2011 practices is available on the AWI website wool.com

The survey will be available online in February 2019. Its availability will be publicised through various channels including email invitation, AWI e-newsletter, and on the AWI website Wool.com and ParaBoss websites at Paraboss.com.

The questionnaire will survey producers' control practices undertaken in the 2018 year. Sheep producers will be invited to indicate how they prefer to receive information on parasites and in which areas they would like more information and research.

Although the survey will be available online, producers who prefer to complete a paper copy can still do so by requesting a copy from the researchers: Dr Alison Colvin (alison.colvin@une.edu.au) or Prof Stephen Walkden-Brown (swalkden@une.edu.au) of UNE. Phone (02) 6773 5152. **B**

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.



AWI'S BREECH FLYSTRIKE RD&E TECHNICAL UPDATE PRESENTATION

(July 2018)

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



BREEDING LOWER WRINKLE AND DAG

(June 2017)

PAIN RELIEF: FREQUENTLY ASKED QUESTIONS

(March 2017)

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



AWI BREECH STRIKE RD&E PROGRAM - IMPROVING LIFETIME WELFARE

(November 2017)

Presentation slides that outline the outcomes of AWI's Breech Strike RD&E Program since 2005. There are five key areas of work: (1) Breeding and Selection, (2) Breech Modification, (3) Improved Management, (4) Domestic Extension and (5) International Supply Chain Communication.



DAFWA BREECH STRIKE RESISTANCE PROJECT NEWSLETTER ISSUE 7

(July 2017)

CSIRO ARMIDALE BREECH STRIKE GENETICS NEWSLETTER ISSUE 7

(November 2016)

Newsletters from the Breech Strike Genetics project funded by AWI.

NUMNUTS NUMBS NUTS (AND TAILS)!

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. The pilot launch of Numnuts® is expected for the 2019 lambing season.



Numnuts is a new product for sheep producers to provide pain relief when lamb marking with rings.

Numnuts is a handheld device that includes an easy-to-use 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. A trained operator can apply Numnuts in 2-3 seconds.

Pain relief is the core reason to use Numnuts. The patented technology is scientifically proven to reduce tail docking and castration pain by up to 68%.

“Numnuts aims to improve animal husbandry procedures and animal welfare outcomes,” said Numnuts director Robin Smith.

“The system has been designed to utilise the traditional rubber ring, which is a bloodless and highly effective, farmer-friendly method for castration and tail docking lambs. Numnuts is very suitable for use on lambs held in the type of marking cradle commonly used in Australia.

“Speed, ease of application and productivity all at a reasonably low cost have been the key factors when developing the product. It can be used by a producer or contractor in Australia without the need for a veterinarian to be present, although the local anaesthetic

NumOcaine™ will require a vet’s prescription so farmers will require a relationship with their vet to access Numnuts next year.”

Numnuts was born in 2009, when Scottish design engineering firm 4c Design and Moredun Research Institute in Scotland partnered together to investigate the 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 research and development (R&D) work. MLA has since invested 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.

Lead researcher from CSIRO, Dr Alison Small said the results of their field trials at Armidale and on five commercial sheep properties – using more than 15,000 Merino and crossbred lambs during last year’s marking season – showed positive animal behaviour in response to using Numnuts.

“Numnuts lambs’ were noticeably more relaxed than ‘Ring lambs’ when released from the cradle. For the next 20 to 30 minutes, when pain is most intense, the number of pain behaviours was reduced by up to 68% in Numnuts lambs in comparison to Ring lambs. Similar benefits were seen in male and female lambs.

“At subsequent time points, the number of pain-related behaviours were low in all lambs, and differences between Numnuts and Ring lambs were less noticeable.”

Numnuts will be available commercially in Australia for the 2019 marking season. However, in its first-year stocks will be limited to approximately 500. Producers, contractors and veterinarians interested in obtaining the Numnuts technology should register their interest at www.numnuts.co.uk

Robin Smith said the Numnuts device would cost approximately \$200 with each dose anticipated to cost about 65-70c in the early years, but the company is working hard to try to reduce the cost in subsequent years.

WOOLGROWERS’ PRACTICAL EXPERIENCE OF NUMNUTS



Jodie and Andrew Green of ‘Aloeburn’ at Boree Creek, NSW, have been involved in trialling Numnuts and regard it as a practical and successful method of marking with pain relief.

One of the farms at which Numnuts commercial trials have been undertaken is 'Aloeburn' at Boree Creek in the Riverina of NSW. The property is owned by fourth-generation woolgrower Andrew Green, with his wife Jodie, who usually run 5,000 Merino ewes, including 500 Poll Merino stud ewes.

Andrew said they certainly noticed the pain relief effects on the lambs after using Numnuts.

"On the whole the lambs were not lying around in the yards, they were concentrating



Jodie Green using Numnuts for marking at 'Aloeburn'.

on getting back to their mothers to get a drink again as quickly as possible," he said.

"The walk back to the paddock was easy as the lambs were completely mobile and walking with their mothers, they were not lying on the ground agitated from discomfort."

Jodie said the device was easy to use and its development had benefited from practical on-farm trials.

"The improvements made to the device from the first trial work in July to the next version which we used in the September trial were very good. The plunger device which administers the NumOcaine was softer and ergonomically a much better design," she said.

Jodie said administering to the testicles is particularly easy while a good technique to work with the variation of tails can be quickly worked out by each user.

"Like undertaking any new procedure, it was necessary to do a few lambs before the correct necessary technique for the tail was worked out, but that came quickly from familiarity.

"Some tails are thin with little muscle around the bone and some are much thicker with a great deal of muscle around the bone. A good technique is quickly determined to ensure that the NumOcaine is injected to the muscle

rather than hitting the bone."

Andrew said implementing pain relief to lambs when applying rings for castrating and tail docking is not only better for the lambs, but it could open up opportunities for both wool and meat in markets where animal husbandry practices are keenly monitored.

"As well as those sheep producers who have ceased mulesing, likely producers to use the product are those who have a high concern for optimum animal welfare and who wish to be able to demonstrate this level of diligence to consumers of their products, both meat and wool," he said.

"It will also be useful to growers who are seeking to obtain and maintain accreditation under the various standards now available to wool producers for new marketing opportunities for their wool."

Robin Smith of Numnuts thanked Andrew and Jodie Green for their support in hosting the test engineers, and also the owners of the other test sites TA Field Estates Pty Ltd ('Wyvern' and 'Congi', NSW), Michael Craig ('Tuloona', Vic) and Tim Leeming ('Paradoo', Vic), along with other early pioneer users in Australia including John Chappell ('Arkhaven', NSW).

MORE INFORMATION

For more information and to register your interest, visit www.numnuts.co.uk

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MERINO SIRE EVALUATION EXPLAINED

The largest joining in the history of Merino Sire Evaluation took place in 2017 both in terms of the number of sires and the number of sites. One hundred and thirty-one sires were joined across nine sites with 19 new studs contributing 15% of sires.

This record number of joinings coincided with 14,795 downloads of Site Reports in 2017, indicating a strong level of interest in sire evaluation results. This builds upon important developments in sire evaluation, first among which was the recent AMSEA Historical Sire analysis.



Sire evaluation classing, September 2018, NSW DPI Trangie.

Merino Sire Evaluation was first established in 1989 to provide an independent comparison of the breeding performance of rams by evaluating their progeny relative to the progeny of other sires and in particular, link sires.

Thirty years later, the program evaluates progeny run across the 10 current sites under consistent protocols for a large number of traits that are important to commercial producers. The results are used by ram breeders to benchmark their genetics and by ram breeders and buyers alike to assist them select the genetics that are going to add the most profit to their enterprises.

SITES AND LINK SIRES

Sire evaluation sites are located throughout the major wool-growing regions of Australia with between 12 and 20 sires entered at each site. Sires are joined to ewes via artificial insemination (AI). Link sires are used at all sites to allow sires entered at different sites and in different years to be compared by removing the differences between sites, years and seasons, leaving only the genetics to be evaluated via the progeny.

EWES

The ewes at each site are selected on the basis of offering an even, classed line that is representative of sheep typically run in that environment. An equal number of ewes are joined through AI to each sire. The minimum number of ewes joined to each sire is 50, with some sites choosing to join more.



2017 drop sire evaluation MLP project F1 ewes, NSW DPI Trangie.

PROGENY

Evaluation of a sire's progeny is the key to sire evaluation. Progeny are managed together under the same conditions throughout the period of the trial, with the exception that single and twin bearing ewes can be separated prior to lambing and managed accordingly up until weaning. Ewe and wether progeny can also be managed separately. All progeny are evaluated with no culling, except for welfare purposes.



2018 drop sire evaluation MLP project F1 progeny, NSW DPI Trangie.

EVALUATION

Progeny can be evaluated at many stages in the trial. These include post lambing, early post weaning (120-210 days), post weaning (210-300 days), yearling (300-400 days), hogget (400-540 days) and adult (>540 days). Many sites complete evaluations at two or more stages.

Evaluation involves both measured traits and visual assessment. The measurement of traits is conducted by experienced site committee members and specialised service providers. Visual assessment (including classing for Tops and Culls) is completed by independent sheep classers and involves evaluating a comprehensive list of visual traits for wool quality, breech and conformation characteristics, as well as providing an overall classer's grade. All data collection and classing is carried out in a randomised, blind manner so the data collector and classer is not aware which sire's progeny they are assessing.

RESULTS AND REPORTING

AMSEA Site Reports are published for each site which provide information on traits including:

- measured wool, growth and carcase traits
- wool quality, breech and conformation traits
- internal parasite resistance
- growth and carcase traits

The reports present results as Adjusted Sire Means for each sire, which adjust the raw data for effects such as being born or raised a single or a twin, as well as Flock Breeding Values (FBVs). Site Reports can be downloaded from either of the *Sites* or *Reports* pages of the Merino Superior Sires website www.merinosuperiorsires.com.au

Also available from the www.merinosuperiorsires.com.au website is the Merino Superior Sires Report. Merino Superior Sires is the annual publication that reports Australian Sheep Breeding Values (ASBVs) which are generated using data from Merino Sire Evaluation as well as other data that has been submitted to MERINOSELECT. Merino Superior Sires also publishes visual classing results, contact details for sire owners and breeders and the leading rams in a summarised Top 50 report for each Index. Merino Superior Sires is produced annually with the support of AWI. The latest edition, Number 24, was produced in October 2018.



The cover of the latest Merino Superior Sires available on www.merinosuperiorsires.com.au

MERINO SIRE EVALUATION PROVES ITS WORTH

HISTORICAL SIRE EVALUATION

Linkage is a critical element of Merino Sire Evaluation and allows sires to be compared across years and environments. This is done by entering the same sire across a number of sites and years to allow environmental differences to be accounted for in the genetic assessment.

To determine how well the system of linkage in MERINOSELECT is working and to assess productivity gains over the past 15-20 years, 16 industry leading 'historical' sires, first tested in the mid-1990s, were re-entered in Merino Sire Evaluation sites between 2013 and 2015 with progeny completing evaluations in 2017.

The project proposed that if linkage is working, the historical sires should have similar Australian Sheep Breeding Values (ASBVs) now to the breeding values they had when they were originally entered. The project also proposed that if there have been significant genetic gains, today's new sires should be outperforming those of 15-20 years ago.

AND THE RESULTS ARE IN...

When analysed using the new 'dummy identities', the 16 historical sires' average ASBVs were very close to the breeding values of the sires using

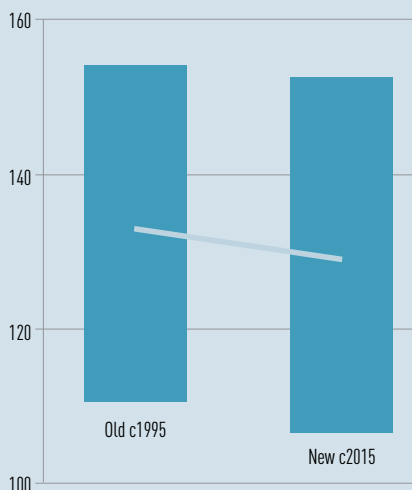


Figure 1: Merino Production Index; range of indexes and the average index of the 16 sires.

the data from 20 years earlier. That is, the results of the sires were repeatable 20 years apart. This shows that the evaluation methods are working, as is the technology of using Link Sires between sites and years over a 20-year time period.

SO WHAT ABOUT GENETIC GAIN OVER THE PERIOD?

When considering genetic gain, the historical sires showed a high level of superiority compared to other sires used in the 1990s, but are now well below average compared to current sires. This is illustrated by the fact that the historical sires were on average in the top 35% for the Merino Production Index in 1995, but are now in the bottom 15% compared to sires evaluated in 2015.

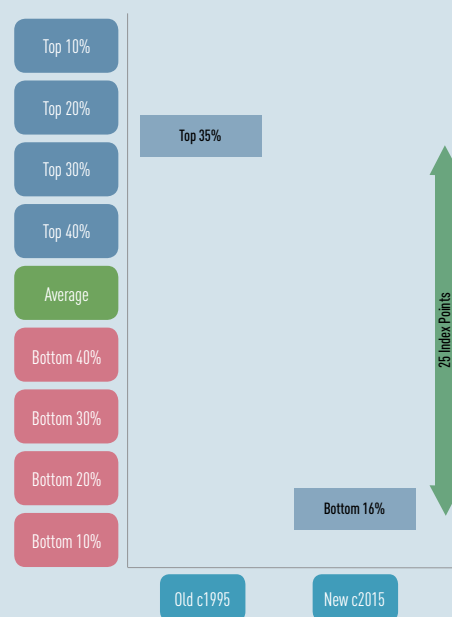


Figure 2: Merino Production Index

Fleece weights are up 11% compared to 1995, micron is down by 0.7 and body weight is up 3.3kg. This shows there has been considerable advancement in the productivity of the sires being entered into Merino Sire Evaluation over the 20-year period.

MORE INFORMATION
www.merinosuperiorsires.com.au

KEY MESSAGES FROM THE STUDY

1. Linkage across time is sufficiently high to ensure accurate estimation of genetic trends and users, or prospective users, of the technology can have confidence that the science behind the *across flock* and *across year* performance breeding values works well.
2. There is considerable genetic gain occurring in the sires entered into Merino Sire Evaluation.

SIRE EVALUATION MADE EASY VIA NEW WEBSITE

The recently updated Merino Superior Sires website makes it easy to identify and compare a diverse range of Merino sires for a wide range of traits and provides access to detailed information regarding Merino Sire Evaluation in Australia.



The Australia Merino Sire Evaluation Association (AMSEA) is a not-for-profit organisation that oversees Merino Sire Evaluation across a range of sites located throughout Australia. These sites provide unique opportunities for ram breeders and buyers to compare the genetic performance of individual rams with other leading sires entered in 10 current independent sites across Australia.

With the support of AWI, AMSEA collates and analyses the data from sire evaluation

sites and publishes Site Reports and Merino Superior Sire Reports on the recently redeveloped website www.merinosuperiorsires.com.au

The improved website provides useful information on the Merino Sire Evaluation program and allows ram breeders and buyers to easily identify and compare sires based on the breeding performance of their progeny. This has been achieved through the use of interactive search functions and intuitive navigation to create an easy and rewarding user experience.

The website also includes reports from the Merino Lifetime Productivity (MLP) project, an exciting collaboration between AWI and AMSEA designed to capture lifetime data across diverse environments and Merino types to help better understand and deliver Merino ewe lifetime performance outcomes for the Australian Merino industry.

Useful information available through the website includes:

- Site information for those interested in learning where the sites are and how they operate
- Detailed sire performance data as well as search and comparison functionality

- Detailed reports including:
 - AMSEA Site Reports including adjusted sire means, within-site (flock) breeding values (FBVs) and visual classing results for the sires entered at each site
 - MLP Reports which include raw data, adjusted sire means and within-site (flock) breeding values (FBVs) for both wool and carcass traits as well as visual classing results
 - Merino Superior Sire Reports covering all AMSEA and MLP sites and listing the top 50 sires for Indexes, as well as Australian Sheep Breeding Values (ASBV) for wool, carcass and breech traits, along with results from visual classing
- Event information including Merino Sire Evaluation and MLP field days.

Visit www.merinosuperiorsires.com.au today to find out what sire evaluation can do for your business. **B**

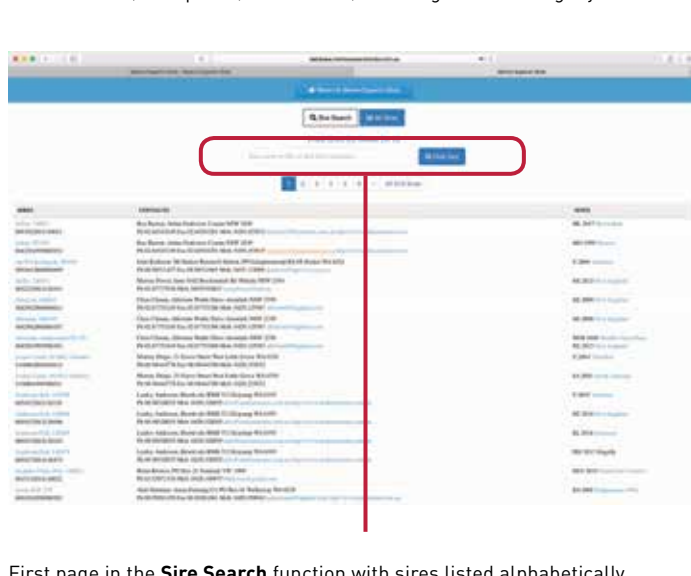
MORE INFORMATION
www.merinosuperiorsires.com.au
AMSEA Executive Officer,
Ben Swain, 0427 100 542.

The **Sire Search** function is available in the header menu, which is accessible from all pages within the website.

MLP Project information and reports can be found via the **MLP Project** tab in the header menu which is accessible from the all pages within the site. Scroll down through the MLP Project information to locate MLP Reports which are sorted by site: Balmoral, Macquarie, MerinoLink, New England and Pingelly.



The homepage showing the **Sire Search** and **Compare Sires** buttons.



First page in the **Sire Search** function with sires listed alphabetically. Sire and stud names or ID can be entered in the highlighted search box.

BLOODLINE ANALYSIS HELPS BUILD PROFITABILITY

Analysing wether trial data gathered over a 10-year period to 2018, the new Merino Bloodline Performance package compares many commonly used Merino bloodlines to identify performance differences and subsequently the best ram source for specific breeding outcomes.



The new report, funded by AWI and NSW Department of Primary Industries (DPI), has delivered important information to Merino breeders with implications on the profitability and performance of 73 Merino bloodlines.

NSW DPI development officer, Kathryn Egerton-Warburton, said *Merino Bloodline Performance 2007-2018* delivers objective production data which can inform growers of the variation between the bloodlines and assist them in their choice of ram source.

Analysis of nine individual traits and four financial indicators from 24 wether trials in NSW and one in Tasmania show significant variation between the bloodlines.

Merino bloodlines varied across a range of 3.6 microns in fibre diameter, 28 per cent in clean fleece weight and 13 per cent in live weight and the production differences translate into very significant differences in bloodline profitability.

“Significantly there was a strong relationship between fleece weight and fibre diameter across the bloodlines, with a significant genetic variation across the fibre diameter range,” Dr Egerton-Warburton said.

“This genetic variation offers two key options to fit breeding objectives – producers can choose a finer bloodline to reduce fibre diameter without compromising clean fleece weight or choose a bloodline with a heavier fleece weight and maintain their current fibre diameter.”

Merino breeders and commercial wool producers can use the updated report to identify the relative performance of bloodlines and fine-tune their future breeding programs.

Determinants of profitability, including diameter, fleece weight, live weight, staple length and strength, style and colour, and measures of financial performance allow producers to compare bloodlines on a

FIVE STEPS TO MAXIMISING PROFITABILITY

There are five steps commercial wool producers can take in order to maximise their profitability and make the best use of the Merino Bloodline Performance report:

1. Set a long-term breeding objective
2. Benchmark your current bloodline performance against other bloodlines
3. Consider all traits, even though some will be dominant
4. Consider performance and future progress of the bloodlines that are of interest
5. Consider practical constraints of a bloodline, such as price, availability and location.

profit per head or per dry sheep equivalent (DSE) basis.

Dr Egerton-Warburton said Merino producers can confidently use the data in selecting bloodlines which best suit their breeding objectives.

“The trials have each run from two to three years and we are confident the information gives a very reliable indication of potential Merino profitability,” she said.

“Genetic data has been isolated from seasonal and geographic environmental differences by grouping multiple teams of wethers into bloodlines across the trial sites.”

NSW wether trials were run in the Central Tablelands, Central West, Northern Tablelands, Riverina, Southern Tablelands and the Monaro.

AWI and NSW DPI funded the Merino Bloodline Performance project.

MORE INFORMATION
www.merinobloodlines.com.au

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R&D INTO PROFIT PER HECTARE OF DIFFERENT MERINO TYPES

A new AWI-funded project with Murdoch University aims to better predict differences in stocking between sheep and thus estimations of differences in profitability per hectare.

Farm consultants and economists have long been saying that the key driver of production in a Merino enterprise is profit per hectare. Currently, the extrapolation of per head productivity to per hectare productivity is attempted using liveweight and the increase in energy requirements of heavier animals based on body weight alone. These assumptions mean lower stocking rates and lower profit per hectare for heavier genotypes. However, there are more factors than just bodyweight that determine the number of animals carried per hectare, but these liveweight-based estimates of profitability per hectare are the best available unless other information is collected and can be valued.

When animals have been run together and genotypes have different body composition or levels of fatness and productivity, this indicates variation between genotypes in their ability to utilise the feed resource. Animals that are fatter can either be fed less supplementary grain in subsequent feed shortages or more animals could have been carried on the same pasture. New profit equations could better quantify these differences using feed intake and differences in body energy stores. This approach, if successful and practical, will be superior to the current assumption that the number of stock carried is only inversely proportional to the metabolic liveweight which implies that all animals have the same grazing ability and all animals have the same energetic efficiency.

NEW AWI-FUNDED PROJECT

Murdoch University, with funding from AWI, are about to undertake a large-scale trial to more accurately estimate profit per hectare by measuring feed intake and whole-body energy reserves on progeny from 29 different Merino sires representing the many different sheep types.

The animals in this project are wether progeny

born in 2016 and 2017 from the AWI-funded Merino Lifetime Productivity (MLP) project at the University of Western Australia's Ridgefield farm at Pingelly in Western Australia. The MLP project aims to compare the lifetime productivity of 5,000 ewe progeny from 135 sires over five sites across Australia. If successful, this project will improve the estimation of profitability of the MLP sire groups at Pingelly by demonstrating the importance of more accurately estimating profit per hectare assuming the missing data needed can be practically collected and interpreted with data already being collected. This could then lead to an improvement in the economic analysis of the other four MLP sites.

The wethers involved in the project were part of the Pingelly MLP project up until weaning age. Since weaning they have been assessed for a number of growth and productivity traits and visually classed for structural and performance traits. From 12 months of age the wethers have also been assessed for time of teeth eruption, scanned for fat and eye muscle depth and had weight and condition score recorded monthly until all animals were no longer classified lamb (according to current teeth eruption status). They have had wool measurements taken and AWEX-IDs given to value wool quality and quantity for individual animals.

PROJECT'S UPCOMING ACTIVITIES

From January 2019, the wethers will undergo intensive animal house studies to quantify key components of the feed intake and energy equations. Following shearing in December 2018, the wethers will be introduced to a pelleted feed at the Ridgefield research site before being transported to the Department of Primary Industry and Regional Development's Katanning research facility and housed in single pens. Following a seven-day acclimation period, the wethers will be managed through two 35-day feeding periods with liveweights collected three times weekly and condition

score once weekly. During the first period, the wethers will be fed to maintain liveweight. During the second period, the wethers will be split into two groups and fed one of two diets to gain or lose weight. These groups will be balanced for sire, fasting liveweight and condition score.

During the trial, all wethers will be assessed using Dual Xray Absorptiometry (DXA) so that changes in fat and muscle components in relation to energy intake can be quantified for an understanding of the efficiency of energy use over the course of each feeding period. Wethers will also be measured by ultrasound for fat and muscle depth at the C site by an industry specialist. Mid-side sample wool patches will be collected for each wether and dyebands will be applied every month or so to assess wool growth rates.

On two occasions during each feeding period, the wethers will be held in portable accumulation chambers for 45 minutes to measure CO₂ production in order to investigate the value of this measurement as a proxy for feed intake.

Wethers will also be fitted with sensors for two periods. The first application will be during the final 14 to 17 days of the maintenance feeding period and the second application will be during the second feeding period. It is anticipated that the sensors measuring feeding and rumination behaviour will be correlated with their feed intake.

Following completion of the intensive measurements, wethers will be removed to a feedlot, and monitored for liveweight change and gross feed intake. Sensors will again be fitted to the wethers for five days during this period and using knowledge of individual and sire group intakes in relation to liveweight change, we will be able to assess the usefulness of sensors to predict feed intake in a less controlled environment. In addition, the geolocation and accelerometer functions of the sensors will be used to examine feedlot behaviours. This program will be repeated in 2020 using 2017 drop wethers.

The ultimate aim is that better measures of sire group differences in feed intake together with the current measures of live weight, fat and muscle and whole body reserves will provide better estimations of stocking rate and thus profitability per hectare of the different sire groups. **B**



2017 drop Pingelly wethers.

IMPROVING RESILIENCE IN MERINOS

CSIRO researchers Dr Brad Hine and Dr Jen Smith are investigating whether the resilience of Merino sheep can be improved through targeted breeding. The project is using wether progeny of the Merino Lifetime Productivity (MLP) project over five years at the New England MLP site.

Resilience is defined as the ability to cope with challenges and return quickly to being productive. Livestock face a variety of environmental challenges in their production environment from pathogens (disease challenge), climatic extremes, social mixing and management induced stress. Animals respond to these challenges with a variety of immune, physiological and behavioural responses which are highly integrated.

A newly funded collaborative project between AWI and CSIRO will test several hypotheses around resilience and the ability of animals to cope with challenges posed by their production environment.

The focus of the project will be two drops of F1 MLP wethers, the sons of 28 industry sires, half of which will be used to answer the following four research questions:

1: Are immune competence (ability to mount an immune response), stress responsiveness and temperament favourably correlated in Merino sheep?

Immune competence, ability to cope with management induced stress and temperament are important traits which contribute to an animal's resilience. We have observed favourable genetic correlations between these resilience traits in beef cattle. Based on these results, researchers will investigate whether similar favourable correlations exist between these resilience traits in Merino sheep.

2: Do Merino sheep with enhanced immune competence have reduced incidence of disease, reduced health-related mortalities and improved productivity in the face of disease challenge resulting in significant benefits in terms of health, welfare and productivity of animals?

Work in beef cattle has demonstrated that animals identified as being 'immune competent' have significantly less disease related mortalities and incur significantly lower health-related costs for producers. Researchers will

investigate whether similar benefits, in terms of improved health and welfare, and reduced production costs will be associated with 'immune competent' Merino sheep.

The initial MLP site (Balmoral) now has ewes that are rising 3 and 4 year old ewes, and the Pingelly and MerinoLink sites have rising 2 and 3 year old ewes. The progeny of different sires are showing increasing variation in mortality rate which is having a significant economic impact.

3: Do Merino sheep with enhanced immune competence respond more strongly to routine vaccinations used by the sheep industry than their low responder counterparts, allowing producers selecting for immune competence to improve their ability to protect their flocks against disease?

Vaccination is routinely used in the Merino industry to protect animals against common diseases of significant economic importance. For most vaccines, there is always a proportion of 'non- or low-responders' who do not respond sufficiently well to the vaccination to achieve protection and which remain susceptible to disease. These animals significantly reduce the efficacy of vaccination on-farm and the ability of producers to protect their flocks against disease.

Researchers will investigate whether they can improve lifetime productivity and the number of low- or non-responders to vaccination programs through selection for improved resilience in Merino sheep.

4: Are immune competence and carcass traits that predict eating quality, favourably correlated in Merino sheep (as has been demonstrated in meat breed sheep) suggesting selection for immune competence may also have benefits for carcass retail values and eating quality?

Researchers have observed favourable genetic correlations between immune competence traits and carcass traits related



Tim Lawrence (scanner) and **Annika Alexander** (student) fat and muscle scanning 2017 drop New England MLP wethers.

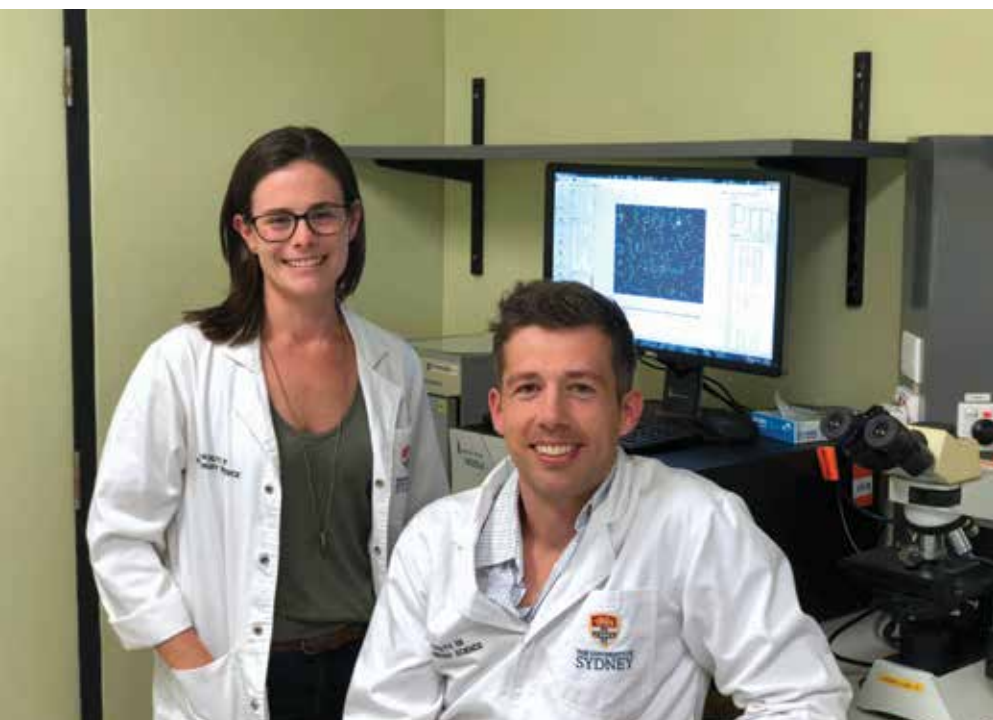
to tenderness (shear force), intra-muscular fat (IMF) and fat cover in meat breed sheep. Results from carcass data were supported by live animal ultrasound scanning data which suggested that fat cover was also favourably genetically correlated with immune competence in terminal lambs. These findings suggest selection for immune competence may also have benefits for carcass retail values and lamb eating quality in Merino sheep. A proportion of 'resilience tested' lambs will be feedlot finished and slaughtered at a commercial abattoir to obtain detailed feedlot performance and MLA-funded carcass data.

The final report from this project is due in December 2021. **E**

MORE INFORMATION
Dr Brad Hine, CSIRO:
brad.hine@csiro.au or (02) 6776 1377

SEXED SEMEN VIA AI TO ENABLE SELECTION OF RAM OR EWE LAMBS

The results from an AWI-funded project undertaken by The University of Sydney have determined that 'sexed semen' technology is effective enough to enable woolgrowers to choose whether they want male or female lambs via artificial insemination (AI).



Dr Jessica Rickard and Associate Professor Simon de Graaf who are undertaking the research at The University of Sydney.

The ability to choose the production of either male or female lambs would provide a number of benefits for the wool industry. Sex preselection can streamline flock management, reduce costs associated with progeny testing, allow woolgrowers to focus selection on a ewe line, and can improve the rate of genetic gain under certain breeding strategies.

At present, these benefits are not being taken advantage of due to a lack of availability of commercialised semen sexing for sheep. However, AWI's 'sexed semen' project aims to deliver a reproductive technology which is already very prevalent in the dairy cattle industry.

The project recently conducted an insemination trial in Victoria at Paul Walton's Wurrook Merino Stud, with Livestock Breeding Services inseminating about 300 ewes to test the fertility of fresh sexed semen that had been 'sorted' to contain female X-chromosome-bearing sperm.

The results obtained are encouraging. Fertility following laparoscopic AI was excellent

with non-sexed control semen inseminated at normal commercial doses achieving 78% pregnancy, while fresh sexed semen resulted in pregnancy rates as high as 65% depending on sperm dose used.

Importantly, a significant skew in sex-ratio was achieved at lambing with an indicative success of 93.4% female lambs born to the ewes inseminated with the 'female X-chromosome-bearing sperm'.

These results support the commercial feasibility of fresh 'sexed ram semen'. Additional research to deliver frozen sexed ram semen is already under way.

HOW THE RESEARCHERS SEX SEMEN

The only method capable of repeated, proven production of pre-sexed offspring is the 'flow cytometric' sex-sorting of sperm.

"It's a pretty technical process I've got to

admit," said Associate Professor Simon de Graaf, who along with Dr Jessica Rickard is undertaking the research at The University of Sydney in partnership with Sexing Technologies. "It's a long way from a ram just doing his thing in the paddock."

The way it works is an ejaculate of semen is collected in the same way as prior to semen freezing for normal AI programs.

"But instead of sending it straight for freezing, we add a fluorescent dye that binds with the DNA inside of the sperm. Of the two types of sperm, the female X chromosome bearing sperm has more DNA so takes up more dye than the male Y bearing sperm.

"So when the sperm are sent through the flow cytometer and exposed to UV light, the X bearing sperm fluoresce brighter than the Y bearing sperm. We're then able to place a charge on the droplet of fluid that each sperm is contained in – for example the female sperm might be given a positive charge and the male sperm given a negative charge. Then just like sheep going through a set of drafting gates we're able to send the sperm through electrostatic drafting gates and push them to one side or the other, so the female sperm goes into one tube and the male sperm goes into another tube.

"We then process them and end up with a population of sperm which is either male or female and can then be used for artificial insemination."

The accuracy of the process depends on how fast the semen is processed through the flow cytometer. The slower the speed, the more accurate the process; but if it's too slow then the procedure becomes economically non-viable.

"Shooting the sperm through the flow cytometer at 80 km/h may sound fast, but it still only equates to around 8,000 sperm of each sex produced per second, so when you consider the standard AI dose contains 20 million motile sperm it can take quite a while. Setting the machine at about 90% accuracy seems to be the sweet spot – where you can expect 90% of your lambs to be the required sex, either male or female, and it doesn't slow things down too much."

50-YEAR-OLD RAM SEMEN

ACHIEVES HIGH FERTILITY

The oldest frozen ram semen in existence was thawed out and inseminated this year as part of the 2018 Balmoral sire evaluation program – and the semen achieved remarkably high pregnancy and scanning rates.



Associate Professor Simon de Graaf defrosting semen frozen 50 years ago at 'Koorringal', Coleraine in Victoria, in April.



'Sir Fred' (Tattoo: "L") born in 1959, is one of four rams that contributed to the pool of semen frozen in 1968. Ledgworth purchased the 'Sir Fred', a Boonoke ram, in 1961 for 345 guineas. The photo was taken when Sir Fred was a 10-year-old. PHOTO: Peter Walker, 'Woolaroo', Yass.

Frozen in 1968 by Dr Steven Salamon of The University of Sydney, the 50-year-old semen comprises a pool of semen from four rams of Ledgworth, Merryville and Boonoke genetics, owned at the time by the Walker family of Ledgworth (and latterly Woolaroo), Yass.

Originally frozen to prove sperm could survive storage in liquid nitrogen (-196°C) for several years, this bank of semen is to the best of our knowledge the oldest in existence of any species (human or animal) anywhere in the world.

Remarkably, pregnancy scanning results indicate that despite 50 years of storage the semen is as fertile as the day it was frozen, with pregnancy and scanning rates no different to the overall average of all sires (also artificially inseminated) in the Balmoral AMSEA program (see Table 1).

The high fertility of this semen demonstrates that long term frozen storage of sperm is safe and reliably preserves genetics for future use, not just for agriculture but also human medicine. This is of particular importance to young male cancer patients who have stored semen prior to radiation treatment and/or chemotherapy who potentially may want to start a family decades later and are unable to conceive naturally.

Beyond insights into artificial breeding and semen freezing technology, use of this semen also stands to showcase 50 years of genetic progress of the Australian wool industry. Comparison of the performance and appearance of lambs produced from the 50-year-old semen with those sired by the modern rams will be of great interest.

This trial offers a remarkable opportunity to open a window to the industry's past and in doing so also contemplate the future of sheep selection and genetics and what we might expect to see in 50 years' time.

The progeny will be on display at the Balmoral Sire Evaluation Field Day on Friday 22 February 2019 at 'Koorringal' at 2115 Coleraine-Edenhope Rd, Coleraine in Victoria.

For researchers at The University of Sydney, looking down the microscope at sperm cells swimming for the first time in 50 years is a window to their history of sheep reproduction research and a reminder of the remarkable discoveries their predecessors made to enable the artificial insemination of sheep.

AWI's predecessors Australian Wool Research and Promotion Organisation (AWRAP), the Australian Wool Commission and Australian Wool Corporation co-funded much of this pioneering work. With continuing support from AWI, current research projects aim to build on this legacy and deliver the next generation of assisted reproductive technologies for the sheep industry. **E**

MORE INFORMATION

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Dr Steven Salamon conducting cervical artificial insemination of a ewe. PHOTO: The University of Sydney



Table 1: Pregnancy and scanning rate of ewes inseminated via intrauterine laparoscopy with pooled ram semen (four sires) frozen in 1968 and with semen from modern sires (19 sires) recently frozen.

Semen type	Pregnancy rate*	Scanning rate**
50-year-old semen	61% (34/56)	82% (46/56)
All other sires†	59% (618/1048)	80% (842/1048)
Total	59% (652/1104)	80% (888/1104)

* number of ewes pregnant/number of ewes inseminated

** number of fetuses scanned/number of ewes inseminated

† Combined fertility results of all remaining (n=19) sires

LIFTING THE LIFETIME PERFORMANCE OF YOUNG MERINO SHEEP

AWI's Winning With Weaners workshops are being held across the country to help woolgrowers identify key management strategies that will assist in improving the performance of their Merino weaners.

KEY THEMES OF THE WINNING WITH WEANERS WORKSHOP

1. Understand the impact of weaning weight on the survival of weaners to first joining
2. Understand weaner nutrition, in terms of both energy and protein
3. Set weaner weight targets
4. Understand the importance of weaner management on lifetime performance of breeding ewes
5. Strategies for success – management calendar

Weaner ill thrift and mortality are the fourth highest ranked priority disease, in terms of economic cost, to the Australian sheep industry. It has been estimated to cost the industry approximately \$188 million annually – most of this estimate is due to production losses. The cost of prevention (providing improved nutrition for weaners) is estimated to be only \$36 million.

Weaner ill thrift occurs when young sheep fail to thrive when other classes of stock in the flock are in satisfactory health and body condition. It results in poor growth, reduced wool production and wool quality (especially staple strength), increased susceptibility to disease (especially worms) and can lead to high mortality rates in young sheep up to one year of age.

While there are multiple (and often)

Alastair Rayner of RaynerAg presenting to woolgrowers at the Winning With Weaners workshop at Armidale.



concurrent causes of weaner ill thrift and mortality, they are all primarily related to animal management and husbandry.

To help woolgrowers improve weaner management of their Merino flock, AWI has been holding its Winning With Weaners workshop across the country.

The industry targets a minimum 95% weaner survival to one year of age, and the workshop identifies key practical actions and tools for commercial enterprises to implement on-farm to achieve this target.

Winning With Weaners assists participants in understanding the key issues affecting weaner survival and performance and guides them through developing targets for growth and practical pathways for improving performance from this group of sheep.

POSITIVE REACTION TO WORKSHOPS

Workshops are run on a demand basis through AWI's State Grower Networks across Australia.

Tony Overton, who manages a flock of Merino sheep on 'Europambela' at Walcha, one of the larger superfine operations in NSW's New England region, attended the workshop at Armidale in October – at which there was plenty of interaction, with heaps of questions and great discussion.

"The Winning With Weaners workshop was a very informative day. It highlighted the potential gains for our business, allowing us to be very focused on the performance of our weaners. It sets them up for a

lifetime of production," he said.

"After completing the Lifetime Ewe Management course, the Winning With Weaners day is the ideal next step to increasing our on farm sheep production systems."

In the past six months, AWI's Grower Network in NSW, Sheep Connect NSW, has held Winning With Weaners workshops at 19 locations across the state, including Goulburn, Armidale, Walgett, Young, Dunedoo, Parkes, Hillston, Rankins Springs, Mangoplah, Wanganella, Cowra, Corinella, Tallimba, Tottenham, Condobolin, Temora, Wagga Wagga, Yass and Crookwell.

Alastair Rayner of RaynerAg at Tamworth helped deliver the workshops in the north west and New England regions of NSW.

"Winning With Weaners is a great workshop for all sheep breeders. I enjoyed presenting at them along with Megan Rogers from Sheep Smart Solutions who coordinates the Sheep Connect NSW team," he said.

"If you haven't attended one of these workshops, you really should consider it."

Megan Rogers says the feedback from the workshops in NSW has been very positive with 99% of attendees saying they would recommend the event to others.

"Having analysed the feedback from the first 18 events we've held, the workshop was given a satisfaction rating of 8.94/10 by attendees which is pleasing to hear," she said.

"91% said that they learned something new, the other 9% said it reinforced what they were already doing. Confidence in managing weaners went from 6.8/10 at the start of the workshop to 8.3/10 at the conclusion of the event. Furthermore, the dollar value to the business of each attendee of the workshop averaged an impressive \$3,787."

Winning With Weaners is a single day workshop (9.00 am-2.30 pm) with about 15-25 participants per workshop and costs \$75 per person. Attendees receive a full set of workshop notes, useful tools to help with monitoring and planning for successful weaner management and a checklist for use in their own operation. **B**

MORE INFORMATION:

To find out about upcoming workshops in your region, contact your AWI State Grower Network (contact details at www.wool.com/networks).

RAMMING UP REPRO WORKSHOPS

RAMping Up Repro workshops are being rolled out across the country to give sheep and wool producers the skills to improve ram health, performance and longevity in their sheep breeding enterprises.

Rams are a considerable investment for a woolgrowers' business; with the rams' performance impacted by management and preparation for joining.

To help ensure that woolgrowers get the most from their rams, AWI in partnership with Zoetis Australia developed the hands-on RAMping Up Repro workshop. The half-day workshop is being rolled out across the country, in conjunction with leading deliverers, via AWI's state networks.

AWI Manager, Woolgrower Education & Capacity Building, Emily King, said the RAMping Up Repro workshop is designed to give producers the skills across the key components of what drives ram performance, to help improve the profitability of woolgrowers' enterprises.

"The workshop provides a hands-on guide to making ram examination practical and achievable and helps woolgrowers manage their ram teams through joining with confidence," she said.

AWI's state network in WA, The Sheep's Back, held a RAMping Up Repro workshop at Katanning in August, at which veterinarian Dr Michylla Seal of GENSTOCK presented to the attending woolgrowers.

Michylla said the workshop was focused on giving producers the skills to adequately assess their rams prior to joining to ensure they perform to their full potential.

"The main focus was on the assessment of the reproductive organs, spermatogenesis cycle and management practises of rams. This allows the rams to perform like the elite athletes they need to be during joining," she said.

"The day was split between theory and hands-on demonstration ensuring producers attained a full understanding of carrying out their own examinations/assessments of rams.

"The producers attending the workshop really got involved and I was very impressed with their skills in detecting issues in rams' testicles and the involvement in discussions



Michylla Seal of GENSTOCK presenting to woolgrowers at the RAMping Up Repro workshop at Katanning in August.

stemming from the issues we detected."

Michylla said the producers will have more confidence in using the learned management skills on their properties going forward.

"Feedback was really positive. Producers attained a lot of confidence in assessing their rams and feedback I received from the producers indicated they would be putting 'ram checks' on their calendar as a routine management practice.

"The discussions between everyone attending the day were fantastic with everyone sharing positive and negative experiences in many aspects of ram management. We can all benefit so much from sharing our experiences, whether they are positive or negative." **B**

MORE INFORMATION:

For more information on upcoming RAMping Up Repro workshops in your area, contact your AWI State Grower Network (contact details at www.wool.com/networks).



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BEST PRACTICE CONTROL OF SILVERLEAF NIGHTSHADE

Silverleaf nightshade is spread by sheep that eat and then deposit the weed's mature berries during summer and autumn – so now is the perfect time to take a look at a new best practice manual that provides Australian farmers with guidance on controlling the weed and preventing its spread.

Silverleaf nightshade is a weed that grows during spring and summer, using up valuable moisture and reducing production in pasture and crop enterprises throughout the Australian wheat-sheep zone.

It is a long-lived perennial plant with very deep, resilient roots. Spread is relatively slow but, once established, it is extremely difficult to eradicate.

It is likely that most silverleaf nightshade spread has been by livestock, particularly sheep.

First detected and reported in northern NSW in 1901, silverleaf nightshade has spread to most regions in the cropping areas of NSW, Victoria and SA. WA has a relatively small number of infested farms, but it continues to spread. Queensland also has some scattered populations.

Despite its widespread distribution, there are vast areas of farming land where silverleaf nightshade has not been detected. Stopping its spread to clean land is a priority to minimise future losses.

NEW MANUAL TO HELP FARMERS

The newly released best practice manual is a collaboration between PIRSA and NSW DPI, with much of the information in it generated by research and extension projects funded by AWI, MLA, the South Australian Grains Industry Trust (SAGIT), the Murrumbidgee Land Care Group, and the Australian and Victorian governments.

The authors, Dr Hanwen Wu (NSW DPI) and Dr John Heap (PIRSA), have been involved with silverleaf nightshade research and extension for decades.

The collective experience, knowledge and research findings of the two have been combined to produce the most current and comprehensive best practice management information available, and woolgrowers are encouraged to take a look.

The 66-page manual includes the weed's biology and threat, integrated weed management, case studies and sources of further information.

HOW IS THE WEED SPREAD?

There is strong evidence that sheep are the most important vector for seed dispersal in Australia.

Dr Wu says sheep eat mature berries, and viable seeds may then be deposited in dung for the next two to three weeks.

"Sheep most commonly eat mature silverleaf nightshade berries during summer and autumn, when pasture reserves are very low. Sheep movements from an infested paddock to a clean paddock are therefore most risky during the mid-summer to early winter period.

"New infestations of silverleaf nightshade typically increase slowly within paddocks that were previously clean, and there may be a lag phase of at least 5 to 10 years between silverleaf nightshade seed introduction and recognition of a developing problem.

"It is important to note that clean paddocks and farms can be protected from invasion, even in heavily-infested districts, by careful management and good farm biosecurity practices."

Cross-bred sheep reportedly eat berries more readily than Merinos.

WHAT IF MY PROPERTY IS AFFECTED?

If a property is affected by silverleaf nightshade, control must be planned over at least a five to ten-year time frame.

While designing a management plan can be a daunting task at first, Dr Wu says careful and logical thought will produce a plan that directs time and money to where it is most needed over the long journey.

"Large, dense, established infestations attract immediate attention, but careful consideration of the situation may identify higher priorities. The two highest priorities should be to stop seed and fragment movement to clean areas, and to control isolated outlier patches of silverleaf nightshade.



The new **66-page best practice management manual** is aimed at helping farmers combat silverleaf nightshade.

"Large dense infestations will still need to be managed, but the potential damage that can result from ignoring newly-established colonies dictates that they should take priority."

In paddocks where there are large infestations, the emphasis shifts to protecting crop and pasture productivity, which will incur extra ongoing costs (eg supplementary feeding, herbicide, fertiliser) to minimise yield losses.

"However, it must be accepted that there are no suitable effective herbicide treatments that will *quickly* kill dense infestations," Dr Wu added.

Experience and research suggests that a 'Dual Action' approach is most suited to long-term control. Action One, in early summer, is aimed at stopping seeding, and Action Two is aimed at weakening the root system in late summer or autumn. **B**

MORE INFORMATION

The Silverleaf Nightshade Australian Best Practice Management Manual 2018 is available at www.silverleafnightshade.org.au and at www.wool.com/weeds

CUTTING EDGE R&D INTO ROBOTIC SHEARING

The results from an AWI-funded scoping study into robotic-assisted shearing demonstrate the plausibility of a semi-autonomous wool harvesting system. The scoping study will help guide AWI's future investment in the area.



The UTS robotics team used the latest digital technology to demonstrate gentle and intuitive shearing blow patterns using two robot arms on each side of a 3D printed sheep.

As reported in the September edition of *Beyond the Bale*, AWI has brought together some of the best shearers and robotic experts in Australia to help determine how a robot, equipped with the latest digital technology, will be able to shear a sheep.

Further work has been undertaken and the researchers from University of Technology Sydney (UTS) have now completed its scoping study into semi-autonomous shearing.

MACHINE LEARNING ON A 3D PRINTED SHEEP

"To enable the UTS researchers to test out the feasibility of their robotics in a sheep shearing situation, they needed a life-sized model of a sheep," said AWI's shearing industry development coordinator Jim Murray.

So, in October, they carried out 3D scanning of several sheep with the help of AWI. Using the latest printer technology, the researchers then printed a 3D sheep of the same shape, size and contours as a real sheep.

Once printed, this sheep allowed the UTS team to transfer their robotic knowledge from other industries – such as robotic assisted surgery and robotic apple picking – to the life-sized printed sheep. This was achieved by programming robotic arms to mimic a shearer's blow pattern along the life-sized sheep model, where a proxy 'end-effector' (a soft ball) maintained contact with the surface of the model sheep, closely following its contours.

The blow patterns were 'taught' to the robot by a human demonstrator. Computer algorithms then enabled the robot to store

memory of its movement and apply this to its next movements – effectively learning.

"Every time this prototype shears a sheep, its method gets stored in the robot's memory bank," Jim said. "The first time it sheared a sheep it took five or ten minutes, but the next time it won't have to think about it as much. It might take 100-200 sheep before it has got enough knowledge in its memory bank to shear quickly, but once it has that knowledge it could be very efficient."

INCREASING PRODUCTIVITY AND EASE

The researchers' focus in this preliminary study was for the robot to concentrate on the higher quality fleece wool, with a human shearer removing the oddments.

"If we can get the robot to take the fleece wool off in under two minutes and we have somebody else on an upright posture shearing platform doing all the trimmings (bellies, points, pieces etc), we're looking at 240 sheep a day being shorn – and so for two people employed that's 120 sheep per person," Jim said.

"When you consider that in most shed operations today each shearer is probably shearing 80 to 90 sheep per person employed in the shed, there's a definite productivity gain that can be had with robotic-assisted shearing."

Jim also emphasised that robotic shearing is not aimed at making shearers redundant, but rather at increasing productivity and making the job of shearers less physically demanding.

"It's important to note that this system is not about putting shearers out of work. It still needs somebody to for instance make sure the sheep have been positioned correctly for the robot, plus the person shearing off the oddments will probably be shearing in an upright position and not bent over, which will limit the strain on the shearers' back and increase the longevity of their career in the industry."

ANIMAL WELFARE AND OTHER CONSIDERATIONS

During this scoping phase, there was discussion about the best way to position the sheep so they were comfortable – and to enable smooth and consistent blows by the robot. The researchers and shearers concluded that a prone position for the sheep with them lying on a support frame could be the best solution.

"It's about keeping the animals in their natural position, making it obviously very safe for them. Maintaining animal welfare is paramount," Jim said. "The sheep we used when trialling the support frame had just been fed and despite their full bellies the sheep were very comfortable and didn't show any sign of struggle."

The researchers have also considered the type of shearing device that cuts off the wool and the advantages and disadvantages of shearing right next to skin, or alternatively using high-riders like cover combs to shear a few millimetres away from the skin.

NEXT STEPS

The completed UTS scoping study has now been publicly released by AWI and is being circulated to shearing and technology experts to increase the interest in shearing technology.

The project's outcomes will provide strategic guidance to AWI and researchers on potential future technological directions to improve efficiency, working conditions and quality in the shearing process.

"The research is still very much in its infancy, but it's very exciting times," Jim added. **B**

MORE INFORMATION

The scoping study report and a video is available at www.wool.com/robotics

Hear more about the project in Episode 69 of The Yarn podcast, available at www.wool.com/podcast.



AWI-FUNDED SHEARER TRAINING AT TAMBO, QUEENSLAND

An AWI-funded shearing and wool handling school held at Tambo in Central West Queensland in August proved very popular, which is a reflection of the optimism that is returning to the state's wool industry.

With buoyant wool prices and a growing network of cluster fences, there is a confidence in the Queensland wool industry not seen for many years, despite the drought.

To help increase the capacity of the industry to rebuild, AWI funds training for novice shearers and wool handlers to attract and retain new entrants into the state's wool harvesting industry.

The training school at Tambo was initiated when Blackall woolgrower Alison Krieg contacted AWI's shearing industry development coordinator Jim Murray seeking support to get a local shearing school up and running. AWI was glad to get on board and provided funding for the participation of gun WA shearer trainer Dwayne Black and fellow trainer Boogie Ferguson from Surat, along with Longreach wool handler trainer Tanya King.

Alison and Tanya organised the school, with the generosity of woolgrowers Andrew and Louise Martin of 'Macfarlane' at Tambo who provided their shed, sheep and shearing quarters for the week-long school.

Alison said the shearing school was fully booked out, despite the remoteness, and the 18 very enthusiastic youngsters contributed to the great atmosphere throughout the event.

"We advertised the school in the *Longreach Leader* and word soon got around by word of mouth and Facebook. After we filled the quota for the school we were still getting enquiries," Alison said.

"We were very pleased by the response as we really need youngsters to join the shearing industry. The current local shearers are nearing retirement and woolgrowers are always asking 'where are we going to get ourselves some shearers?'"

"It was fantastic to see the smiles on the faces of the students at the shearing school



Shearer trainer **Dwayne Black** shows the students at Tambo how to balance a sheep properly which makes shearing easier. *PHOTOS: Sally Cripps, Queensland Country Life.*



Tambo shearing school participants came from Thargomindah, Charleville, Tambo, Blackall, Aramac and Longreach to learn the tricks of the trade.



Louise and Andrew Martin, 'Macfarlane', Tambo, supplied their weaner wethers, shearing shed and quarters for the AWI shearing school.

– I had many of the young fellows there eagerly asking when the next school will happen.

"Despite the lack of rain, there is a lot of positive feeling in the wool industry around these parts. There is a belief that the current high wool prices will hold up for at least a few years and producers are keen to rebuild their flock numbers."

These sentiments were echoed by Louise Martin who said the whole district was encouraged by the good turnout at the shearing school.

"It was the first shearing school at Tambo for quite a while and it was a very well supported initiative – we need more of them. It was excellent to see the enthusiasm of the young team willing to have a crack," Louise said.

"With many older shearers retiring, it's important that we have youngsters entering the industry because I can see more sheep heading up north – if we ever get rain – as graziers rebuild the industry to take advantage of good prices and confidence returns with the introduction of cluster fencing."

PRACTICAL HANDS-ON TRAINING IN THE SHED

Shearer trainer Dwayne Black said the Martins were very accommodating and helped make the shearing school very successful.

"It was a very hands-on school, with the Martins providing six stands that enabled a lot of one-on-one training which really helps the students to quickly learn how to shear competently and cleanly," Dwayne said.

"The school ran from Monday to Friday and we started off by having an introductory talk about the industry, the attitude needed to be a shearer or wool handler, the work ethic and camaraderie, and the opportunities for young people in the industry, such as travelling and making good money. Then we explained the gear, the set-up, safety and why for instance you would use different combs in different conditions.

"After that, it was straight into the shearing and wool handling demonstrations, which we did frequently, helping the students develop good techniques. Crucially, we emphasised the importance of the quality of the end-product.

"The students ranged from about 15 to 25 years: some were completely new to the industry, some were from farms and just wanted to learn a bit about shearing so they can help out back at home rather than get someone in, and some had a bit of experience and wanted to learn more to progress their careers.

"They were very keen and got a lot out of it. It was really pleasing to see their faces light up as they progressed through the course and got a real sense of achievement."

In the 2017/18 financial year, more than

1,500 days training (with more than 6,000 attendances by shearers and wool handlers) were delivered through AWI-funded programs across Australia.

By funding hands-on practical training of shearers and wool handlers in the shed, AWI aims to increase participants' productivity, skills development and professionalism. As well as the training of

novices, AWI is building the capacity and longevity of existing staff, and increasing returns to woolgrowers through improved clip preparation practices. **E**

MORE INFORMATION

To arrange training in your state, contact AWI's Jim Murray on 0427 460 007 or email swt@wool.com



St George shearer trainer **Boogie Ferguson** giving Blackall's **Clay Armstrong** a few tips on handpiece placement as he prepares to shear the belly wool of a Macfarlane wether.

QUEENSLAND SHEARING AND WOOLHANDLING TEAM



A Sports Shear Queensland team attended the 2018 National Championships held at the Perth Royal Show in September (see following page). Pictured in the photo left to right are: (Back) Bruce Lines, Roma (WH); Alexander Schoff, Hopeland (Junior WH); Nick Dennis, Boonah (Blade SH); Phil Schoff, Hopeland (SH); Cameron Griffiths, Toowoomba (SH); James Ferguson, St George (SH); Rodney Rayner, St George (SH Judge); Cameron Foat, Flinton (SH Judge). (Middle) Simone Sinclair Mills, Goondiwindi (WH Judge); Jodie Donnelly, Bollon (WH); Michelle Schoff, Hopeland (WH Judge); Victoria Nancarrow, Bollon (Team Manager). (Front) Grace Schoff, Hopeland (Junior SH); Michael Nancarrow, Bollon (National Championships Event Commentator).

Reflecting the tough times that the Queensland wool industry has experienced during the past couple of decades, Sports Shear Queensland has also had some hard years of late with it conducting only very few shows. However, a highlight for the next few years will be conducting the State Shearing & Woolhandling Championships at the Brisbane 'EKKA' Show in August.

COMPETITIONS

PROMOTE EXCELLENCE

AWI provides support to shearing and woolhandling competitions at local, state and national levels. The aim is promote excellence and encourage better techniques in shearing and woolhandling.



The AWI-supported shearing competition at the **Yallunda Flat Show** on South Australia's Eyre Peninsular, held on 1 October.

AWI once again sponsored the National Shearing and Woolhandling Championships and Trans-Tasman Tests, which were held this year at the Perth Royal Show in September.

AWI provides support for these events – plus many local, regional and state shearing and woolhandling competitions across the country – with the main aims of promoting excellence within the shearing industry, and to encourage young people to join the industry. In the 2017/18 financial year, AWI provided support to 48 local shearing competitions across the country, which includes payment of entry fees for learners shearers and novice wool handlers.

AWI Shearing Industry Training Development Coordinator Jim Murray says AWI is keen to raise the profile and status of the shearing industry by enabling participation in well conducted shearing and woolhandling competitions.

"Competitions help encourage better techniques in shearing and woolhandling, which is for the benefit of the wool-growing industry from which they derive," he said.

"AWI's support aims to encourage a quality workforce, an interest in wool, and an appreciation of the art and skill of shearers and wool handlers. AWI's financial support for competitions makes a significant impact on the viability of many competitions."

NATIONAL SHEARING AND WOOLHANDLING CHAMPIONSHIPS



Daniel McIntye of Glen Innes, NSW, on the way to retaining his national shearing title at this year's Perth Royal Show in September.

In a repeat of last year's Championships, Daniel McIntye of NSW beat Victorian Jason Wingfield to take out the National Shearing Final. Both have earned a place in the Australian team to compete at next year's World Shearing Championships to be held in Le Dorat, France, in July. Callum O'Brien of WA, who beat legend Shannon Warnest to third place, is the reserve for the World Championships. All three will take part in the next Trans-Tasman test at Masterton in New Zealand in March.

In a reversal of last year's National Blade Shearing Championships, South Australian John Dalla this year beat Victorian Ken French in the final, with Andrew Murray from NSW once again in third place.

The National Woolhandling Championships also saw a reversal of last year's result, with

Sophie Huf of Victoria beating Tasmanian Mel Morris to the title. Rachel Hutchinson of NSW was third.

The top two in each discipline qualify for the Australian team for the World Championships which will be held in France, for the first time in its 40-year history. The French organisers hope to attract up to 30,000 visitors and 300 shearers from across the world to shear 5,000 sheep.



Sophie Huf and **Mel Morris** of Australia (wearing their green blazers) after winning the Trans-Tasman woolhandling Test.

TRANS-TASMAN TEST

A spectacular Australian woolhandling win resulted in Australia winning the Trans-Tasman Test 2-1. It was just the 10th win for Australia in the 40 woolhandling tests since Trans-Tasman woolhandling matches started in 1998. Mel Morris and Sophie Huf stopped the New Zealanders achieving a sixth win in a row (since Australia last won at Masterton in 2015) by taking out the Test by just 1.9pts.

Even World Champions New Zealand were unable to break Australia's grip on Trans-Tasman machine shearing bragging rights, with the home side of Daniel McIntye, Jason Wingfield and Shannon Warnest winning the Test. Australia has now won eight machine shearing tests in Australia since New Zealand last won in Australia – at Hay, NSW, in 2010 – a period in which Australia has won five tests against New Zealand in New Zealand. Australia have now won 34 of the 64 tests since regular home-and-away matches started in 1974.

In the blade shearing match, the New Zealanders overcame the efforts of Aussies Ken French and Andrew Murray to once again win the blade shearing Test. **B**

MORE INFORMATION

To apply for AWI support for local or regional shearing or woolhandling competition, complete the form at www.wool.com/competitionsupport

WOOLMARK BALE STENCIL

AWI and The Woolmark Company are offering Australian woolgrowers a free stencil of the Woolmark logo for use on their wool bales, to identify and brand their wool fibre as being proudly grown in Australia.

Australian wool has been transported in bales ever since wool was first produced in Australia, more than 200 years ago. Sometimes the bales were conveyed by bullock drays, sometimes by horse wagons, sometimes by train or paddle-steamer – sometimes even on carts pulled by camels. Nowadays, of course, they are mainly transported by trucks on the road.

But in whatever way they are transported – in the past, now or into the future – one thing is for sure, it is a very proud moment for the woolgrower to see their bales loaded onto the truck and sent off for sale; often it is the culmination of 12 months' hard work.

To help showcase their greasy wool as proudly grown in Australia, AWI and its marketing subsidiary, The Woolmark Company, are offering Australian woolgrowers a free stencil of the Woolmark logo (pictured right) that they can use to brand their wool bales.

"Wool bales are seen by many hundreds of thousands of people as the bales travel the backroads and highways of Australia, through country towns and metropolitan suburbs, before they end up in warehouses ready for sale," AWI CEO Stuart McCullough said.

"Having the world-famous Woolmark logo stencilled onto wool bales is a simple and cost-effective opportunity to help market Australian wool, in a very personal and proud way.

"In 2017 there were 1.78 million bales of wool sold at auction. Imagine if all those had the Woolmark logo on them – the returns in terms of exposure would be exceptional.

"Most of our wool bales are of course shipped overseas, and the logo on the bale would travel with the bale, clearly identifying to processors that they are handling wool sourced from the world's leading producer of the fibre.

"I encourage all eligible Australian levy payers

to apply for the new Woolmark stencil for use on their wool bales – and proudly showcase their premium fibre to the world." **E**

MORE INFORMATION
www.wool.com/stencil
stencils@wool.com



HOW DO I OBTAIN A WOOLMARK BALE STENCIL?

Australian woolgrowers should head to www.wool.com/stencil and fill out the application online.

Alternatively, woolgrowers can fill out the hard copy application form that was sent with this edition of *Beyond the Bale* and post it (no stamp required) back to AWI.

Woolgrowers are eligible to apply for a stencil if they were eligible to vote in WoolPoll, ie they have paid more than a total of \$100 in wool levies over the past three financial years.

Woolgrowers can order up to two stencils per order.

Woolgrowers need to provide their AWI Shareholder or Levy Payer Reference Number as part of the application.



Winner of the Merino Fleece Young Judges competition: **Stuart Richardson** of Esperance in WA. PHOTO: Fairfax Agricultural Media

YOUNG JUDGES CHAMPIONSHIPS FOSTER TALENT

AWI supports the National Merino Fleece and Merino Sheep Young Judges Championships to help bring through the next generation of young judges and Merino breeders.

AWI was once again the national supporter of this year's National Merino Fleece Young Judges Championship and the National Merino Sheep Young Judges Championship, held at the Royal Adelaide Show in September.

AWI helps fund the events to support young people within the industry to further their skills through visual selection and appraisal of wool and sheep. By providing the opportunity to broaden their experiences and knowledge base through competition, the finalists become ambassadors for the wool industry.

The Young Judges Championships are for people aged between 15 and 25 and are helping to train the next generation of young judges and livestock breeders.

To participate in these National Championships, the competitors must first have won their own state finals. The New Zealand champion also competes in these National Championships. Positions at the Nationals are keenly contested.

Participants demonstrate their skills in communication, public speaking and breed and industry specific knowledge. They

also get a chance to strengthen career opportunities through networking with colleagues and key industry stakeholders.

The **National Merino Fleece Young Judges Championship** was won this year by Stuart Richardson of Esperance in Western Australia, ahead of runner-up Jedidiah Morrison of Barcardine in Queensland, with

Courtney Davies of New Zealand in third.

The winner, 20-year-old Stuart Richardson, said the competition involved judging two lines of four fleeces (eight in total).

"Competitors had to speak on their chosen group and were judged on their handling of the fleece, the observations that were made in their



Overjudge **John Daniell** with the top three place getters in the Merino Sheep Young Judges competition: **Adam Bennett** of Everton Upper in Victoria, **Klay Smith** of Cowell in South Australia, and **Kaiden Johnston** of Quairading in Western Australia. PHOTO: Charmane Bennett

oral presentations, speaking ability and general presentation,” Stuart said.

“I really enjoyed competing in the championship – it was a fantastic and well-organised event with lots of industry people attending”

Stuart is originally from the rural area of Pinjarra, 80km south of Perth, but he wasn't brought up on a farm and hadn't had anything to do with sheep until he attended the WA College of Agriculture at Harvey.

“At college for three years I specialised in sheep and developed my love for the industry. I also attended AWI's National Merino Challenge for three consecutive years which helped me learn more about wool. My college experience really spurred me on to focus on sheep as a career,” he said.

“I'm currently working for Landmark at Esperance as an account manager in the animal health area. I definitely want to stay in agriculture and want to give everything a go. I would love to stay in sheep – there's lots of money in it at the moment – and ultimately, I want to own and run my own sheep property.”

The **National Merino Sheep Young Judges Championship** was won by Adam Bennett of Everton Upper in Victoria, followed by Klay Smith of Cowell in South Australia in second place, and Kaiden Johnston of Quairading in Western Australia in third place.

Competitors had 12 minutes to judge eight poll Merino sheep (four ewes and four rams) put up for appraisal and were judged on their handling as well as their reasoning.

The winner, 18-year old Adam Bennett, who is a shearer by day, also helps his parents run their Bennmann Merino Stud at Everton Upper.

“Being a fifth-generation sheep farmer, Merinos are in my blood,” Adam said. “I have a passion for the breed; it was bred into me from a little tacker and that'll never change.”

Adam has been attending the Australian Sheep and Wool Show at Bendigo since he was a six-year-old and began his judging career in the Junior Judging there from age 16; this year he was invited to be an Associate Judge for Merinos at Bendigo.

This year was Adam's second attempt at the National title, after competing in the National finals in 2017 at the Royal Melbourne Show. He said competing at the National Championships is a wonderful way to improve confidence and further a young person's knowledge of the Merino breed by being around others in the industry.

“When judging, I look at the wool first, before assessing the other traits to see if they would be productive and profitable in the current environment,” Adam said.

He would like to judge at more events, in Victoria and interstate, and get the opportunity to evaluate more elite sheep, as well as continuing to display and show Merinos from Bennmann. B

NUFFIELD STUDIES

AIM TO BOOST MERINO FLOCK

Anthony Close from Culla in Victoria has been awarded a 2019 Nuffield Scholarship supported by AWI and will investigate ways that Australia can increase its national Merino flock.



Anthony Close from Culla in Victoria will investigate ways that Australia can increase its national Merino flock, as part of an AWI-funded Nuffield Scholarship.

Anthony Close farms with his parents Robert and Bernadette and his brother Simon at 'Kurra-Warra' at the north of the Western Districts of Victoria. The 26-year-old says Kurra-Warra has been in the Close family for many generations.

“We built our family farm off the back of the Merinos,” he said. “We currently run about 7000 Merino ewes of 18-micron, with half run as a self-replacing Merino flock and the other half producing prime lambs. The family also runs a large cattle operation.”

Acknowledging the shrinking size of Australia's sheep flock throughout the past 20 years, Anthony said his focus of his Nuffield studies will be researching the range of factors that have caused this reduction, comparing the industry with those overseas to gain a better understanding of what makes progressive industries grow and prosper.

“In 1992 the national sheep flock was 150 million head, and produced 4.75 million bales of wool. In 2018, the flock is 70 million head, and will produce two million bales,” he said.

“Given the impact that this reduction in flock numbers has on both wool and

sheepmeat production, it's important to understand and sheeppart how we can reverse this downward trend to secure the sustainability and relevance of the industry.

“Wool prices are at historically record levels at the moment and there is a lot of confidence in the industry, despite the current lack of rainfall in many areas, so I hope my research will identify ways that the Merino can once again become a prominent feature of the Australian farming landscape.”

Anthony has completed a three-year agricultural science degree at La Trobe University and is an active hands-on Deputy Chair of the Balmoral Sire Evaluation Trial.

Anthony's Nuffield studies will take him to New Zealand, South Africa, Uruguay, the United Kingdom and the United States.

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

AVERAGE MONTHLY EMI COMPARISON

EMI'S STRONG PERFORMANCE CONTINUES

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 2018 – October 2018) in Australian dollar terms compared with the previous five years August 2013 to July 2018 (circles) and the decade previous to that, August 2003 – July 2013 (squares).

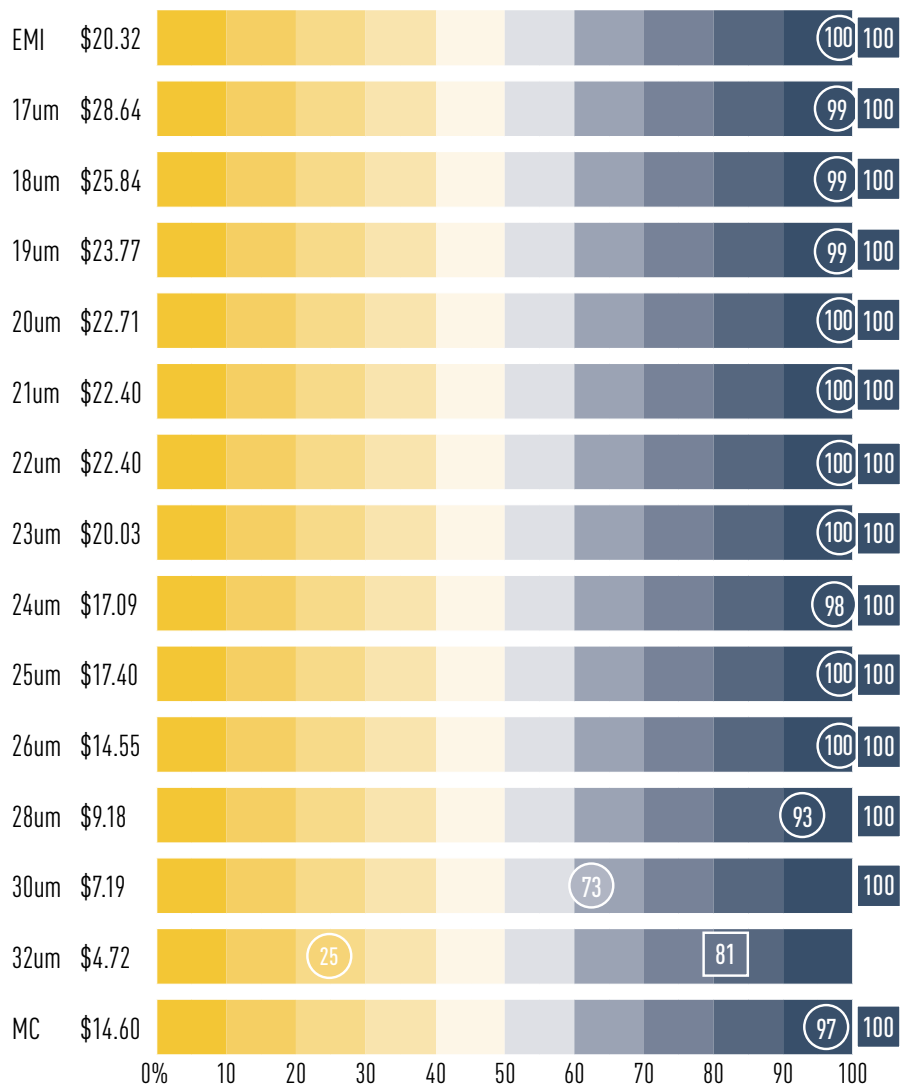
For the past three months, the monthly EMI averaged at \$20.32, tracking at the 100th percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has never recorded a price higher than the current \$20.32 (August 2018 – October 2018).

As well as tracking at the 100th percentile over the previous five years, the EMI is also at the 100th percentile when compared to the decade August 2003 – July 2013. This means the current EMI of \$20.32 (August 2018 – October 2018) is higher now than it was for all that decade.

The mid and finer microns and Merino Cardings (MC) have continued to perform particularly well recently. For the past three months Merino Cardings averaged at \$14.60, operating at the 97th percentile for the previous five years and the 100th percentile for the previous decade.

For the same period, 18 micron averaged at a monthly value of \$25.84 (99th percentile for the previous five years and 100th percentile for the previous decade), 21 micron averaged at \$22.40 (100th percentile for the previous five years and 100th percentile for the previous decade), and 28 micron averaged at \$9.18 (93rd percentile and 100th percentile respectively).

AVERAGE MONTHLY EMI FOR AUGUST 2018 – OCTOBER 2018 COMPARED WITH
 ● PREVIOUS 5 YEARS AUGUST 2013 – JULY 2018
 ■ THE DECADE AUGUST 2003 – JULY 2013



MARKET INTELLIGENCE: FREE VIA SMS

In an initiative launched last year, 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





ADOPTION OF WOOLQ CONTINUES TO BUILD!

WoolQ eSpeci submissions continue to increase throughout the shearing season as growers and classers trial the digital tool.

With growing numbers of WoolQ eSpeci's being submitted across Australia since its launch earlier in the year, it is clear there is an appetite within the Australian wool industry for the introduction of digital tools such as the WoolQ platform.

Growers and classers can see the various benefits of using the digital alternative to the paper speci – the WoolQ eSpeci – but understandably, many will experience a natural reluctance because they've used paper all their lives and are very comfortable with this in-shed process. For the digital natives, who have grown up with digital technologies, the introduction of a technology such as WoolQ is an obvious and welcome addition. However, for those who don't use digital devices every day, the process of adoption is naturally less comfortable and requires some additional support and preparation.

The key to these smooth adoptions of the WoolQ eSpeci has been advanced preparation and planning. Ensuring your full team has been exposed to the WoolQ tool before you commence shearing will help ensure a much

easier transition, the first time you use the tool. Whilst the WoolQ eSpeci tool is very intuitive and has been designed for ease of use, like any software, it still requires preparation and some light training to ensure you get the most out of it. The more you use the tool, the easier and quicker it will become.

WoolQ recommends meeting with your classer before shearing, to run through the tool and online video tutorials. Taking time to get comfortable with the interface and where everything is located will ensure the tool feels familiar when the time comes to use it.

Practicing in advance, by entering details from an old paper speci into the WoolQ eSpeci, just as if you were in-shed, will enable you to understand the workings of the tool and get used to the process of entering the data. Once you have completed this practice eSpeci, you should be ready to go.

If you come across any questions during your trial run, you can easily refer to the online training, use email support or call WoolQ to work through any issues before



Jack Cotton from Kelvedon estate in Tasmania, pictured with his daughter **Anna**, was initially sceptical as to whether the transition from paper to digital would really pay off, but after using the eSpeci in-shed for a few days he could see its "clear advantages". This has been the overwhelming experience of growers and classers who WoolQ has supported in their transition from the current paper speci to the WoolQ eSpeci.

shearing starts. Our in-field support team is also available, with notice, should you have a larger group or association that would benefit from a live demonstration – you can reach the WoolQ team at info@woolq.com if you are interested.

A WoolQ Starter Pack can also be mailed out to your address, to further support you in-shed. Once you've registered at www.woolq.com you'll find the Starter Pack order form in the education section of the WoolQ portal. **B**

MORE INFORMATION
www.woolq.com

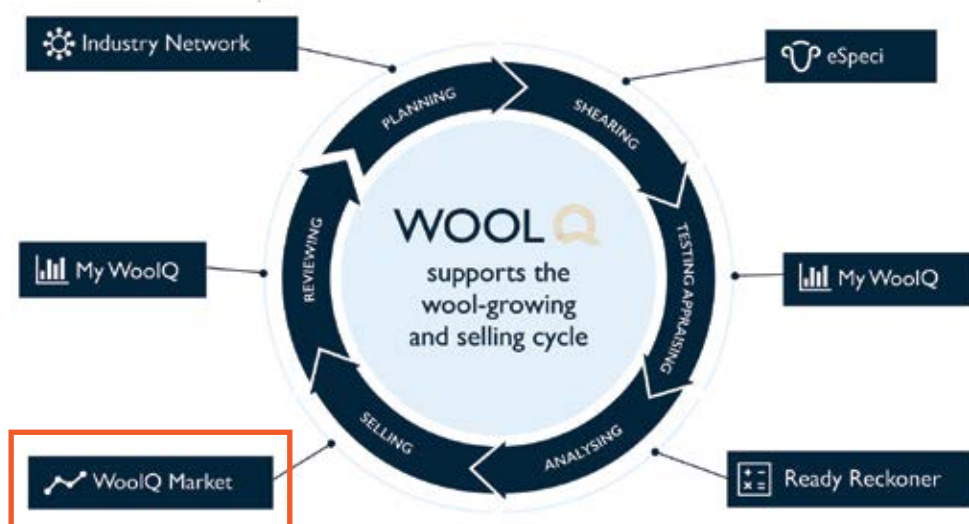
WOOLQ MARKET COMING SOON!

The final piece of WoolQ functionality, WoolQ Market, will soon be released, completing the suite of tools on the platform.

The WoolQ Market aims to be a centralised, online marketplace for Australian wool. The two-tiered platform will provide both a bulletin board of buying and selling interest accessible on a 24/7 basis as well as an efficient, easy to use online auction operating outside the Open Cry market hours.

With extensive benefits for buyers, brokers and growers, the WoolQ Market will serve as a complement to the current Open Cry auction markets.

A pilot of the WoolQ Market will commence at the end of the year, with full roll out anticipated early in 2019. To ensure you are kept informed via email of the developments, ensure you register at www.woolq.com. **B**



MARKET INTELLIGENCE

WHAT'S THE IMPACT OF FOREX ON THE MARKET?

An analysis of the impact that the foreign exchange (forex) rates used in wool trading has on the market shows two clear but diverse findings.

LONG TERM IMPACT

The analysis shows that, firstly, *long term* market direction more often than not tracked *independent* of the direction that the value of the AUD/USD pair takes. However, there is overwhelmingly evidence that *day to day* market movements are more likely to *follow* the directional movement of the AUD/USD.

As can be seen in Figure 1 right, the past three years of data shows when measured over the *longer* time periods of months, the US Dollar (USD) forex rate against the Australian Dollar (AUD) EMI monthly average, virtually goes directly *against* the most 'logical' or traditionally simplistic and accepted thinking that a lower rate forces the market up and a stronger dollar results in a cheapening market.

The long-term measurement brackets indicate the market in AUD prices defied the 'logical' movements of forex rate application, for 17 months or 47% of the time during the 36 month series of data.

Basically, this is indicative that a 'coin toss' analogy can be applied as to the economic merits of the USD v AUD forex rate as a foundation of market outcomes over the longer term.

SHORT TERM IMPACT

Drilling down into the daily operational level of forex v price comparison though, a contrary finding becomes apparent.

The forex rates do appear to act as more of an immediate force upon market direction, although the magnitude of the movement is less applicable in accuracy. Examination of day to day and intra-day movements of the AUD v USD forex rate clearly shows a more valid relationship to economic rationale, as immediate auction results trend more-so to the standard assumptions in directional terms.

As can be seen in Figure 2 right, of the past 137 weeks, 85 weeks or 62% of the price results went the direction that the forex rate would be expected to run.

In a nutshell, the AUD/USD pair is more influential on a daily basis, whilst over time

FIGURE 1: MONTHLY USD FOREX RATE COMPARISON AGAINST AUD EMI

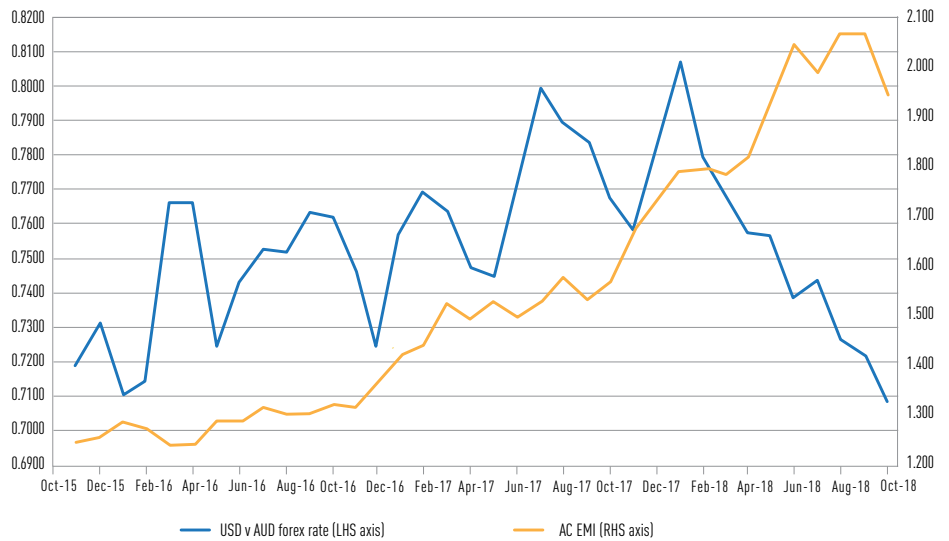


FIGURE 2: WEEKLY USD FOREX RATE COMPARISON AGAINST THE AUD EMI



that influence wanes considerably.

The analysis also provides evidence that much stronger price determination factor(s) are in play than the forex movement, to have continuously driven the market in an almost

solely upward direction until the most recent of weeks. Given that supply up until the current year has been relatively stable, those factors are highly likely to have been sourced from the demand side of the trading market equation.

INTELLIGENCE REPORT

MARKETS IN NEED OF STABILITY

Although moving mainly in a positive direction due to demand creation, and supply limitations brought on by the extended dry period, volatility has been an overriding constant.

This volatility was no more evident than in the last two months as we saw the key Merino indices lose in excess of 300 cents after creating record highs in late August.

The 19.0 micron price guide (MPG) fell from 2462 to 2094 giving back 366 cents of the gains of the rally from November 2017 (1984 cents). A similar story has played out in the 21.0 MPG which had a meteoric rise from 1637 to peak at 2354 before pulling back to 2051.

The main reason for this correction has been processors being unable to pass on the full extent of the rise in prices that has continued almost unabated for three years. The demand retraction has seen export volume drop by nearly twenty percent in the first quarter of this financial year.

A relief rally off the newly established lows should see opportunities into the coming year for growers and processors alike to create some

certainty and manage their margins. It is in everyone's interest that a stable base be formed at a level that provides sustainable long-term margins for all participants.

Figures 3 and 4 below provide clarity to not only volatility of the market in general over the past five years but also the volatility between the key micron types, an important factor when embarking on a hedge strategy. **E**

SOURCE
Southern Aurora Markets

FIGURE 3: AWEX 19 AND 21 MICRON MPG

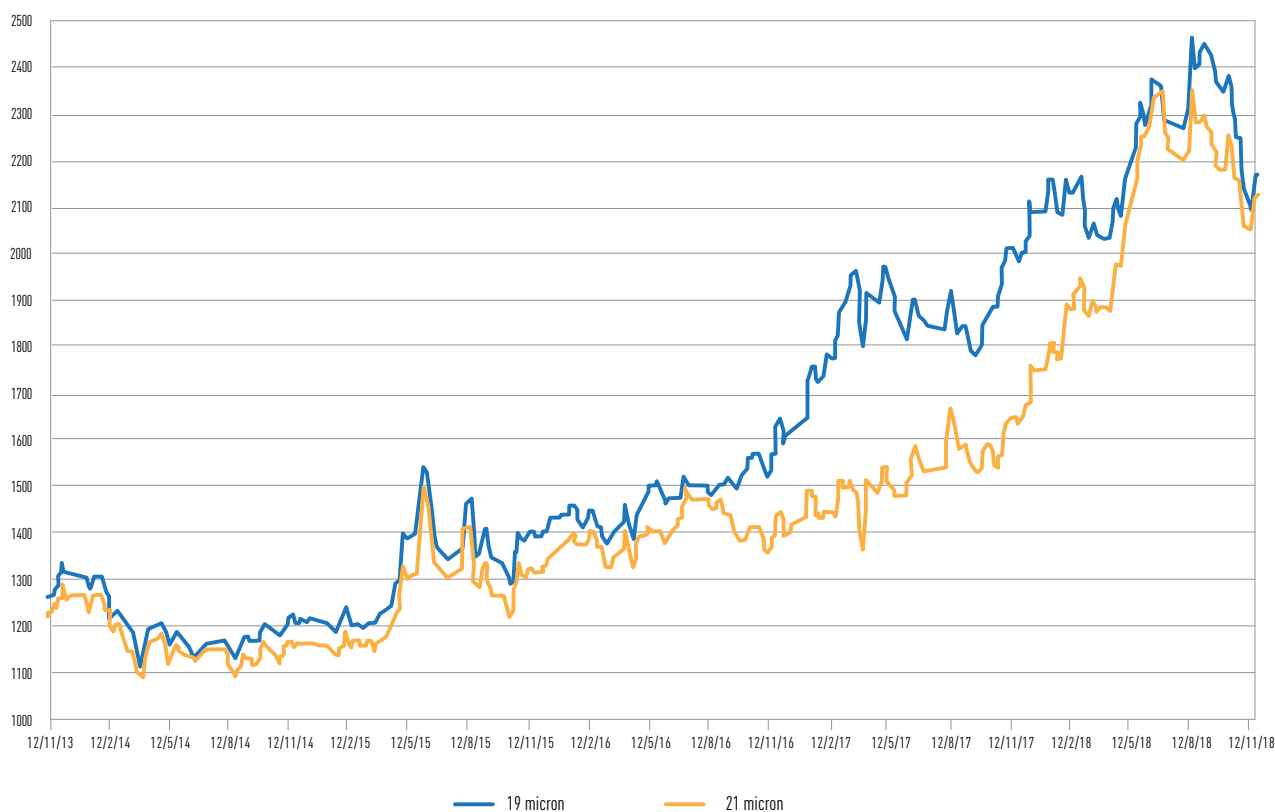
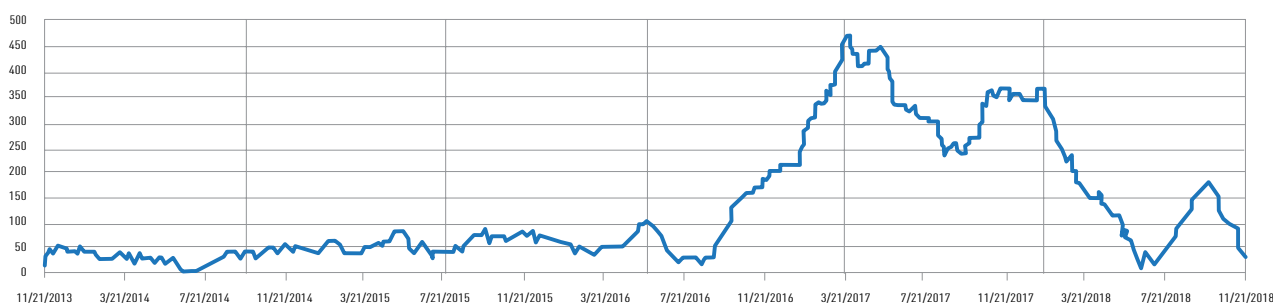
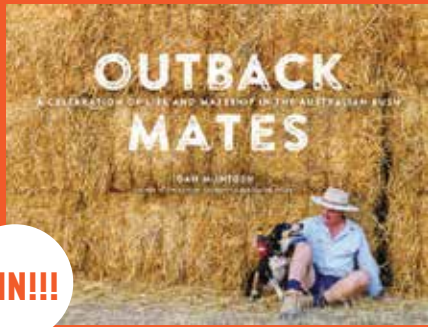


FIGURE 4: BASIS DIFFERENCE BETWEEN 19 & 21 MICRON IN AC CLEAN/KG





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 also launched 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.

FEEDING TIME

Darren and Fiona Millard who farm at Wharminda on the Eyre Peninsular of South Australia sent in this photo of their daughters feeding their pet lambs.



STAY STRONG, LITTLE LAMB

Ange Bunner from Baradine, north-west of Coonabarabran in NSW, found this little fella chasing the ute when she went to fill up the feeders. Let's hope the winter was kind.



OVER THE MOON

Emma Moon of Pyramid Hill in Victoria sent in this photo of her then 4-month-old daughter Isabelle who has spent quite a bit of time in the shearing shed since she was born, making it four generations of Moons in the shed at the one time!



MERINO IN THE MOUNTAINS

AWI On-farm Project Officer Mark Scott was inspired by AWI's Live & Breathe campaign (see page 6) to don his Merino wool sportswear during his vacation to the Canadian Rockies. Mark always takes some quality reading when on holiday...!



CLICK GO THE SHEARS

Casey Chard of Ben Lomond on the Northern Tablelands of NSW sent in this photo of her 7-year-old son Bobby who loves the shearing shed.



BEN THE CHILDCARE LAMB

Christina Mowbray, who is the former director of the Gladys Smith Early Learning Centre in Millicent, 400km south of Adelaide in South Australia, says the Centre every year raised a lamb, but Ben was one of the most loved. He would go down the slippery dip with the children and at morning tea he would sit on the mat with the children to have his apple. Making up the milk mixture was an early education in maths because if the milk wasn't right Ben wouldn't drink it. He had a great personality and lived to the good age of 18.



MUSTERED FOR SHEARING

Alison Rutledge of Woodstock in the central west of NSW posted on Instagram (alisonrutledge) this late afternoon photo of a flock ready for shearing.



NYNGAN SUNSET

Monique Wye of Nyngan, NSW, posted this evening photo on Instagram (Neek72) of a flock ready for the next day's shearing. Monique is keen on photography and is available for commissions and can be contacted via moniquewye@gmail.com.



ALL HANDS ON DECK

Eddy Ostarcevic of 'Tamarama Estate' at Stuart Mill in north western Victoria sent in this photo shearing their fine wool Merino flock. Eddy says he loves the activity of the shed and seeing their neighbour's son, Ben Lloyd, developing as a fine shearer, following in his father and grandfather's footsteps.



BUSY DAY IN THE SHED

Chloe Adler, who is a photographer from West Wyalong in NSW, sent in this photo captured on old fashioned black and white film, which is her favourite way to capture farm life. Cloe's work can be found at www.facebook.com/chloejasmine.photography



MERINO TOPS ARE TOPS!

AWI's Digital User Experience Designer, Penelope Kendall, and Corporate Affairs Manager, Emma Gittoes, were inspired by AWI's Live & Breathe campaign (see page 6) to put their Merino wool tops to the test when walking the 45km Six Foot Track in the Blue Mountains, west of Sydney, NSW. Penelope and Emma report the Merino tops performed excellently!



A BIG SHEAR

12-year-old Adelaide Wall of 'Borrehma' at Braidwood in NSW is wanting to learn more about Merino wool's natural properties and was very keen to assist in shearing the rams for her uncle's property 'Ooranook' (Braidwood). This Roseville Park 18.5 micron ram cut 8.6 kg in 7 months of wool growth.





Be the first in the 'Q'

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