

Beyond the bale

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IS THIS THE BEST SHED DESIGN EVER?



Beyond thebale

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FRONT COVER

NEW INNOVATIVE SHEARING SHED DESIGN: Shearing contractor and woolgrower Hilton Barrett, with support from AWI, has designed a shearing shed which optimises worker safety and animal welfare, while also achieving improved shed efficiency and wool quality. Australian shearing team member Jason Wingfield says: "I reckon it's great, it's going to help our industry a lot in giving a good standard to farmers to follow." The designs of the shed are available FREE to all woolgrowers. See pages 60-61 for details.



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AWI INVESTMENT STRATEGIES

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



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BTB View Beyond the Bale online with image galleries and video at <http://beyondthebale.wool.com>



GETTING ON WITH BUSINESS

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



Stuart McCullough
Chief Executive Officer
Australian Wool Innovation

AWI THREE-YEAR STRATEGIC PLAN

AWI's Strategic Plan for the next three financial years, 2019/20 to 2021/22 was published at the end of June. We have consulted widely with woolgrowers and their representatives to ensure that industry views are incorporated into the plan – and we will continue to ensure that woolgrower levies are directed to projects that deliver the greatest value to woolgrowers. A summary of the Strategic Plan is available on the following four pages of this magazine; however, I encourage you to take a look at the full Strategic Plan available at www.wool.com/consultation.

R&D INTO ARTIFICIAL INTELLIGENCE TECHNOLOGIES

Favourable results have been achieved in an AWI-funded pilot study of whether artificial intelligence technologies can accurately predict performance indicator traits of young sheep. This kind of research has never been done before with sheep. The project concluded that over the next five years the technology has considerable potential to progress to a stage where it could aid selection and productivity management decisions in a commercial wool-growing environment. This is very exciting news which could transform the way that key farming decisions are made in the future.

INNOVATIVE SHEARING SHED

With AWI support during the past 18 months, shearing contractor and woolgrower Hilton Barrett from Dubbo has designed a shearing shed which improves the efficiency of workers and the flow of livestock – while optimising worker safety, animal welfare and the quality of wool preparation. The internal fit-out, incorporating the stands and yards, has been designed to have its own structural integrity so can be built within any suitable pre-existing shell. Woolgrowers have the opportunity to copy the design by using the shed's blueprints that are available free on the AWI website. See pages 60-61 for details.

THE AMERICA'S CUP

The America's Cup has always had a special place in our nation's hearts, ever since Australia II's famous victory in 1983. In June, The Woolmark Company was proudly announced as the official technical partner of the America's Cup team Luna Rossa Prada Pirelli. We are helping to develop a Merino wool-rich uniform to support the entire team and crew across the regattas, events and activities – during training and sailing. The America's Cup has always symbolised the best of the best – from the best boats, to the best crews and now the best fibre. Now is the first time wool will take to the seas on such a large scale and allows us – along with Australia's 60,000 woolgrowers – to see Australian wool used in such an innovative way.

LIFETIME EWE MANAGEMENT (LTEM)

An evaluation of sheep producers who have completed the LTEM course shows that on average they have increased their whole-farm stocking rate by 9.3% from 8.5 to 9.3 DSE/ha, increased lamb-marking percentage by 7% from 97.3 to 104.3% and reduced ewe mortality from 4.1 to 3.0%. The scale of these productivity and welfare gains achieved by participants of LTEM are unprecedented by previous extension efforts in the Australian sheep industry. Our investment in LTEM continues, supplemented by our three workshops – 'RAMPing Up Repro', 'Picking Performer Ewes' and 'Winning With Weaners'. These workshops are aimed at helping woolgrowers identify key practical actions to implement on-farm to achieve improved productivity. The workshops are rolled out through the AWI state-based extension networks in conjunction with leading deliverers.

SHEARER AND WOOL HANDLER TRAINING

Shearer and wool handler training remain a priority for AWI. We fund this training to attract and retain new entrants into the wool harvesting industry, build the capacity and longevity of existing staff, and increase returns to woolgrowers through improved clip preparation practices. In the past financial year, more than 1,500 days training (with more than 5,600 attendances by shearers and wool handlers) were delivered through AWI-funded programs across Australia in a combination of in-shed training, novice schools and workshops. **B**

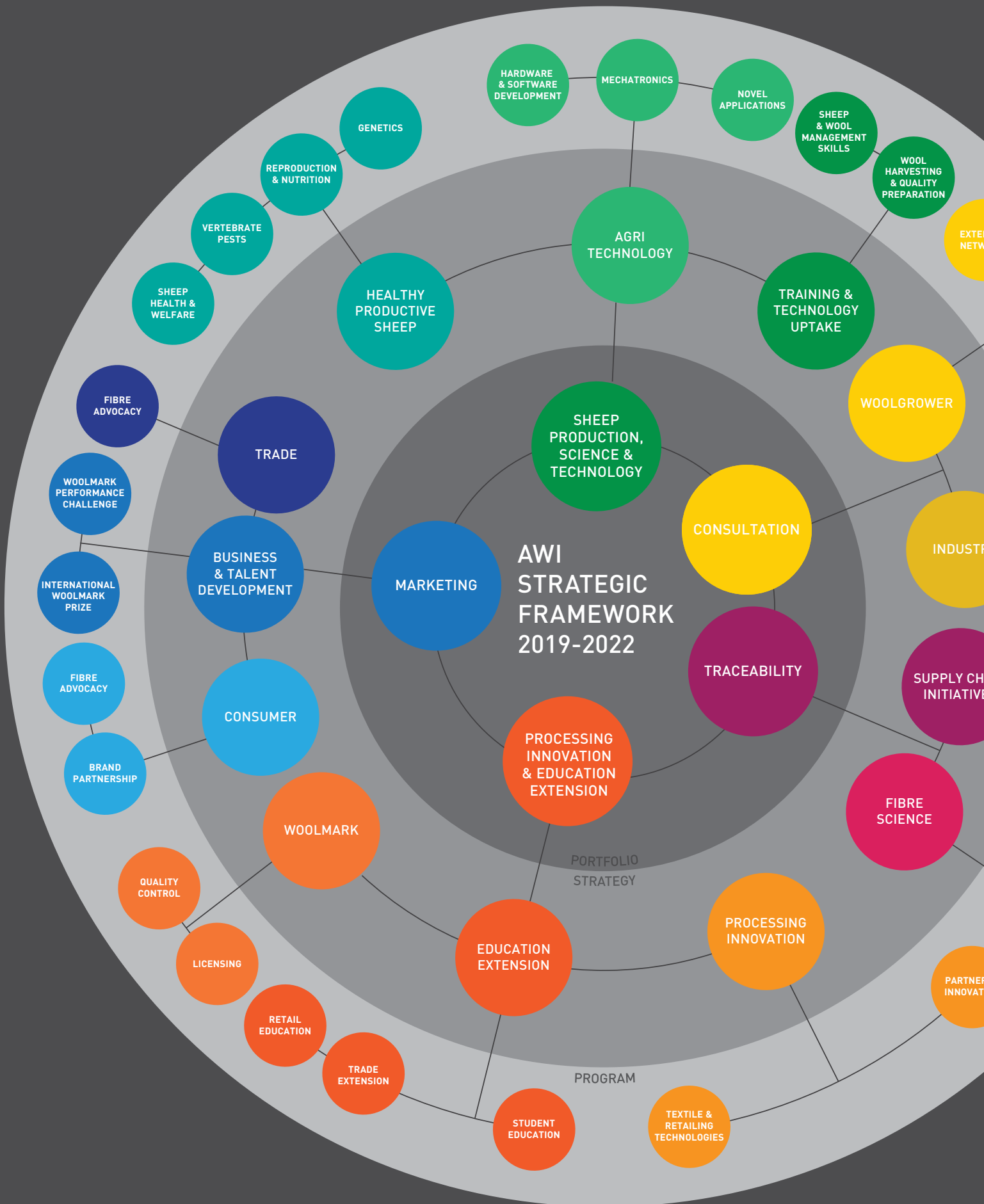
AWI ANNUAL GENERAL MEETING (AGM)

The AWI 2019 AGM will be held on Friday 22 November at the Amora Hotel located at 11 Jamison Street in Sydney. Formal notice and meeting papers will be sent to AWI shareholders in October 2019. AWI shareholders who are unable to attend the AGM in person will be able to view the AGM proceedings via webcast. Further details are available on the AWI website at www.wool.com/agn2019. The AWI 2018/19 Annual Report will also be released in October.

This year is a director election year. Persons other than retiring directors who are interested in putting themselves forward as candidates for election must have their candidacy supported by a written nomination signed by more than 99 eligible shareholders. The nomination form and a consent form (available at www.wool.com/agn2019) must be received by the AWI Company Secretary by 24 September.

Only AWI shareholders can vote at the AGM. If you are an eligible wool levy payer who is not an AWI shareholder, I encourage you to apply to become one (which is free) – the shareholder application form is available at www.wool.com/shareholders. Please return it to the AWI share registry, Link Market Services, soon to enable you to vote at this AGM. **B**

AWI THREE-YEAR



STRATEGIC PLAN

AWI has released its Strategic Plan for the three financial years 2019/20 to 2021/22, after consulting widely with woolgrowers and their representatives to ensure industry views and priorities are incorporated into the plan. Traceability, consultation, measurement and evaluation are key investment and operational priorities for AWI.

AWI's strategic plan for the next three years was published in June.

CEO Stuart McCullough said that in drafting the Strategic Plan, AWI had incorporated feedback and input provided by industry, gathered through AWI's annual planning and consultation cycle, to ensure it reflected woolgrower priorities for research, development and marketing.

"As always, AWI's overriding commitment is to support Australian woolgrowers and ensure they get the best price for their wool. But through the consultation process, we have been able to prioritise issues that woolgrowers believe will make a big difference to the industry over the next three years," Mr McCullough said.

"The Ernst & Young 2018 Review of Performance (ROP) was also instrumental in forming our new Strategic Plan. With our overall implementation progress of the ROP recommendations progressing well and tracking at more than 75%, consultation and measurement and evaluation are both integral parts of the new strategic document."

STRATEGIC PRIORITIES

Outlining the priorities in the new Strategic Plan, Mr McCullough said AWI had commenced a number of projects focussed on **traceability** during the past five years.

"These projects are at a point of maturity, and we have enough of them where we can create an entire strategy around traceability," he said.

"We recognise that generation Ys and generation Zs are going to be more interested in the source of materials in the future. They will want to know where something has come from, how it was treated, what the supply chain did with it and where it is going to at the end. We see this as a macro-consumer trend.

"The first stage of the traceability journey is AWI's WoolQ project which is designed to offer clean digital data straight from the farm. Research projects have also been conducted on fibre traceability and the ability to identify, in a garment form, where that fibre came from."

Mr McCullough said AWI had reviewed the company's **consultation** model, and the Strategic Plan reflected the new arrangements, with the Industry Consultative Committee (ICC) being

replaced by the Woolgrower Industry Consultation Panel (WICP) and Woolgrower Consultation Group (WCG).

"Effective, accountable and productive consultation is essential to the success of AWI's new Strategic Plan to ensure we identify woolgrower priorities, and report on our activities," Mr McCullough said.

"In reporting on the company's activities, in consultation with the former ICC, we have developed a **measurement and evaluation framework** to provide measurable and quantifiable returns on woolgrower and government funds.

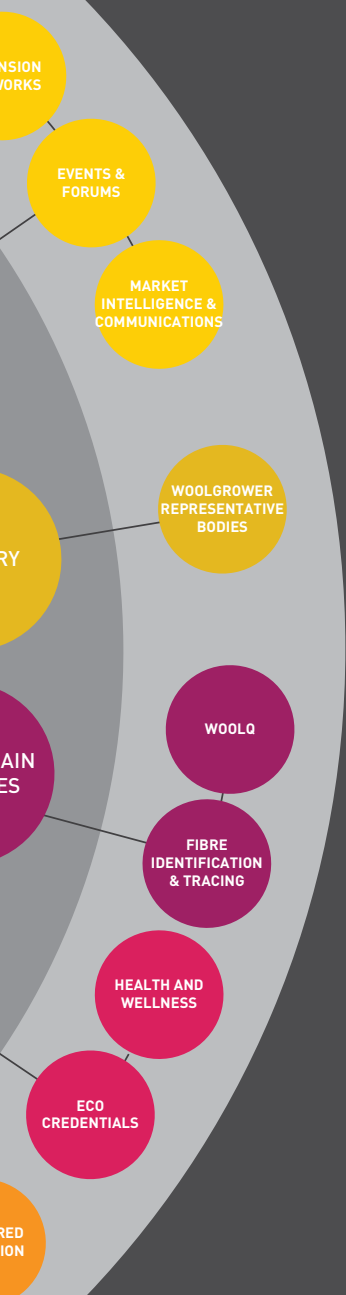
"The implementation of this framework will enable AWI to sustainably measure and evaluate our programs, projects and investments. During the next strategic period, measurement and evaluation will be sustainably embedded into each of AWI's business areas to effectively measure and evaluate activity and investment, applying a transparent and consistent approach.

"We believe AWI's Strategic Plan maps a way forward through to 2022 and strikes a balanced position, meeting the expectations of woolgrowers, our levy payers, woolgrower representative groups and government.

"AWI remains cognisant of the ongoing impact of the drought and its influence on production levels. With reduced production, coupled with a 1.5 per wool levy, we have strategically targeted investments and managed a draw down on our reserves to enhance profitability and international competitiveness and to increase demand and market access for Australian wool."

MORE INFORMATION

The Strategic Plan is available to view online at www.wool.com/consultation or request a hard copy from the AWI Helpline on 1800 070 099.



AWI STRATEGIC PLAN

THREE-YEAR TARGETS

SHEEP PRODUCTION, SCIENCE & TECHNOLOGY

To lower the cost of production of wool on-farm by increasing the productivity of sheep and land, and increasing the efficiency of use of inputs and resources while maintaining Australia's reputation for sustainability.

HEALTHY PRODUCTIVE SHEEP

SHEEP HEALTH & WELFARE

1. Evidence of successful development of a flystrike vaccine prototype.
2. Evidence of investigations into novel pain relief options.
3. Developed integrated parasite management strategies to minimise the impact of chemical resistance.
4. Evidence of successful development of wool bale biosecurity tools.
5. Demonstrate a 10% increase in adoption of welfare improved practices.
6. Demonstrate a 20% improved capacity of post-farmgate wool industry preparedness for an Emergency Animal Disease.

VERTEBRATE PESTS

1. Reduce the negative impacts of predation by 10% by 2022.
2. Improve capacity to undertake pest animal control by 10% by 2022.
3. Development of new rabbit bio-controls.

REPRODUCTION & NUTRITION

1. At least 1,500 woolgrowers engaged in implementing beneficial feedbase guidelines and practices by 2022.
2. Increasing Merino marking rates by 0.5% per annum.
3. Complete the development of guidelines and extension workshops to improve reproductive rates that support the aim of 34% of ewes differentially managed to best practice by 2022.
4. Improve the understanding of three key areas to address climate variability: effect of heat stress on reproduction performance, best practice for supplementary feeding and management of resilient pasture species.

GENETICS

1. By 2022, 50% of Merino producers will be using genetic tools (eg Australian Sheep Breeding Values, Flock Breeding Values or wether trial data) in ram purchasing decisions.

AGRI TECHNOLOGY

HARDWARE & SOFTWARE DEVELOPMENT

1. AWI Smart Tag system delivers at least three practical functionalities driven by sensors, hardware is reliable and durable, and software is able to be updated remotely.
2. Artificial Intelligence (machine learning) applied for data analysis delivering accurate predictions for at least two sheep traits or paddock events.

MECHATRONICS

1. Proof of concept robotic shearing system delivered.

NOVEL APPLICATIONS

1. Proof of concept novel user interface application.
2. Educational packages to increase technology adoption and digital literacy.

TRAINING & TECHNOLOGY UPTAKE

SHEEP & WOOL MANAGEMENT SKILLS

1. 1,500 tertiary participants in AWI leadership and practical skills events.
2. AWI leadership and practical skills events delivered to participants receive a net promoter score of at least 7.5/10.
3. 30,000 views of AWI Education & Extension resources online.

WOOL HARVESTING & QUALITY PREPARATION

1. 3,000 novice and intermediate level participants trained by AWI shearer and wool handler trainers.
2. Ongoing retention rate of 75% of those trained yearly.
3. More than 1,000 participants in shearer and wool handling competitions nationally.
4. 15,000 views of AWI Wool Harvesting resources online.

To build trust and transparency across the supply chain through an industry best-practice structured, targeted and measurable engagement model; and for this intelligence to influence, inform or contribute to AWI's business activities.

CONSULTATION

WOOLGROWER

EXTENSION NETWORKS

1. 15,000 active participants in AWI extension initiatives.
2. AWI workshops delivered to participants receive a net promoter score of 7.5/10 (evidenced by exit surveys).
3. 50,000 views of AWI Network resources online.

EVENTS & FORUMS

1. Support and engagement at more than 50 events and forums nationally.

MARKET INTELLIGENCE & COMMUNICATIONS

1. 70% of users of AWI's Market Intelligence find it of 'high value' or above (evidenced by AWI survey).
2. Increase subscriber numbers by 20%.
3. E-news click through rate of 35%.
4. Market Intelligence area on AWI website receives 1,500 views per month.

INDUSTRY

WOOLGROWER REPRESENTATIVE BODIES

1. WICP and WCG members report AWI consultation efforts have been maintained or improved at 8.9 (approval rating out of 10).

PROCESSING INNOVATION & EDUCATION EXTENSION

		To increase the profitability and sustainability of the wool processing and manufacturing supply chain.	
PROCESSING INNOVATION	TEXTILE & RETAILING TECHNOLOGIES		<ol style="list-style-type: none"> 1. Proof of concept novel retail technology application. 2. Proof of concept novel textile technology/fashion tech application. 3. Educational packages to increase technology awareness, adoption and digital literacy.
	PARTNERED INNOVATION		<ol style="list-style-type: none"> 1. Partner with six machinery companies for product or process development. 2. Minimum of ten fully-fashioned garment product developments made commercially available. 3. Minimum of five footwear developments made commercially available. 4. Research and commercial trial of one wearable technology. 5. Partnered product developments to increase by 20%.
EDUCATION EXTENSION	RETAIL EDUCATION		<ol style="list-style-type: none"> 1. Deliver retail training programs across womenswear, menswear and sportswear to a minimum of 50 retailers/brands globally. 2. Retail staff have successfully completed 200 retail training courses on the properties and benefits of Australian wool on the Woolmark Learning Centre digital platform.
	TRADE EXTENSION		<ol style="list-style-type: none"> 1. Increase the number of supply chain partners contributing to The Wool Lab by 10% to drive demand. 2. Increase swatch requests from The Wool Lab by 5%. 3. Expand its Wool Resource Centres to USA (New York) to increase awareness. 4. Increase engagement at the most influential international yarn, fabric, sports/outdoor, machinery and technical shows by 10%.
	STUDENT EDUCATION		<ol style="list-style-type: none"> 1. Increase participation in the Learn About Wool primary and secondary education program by 10%. 2. Increase global participation in the Wool4School secondary design competition by 20% across Australia, Hong Kong, UK and Italy. 3. Increase participation in tertiary education programs by 15%. 4. Students have successfully completed 700 courses on the Australian wool and manufacturing industry through the Woolmark Learning Centre digital platform.
WOOLMARK	QUALITY CONTROL		<ol style="list-style-type: none"> 1. 1,200 branded product samples purchased and processed through the QA program to maintain the integrity of the Woolmark brand.
	LICENSING		<ol style="list-style-type: none"> 1. Increasing use of the Woolmark logo on qualifying product by 10% as measured through the use of branded tickets and labels.

MARKETING

		To continue to build demand for Australian wool by reinforcing its position in the market and solidifying a strong price to ensure a sustainable future for Australian woolgrowers.	
BUSINESS & TRADE TALENT DEV.	FIBRE ADVOCACY		<ol style="list-style-type: none"> 1. Increase trade leads by 2.5%. 2. 5% active engagement rate on owned content.
	INTERNATIONAL WOOLMARK PRIZE		<ol style="list-style-type: none"> 1. 300 new leads per year. 2. Achieve 50% of surveyed alumni as continued wool advocates post-award. 3. Five commercial partners retain alumni collections after initial season.
	WOOLMARK PERFORMANCE CHALLENGE		<ol style="list-style-type: none"> 1. Increase digital engagement by 20% year on year. 2. Increase competition entry rate by 10%. 3. Increase webinar average attendance rate from 19.
CONSUMER	FIBRE ADVOCACY		<ol style="list-style-type: none"> 1. 5% increase in active engagement on owned media channels. 2. Increase Share of Voice (SOV) by 8% for The Woolmark Company and Merino wool. 3. Increase in campaign-specific brand awareness by 5%. 4. Increase in campaign-specific brand sentiment by 5%.
	BRAND PARTNERSHIP		<ol style="list-style-type: none"> 1. Partner with five global brand partners. 2. Increase purchase intent of Australian wool by 5%. 3. Achieve 5% increase in units of clothing with five brand partners with a global presence.

TRACEABILITY

		To provide tools to ease the flow of information about Australian wool up and down the supply chain to all parties; to communicate wool's benefits, facilitate provenance and supply chain transparency.	
SUPPLY CHAIN	WOOLQ		<ol style="list-style-type: none"> 1. An increase of 5,000 woolgrowers adopting the WoolQ grower tools. 2. 5% of all Australian wool traded via the WoolQ Market tool.
	FIBRE IDENTIFICATION & TRACING		<ol style="list-style-type: none"> 1. Define new fibre-origin test method for adoption into the supply chain and use by laboratories. 2. Draft protocols for the chain of custody of wool through the supply chain ready for review by global wool industry bodies.
FIBRE SCIENCE	HEALTH AND WELLNESS		<ol style="list-style-type: none"> 1. Produce and publish evidence of specified next to skin Merino garments as beneficial for eczema. 2. Produce and publish evidence of specified next to skin Merino garments as improving sleep quality. 3. Generate new test protocols to measure wool's breathability in dynamic conditions.
	ECO CREDENTIALS		<ol style="list-style-type: none"> 1. Produce and publish evidence how current environmental scoring of apparel disadvantages the value chains of natural and renewable biogenic carbon fibres compared to non renewable fossil carbon derived fibres. 2. Produce and publish case studies on the environmental and economic impact of woolgrowers using regenerative farming practices. 3. Complete a wool cradle to grave Life Cycle Analysis. 4. Generate new knowledge for improving the on-farm carbon account.

WOOL JOINS CHALLENGE TO HELP WIN THE AMERICA'S CUP

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

The Woolmark Company was announced in June as the official technical partner of the America's Cup team Luna Rossa Prada Pirelli.

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

The Woolmark Company's commitment to championing innovation will see the development of a Merino wool-rich uniform to support the entire Luna Rossa team and crew across the regattas, events and activities – during training and sailing. The Woolmark-certified uniform will include: waterproof jacket, soft shell jacket, polo shirt, T-shirt, wet jacket, blouson, wetsuit and base-layers.

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

Team members in their wool-rich garments, training in June on a scaled-down model of the AC75 Luna Rossa that will take part in the America's Cup. Luna Rossa team director and skipper Max Sirena: "Our new uniforms are a wonderful surprise that make our body – and our spirit – feel good."

of Marketing and Communication, Lorenzo Bertelli. "I am certain that having The Woolmark Company as technical partner will add even more prestige to the team."

Team director and skipper Max Sirena said: "Our physical activity is very demanding in terms of clothing: the garments we wear must be as isothermic, elastic, breathable and water resistant as possible. Well, I discovered on my own skin that Merino wool is all this. It really is a performance fibre, and besides that, it is also absolutely sustainable and biodegradable."

Wool is 100% natural, renewable, biodegradable and is the most reused and recycled apparel fibre on the planet. Moving away from uniforms made from synthetic fibres, the use of wool in the Luna Rossa Prada Pirelli team uniforms offers a natural solution with reduced environmental impact and will be tested by the best through this technical partnership.

The partnership announcement was made at a press conference during the Pitti Immagine Uomo trade show in Florence, attended by the sailing team who wore the wool polo shirt



The wool-rich garments are worn by the entire Luna Rossa sailing team during training as well as sailing. PHOTO: Marco Bertani.



Consul at the Australian Embassy in Italy, Belinda Waldron, with AWI's Global Strategic Advisor Fabrizio Servente and Luna Rossa helmsman Jimmy Spithill from Australia (who has won the America's Cup twice) at the partnership launch in Florence.

alongside examples of other wool garments from the collection. Lorenzo Bertelli and Max Sirena were speakers at the presentation, along with AWI CEO Stuart McCullough.

"The America's Cup has always symbolised the best of the best – from the best boats, to the best crews and now the best fibre," explained Mr McCullough. "It's the first time wool will take to the seas on such a large scale and allows us – along with Australia's 60,000 woolgrowers – to see Australian wool used in such an innovative way."

In 2020, the first regatta of the America's Cup World Series will take place in Cagliari, Italy. Additional World Series events will be held around the world in the lead up to Auckland, New Zealand, where in early 2021, the Prada Cup will decide the challenger who will race in the 36th America's Cup, presented by Prada, scheduled for March 2021. **B**

Luna Rossa team director and skipper Max Sirena wearing the uniform with the Woolmark logo on the sleeve. PHOTO: Marco Bertani



MERINO ON THE CREST OF A WAVE



Lifestyle brand Outerknown – the brainchild of surf legend Kelly Slater and designer John Moore – has created the world’s first boardshort crafted from 100% Australian Merino wool.

American professional surfer Kelly Slater has spent more time at the beach than most people – both in and out of the water. He is well-known for his unprecedented 11 world surfing championships. In 2015, Kelly and acclaimed designer John Moore together founded men’s and women’s lifestyle brand, Outerknown, with a strong environmental mission and the belief that brands have a responsibility to make clothing that respects the world around us.

In its constant quest to push the limits of sustainable design and responsible innovation, Outerknown has partnered with AWI’s subsidiary The Woolmark Company to develop the first 100% Merino wool boardshorts.

“We love collaborating with like-minded brands to push boundaries and charter new territories in sustainable design,” Kelly said. “The Woolmark Company’s longtime dedication to authenticity, fibre quality, and supply chain excellence naturally aligns with Outerknown’s ethos, and we’re so excited to launch the world’s first Merino wool trunks together.”

Made entirely out of nature’s original performance fibre, Merino wool’s natural benefits come into their own in the world-first Woolaroo. Naturally breathable and resistant to odour, the Woolaroo is quick-drying and wind resistant for post-surf comfort and the fibre’s natural softness and drape offers freedom to move in the waves and on the sand.

The high performance Woolaroo boardshort is a throwback to the days when trunks were considered equipment – they had to last, and stand up to monster waves and the nomadic lifestyle of a surfer.

“This trunk is for a man with a keen sense of nostalgia, who puts style and soul on the same plain as function and quality,” said Outerknown Creative Director, John Moore. “We’ve been wearing the Woolaroo since its early development and it’s soft yet strong and the more you wear them in, the better they look.”

Using the latest Optim™ spinning techniques, Merino wool fibres are pre-stretched and spun into yarn before being woven to create the fabric used in Outerknown’s Woolaroo. During the manufacturing process, the fabric then super contracts creating a highly compact fabric and the ‘jammed’ weave structure delivers a resilient handle able to withstand surf conditions.

“The first of its kind in the world, Outerknown’s Woolaroo is redefining the way we wear wool,” said AWI CEO Stuart McCullough. “Soft on skin but tough enough to handle the elements, wool is not only the world’s oldest fibre but also the most technically advanced, with modern manufacturing techniques making the best even better.”

E

MORE INFORMATION
www.outerknown.com/woolaroo

Outerknown’s Woolaroo boardshort, made from 100% Australian Merino wool, is soft yet strong and is available now – in three colours: herb, berry and dark teal.





Black Diamond's new SolutionWool base-layer range includes men's and women's crew tops and full length and ¾ length bottoms, ideal for use in the great outdoors.

BLACK DIAMOND

EXPANDS ITS MERINO RANGE

Leading mountaineering and outdoor brand Black Diamond has expanded its use of Merino wool – and this month its millions of customers in 40+ countries across the world are set to be showcased a range of new products made from the fibre, thanks to a collaboration with AWI.

Following the reintroduction of wool into its product range in April, with the ultralight Rhythm Tee (see opposite page), Black Diamond is now releasing a new Merino range including base-layers, a hoody and gloves, which all incorporate the same breakthrough NuYarn Merino technology that was in the Rhythm Tee.

The Utah-based company is strategically focused on growing its apparel category and has been working with AWI's subsidiary The Woolmark Company to introduce Merino

wool apparel into its product range, with performance top of mind.

The Woolmark Company has taken an active role in educating the internal Black Diamond development team about the technical advantages of Merino wool, connecting the brand with the wool supply chain and supporting business units on product innovation.

The co-developed NuYarn Merino technology drafts the Merino wool fibres along a polyester core, creating a structure that amplifies Merino wool's natural moisture management and thermal regulation qualities. Specifically, compared to standard ring-spun Merino, the fabric dries up to five times faster, is 35% warmer, has 35% more stretch, and the seams are up to 120% tougher.

The result is that Black Diamond's new SolutionWool range is very light and lofty and has superior stretch, durability and performance. The apparel also has the softness one would associate with superfine Merino and its natural odour resistance for long-wearing comfort – and they are machine washable.

The new range embodies the advance in Merino wool technology that has already been proven in the Rhythm Tee, but refined and tuned for ultimate cold weather performance.

While the fabric of the Rhythm Tee weighs just 95gsm, making it the world's lightest technical Merino wool shirt and perfect for activities like rock climbing and trail running, the new Solution Base-layer tops and bottoms for men and women are made for cooler climates. They use 150gsm fabric made from a blend of 78% 18.2-micron Merino wool and 22% polyester. The men's Solution Hoody uses a 212gsm fabric incorporating 97% Merino wool. The Wooltech gloves come in three different weights.

"Our partnership with The Woolmark Company on the SolutionWool line for our spring and fall collections features the latest innovations in Merino wool technology."

Julie Hirsch, Black Diamond's Category Director of Apparel.

"Black Diamond customers are amongst the most demanding in the world in terms of performance and innovation. We chose Merino wool for its versatility, durability, and natural performance benefits and believe this combination of features will enhance our customers' experience while wearing our products," explained Black Diamond's Category Director of Apparel, Julie Hirsch.

"Our partnership with The Woolmark Company on the SolutionWool line for our spring and fall collections features the latest innovations in Merino wool technology. These innovations are redefining the market's understanding of performance in Merino wool products."

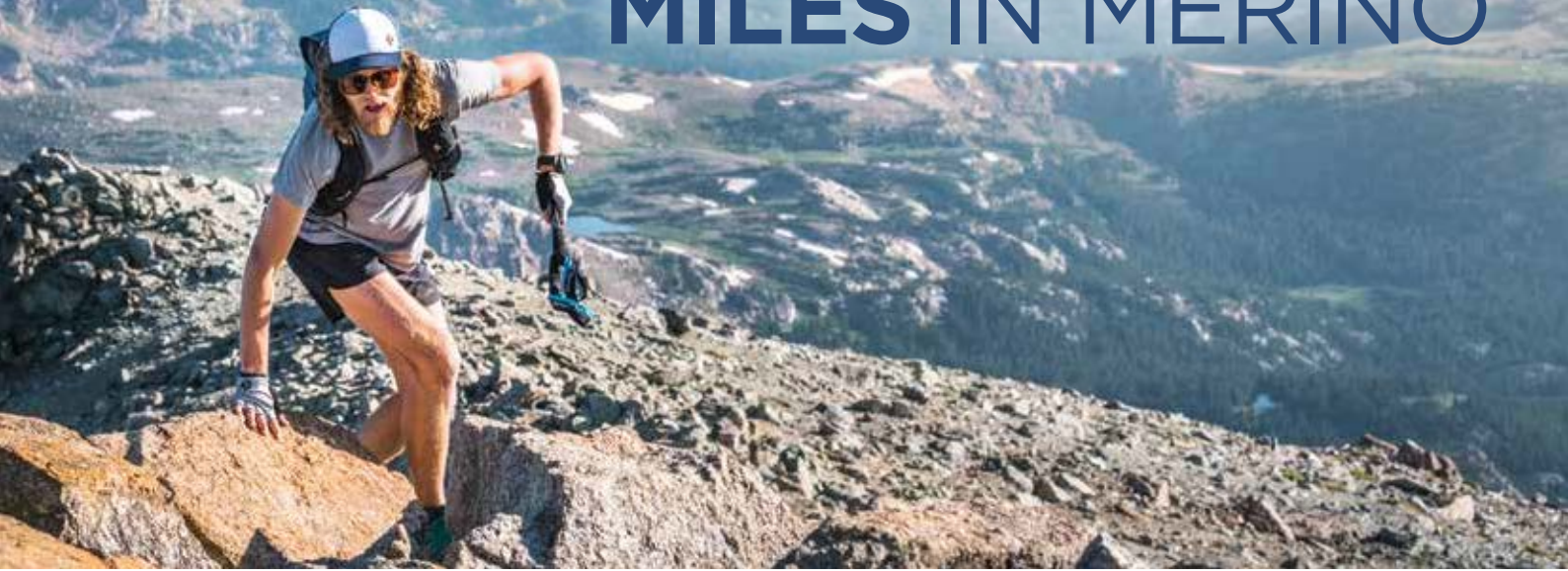
AWI CEO Stuart McCullough said AWI's aim with the collaboration is to increase wool consumption in the climbing and outdoor category.

"Black Diamond is a global leader in outdoor gear and apparel and its products are available in more than 40 countries across the world. Collaborating with such an iconic brand in product development and marketing allows us to showcase the natural technical benefits of Merino wool to a global audience," he stated.

"Black Diamond continually focuses on high performance and innovation in every product, and the new SolutionWool range using NuYarn Merino technology will solidify Black Diamond's reputation in this regard."

As well as Black Diamond stores and distributors in key markets – including USA, Canada, Europe, UK, Asia and Australia – the company reaches a global audience on its website www.blackdiamondequipment.com and their products are distributed online on the websites of more than 100 global retailers. It also has a huge social media reach with more than a million followers on its channels. **B**

100 MOUNTAINOUS MILES IN MERINO



Joe Grant wearing Black Diamond's ultralight Rhythm Tee during his record-breaking 49½ hour 100 mile run in the mountains of Colorado.

Before Black Diamond released its ultralight Merino Rhythm Tee in April, its performance was extensively tested by staff and athletes while climbing, back-country skiing, hiking and running. One of those people was ultra-runner Joe Grant, who wore it on his record-breaking 49½ hour run spanning 'Nolan's 14' in his home state of Colorado, a journey of roughly 100 miles across 14 mountain summits each of more than 14,000 feet in height.

Black Diamond athlete Joe Grant was looking for an experience. He wanted it to be hard, and he wanted to push himself to "that edge" where he'd have to make difficult decisions. That's why he chose to run Nolan's 14 in Colorado's Sawatch range. Only 15% of people who attempt Nolan's 14 complete it.

Needless to say, Joe found what he was looking for.

"I find it interesting to get into that place where I'm on the edge and I have to elevate myself and I don't have anything to rely on other than myself," Joe said. "I think there's just a real sense of curiosity, for me, when I know I'm going to get into a difficult situation. Growth ultimately does come with a certain amount of struggle."

Joe ran Nolan's 14 unsupported, with no aid along the way.

"Really, if your motive is purely to go fast, then supported would be the way to go. But the aesthetic of setting off with everything you need on your back and just going out into the mountains speaks to me more. There are creeks with water in them, you have some food, a headlamp for the night and away you go. There's a real sense of freedom around that."

Joe wore Black Diamond's Merino Rhythm Tee (see opposite page) throughout the Nolan's 14, but he had also been wearing it for the previous year through every season.

"The Rhythm Tee is all I've been wearing on all my runs. It's soft to the touch, very light

and breathable, and has plenty of stretch to not hinder movement. It also doesn't smell so it's the perfect shirt to bring along when traveling light and I can wear it day in day out sometimes for several weeks straight without needing to wash it.

"Living in Colorado, I experience a broad variety of weather conditions from dry, hot summers, to snowy winters, and everything in between. The more versatile my gear is the better. Wool is very effective in helping me regulate my temperature in these weather variances. It performs perfectly in the hottest conditions (wicking moisture away from my body and keeping me cool), as well as in the cold providing warmth and insulation. That range of performance helps considerably in simplifying my gear and preparation."

So how did the Merino Rhythm Tee perform on the Nolan's 14?

"Flawlessly! On my Nolan's 14, Merino wool was critical because of its superior breathability. I was able to wear one lightweight piece that worked impeccably day and night in the mountains."

And how did Joe himself perform on the Nolan's 14? Well, he set a new unsupported record for the route.

"But in the end, the 'time' doesn't define the experience. The things that happened along the way are much more interesting and meaningful, rather than just the number at the end," Joe said.

"Overall I really enjoyed the whole route, even the tedious stuff. I never doubted that I was going to get to the finish. There are definitely highlights, like the sunset on Missouri Mountain during the first night was pretty incredible. The same goes for the sunrise on Mount Columbia with the full moon. There's just a vastness to the route that you can really feel on that peak because you're midway.

"Next-to-skin, I wear wool exclusively for all my activities in the mountains. It meets all my criteria for a high-performance garment."

Joe Grant, ultrarunner

"That being said, I did have some incredibly low moments on the course. There are approximately two hours during the first night that I still can't seem to remember. When I finally came to, I was lying on a steep slope at 13,000 feet, slowly sliding down. My shoes, which I didn't remember taking off, were sitting about 15 feet above me!

"These experiences force me to be the best version of myself. It forces me to elevate my game as much as I can and really dig deep to the depths of myself."

And after he finished, what did he do?

"I had a Subway sandwich [laughs], went and hopped in the Arkansas River – which was divine – tore a blister off my foot and then went to have some Bolognese, and then... drove home."

DON'T LET HOUDINI ESCAPE YOUR ATTENTION

Houdini is a Swedish outdoor brand at the forefront of sustainable design for outdoor apparel. The brand's "odd band of designers, scientists, artists and adventurers" are pioneers of a movement to reduce the environmental impact of textiles.

Most of the fabrics it now uses are recycled and recyclable or renewable and biodegradable. The brand's aim is to eliminate their negative impact entirely by designing a circular and regenerative system for both production and consumption.

Houdini's Lana Jacket is made from 100% superfine Merino wool. The densely woven fabric has natural breathability as well as wind and water resistance.



Houdini has had a busy year. It launched itself into the US and Canadian markets, whilst also further innovating its business model by opening a permanent clothing compost for worn-out wool garments and launching a pilot subscription program to complement its already existing rental service.

100% MERINO WOOL JACKET AND PANTS

On the product side of things, a highlight for Houdini this year has been the launch of its four-season Lana Shell Jacket and Pants, which are both made from 100% superfine Merino wool of 16 micron.

The fabric used in these two products is made using Optim™ technology that results in a very dense fabric that is both water and wind resistant without any chemical treatments, while retaining all Merino wool's fine properties such as breathability. The fabric is a result of development by the Wool Development Centre set up in 2013 by AWI and Chinese company Nanshan.

"We are proud to introduce the Lana Jacket and Lana Pants, a shell layer made in light, densely woven 100% Merino wool. No synthetic blends. No plastic coating. Just the pure performance of nature itself," said Houdini CEO Eva Karlsson.

Eva says the progressive material and minimalistic design make it visually appealing to a wide customer group from hard core mountaineers and hikers to the urban sophisticated.

"We field tested Lana for extended periods of time together with authorised mountain guides, who demand as much from their apparel as they do from the rest of their equipment, stress-testing comfort in a wide range of situations and a broad variety of activities in tough conditions, as well as for travel and occasional days in town.

"We got such awesome feedback. Lana does the trick in so many different situations, no matter what the outside conditions or activity level – and the styles are truly state-of-the-art."

HOUDINI'S CIRCULAR DESIGN MODEL

Thanks to the fibre in the Lana Jacket and Pants being made from 100% Merino wool, the fabric is fully biodegradable. Houdini never mixes its natural fibres

with synthetics and doesn't use harmful chemicals, so at the end of the garment's life, the fabric should be pure enough to put in a compost and nature will transform the fabric into fertile soil.

Water and wind resistant jackets made from 100% Merino wool were launched earlier this year by Swedish outdoor apparel brand Houdini, a company that has won awards for integrating sustainability into its business model.

with synthetics and doesn't use harmful chemicals, so at the end of the garment's life, the fabric should be pure enough to put in a compost and nature will transform the fabric into fertile soil.

"Lana is circular by design, meaning the textile raw materials used are all renewable and biodegradable resulting in a product that is pure enough in its form to be recycled or composted at the end of life," said Eva.

"Nature is our blueprint for circular design. In nature nothing becomes waste but instead stays a resource. In our product design we mimic nature's cycle, using renewable and biodegradable raw materials."



Eva Karlsson, Houdini CEO

"Lana is at the essence of our philosophy of 'nothing added that isn't needed'. By questioning conventions and stripping fabrics from unnecessary treatments, membranes and coatings, we can form beautiful partnerships between nature and technology. In the case of Lana, it's nature's millions of years of innovation in partnership with state-of-the-art weaving technology."

If a Houdini customer doesn't have their own compost, they can return their worn-out wool garment to Houdini, which has recycling units in all its own stores and at many retailers. The priority however is to first extend product lifetime as much as possible, by caring for, repairing and rebooting each Houdini garment. You might not even get to the composting part but rather have a wool companion for life. **B**

MORE INFORMATION

www.houdinisportswear.com/en/lana

THE HOUDINI MENU PROJECT

Composting worn-out wool clothes is one thing, but in 2016 Houdini started the extraordinary Houdini Menu Project as a way of helping change the way people view clothing.

The company took the step of cultivating vegetables in soil made from composted wool garments and then had star chef Sebastian Thureson use the vegetables to create a unique fine-dining menu for the people who had donated the worn-out wool clothing.

"Our vision of a circular production model has been the same from the start, to create clothes and services that maximise people's outdoor experiences without having a negative environmental impact on our planet. By growing vegetables from worn out base-layers, we wanted to showcase how beautiful it can be when we manage to close the loop. Food for both thought and taste buds, you could say," commented Houdini CEO, Eva Karlsson.

MORE INFORMATION

View the video at www.youtube.com/HoudiniSportswear

The people at Houdini have recycled garments for years, but this time they decided to eat them! The world's first fine-dining experience grown from old sportswear showcased the biodegradability of 100% wool clothing.



Some old Merino wool base-layers of Houdini's customers...



...were placed in compost, and six months later...



...they had biodegraded and turned into nutritious soil.



In the soil, vegetables and herbs were then grown ...



...from which Chef Sebastian Thureson created a meal...



...that was served to Houdini's recycling customers.

WOOLMARK OPTIM WR JACKET

100% Merino wool fabric
Water and wind resistant

The **WOOLMARK OPTIM WR JACKET** has been produced primarily for woolgrowers, to enable them 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. See the article on the opposite page, as an example.

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 – 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 and 5 sizes.

HOW TO PURCHASE

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

Payment by only Visa or Mastercard is accepted.

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

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



**STOCKS ARE RUNNING OUT!
BUY NOW BEFORE
IT'S TOO LATE!**

The award-winning **Devold Running Cover** is a performance garment for year-round use with a reduced design that works both as a lifestyle garment and as an outdoor garment.



DEVOLD'S WOOL MID-LAYER IS A RUNAWAY WINNER

A wool blend mid-layer from Woolmark licensee Devold of Norway, designed for running and other high intensity activities, has won a Gold Award at the 'Outdoor by ISPO' trade show in Munich, Europe's largest outdoor trade show.

Devold's Running Cover Zip Neck was the Gold Winner in the Mid Layer category of the Outstanding Outdoor Awards at 'Outdoor by ISPO', judged by an independent jury panel consisting of 21 judges from nine countries.

The Running Cover is a lightweight, wind-resistant pullover developed for high intensity activities. It's not only the clean look that makes this a such a desirable item, the innovative body mapping technology provides unique features which will make the most out of your running experience.

Features such as smart panels on the back and arms offer great breathability during exercise, while the front and upper part of the sleeves are made of a tightly woven but stretchy Merino wool blend, adding wind-resistance and weather protection. In combination with soft single jersey made of 100% Merino wool on the back and the lower part of the sleeves, the Running Cover offers excellent climate comfort.

The Running Cover has a tailored and articulated fit for freedom of movement, including a fitted collar and a two-way zip at the front for extra ventilation. Reflective detail is also added to keep you visible while running in the dark.

"We are very proud to win this Gold award for the Devold Running Cover," said CEO of Devold of Norway, Cathrine Stange.

"That Devold, a small, Norwegian company, is being recognised with an innovation award for a running product, in a category dominated by global brands, is hugely inspirational to us.

"This mid-layer will extend the running and outdoor training season to all year round due to its highly performing mix of fabrics: 58% Merino wool of 17.5 micron, plus 36% polyamide and 6% elastane."

Available to consumers from March next year, the Running Cover complements the other garments in the Devold Running Collection which comprises singlets, T-shirts, shirts, shorts, tights, vests, accessories and now a cover.

OUTDOOR BY ISPO

Outdoor by ISPO is Europe's largest outdoor trade show, with more than 1,000 exhibitors and 22,000 trade visitors. The ISPO Awards have become a highly respected quality seal for the sporting goods industry. It helps specialist retailers put together their product ranges and customers make their buying decisions.

The judging by the independent experts on ISPO's jury panel took place in June in the French Alps where they put products through their paces in an authentic outdoor setting. Jury member Arne Strate, who is General Secretary of European Outdoor Group, said of Devold's Running Cover: "Pleasant stretch, very good fit, soft feeling on the skin: The mid-layer from Devold of Norway is the right companion for the next outdoor adventure."

It was a Merino wool double win at the awards ceremony, with a Merino wool blend long sleeved top from German company Palgero



Devold's Director Business Development, **Vidar Thorvik** (centre) collecting the **Gold Award** for the Running Cover on stage at the 'Outdoor by ISPO' trade show in Munich, Germany. Also pictured are head of ISPO Business Solutions **David Badalec** (left) and professional rock climber and jury member **Alexandra Schweikarton** (right).
PHOTO: Messe München GmbH

winning the base-layer category. The product is made from a blend of Merino wool with the company's own natural 'SeaCell' fibre (which is made out of algae).

One theme shaped every segment of the Outdoor by ISPO trade show: sustainability. Organisers said it has been an absolute must-have for the entire outdoor industry for years now. The theme was highlighted throughout the show's focus areas and exhibitors' booths. Industry heavyweights like adidas as well as smaller companies demonstrated that natural materials like wool, and recycled polyester fibres, represent real alternatives to conventional synthetic fibres. **B**

MORE INFORMATION
www.devold.com

ORTOVOX MERINO WINDBREAKER SUPER LIGHTWEIGHT SUPER STRONG



The unique blend of the yarn in the Merino Windbreaker comprises polyamide filaments wrapped around a core of fine Merino fibres – creating a very durable but comfortable fabric.

The Merino Windbreaker from German mountainwear brand ORTOVOX is not only windproof, it is also extremely lightweight, very strong and has all the breathability and comfort benefits of fine Merino wool.

Since 1988, German mountainwear company and Woolmark licensee ORTOVOX has focused its attention on using wool throughout its apparel range – from base-layers through mid-layers to outer-layers. The company has expanded during these past three decades, now selling its products in more than 1,750 stores across Europe, North America and Japan.

One of the company's most innovative recent products is its Merino Windbreaker, which

caught the attention of industry experts at the Outdoor Retailer trade show in July 2018 and which was rolled out to consumers for the 2019 summer season.

What is innovative about the product? Put simply, this jacket is one of the lightest pieces of wool-rich outerwear that has ever been developed, with the fabric weighing in at just 59 g/m². To put this figure in perspective, the page of paper on which you are reading this article in *Beyond the Bale* weighs 95 g/m², that's more than 1.6 times as heavy as the fabric. The men's jacket weighs just 158 g in total while the women's jacket weighs 136 g – about the weight of a small tub of low-fat yoghurt.

This is the first windbreaker to be made of a material containing a majority of fine Merino wool fibres: 55% Merino wool and 45% polyamide. But not only is the fabric super lightweight, it is also very robust and comfortable.

ORTOVOX's extraordinary super lightweight Merino Windbreaker provides protection from wind and weather.



"At ORTOVOX, we've been putting our trust in wool since 1988. Influenced by our wool-DNA, we had an extraordinary idea: A windbreaker made of material containing fine Merino fibres – for the very first time! The result is the Merino Windbreaker – a unique windproof jacket that has all of the benefits of fine Merino fibres."

Lucia Wangler, ORTOVOX Product Development Mountainwear

Using Beta-Spun technology from the Südrolle Group, fine polyamide filaments are spun around a Merino wool core. The protective polyamide coat makes the yarn more than 70% more tear resistant than conventional Merino yarn, and more abrasion resistant too. However, thanks to the elaborate spinning process, the wearer can still feel the fine Merino fibres on their skin – providing all the comfort benefits of fine natural fibre.

Thanks also to its high wool content, the material can regulate moisture and temperature levels and is odour resistant. A DWR (durable water repellent) finish protects against light rain. The high quality of this lightweight windbreaker is also apparent in its manufacture. Intricate seams and neat workmanship on the inside prevent bulges so that all seams are flat, making this jacket pleasant to wear. And despite the high wool content, technical bonding has not been dispensed with. An elastic hem and elastic cuffs ensure that the jacket is comfortable when done up.

While minimalistic, it is also very functional: A practical breast pocket provides space for a map, and the whole windbreaker is so compact that it can be stored in its own pocket and then fastened to a belt or backpack. A self-adjusting hood and long cuffs provide perfect protection against wind and weather.

All this makes the Merino Windbreaker an exceptional all-rounder and the perfect companion in the mountains.

MORE INFORMATION
www.ortovox.com

100 DAY CHALLENGE

Thirteen women wore this wool dress 100 days in a row. Read on to see what they learned.

Wool& is the sister-brand of Wool&Prince, the American menswear brand that was famously launched when its founder successfully wore a wool button-up shirt for 100 straight days without washing or ironing.

Following in these footsteps, wool& threw out a challenge to its female followers. The premise was simple: wool& would provide its Rowena Swing Dress, and the participant would wear it for 100 days in a row. Fifty women took on the challenge, and thirteen completed it.

What is the Rowena Swing Dress? It is a long sleeve and pocketed wool blend dress made predominantly from 17.5-micron Merino wool. The garment is designed to have a flattering fit suitable to be worn every day of the week, dressed up or dressed down.

“Our brand, wool&, was founded on three principles: live simply, consume carefully, and do good,” said wool& founder Mac Bishop.

“We created the Rowena Swing Dress as well as the 100 Day Challenge to encapsulate all three principles. We want to encourage people to find happiness and fulfilment in a life of less. The modern age supports a life that favours over-consumption, and we think that this is unsustainable on every level.

“However, we love Merino wool. Known for its wearability and need to be washed less, it has a myriad of other benefits including everything from wrinkle and odour resistance, to climate control. And of course, it’s a naturally renewable resource.

“In the 100 Day Challenge we sent dresses to the first fifty people who volunteered to wear our dress for the duration of the challenge. We were beyond pleased with the results.”

HOW DID THE CHALLENGERS FARE DURING THE 100 DAYS?

Several women observed how people really don’t notice when you wear the same thing day after day. Others were pleasantly surprised by the versatility of the dress: “The fabric was more comfortable than I expected for every situation. I was never too heated or too chilly,” said participant Grace.

Nancy said she was always appropriately dressed no matter where she went: “One Saturday at 6:50pm we remembered that we had symphony tickets for a 7:30pm curtain.

I already had my Rowena on, so I just grabbed my coat.” A candlemaker was “shocked that after one hundred days, the dress showed zero signs of wear” even working in her studio six days a week with “five sets of little hands tugging on me”.

Each challenger took on a different approach regarding care. Miranda didn’t wash it the entire hundred days! One woman made it the entire 100 days only spot-washing as needed and another washed it only three times, while others had a more ritualistic twice-a-week routine. Overall, the women from the challenge demonstrated that Merino clothing greatly reduces the need for washing, which has a positive impact on our planet.

A challenge of this scale doesn’t go without difficulties, boredom being the most prominent. But Kjerste noted: “Honestly I loved not having to think about what to put on in the morning, and always knowing that I looked good.” And Sarah remarked: “I was surprised that I didn’t get sick of wearing the same thing! In fact, I’m still completely in love with my Rowena.”

“Merino wool allows us to live with less and do more of the things we love.”

Mac Bishop, founder of wool&

The challenge spurred other goals in these women’s lives. Rebekah said: “My goal this year is to have zero waste.” For Johanna, it was a lesson in styling: “Pushing myself to style the dress in different ways will probably overflow into how I can be more creative with styling items that I have in my wardrobe.” Sarah learned: “Quality, versatile pieces of clothing will wear well and be staple items in your wardrobe for a long time.”

THE TAKEAWAY

“This challenge was intended to be an exaggerated experiment of what conscious, slow fashion can look like,” Mac said. “But the takeaway is obvious: wearing something more often than we currently do can lead to a real benefit. We’ve seen for ourselves that this can create a shift towards doing good and feeling good.”

The following testimony exceeded all expectations. Kjerste wrote: “Here’s the deal: the biggest impact – the completely unexpected impact – has been on the inside.

The Rowena Swing Dress is universally flattering and easy to wear, and putting it on every day took my focus off how I looked in my clothes or how I felt about my body. My focus shifted to the real person inside the dress, and I have never felt so comfortable in my own skin.”

The Rowena Swing Dress is available in five sizes (XS to XL) and five colours (marine blue, black, burgundy, burgundy/terracotta stripe, green/black stripe). wool& has recently launched four more wool dresses, each designed for maximum functionality: a reversible wrap dress, a reversible belted tank dress, a midi tank dress and a split neck shirt dress. The Rowena Swing Dress will be restocked in fall 2019, in both black and a new colour. The Woolmark Company provided support for the launch of wool& and advice to wool& regarding the manufacture of its dresses. **B**

MORE INFORMATION
www.wooland.com

The Rowena Swing Dress from US brand wool&.



ROWENA'S TRAVELS

The versatility of the Rowena Swing dress - including the breathability, elasticity and odour resistance of Merino wool - makes this dress the perfect travel garment. Here are some snapshots of the dress being worn in diverse locations across the world.

LIMA, PERU



PHOTO: Tom Vanderbilt

Writer Jancee Dunn packed little more than two Rowena dresses in her suitcase for a five-day family trip to the busy metropolis of Lima in Peru. She wore the dresses the entire time.

"I have to say that I loved how versatile the dress was. It was swingy, so I could move in it when I was walking around on the street, but if we went to a nice restaurant or gallery, it looked crisp and chic and polished," said Jancee, who lives in New York City.

"It was so easy to throw on some accessories to change it up - different sandals, or a scarf, or hoop earrings.

"It functioned nicely when I was active, too. One afternoon, we went to Huaca Huallamarca, a towering pre-Columbian pyramid made of adobe bricks situated right in the middle of Lima's beautiful San Isidro neighborhood. I scrambled around there with my daughter - you can really move in that dress, and it's not too short. I even wore it to the beach, while my husband and daughter surfed.

"The dress was also perfect for the white, vaporous atmosphere that appears in the winter and spring in Lima - what locals call la garua. Because the dress is made of lightweight wool, it kept me warm when the mist got too chilly, and cool when it was warm."

MOROCCO



JOSHUA TREE NP, USA



PHOTO: Aza Ziegler

GLACIER NP, USA

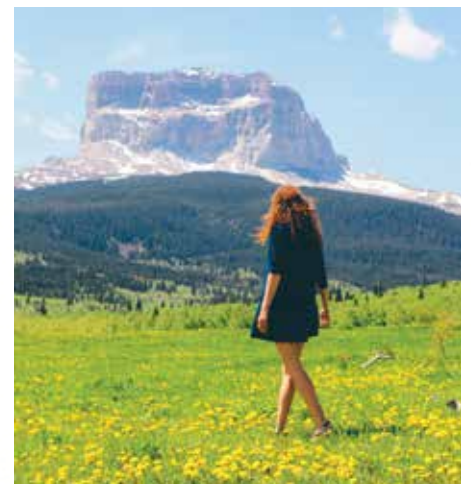


PHOTO: Charlotte Massey



PHOTO: Alisha Bube

THAILAND

Alisha Bube from the Travel Channel went on an 18-day vacation to Thailand and tried her hand at minimalist packing.

"How was it traveling with only a carry-on for 18 days? Actually, not that bad!" said Alisha, who lives in Knoxville, Tennessee.

"I think the critical part was packing a limited wardrobe of durable clothes that were all within one colour scheme making it easy to mix-and-match.

"I was looking for clothes that were cute, versatile, and wouldn't need to be washed after one wear, so my Rowena dress qualified.

"It ended up being a great choice; it transitioned well from the chilly winter morning in Nashville all the way to the warm Bangkok spring. [Bonus points: The pockets came in handy for easy access to my passport and travel documents along the way.]"

Designer Emily Riggs (right) with her sister-in-law Bec Ashby on-farm at Burra. Both are modelling the Drysdale pullover, showcasing its reversible nature (the V neck can be worn on the front or the back) – two outfits in one!

COUNTRY COUTURE



Founder of iris + wool, Emily Riggs, wearing her brand's Drysdale pullover made from 100% superfine Merino wool, pictured here with her son Sam on the family property at Burra in South Australia.

Married to a woolgrower in Burra in South Australia, Emily Riggs recently launched a luxe fashion label – iris + wool – helping to promote the superior quality of wool produced in Australia and support the country's farmers.

Emily grew up in the country at Ardrossan on South Australia's Yorke Peninsula. Her grandparents and cousins live on a farm and she would often visit them during school holidays. However, it was when she met and married her husband Tom, that her appreciation of wool really took off.

They live at Burra in the mid-north of South Australia where the family has more than 30,000 hectares of mainly pastoral country on which they currently run about 10,000 Merino ewes.

"Being married to a Merino sheep producer, it was only natural that I should choose wool as the basis of the iris + wool knitwear range which comprises jumpers and tops," Emily said.

"Australian wool is so fabulous and it makes me feel really good to be supporting the industry. I love the fibre's qualities of keeping you warm in the cold and its ability to be cooling in the summer. I also love that it's a renewable fibre, so iris + wool customers are supporting the environment whilst looking good. It's fashion but with our planet front of mind.

"The brand's target market is stylish ladies that have a connection to the land; think Emma Hawkins and Catriona Rowntree (who has actually worn iris + wool). They love timeless garments that are top quality. Country Couture!"

LINKS TO THE LAND

With a newborn son, Sam, Emily was keen to set up a business which would enable her to work from home on the property.

"It has worked well for the family," Emily said. "It was a huge outlay to begin the label because the manufacturing can be costly, so I have had to start small, but I have plans to increase my collections in the future, dependent on how well this collection sells!"

The first iris + wool collection contains four pieces, all made in Australia from 100% superfine Australian Merino wool of 16 micron, and each piece available in four colours.

"Each of the pieces pays homage to our properties. For example, the Drysdale reversible pullover is named after our station, while the Wandilah, another reversible top with flared sleeves, is named after where Tom, Sam and myself live.

"Our Murkaby cami is named after our wool brand. It is a singlet to wear under garments specifically for mothers whilst breastfeeding. It has a relaxed fit for pure comfort on a full-term bump and/or post baby tummy. But as with our entire collection, this piece is also super flattering without a bump, ensuring you get longevity out of your iris + wool pieces."

SUSTAINABLE FASHION

Emily believes that having a high-quality garment that is well made shouldn't be a luxury. It should be an investment that will see you through the seasons for years.

"As well as the choice of fibre, sustainable fashion is also about not replacing garments every season. I live by the cost per wear theory: If I buy a \$15 garment and wear it once because it was bad quality, then that one wear cost me \$15. However if I buy a \$600 cardigan and wear it 300 times it has only cost me \$2 per wear."

And finally, what does husband Tom think about iris + wool?

"He is very supportive; I am so lucky. He loves what I am doing but obviously wants it to be viable and successful. I think he's quite chuffed I love Merino wool so much that I have made a label out of it."

MORE INFORMATION

The collection is available at www.irisandwool.com and at Oak and Elm in Clare, South Australia.

WOOL FOR STRONG WOMEN AND MOTHER EARTH

Designer Emilia Wickstead was inspired by nature and strong women of the world for her latest collection, which is made entirely from Australian Merino wool.

Established in 2008, the Emilia Wickstead label has become the epitome of modern femininity. The seasonal collections of the New Zealand-born designer have been showcased at London Fashion Week since 2012 and the label has a growing international presence.

The label's clothes are worn by stars such as Oscar winning actress Olivia Colman and model Alek Wek, royalty including the Duchesses of Cambridge and Sussex, and other women of stature such as former First Lady Michelle Obama and New Zealand Prime Minister Jacinda Ardern.

Emilia Wickstead, now based in London, earlier this year travelled to Australia, where she visited a wool-growing property to not only meet the growers who produce Australian wool but also reimagine our iconic fibre in a modern way.

"Mother Earth is a huge inspiration for this collection. Each piece is made entirely from 100% Australian Merino wool, so it naturally connects it to the earth and our natural environment."

Designer Emilia Wickstead

"Visiting farms in Australia was wonderful as it enabled me to discover the source of where Merino wool comes from," the designer explained. "For me a huge part of designing this collection was understanding where wool is grown, sourced and produced."

Partnering with AWI's marketing arm The Woolmark Company, in May she launched her latest collection, a modern workwear wardrobe made entirely from Australian Merino wool.

Titled 'Ordinary Yet Extraordinary Women', the collection draws on the strength and dynamism of New Zealand women and their cherished connections between whanau (family), hoa (friends) and Papatūānuku (Mother Earth). With this in mind, Emilia has dedicated the project to the hugely significant 125th anniversary of women's suffrage in New Zealand, as a heartfelt means of recognising, celebrating and empowering women.

"I've loved collaborating with The Woolmark Company and bringing together a modern workwear collection that is ultimately inspired by the nostalgia of home," she said. "This collaboration has felt like a real return to my roots and for me has been about reinventing the use of this natural and historic fibre in a modern context."

The Woolmark-certified collection includes fine ribbed and chunky knits through to luxe wool gabardine, showcasing the next-to-skin softness, strength and durability of Australian Merino wool, whilst focusing on modern shapes and tailoring.

The collection shifts perceptions about when and how wool can be worn and demonstrates the luxury fibre's innate versatility. The pieces reimagine the role of wool not solely as a winter textile, but as a trans-seasonal fibre made to last.



Travelling to Australia earlier this year to visit the source of Merino wool, designer Emilia Wickstead was able to experience first-hand the natural beauty of the fibre and those who produce it.

"Working with Merino wool has been incredibly exciting for me: it's biodegradable, it's renewable, it's natural and it's the more sustainable option. We've shifted people's perceptions about how wool can be worn by enjoying it season-to-season and not just as a winter textile."

The collection is available from Emilia Wickstead as well as leading luxury retailers including Selfridges and Net-A-Porter. **B**

MORE INFORMATION
www.emiliawickstead.com



The latest collection from Emilia Wickstead is made from 100% Australian Merino wool and is a celebration of women.

ENVIRONMENTAL

FASHION BRAND: WOLFGANG SCOUT

New Australian knitwear label Wolfgang Scout was founded on the principle of producing Merino wool knitwear with a light environmental footprint and a fully traceable and ethical supply chain.

The brand's three founders – Natalie Wood, Carla Woitdt and Marianne Horton – are no strangers to wool or the fashion industry, having previously worked for prominent brands including Country Road, Veronika Maine, Temperley and Helmut Lang. Carla is also the daughter of a shearer, so wool has long been a pivotal part of her life.

The three came together with a desire to do what they love but better: selecting each part of their supply chain based on ethical and sustainability principles and then building strong relationships with them. Their wool is sourced from a single Victorian sheep farm, Kia Ora Merino (see opposite page); they use no chemicals in the processing of the wool; they work closely with a local small-scale spinner; the yarn is hand-dyed in Australia using non-hazardous and low impact dyes; and each garment is then knitted by hand by artisan knitters in India.

“Wolfgang Scout is built around a philosophy of interwoven connections: to people, to place and to the natural environment,” Carla said. “The many hands that come together to make our products are selected with care and treated like family. We believe in treading lightly on this earth and creating long-lasting products.”

TRACEABLE AND SUSTAINABLE SUPPLY CHAIN

The development of a unique wool yarn is at the heart of Wolfgang Scout. It is made from 100% superfine Australian Merino wool, with a quality of micron that is rarely found in handknit garments.

“We buy wool by the bale in its original state, sourced from one farm, Kia Ora Merino, that shares a philosophy in keeping to our standards. Having our yarn fully traceable and knowing the woolgrower that produced the



Wolfgang Scout's debut collection features sweaters made with 100% superfine Merino wool sourced from Kia Ora Merino at Winslow in Victoria.

fibre is important to us,” Carla said.

“Wool is most beautiful, most kind to our skin and best for the earth in its natural form, so we use no chemicals in the processing of our wool.

“To get exactly the type of yarn we wanted, we worked closely with a small-scale spinner in Victoria. It is the lightest and softest yarn you could imagine, something that exemplifies the quality of the raw material and celebrates wool in its purest form.” The Wolfgang Scout yarns are also available to buy in skeins as they also share a philosophy around the connection to the art of ‘making’. “Our yarns are environmentally friendly, sustainably

produced, and responsibly dyed with organically certified dyes to our own unique color palette.”

“Having our yarn fully traceable and knowing the woolgrower that produced the fibre is important to us.”

Carla Woitdt, Wolfgang Scout

Wolfgang Scout's jumpers are hand knitted in rural southern India by artisans at a female-run, female-only factory, which provides education and above-average wages to its employees.

“It is a personal, sustainable and transparent production practice which empowers the artisan knitters. Each garment is made, from the first stitch to the last, by one person, so it can take more than 40 hours to complete one jumper.”

Wolfgang Scout's wool garments are lovingly produced right along the supply chain. They are made to be treasured and handed down to future generations, just like the land on which the fibre is grown.



Wolfgang Scout designer Carla Woitdt with woolgrower Nicole Finnigan of Kia Ora Merino. Both businesses are focussed on producing their product in an environmentally friendly way.



MORE INFORMATION
www.wolfgangscout.com

SUSTAINABILITY

WOOLGROWERS: KIA ORA MERINO

With consumers increasingly interested in the eco-credentials of products, many woolgrowers are focusing more and more on supporting the environment on their properties. One such business is Kia Ora Merino at Winslow In Victoria, which recently won an Environmental Sustainability Award for its achievements.



James and Nicole Finnigan and family of Kia Ora Merino from Winslow, Victoria, pictured receiving their Environmental Sustainability Award in May.

For today's discerning consumers, a garment's origin can be as important as the quality and style of the clothing itself. Customers are insisting on greater integrity and authenticity in the products they buy – and they are increasingly demanding products that are planet friendly.

Australian wool has a great story to tell. Indeed, many brands and retailers are using wool's 'farm to fashion story' as a core ingredient in the marketing of their high-value end product. These companies are using wool's natural origin as a way of differentiating their wool products from synthetic and other fibres on the market that are less eco-friendly – see the article opposite.

With the spotlight increasingly being shone on farming practices, many woolgrowers – such as Kia Ora Merino at Winslow, 23 kms north of Warrnambool in Moyne Shire, Victoria – are taking steps to maximise their environmental credentials.

"Here at Kia Ora Merino we continuously aim to improve not only productivity, but the condition of the land and its environment. We hope to leave our place in the best possible state for future generations," said James Finnigan of the family-owned property.

James and Nicole were recipients this year of one of Moyne Shire Council's two Environmental Sustainability Awards, presented to them for their focus on sustainable and ethical farming practices.

"Over the past five years Kia Ora Merino has expanded its business model based on economics to include sustainability, responsibility and ethics. It is an honour



The Finnigans have implemented a range of practices on their wool-growing property to increase its environmental credentials.

to be recognised by the council for our work in creating positive impacts on our environment," James said.

It was a wool-growing double at this year's Environmental Sustainability Awards, with the other recipients also being woolgrowers: David and Susan Rowbottom of 'Rowensville', who have previously been featured in *Beyond the Bale* for their excellent environmental work and quality wool.

PUBLIC ENGAGEMENT REAPS REWARDS

The Finnigans provide wool and wool/sheep themed merchandise to their local tourist information centre, which has resulted in a 400% increase in traffic to the Kia Ora Merino Facebook page.

"Public discussion around environmental sustainability is very prominent now, so it's been wonderful to do our bit and get the word out there that primary producers can have a positive impact on the environment," said Nicole.

The Finnigans have demonstrated that traditional farmers can change practices and that being sustainable will increase demand for their wool.

"At Kia Ora Merino, we consistently have soft handling, sound, bright wool that is bought at auction by the likes of Schneider Group, New England Wool and Fox & Lillie.

"Recently Fox & Lillie organised the supply of Kia Ora wool to Wolfgang Scout, a new Australian fashion label, itself very much based on ethics and environmental sustainability (see opposite page). To be supplying our wool to such a like-minded company is very exciting."

HOLISTIC FARMING PRACTICES

The Finnigans have implemented a range of holistic practices at Kia Ora that have made a significant contribution to environmental sustainability.

These include fencing off their rivers and revegetating the banks with indigenous trees and grasses, which has reduced nitrate

and sediment runoff by about 80%. Stock are now watered by troughs to protect the environment and reduce evaporation.

Tree corridors have been planted according to a whole farm plan to encourage wildlife to travel along rivers and across the farm. Over the past five years they have completed gorse, blackberry, willow, ragwort and rabbit eradication along river frontage and across the farm.

Ground cover is kept above 70% and pasture mass above 1,000 kg DM/ha which ensures the surface movement of water, nutrients and soil is greatly reduced. They do frequent soil tests and only add the inputs required to improve soil health.

"To be supplying our wool to the Wolfgang Scout fashion brand is very exciting, because like us they too base their business on ethics and environmental sustainability."
Nicole Finnigan, Kia Ora Merino

They do drench resistance testing to ensure they are using the appropriate drench and have no drench resistance. They also send faecal samples from their sheep for worm egg counts and only drench as needed – resulting in less chemical usage.

They are also avid recyclers and repair instead of buy, and they use solar energy and windmills.

As a result of these and other initiatives, the Finnigans have seen a huge increase in biodiversity. For example, they now have a blue wren population, koalas, a pair of wedge-tail eagles (in the Winslow Gorge), and an endangered Wallaby population appears to have stabilised. **E**

MORE INFORMATION
www.kiaoramero.com.au

EMU Australia has also launched wool sneakers for kids.

WOOL SNEAKERS

LAUNCHED BY EMU AUSTRALIA

Iconic Australian brand EMU Australia, famous worldwide for its sheepskin footwear, has now launched a collection of lightweight and machine washable wool sneakers for women and kids.



EMU Australia's Barkly wool sneaker for women is lightweight, comfortable and machine washable and is available in four colours.

Thanks to more active lifestyles and a more casual approach to dressing, sneakers are undoubtedly one of the most popular items in people's wardrobes – and wool sneakers are gaining traction in this market.

Now available in Australia is EMU Australia's take on the wool sneaker trend. The Woolmark licensee has utilised fabric techniques from bespoke wool suits along with innovative foot bed design to deliver a lightweight, odour resistant and best of all machine washable sneaker.

The premium sneakers with 100% wool uppers are subtle in design meaning they can be worn

well with everything from active wear to street casual. They are a trans-seasonal sneaker that can be worn all year round.

The success of using wool in sneakers lies not only in the fibre's natural properties, but also in its ability to be constructed in a way that aids performance. The latest hand cut panel construction technology helps to create a form fitting, flexible shoe.

Using a 100% Merino wool outer, with cotton lining, ensures the sneakers are breathable and comfortable for wearing all day. Their comfort is aided by a lightweight EVA outsole and supportive memory foam foot-bed that gives support.

While the Women's Barkly sneaker is lace-up with a removable footbed, the kids' Becher and Moreton sneakers have velcro straps that provide for an easy on-and-off.

The Becher has two velcro straps and is available in four colours, while the Moreton has one wide velcro strap and is available in five colours. They are designed to take kids on their day-to-day explorations and with a gentle machine wash, they're refreshed and ready for their next adventure.

This innovative new collection from EMU Australia talks directly to the company's DNA – natural materials, comfortable, innovative and superior quality.

Rooted in Australian sheepskin heritage, EMU Australia was established in 1994, out of Australia's Jacksons Tannery, which began in 1948. Jacksons Tannery was one of the original manufacturers of sheepskin boots, and EMU Australia proudly still resides at the original location. Born from Australian coastal origins, EMU Australia is available in 70 countries.

The wool sneakers are now available online at the EMU Australia website www.emuaustralia.com (Barkly \$79.95, Moreton and Becher \$49.95, including free shipping) and at premium retailers across the country. **B**

MORE INFORMATION
www.emuaustralia.com

Instagrammer [@tiffany_janes](https://www.instagram.com/tiffany_janes) from Perth (101K followers) wearing EMU Australia's Barkly wool sneaker.



AUSTRALIA'S FIRST WOOLMARK-CERTIFIED LAUNDRY DETERGENT

One of Australia's most iconic household products, Martha's Country Homestead Wool Mix, was rebranded earlier this year to Softly Wool Wash, and recently became Australia's first Woolmark-certified laundry detergent.

Australian company Pental has a portfolio of leading brands that are household names in Australia: from cleaning goods such as White King bleach, personal care products such as Velvet pure soap, and fire-lighters including Little Lucifer and Jiffy.

One of the company's most iconic brands is Martha's Country Homestead Wool Mix, trusted by generations for washing woollens. Pental recently gave the product a new look by rebranding it as Softly Wool Wash, part of the company's aptly named Softly laundry care product range.

While it is the same trusted formula as before, Pental also took the notable step of becoming a Woolmark licensee so that it could proudly display the Woolmark Apparel Care logo on the bottles of its product. This is the first Woolmark-certified laundry detergent in Australia.

AN ASSURANCE OF QUALITY

The Woolmark logo provides an assurance to consumers that Softly Wool Wash is a superior laundry detergent for woollens. Specifically, it means that the laundry detergent has been tested by an independent quality assurance authority and has passed the tests appropriate for Woolmark certification in apparel care. The process includes rigorous testing that assesses the detergent's effect on colour fastness, cleansing efficiency, wool fibre robustness and other attributes.

"The Woolmark logo is a very recognisable symbol in Australia, determining a product is of high quality," said Pental Brand Manager Samantha Rishworth. "We have always known we have a premium product, and by having the Woolmark certification and being the first Australian product on



shelf to do so, consumers can feel safe that they are using the best product to clean and care for their woollen garments."

Softly Wool Wash was launched in May and is available online and at Woolworths' stores across Australia. It will be available in independent stores from late this year and be available in other major supermarkets next year.

This Australian-made product is specially formulated to gently care for woollens. It is pH neutral, readily biodegradable, phosphate-free, suitable for both top- and front-loading machines on a gentle/wool cycle as well as for hand washing, and leaves woollens with a fresh eucalyptus fragrance.

Pental says the feel of hand washing with Softly Wool Wash can conjure up memories of much-loved knitwear washed with Martha's wool mix. The name 'Martha's' is still included on the new bottle's labelling, as a nod to the past.

WHO WAS MARTHA?

Older readers might recall that 'Martha' was a real person, Martha Gardener, who was a famous radio presenter in Victoria and later across Australia. Born in 1905 at Camberwell in Melbourne, she came from a notable family – her father became auditor-general of Victoria and she had an older brother who was a Supreme Court judge.

Martha began her radio career in the 1930s but became well known for her long-running talkback radio show 'Martha Gardener Recommends', which began in 1952 and lasted for thirty years, during which she advised listeners about

household management, from cooking to mending to cleaning.

Of all her advice across the years, she is probably best remembered for her 'no rinse



The Woolmark-certified **Softly Wool Wash** laundry detergent is widely available across Australia at Woolworths.

wool mix' recipe: a mixture of soap flakes, methylated spirits, and eucalyptus, which was to become the successful commercial product that it is today. **B**

MORE INFORMATION
www.pental.com.au/brand/softly
www.woolmark.com/softly

THE WOOL LAB HELPS BUILD DEMAND FOR WOOL

The Wool Lab continues to evolve and go from strength to strength, eight years on from the launch of the first edition in June 2011 by AWI's subsidiary The Woolmark Company.

The Wool Lab contains swatches of a selection of the most innovative and quality wool fabrics and yarns commercially available on the market from the best spinners and weavers in the world. It is issued twice each year, once for the spring/summer retail season and once for autumn/winter retail.

"Each season, we reach out to The Woolmark Company's global supply chain network – hundreds of spinners and weavers in Italy, France, the UK, China, Japan and more – to source their latest fabric developments," AWI Country Manager for Italy Francesco Magri said.

"With this, we curate a seasonal sourcing guide with a selection of the best textile and yarn swatches, which can then be ordered directly from suppliers through The Wool Lab."

THIS YEAR IT GOT EVEN BETTER

What initially started in 2011 as an inspirational guide divided in macro trends, The Wool Lab this year evolved to become a more functional guide.

"It is now divided into product categories to facilitate and better address the research and sourcing of fabrics and yarns," Francesco said.

This year a new digital component has also been introduced to the showing of The Wool Lab at trade shows. Using the devices provided at the booth, visitors can scan the QR code of a swatch and immediately receive an email with the details and contact information of the swatch's manufacturer.

"This digital innovation has proved popular, with increased numbers of fabric swatches requested, strengthening the connection between The Woolmark Company's supply chain network and the world's leading brands."

The Wool Lab is a seasonal guide to the best commercially available wool fabrics and yarns in the world. Since its inaugural edition eight years ago, it has become an important tool for the global textile industry and is helping to increase the demand and use of wool globally.

The Woolmark Company showcases The Wool Lab to brands and retail buying teams at each of the many international trade shows at which it exhibits (22 trade shows in 2018/19).

Individual showings of The Wool Lab are also held with designers and brands. Following the release of The Wool Lab in its new format, in January 2019 for the spring/summer 2020 retail season, The Woolmark Company's team of The Wool Lab specialists had more than 420 one-on-one meetings with designers and industry members to present the edition.

The spring/summer 2020 edition generated more than 11,800 requests for swatches from clients, an increase from the previous spring/summer season.

THE LATEST EDITION

The Wool Lab guide for the autumn/winter 2020/21 retail season was recently launched at the Pitti Filati trade show in June and presented six fashion-oriented categories:

- Suiting – woven formal fabrics
- Blazers & bottoms – woven fabrics for separate jackets and trousers
- Jackets & coats – woven fabrics for outerwear and for the athleisure area
- Shirts & blouses – woven fabrics for shirts, dresses and printed fabrics
- Jersey & knitwear – circular knitted fabrics and yarns
- Lab – experimental inspirations.

The Wool Lab Sport and The Wool Lab Denim were also updated with the latest innovations and technical fabrics.

"The Wool Lab continues to further build the awareness of The Woolmark Company as an international authority on wool. It is helping The Woolmark Company to be once again at the forefront of the international apparel industry, influencing the key influencers," Francesco added. **B**



Trade delegates at the Pitti Filati trade show in June 2019 viewing The Wool Lab sourcing guide for the autumn/winter 2020/21 retail season.

MORE INFORMATION
www.woolmark.com/education/the-wool-lab



JAPANESE STUDENTS LEARN ABOUT WOOL

The Woolmark Company in June gave 664 Japanese fashion and textile students an appreciation for wool, thanks to a new collaboration with two further tertiary colleges in the country.

Hosting seminars that explain the attributes, benefits and versatility of wool to textile and fashion students in the early stage of their careers is an important component of AWI strategy.

In Japan, AWI's marketing arm, The Woolmark Company, already undertakes a comprehensive program of educational seminars to tertiary students including Bunka Fashion Graduate University, Bunka Fashion College, ESMOD Japan and Mode Gakuen. But it has now started working with two further colleges: PIIF (Professional Institute of International Fashion) and UEDA College of Fashion. PIIF is a new college set up in 2019 by Mode Gakuen, one of the most advanced and largest fashion schools in Japan.

To launch its collaboration with these two colleges, in June The Woolmark Company carried out its Wool Appreciation Course with 233 PIIF students in Tokyo, Osaka and Nagoya, along with 431 students from Mode Gakuen.

"There has been a large interest at a tertiary level for educational materials and seminars about wool from both fashion design and textile institutions," said AWI Country Manager Japan, Samuel Cockedey.

"Without our involvement, the students would receive relatively little education about wool, so it's vital for the wool industry that we put resources into teaching this next generation of designers and textile professions about the attributes and benefits of wool." **B**

The Woolmark Company's Wool Appreciation Course being taught to fashion and textile students in Tokyo.



At the Fashion Revolution Day event in Tokyo, AWI's marketing arm The Woolmark Company promoted the natural attributes and provenance of Australian wool.

FASHION REVOLUTION IN JAPAN

AWI supported Fashion Revolution Day in Japan for the first time this year, promoting Australian wool as a responsible fibre of choice, from woolgrowers all the way through the supply chain until the finished product ends up in the hands of consumers.

What is Fashion Revolution Day? It is organised by Fashion Revolution, a not-for-profit global movement with teams in more than 100 countries. It campaigns for systemic reform of the fashion industry with a focus on the need for greater transparency in the fashion supply chain.

Fashion Revolution Day takes place annually on 24 April, the anniversary of the 2013 Rana Plaza building collapse in Bangladesh when 1,133 textile workers died and more than 2,500 were injured. Millions of people around the world call on brands to answer the question "Who Made My Clothes?" and the hashtag #whomademyclothes becomes the top global trend on Twitter.

The Fashion Revolution Day event held in Tokyo this year attracted more than 350 people, including many brands and eco-conscious influencers, who were keen to get an insight into the future of the fashion.

The event comprised a series of discussion sessions on the theme of fashion, the environment and sustainability, with speakers from government, brands (including

Patagonia, H&M, Toyoshima & Co, Kering Group and Stripe International), the Editor in Chief of *Vogue Japan*, and campaigners Zero Waste Academy.

There was also a viewing of the documentary "The True Cost" that focusses on fast fashion, exploring the life of low-wage workers in developing countries and its after-effects, such as river and soil pollution and pesticide contamination. The viewing was followed by another panel discussion with Japanese fashion influencers.

"Our support for events such as Fashion Revolution Day helps connect us with brands and influencers and enables us to promote the natural attributes and provenance of Australian wool and advocate it as a responsible fibre along the supply chain," said AWI Country Manager Japan, Samuel Cockedey. "Through honest and open conversation, we aim to create positive change for the fashion and textile industry." **B**

MORE INFORMATION
www.fashionrevolution.org

STUDENT WOOL IN ASIA VISIT

Through the sponsorship of fashion design competitions for tertiary students, AWI and its subsidiary The Woolmark Company are inspiring students in the early stage of their careers about the properties and benefits of Merino wool. The aim is to encourage them to continue to use the fibre in their designs as they progress through their professional lives.

MERINO AWARDS AT LEADING CHINESE FASHION COLLEGES

The Woolmark Company this year sponsored a Merino Award at two leading Chinese fashion schools to nurture the use of wool by its fashion and textile students.

At an award ceremony in April, the graduates of the Shanghai International College of Fashion and Innovation at Donghua University showcased a total of 88 sets of their design works, with **Yishu Zhang** coming out on top and winning the Merino Award. **Lin Lin** won the Merino Award at the Beijing Institute of Fashion Technology.

By sponsoring the two Merino Awards, The Woolmark Company was able to encourage both colleges' students to use wool in innovative ways in their designs.

Winning the Merino Awards gave Yishu and Lin the opportunity to travel on a study tour to Australia to visit a wool-growing property and gain first-hand knowledge of the 'farm to

fashion' story (see opposite page). Lecturers **Chen Li** of Donghua University and **Cui Min** of the Beijing Institute of Fashion Technology also attended the study tour.



Yishu Zhang of the Shanghai College of Fashion at the awards ceremony with The Woolmark Company's Country Manager for China **Jeff Ma** and models wearing Yishu's winning wool designs.



Tong Zhang made stunning full looks in a vibrant red wool cloth to win this year's Next Generation Award.

NEXT GENERATION AWARD AT JAPANESE FASHION UNIVERSITY

Student designers from the most prestigious fashion university in Japan created graduate collections using Merino wool, with one lucky student winning the opportunity to visit a wool-growing property in Australia.

Tong Zhang, who is from mainland China, won this year's Bunka Fashion Graduate University's Next Generation Award, an annual award initiated by The Woolmark Company in 2016. This annual competition encourages students at the leading Tokyo-based fashion university to incorporate Australian Merino wool into their graduation collections. The students are trained through the Woolmark Appreciation Course and are inspired by viewing The Wool Lab sourcing guide.

Participating students present their wool creations to a jury of industry, media, teachers and The Woolmark Company representatives. A prize of a trip to Australia to learn more about the origins of Merino wool is awarded annually to one student who shows the most unique creativity and a keenness to explore Merino wool's potential. This year, **Tong Zhang** was that student (see opposite page).

XINAO 'KNIT FOR NEXT' KNITWEAR DESIGN AWARD, CHINA

Knit for Next is a knitwear design award presented by Chinese knitwear manufacturing giant **Xinao**. The award is supported by **The Woolmark Company** and the **China Wool Textile Association**, along with the **Spinexpo** trade show in Shanghai at which the winners were announced.

In October last year, students **Hui Ham Lui** and **Wing Sem Mak**, who are both majors in Knitwear Design and Technology at Hong Kong Polytechnic University, were announced as the winner and runner-up of the competition. Third prize went to **Enping Chen** and **Suhui Song** of Zhejiang Sci-Tech University. All four students won a trip to Australia to see the source of Merino wool (see opposite page).

First prize winner **Hui Ham Lui** used Xinao's Easy Care and Cashfeel wool yarns to create a mesh effect on the surface of the fabric which emphasises the simple lines of the

garment. She also used Xinao's Empire yarn to impart flexibility and softness so that the garment can be worn against the skin.



The winning wool design of the Knit for Next competition by **Hui Ham Lui** on display at the Spinexpo trade show in Shanghai.

Wool Winners Australia

The seven fashion and textile students from Asia who won awards in the competitions on the previous page visited Australia in May to experience first-hand the wool industry in this country and to see the source of the fibre that they use in their designs. They take back home an experience that will inspire them for years to come.

The Woolmark Company regularly hosts delegations of fashion and textile students from overseas and from within Australia, to educate and inspire the students about Australian wool, the supply chain, and the benefits and attributes of the fibre.

The most recent delegation of students came from some of the most prestigious colleges and universities across Asia. These students had received a scholarship for the trip after creating Merino wool garments that won fashion design awards (see previous page).

Overall, the students gained a valuable insight into the fibre and developed a strong attachment with the industry here in Australia. They will take this valuable information back with them and employ this knowledge as they begin their careers in fashion and textile design.

INDUSTRY OVERVIEW AT AWI HQ

After arriving in Sydney the previous day, the seven students were welcomed into the AWI office by AWI CEO Stuart McCullough and staff to receive (along with fashion sponsorship recipients from TAFE NSW) insights into the work undertaken by AWI and its subsidiary The Woolmark Company.

"During the tour I learnt lots about the features of wool. By far the greatest gain was learning the story behind wool. I will now use more wool fibre in the future to support the sustainable clothing industry."

Lin Lin, student at Beijing Institute of Fashion Technology

Some of AWI's innovations, such as Optim technology and wool footwear, were shown to the students. Everyone took a great deal away from this meeting, learning about the potential of wool in different market sectors.

"Following the presentations, I now have a deeper understanding of the versatility of wool. The application of wool fabrics in outdoor sports clothing products and the promotion of human health particularly



The students attended the wool auctions at Yennora learning how wool is bought and sold.

impressed me," said Hiu Ham Lui of The Hong Kong Polytechnic University.

THE WOOL AUCTION

The following day the delegation travelled to the wool auctions at Yennora in Sydney, where they were run through the processes involved after wool leaves the farm gate ready to be sold at the auction centre.

The wool classification process was explained to the students alongside them being shown a variety of different wool samples.

"People might have thought that wool is just a material that can be made into clothes. But we have learnt to distinguish the quality of wool fibre from its thickness, length and strength, and determine what type of wool would be most suitable for knitwear for example," said Suhui Song of Zhejiang Sci-Tech University.

THE FARM VISIT

After waking up and seeing kangaroos from their windows, the delegation from Asia was joined by students from University of Technology Sydney (who are a part of AWI's study tour sponsorship program) to learn the basics of growing wool and the importance of research and development.

This was followed by a hands-on viewing of sheep and a farm tour where they learnt the important role farmers play in ensuring the quality of wool and the health and welfare

of their flocks.

"I learnt that the relationship between woolgrowers and sheep is one of mutual dependence," said Yishu Zhang of Donghua University. "Woolgrowers provide a comfortable environment for their sheep, and the sheep produce wool to create income for the woolgrowers, which provides sustainable development."

NATIONAL MERINO CHALLENGE

The final day of the tour saw the delegation visit the National Merino Challenge (see page 32), which gave the students a unique opportunity to engage with young woolgrowers and future industry leaders. This visit gave students a chance to see in practice much of what they had learnt in previous days. **E**

The students undertook a farm tour with some Australian students, where they received an introduction to wool production.



AWI GRADUATE TRAINING PROGRAM

Two of the graduates in the inaugural AWI Graduate Training Program have now completed the 18-month program. Here they reflect on their time working with AWI along the wool supply chain and we find out what awaits them next in their careers.

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.

If you had told me during university that my first job could take me to Sydney, Shanghai, Hong Kong and London, I would've said "ya dreamin"!

Before starting the AWI Graduate Training Program, I knew little about what happened to wool after it left our shed. Now, at the end of the program, my knowledge of the global wool supply chain has dramatically grown from the scientific and farm-focused research and development, to product innovation, manufacturing and understanding the demands of our end customers around the world.

While a mixed-farming background and double degree in Animal Science & Biological Sciences may seem very useful for research projects and farm-workshops in Australia, it doesn't have quite the same effect in a foreign country of 1.3 billion people who don't speak English as a first language. In Asia, I was well out of my depth – my skillset was irrelevant, I didn't understand the market and my Mandarin was limited to 'I want dumplings'. Nevertheless, where I knew the least, I learnt the most.

The international rotations in Asia and the UK proved to be the most informative experiences. It's not until you travel overseas to the mills and key customer markets that you realise just how immense the wool supply chain is and how important it is to market

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 2018. As the journey through the 18-month program comes to an end for two of AWI's 2018 graduates, here in their own words they reflect on their time in the program.



Ellie Bigwood with AWI Country Manager for China, Jeff Ma, in The Woolmark Company's booth at the SpinExpo trade show in Shanghai.

our fibre. I admit to being disconnected from our end consumers, until working with the AWI Marketing teams in Sydney, Asia and London. At the end of the day, people do not need wool to survive – they can only choose to purchase it. So whether we're woolgrowers, wool brokers, manufacturers or even retailers, we all need to play our part to ensure wool is the customers' first choice.

"It's not until you travel overseas to the mills and key customer markets that you realise just how immense the wool supply chain is and how important it is to market our fibre."

Ellie Bigwood

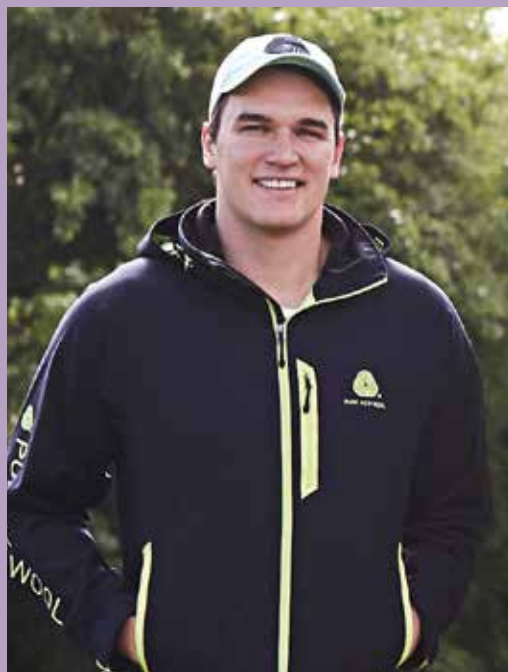
As much as I enjoyed working abroad, my favourite part of the program has been on Aussie soil, engaging with students through AWI education programs, and woolgrowers and stakeholders through on-farm workshops and industry field days/events. It's because of this that I'm itching to commence my next role at AWI as Stakeholder Engagement

Coordinator. With the primary focus to communicate directly with woolgrowers and industry bodies, I look forward to engaging on the ground with more of the wool-growing community.

It seems that there is truth in the sentiment that 'once you're in the wool industry, you stick with it'. I thank AWI and Australian woolgrowers for investing in my education throughout the AWI Graduate Training Program and hope to continue to ride the sheep's back in this incredible industry for a wee bit longer!

ELLIE'S NEXT STEP

Ellie will be starting her full-time permanent role in September with our Woolgrower Services team in the capacity of Stakeholder Engagement Coordinator. Throughout her time in the program, Ellie's enthusiasm and passion for the industry has proven to be infectious and endearing and naturally we want her to spread that across our networks on the ground and through our communication channels.



New graduate **George Lehmann**.

WELCOMING OUR NEW GRADUATE

After yet another successful year for the AWI Graduate Training Program, AWI has selected the next graduate for the 2020 program who in March will embark on their career in the Australian wool industry with AWI.

The competition for the 2020 program was extremely high and once again, the calibre of candidates that AWI received was outstanding. It was an extremely rigorous process for the graduates to get through to the final stage.

AWI is delighted to announce that George Lehmann has been chosen to take part in the 2020 AWI Graduate Training Program. He will begin the program in March next year.

George grew up on a mixed farming enterprise, combining wheat and canola cropping with Merino sheep. He graduated this year from the University of Sydney where he completed a Bachelor of Food and Agribusiness. Having grown up on a sheep farm, George is passionate about the wool industry and excited at the prospect of learning more about the global supply chain, particularly post farm gate.

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.

The list of opportunities the AWI Graduate Training Program has presented to me is as long as the Australian wool supply chain itself. I have been entirely immersed in AWI and The Woolmark Company's work both domestically and internationally, with each department I've joined welcoming me and ensuring that I get maximum exposure to their line of work.

The initial challenge of starting with a new team, on a new set of projects was something that I became comfortably attuned to by the end of the program. On three occasions, this came with moving from Sydney to a new office – in London, Shanghai and Hong Kong – with a total of six months spent overseas. As a result, after only 18-months with the company, I have been fortunate enough to meet and work alongside most staff of AWI. This marks a great success both for my personal development and my abilities to contribute to the business and wider industry moving forward.

"My time overseas emphasised the importance of our relationships with processors, manufacturers, educational institutes and brand partners for the transfer of knowledge across the supply chain."

Ben Madgwick



Ben Madgwick, pictured with AWI Marketing Manager for China, **Alexis Zhang**, examining some raw greasy wool from Australia at **Xinao Textiles** in Jiaxing, China.

As I moved throughout the business, I became particularly interested in the education extension programs that AWI offers across student, trade and retail programs. The value of these programs became evident when I witnessed first-hand both educational content being created from our Sydney office and then delivered to the overseas markets by our local teams. My time overseas emphasised the importance of our relationships with processors, manufacturers, educational institutes and brand partners for the transfer of knowledge across the supply chain and to ensure we are driving innovation and keeping up with consumer expectations.

To this end, in September I begin my full-time role with the Education Extension

team in the Sydney office. In this new role, I am intent on using the knowledge learnt and connections made throughout the program to ensure this long supply chain is increasingly interconnected and efficient for all involved.

BEN'S NEXT STEP

Ben will be moving into our Processing Innovation and Education Extension (PIEE) team in the permanent role of Project Coordinator Education Extension. Over the course of the program, Ben has proven himself to be an asset across any project he is involved with. Working heavily with the PIEE team as well as our UK office on the Woolmark Performance Challenge, his transition into his new role is sure to be a smooth one.

HOW TO SET UP A STOCKMANSHIP TRAINING COURSE IN YOUR RURAL COMMUNITY



Sandra Ireson, who helped found the Hay Inc Rural Education Program in 2014, is helping other rural communities through her Engage Ag project which she established with the help of a bursary from winning the 2017 NSW-ACT AgriFutures Rural Women's Award.

Sandra Ireson of the Hay Inc Rural Education Program has developed an adaptable model of its successful hands-on stockmanship training course for young people, which can be implemented in other rural communities across Australia.

How can regional communities stop younger generations from leaving and moving to the city – and provide opportunities for hands-on farming skills and on-farm experiences to young people from towns and cities?

This is a question that has been asked in many communities across rural Australia. Help is now at hand, with the publication by Sandra Ireson of a 20-page manual that shows how the Hay community in NSW came together to establish the very successful Hay Inc Rural Education Program. The manual provides an adaptable model that can be implemented in other rural communities across Australia.

"The decline in the traditional jackaroo/jillaroo system in the Hay region and the associated lack of essential rural skills being handed down to the younger generation resulted in markedly reduced numbers of young people entering or staying in this agriculturally dependent community. This is what prompted the establishment and launch of the Hay Inc Rural Education Program in 2014," Sandra said.

"Through the Hay Inc program young people are now being given the opportunity to learn the practical agricultural skills needed for them to get jobs on rural properties. It focuses on wool and livestock production and takes place in a practical setting in partnership with local woolgrowers.

"The program is delivered by trainers who have many years of experience on extensive rural properties, covering topics based around the production calendar for sheep, wool production and cattle. There were 15 youngsters enrolled in this year's program that concluded at the Hay Merino Sheep Show in June.

"This year we celebrated five years' success of the program with the inaugural Hay Inc Rural Education Program Alumni Networking Event, held at Shear Outback in Hay on the eve of the Hay Merino Sheep Show. Graduates of the program attended the event, meeting graduates from other year groups and networking with volunteer trainers, industry representatives and sponsors."

REPLICATING THE HAY INC TRAINING COURSE

Sandra, who farms near Booligal in the Riverina of western NSW with husband Matt and their children, was awarded the 2017 NSW-ACT AgriFutures Rural Women's Award, winning a \$10,000 bursary which she has used to set up Engage Ag, the project that has developed the adaptable model of the Hay Inc program.

"In Hay NSW, we 'built' a school using the knowledge and experience of local landholders and business folk who volunteered their time to teach young people how to be jackaroos and jillaroos. The Engage Ag manual shows how we did it; your rural community can do it too."

Sandra Ireson, Engage Ag

The Hay Inc program has delivered substantial benefits to the Hay region and Sandra says the development of an adaptable model aims to bring similar positive benefits to other rural communities across Australia.

"The Hay Inc program has received a lot of positive publicity, and so I quite often receive queries from people in other regions asking for information and advice on how to set up a program like Hay Inc in their community," said Sandra.

"Furthermore, we have a limit of 15 trainees in the Hay Inc course, to keep it practical and hands-on, so it would be great to expand the model into other areas and give more young people an opportunity to enrol in such a course.

"The Engage Ag manual explains how to go about setting up a course similar to Hay Inc, including the best ways to obtain volunteers, engage with agencies and seek funding."

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MORE INFORMATION

The Engage Ag manual is available on the Hay Inc website www.hayinc.com.au or contact Sandra Ireson directly at engageag1@gmail.com or on 0439 938 119.



SANDRA'S TIPS: HOW THE HAY INC COURSE GOT STARTED

1. Firstly we established a committee – every town has people who are passionate about where they live – they won't be hard to find and a committee allows you to establish a governance mechanism for clear communication, organise engagement and to get things done.
2. Then we established a not-for-profit incorporated group, bank account, goals and explored funding options.
3. We established a curriculum that suited our region/rural industry. The model can also focus on specific industries such as livestock or cropping.
4. We found experienced landholders or local businesses who were the key to our success. They donated their valuable passion, time and facilities to teach the students.
5. We created a marketing campaign to engage and to get the message out. It can be as simple as setting up a Facebook page or getting local media coverage.
6. Then we were able to start recruiting students to the program.



Sheep classing being taught by AWI's Stuart Hodgson and Hay Inc Chairman Chris Bowman to the young people on this year's Hay Inc Rural Education Program in June.

FARMING WOMEN GET ON BOARD

More women should be encouraged to 'take their seat at the business table of the family farm' where they can contribute to the running and direction of the business, says farmer and rural women advocate Ellen Downes.

"Farming families remain the predominant business model within Australian agriculture. Our rural communities depend upon viable and thriving family farms to ensure survival. However, the women of the family business – the wives and daughters – are often underrepresented in the business's decision making, despite having a lot to offer," says Ellen Downes, a finalist in the 2019 NSW-ACT AgriFutures Rural Women's Award.

"I believe that in order to promote the role of women in agriculture whilst also enhancing the success of farming family businesses we need to ensure incorporation of all farm members in business discussions."

Ellen Downes and her husband Stuart McDonald run a Merino, cropping and cattle operation on 1,360 hectares near Canowindra in the central west of NSW.

Their participation for more than 12 years in the Ag EDGE farm business program was featured in the March edition of *Beyond the Bale*. Ag EDGE is a not-for-profit group made up of farmers and other agribusiness people who meet quarterly to review the performance of their business, set goals, and discuss current business challenges. It helps its members to successfully navigate the highs and lows of agriculture.

Through the 2019 AgriFutures Rural Women's Award, Ellen has been highlighting the potential benefits for farming families, and especially rural women, of involvement in groups like Ag EDGE.

"I believe Ag EDGE is an opportunity to achieve positive change for rural women. One of its strengths is the way in which it includes all members of the farming business in discussions and decision making – husbands, wives, partners, sons, daughters," Ellen said.

"It is a forum to learn business skills, validate contribution, empower families and form real partnerships within the business. We know that when all the members of the business are 'visible' and involved in decision making, production increases.

"If we can engage more women within farm business discussions, I am certain it will be for the betterment of the businesses, families, agriculture and rural community."

Ellen's life was thrown into chaos after the sudden death of her father in 2010, as the family grappled with forced succession. She says the experience made her determined to ensure the next generation of farming families have sound planning, robust business structures and inclusive collaboration processes in place, so they are spared a similar situation.

"It is with the support of Ag EDGE that we have navigated significant personal and business challenges for both of our family farms. Throughout our time with Ag EDGE, we have worked through transition within two family farming businesses, changes in management, adoption of new ideas and planning for the future. This model helps to facilitates cultural change within farming families with a focus on inclusion, communication and analysis."

As a mother to three young children, a practicing Medical Specialist and a farmer, Ellen also hopes through the Rural Women's Award and Ag EDGE to be a role model for rural women who wish to combine a professional career with farming life and family.

MORE INFORMATION
www.agedge.com.au

"I believe that the future of agriculture depends on all members of family farms sitting together at the farm business table, planning for success, empowering each other and sowing the seeds of leadership. Incorporating women into farming business decisions is key to this."

Ellen Downes



NATIONAL MERINO



Networking among fellow ag students and wool industry professionals is a major part of the NMC.

FAST FACTS

- 161 young people from across Australia enjoyed an introduction to the wool industry at this year's National Merino Challenge.
- Now in its seventh year, the AWI educational initiative connects the future generation of the wool industry with industry professionals, highlighting an array of careers which involve working with wool.
- Students participate in seven 'mini-challenges' across two days. Flinders Christian Community College was the Champion Team in the secondary school division, whilst Charles Sturt University was the Champion Team in the tertiary division.

161 young people from 23 educational institutions across Australia came together in May for the National Merino Challenge (NMC), an AWI initiative that has established itself as a leading education program for students interested in a career in the wool industry.

Held in Sydney this year, the NMC involves

presentations and demonstrations from industry professionals to enable young people to develop their industry knowledge, skills and networks.

Now in its seventh year, the annual two-day event has provided nearly 800 secondary and tertiary students with the basic skills involved in the wool industry – both traditional and modern methods – as well as an understanding of the career opportunities within the industry. Annual participation in the event has more than tripled since the first NMC was held in 2013.

During this year's two-day event, the students were educated and then assessed on their skills across a wide range of areas such as feed budgeting, condition scoring, breeding objectives and wool harvesting together with the commercial assessment and classing of animals and fleeces.

Techniques from several well-known industry initiatives, such as MERINOSELECT, Lifetime Ewe Management and Visual Sheep Scores, were used throughout the NMC, giving students a realistic and practical insight into the tools available to woolgrowers to make more informed decisions.

Students also enjoyed the NMC Industry Dinner on the Saturday evening and said they relished the opportunity to spend time with a range of wool industry participants, from woolgrowers to wool brokers and researchers.

AWI's General Manager of Operations Nigel Gosse said transferring best practice skills and knowledge to future Merino industry participants is important for the industry's future.

"The competition was strong, and it was encouraging to see the energy and enthusiasm of the students as they developed their knowledge and learnt new skills. It was also rewarding to see the event giving young people an understanding of the career opportunities within the sheep and wool industries," Nigel said.

AWI thanks the partners of the 2019 NMC: Royal Agricultural Society of NSW, Australian Association of Stud Merino Breeders, NSW Stud Merino Breeders' Association, NSW Department of Primary Industry, Australian Wool Education Trust, Fox and Lillie Rural, Techwool Trading, Australian Wool Network (AWN) as well as the dedicated volunteers for their time and expertise.

A supporter of the NMC since 2013, AWN's participation this year also included the provision of a team of five of its young staff members who, while not taking part in competition, were able to increase their practical knowledge and experience of wool.

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MORE INFORMATION
www.wool.com/NMC

CHALLENGE 2019



NMC involves **hands-on learning** under the guidance of wool industry professions. Pictured is Australian Wool Network's NSW wool technical officer and auctioneer **Cassie Baile**.



Students testing their **condition scoring skills** to optimise ewe nutrition.



Students learning shed skills during a **shearing demonstration**.



Careers advisor Charles Impey facilitated a careers session in which students were provided with advice on entering the agricultural sector from a panel of five young professionals already in the industry, from left: **Luke Stephen**, Technical Specialist Sheep Breeding for NSW DPI, based at Armidale; **Stephanie Boyce**, Trainee Wool Buyer at Segard Masurel (Australia) Pty Ltd in Melbourne; Wool Classer **Audra Field** from Mudgee; **Molly Faulk**, AWI Project Coordinator Processing Innovation & Education Extension from Sydney; woolgrower **Alex Wilson** from Crookwell.

2019 NMC: GENERATING INTEREST IN SHEEP

As part of the planning process for the 2019 NMC and to maximise interest in the event, the NMC was promoted at regional workshops, resulting in an increasing number of contacts with schools, colleges and teachers, especially in NSW, Victoria and Tasmania.

Train the Trainer sessions were also held for teachers at ag schools and colleges, to generate renewed interest in Merino sheep while students undertook their studies, and also to ensure the colleges fitted the 2019 NMC into their programs.

Through continued liaison and webinars with the schools and colleges,

AWI has linked training discussions with the commercial sheep environment. This has been helpful in inspiring students, even from non-rural high schools, to consider the place of sheep in agricultural operations.

The use of lifetime ewe concepts, AWI dry feed cards and commercial scenarios of wether lamb and wool markets were well received by young people as it provided clear examples detailing how management decisions can increase production in commercial operations.

By using commercial figures, the workshops were also able to capture the interest of those students less focused on individual enterprises but more interested in the business of agriculture.



Students from 12 schools participating in hands-on activities at an AWI regional workshop held at Hugh and Heather Camerons' The Yanko property at Jerilderie in the Riverina of NSW. Presenting training in this commercial operation gave the students a genuine and practical wool-growing experience. Attending the workshop were more than 120 students from across the Riverina and northern Victoria: Ballarat to Narrandera, Hay to Moama.

NATIONAL MERINO CHALLENGE 2019

THE WINNERS



SECONDARY DIVISION AWARDS



Winner of the Secondary School division **Megan Seis**, pictured with **George Gray** (third place) and **Jed Murnane** (second place).

Champion	Megan Seis, Calrossy Anglican School
Second place	George Gray, Launceston Church Grammar School
Third place	Jed Murnane, Cummins Area School
Champion team	Flinders Christian Community College (Erin Douglas, Cassie Goding, Caitlin Morgan, Kasey Shields)
Top performer in Wool Section	Jed Murnane, Cummins Area School
Top performer in Production Section	Megan Seis, Calrossy Anglican School
Top performer in Breeding Section	Jed Murnane, Cummins Area School

TERTIARY DIVISION AWARDS



Winner of the Tertiary division **Pat Crawley** (right), pictured with **Matthew McCauley** and **Mitch Rubie** (joint second place).

Champion	Pat Crawley, Charles Sturt University
Second place (joint)	Mitch Rubie, Charles Sturt University
Second place (joint)	Matthew McCauley, University of New England
Champion team	Charles Sturt University (Pat Crawley, Mitch Rubie, Kayla Kopp, Karissa de Belle)
Top performer in Wool Section	Matthew McCauley, University of New England
Top performer in Production Section	Florance McGufficke, University of New England
Top performer in Breeding Section	Pat Crawley, Charles Sturt University

"THE NATIONAL MERINO CHALLENGE IS AN AMAZING EVENT TO ATTEND."

Megan Seis, Calrossy Anglican School

Megan Seis from Calrossy Anglican School at Tamworth in NSW was the overall winner of the Secondary School division. Megan is from a mixed sheep-cropping property near Dunedoo in NSW where she established a love for sheep and the wool they produce.

"I have since a young age taken an interest in the running of the farm and always been eager to get out mustering or working in the yards with Mum and Dad," she said.

In preparation for the NMC, she was able to spend some quality time with her father, assessing and classing their own sheep for their own breeding objective, as well as with wool broker Don Chad where she learnt a lot about wool after it leaves the farm.

"I really enjoyed the whole experience of the National Merino Challenge," Megan said.

"The weekend itself contained some really valuable practical activities to test our knowledge of a variety of aspects involved in producing a high-quality wool product which all married really well together.

"Everyone who ran sessions and helped run the event all had a unique and interesting story of how the wool industry has influenced them and how they came to be in the industry which was really interesting to hear about, and really opened my eyes to the multitude of career opportunities that exist within the industry.

"One of the reasons I enjoyed the weekend so much was that everyone was really open and helpful with advice, suggestions and encouragement to move into a career in the sheep and wool industry.

"I would 100% recommend this as an amazing

event to attend for anyone interested in wool or anything about the production of this fibre. It has really confirmed my passion for the industry; it has given me some options for where I would like to head in the future and some contacts to help me get there."

Megan said she is hoping to study a Bachelor of Veterinary Science to become a large animal veterinarian, then eventually specialise in sheep genetics.

"I want to assist farmers in ensuring they have access to technologies such as AI and ET to help maximise the production of their breeding flock. I would also like to move back to the family farm and help to continue to improve our own breeding flock in years to come."

B

MORE INFORMATION

www.awinmc.com.au for full results and images.

YOUNG SHEARERS TO CHAMPION THE WOOL INDUSTRY

Two young shearers are the latest crop of enthusiastic Young Farming Champions, sponsored by AWI, who will actively promote the wool industry to the public and to students who might have never before considered a career in agriculture.

The Young Farming Champion program continues to create an Australia-wide network of enthusiastic youth ambassadors to promote Australian agriculture as a dynamic, innovative, rewarding and vibrant industry.

AWI has been involved in the program, run by Picture You in Agriculture, since 2012 and has now sponsored 23 Young Farming Champions during this time. They actively engage with the public and school students, spreading their passion for wool, bridging the rural-urban divide, and inspiring the next generation of youngsters to consider a career in the wool industry.

The two new wool industry Young Farming Champions are 23-year-old shearer Tom Squires from Tasmania and 27-year-old Matt Cumming who owns and operates a shearing contracting business in Inverell in northern NSW.

TOM SQUIRES

Tom grew up around sheep in Tasmania. When he was 16, Tom's father let him buy his very own mob of sheep: ten Merino ewes and one Merino ram. He remembers the initial stress of ownership but the unease quickly disappeared when he shored them for the first time.

"The smell of lanolin in the air and the fleeces floating onto the table. It was that moment I realised there's more to farming than money. There's that sense of achievement in seeing a fleece being packed into a bale, knowing someone will benefit from what you produced," Tom said.

After year 12, he worked around the shearing sheds, which was a brilliant opportunity to travel to other farming operations and gain skills in the wool industry. To grow his knowledge in agriculture, he travelled to New Zealand to complete a Bachelor of Agricultural Commerce, but he is now back



Tom Squires and Matt Cumming are the first shearers to become AWI-supported Young Farming Champions, which adds a new dimension to the youth ambassador program. *PHOTO: Forbes Corby*

in his home state living his dream job as a shearer and a farmer.

Tom wants consumers to understand the entire wool supply chain and to realise the true pride farmers have for their produce. "It's a long road to this destination but I want to be a part of the change: one voice, one education, one person at a time."

MATT CUMMING

Matt is a 5th generation shearer and says he was always destined to work in the wool industry. "One of my favourite earliest memories is of going to work with my grandfather, being keen to take part in the action, sliding down the sheep chute at any given chance," Matt said.

He went shearing full time when he was 20 and three years later started CMAT Contracting, a full contract shearing, wool press and labour hire service which operates throughout northern NSW and south western Queensland.

Matt employees a core team of six under the age of thirty and is very proud of his team for their workmanship and the pride they take in their work. He is very passionate about the wool industry including competition

shearing and wool handling events – he not only sponsors and competes in them himself, but he also encourages his team to do so as well.

"I take pride in my small contribution within the Australian wool industry; Australian wool has the reputation of being a high-quality product, and as such it demands a high-quality shearing and wool clip preparation," Matt said.

"I want to continue to be an advocate for professional standards within the sheep and wool industry. I encourage all to try our industry, as it can be very rewarding."

Tom and Matt will participate in the Young Farming Champions leadership development program, a two-year package of support including media training, networking and mentorship opportunities to help them share their stories with the nation.

In the first twelve months they will attend two immersion workshops and in their second year will visit schools as part of The Archibull Prize to raise awareness of the wool industry and the diversity of agricultural careers.

MORE INFORMATION
www.wool.com/yfc

RAMPING UP REPRO WORKSHOP

At one of AWI's RAMPing Up Repro workshops held in June, students from Marcus Oldham agricultural college in Geelong learnt the skills needed to improve ram health, performance and longevity in sheep breeding enterprises.



Students from **Marcus Oldham College** on a RAMPing up Repro workshop held in June at Lal Lal Estate near Ballarat, Victoria.

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 two years ago developed the RAMPing Up Repro workshop. The half-day workshop is available across the country via AWI's state networks, in conjunction with leading deliverers.

RAMPing Up Repro is a hands-on workshop focussed on improving ram performance and working longevity in commercial sheep enterprises. The workshop is designed to increase skills across the key components that impact on enterprise performance, including anatomy, physiology, spermatogenesis, metabolic demands, health, disease and biosecurity and the financial impact of the ram team.

WORKSHOP FOR MARCUS OLDHAM STUDENTS

While the workshop is primarily aimed at producers already working on wool-growing properties, students enrolled in a Bachelor of Business (Agriculture) at Marcus Oldham College had the opportunity in June to attend a specially organised workshop run for them at Lal Lal Estate near Ballarat.

Marcus Oldham lecturer in Livestock Production and Management, Matt Robertson, said there were 34 keen students in attendance from a range of rural backgrounds.

"The majority are from beef, sheep and cropping properties from around Australia. Most, if not all, have had some experience with sheep and wool and are always eager



to find out more of the detailed aspects," Matt said.

"The students were looking forward to the workshop, in particular doing an industry-based workshop that will be applicable to them on their own sheep properties. They were looking forward to meeting the Zoetis crew and the sheep vets."

A PRACTICAL AND HANDS-ON EXPERIENCE

Matt said the practical aspect of the workshop was excellent, especially having access to the veterinary professionals in the field.

"The hands-on approach was critical to the workshop. It kept the students interested and engaged. 'Learning by doing' is a great way of learning; there is only so much that can be conveyed or demonstrated in the classroom. Working with experienced, industry veterinarians was invaluable to our students. They could answer questions thrown at them as well answer the obscure anatomical questions.

"The students now have a good understanding of the critical aspects of ram

reproductive health and hopefully they will implement their learnings on farm at home or any sheep business they work on."

Student Richard Watts from Western Australia said he loved the hands-on nature of the workshop.

"I learnt a lot about the anatomy of the animal which gave me a greater appreciation for how to monitor, handle and care for the animal. The skills I learnt will be very helpful – I have already talked about them with my parents who run our family farm," Richard said.

Student Jim Conn, whose family own a beef property on Flinders Island in Tasmania, said the skills would be very useful if he ever pursues a career in the sheep industry.

"I found the workshop very informative, practical and worthwhile. Putting the methods into practice is always easier to remember rather than theory. There were lots of points learnt that can be put back into beef."

Hosted by the manager of Lal Lal Estate, Patrick Hyland, and organised by AWI's state network in Victoria, BestWool/BestLamb, this RAMPing Up Repro workshop was delivered by Helen McGregor of Redefining Agriculture and Monica Dickson of Ballarat Sheep Veterinary Services.

RAMPing Up Repro workshops complement AWI's **Picking Performer Ewes** and **Winning With Weaners** workshops that all aim to help woolgrowers identify key practical actions for their enterprises to implement on-farm to achieve improved productivity – see www.wool.com/workshops. **B**

MORE INFORMATION

Read the RAMPing Up Repro fact sheet at www.wool.com/workshops. For more information on upcoming RAMPing Up Repro and other workshops in your area, contact your AWI state network coordinator – see page 46

OVINE BRUCELLOSIS

Ovine Brucellosis (OB) is an infectious bacterial disease which causes infertility in infected rams, leading to considerable economic loss through ram wastage, low lamb marking percentages and drawn-out lambing seasons, and in some flocks, abortion in a small percentage of ewes. As infected rams generally do not show any outward signs of ill health,

abnormalities will only be detected by scrotal palpation or blood testing by your veterinarian. There is no vaccine or other preventive treatment available and infected rams cannot be cured, so ensure your property is free of OB by purchasing rams from an OB accredited flock. Details for each state are available at www.animalhealthaustralia.com.au/ovine-brucellosis

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Woolgrower **Ben Banks** from Blackall, Queensland

SCANNING KEY TO INCREASE IN FLOCK FERTILITY

Blackall wool producer Ben Banks believes introducing a pregnancy-scanning program is an investment that can lift flock fertility by 10 to 15 per cent annually and help fine-tune ewe management.

Ben Banks and his wife Oona manage a 46,500 hectare family property, 'Rivington', west of Blackall, where they run 25,000 Merinos when the season permits.

For close to a decade the couple have also operated a contract pregnancy-scanning business, processing around 100,000 head of sheep annually.

With buoyant wool prices and growing industry optimism thanks to wild dog fencing, Ben said breeding flocks were becoming increasingly valuable.

"Improving the fertility and productivity of your own flock is the most cost-effective way to boost your sheep numbers," said Ben.

The western Queensland producer said he had used pregnancy scanning as an integral part of his own operation in recent years to lift production and in turn bolster profitability.

"I think scanning is one of the most under-utilised resources especially in central-western Queensland, where there is so much potential for improving management of pregnant ewes," he said.

"The information from scanning can assist you to make more informed decisions when to management. Central-western Queensland is a harsh pastoral environment, but by

identifying pregnancy status, we can tailor nutrition and husbandry management programs so we end up marking more lambs."

He said pregnancy scanning also allowed producers to draft ewes into mobs of multiple or single bearing ewes, as well as culling infertile animals, which improved flock efficiency and ensured feed was being utilised by the most productive animals.

"Twinning ewes can be run in smaller mobs and fed to meet their extra nutritional requirements. Alternatively, if you opt to sell a scanned-in-lamb ewe they generally make around \$20 a head more than a station-mated female," Ben said.

"Meanwhile single ewes can be run in larger mobs and dry ewes can be run like wethers or sold."

Within his own operation, Ben said he had become increasingly focused on scanning for multiple pregnancies, so more productive ewes were managed effectively to ensure they delivered lambs on the ground.

"Since we started scanning every year, we have been able to improve our flock's fertility, because we know what our ewes are really producing," he said.

"For example, when we first started scanning at Rivington, in the initial year we

TOP 5 BENEFITS OF PREGNANCY SCANNING

1. Powerful measurement, management and forecasting tool
2. Early identification of fertility or other health issues impacting your flock's productivity
3. Allows you to manage the nutrition requirements of single and twin-bearing ewes to maximise lamb survivability
4. Can help identify possible diseases in your ram team that may be affecting fertility
5. Producers should examine flock nutrition, possible diseases and their ram team management to help identify any fertility issues highlighted by pregnancy scanning.

found we had about 75 per cent of ewes in lamb, so we were able to identify and cull infertile females.

"The following year we did the same thing, and by keeping the productive ewes and culling the non-performers we were able to lift our average to around 85 to 90 per cent scanned-in-lamb."

He said in real terms introducing a regular pregnancy-scanning program allowed him to lift flock fertility by 10 to 15 per cent within one year.

"This is something that other producers could also do, because essentially it is about having more information to make better-informed management decisions," Ben said.

"Regardless of mob size, that sort of improvement, in terms of knowing what ewes are fertile and what they are producing for you, can make a significant difference to your bank balance at the end of the day.

"To me it makes sense to know what your ewes are doing and while it might cost 60 cents per head, the benefit is you increase the number of lambs on the ground each season and you are better able to prepare for the lambing season.

"I think everyone should get into it and make more out of your sheep. You've got to make every single animal count and they're worth so much money now that spending a few extra cents on scanning them is worth it."

AWI's Lifetime Ewe Management course provides skills in condition scoring, pasture assessment and best practice ewe and lamb management to increase wool production, stocking rate and reproduction efficiency, mainly through better matching nutrition to ewe requirements and reducing ewe and lamb mortality. For information about the course, visit www.rist.edu.au/lifetime-ewe-management or call 1800 883 343.

DATA UNDERPINS FLOCK SCORECARD

Having the ability to assess the pregnancy status of ewes is a key tool for sheep and wool producers to not only help inform management decisions, but also create their own flock scorecard and identify any problems early.

That's according to Western Rivers Veterinary Group partner, Dr Tim Gole, who undertakes flock pregnancy scanning for clients in Queensland and NSW.

"An important question from producers is 'what is a "normal" lamb marking result and how do you know if there is a fertility or other health issue impacting your flock's productivity?'," Dr Gole said.

"Pregnancy scanning is essential to answering this question and I think of it as a measurement, management and forecasting tool.

"Scanning data is important because if you've got great conception rates but a poor lamb marking result, you can quickly work out where the losses are occurring. This gives you a very different insight to just putting the rams in with the ewes and waiting until lamb marking to see the result.

"The main benefit of scanning is the ability to identify the pregnancy status of ewes and allocating nutritional resources efficiently according to need.

"Identifying the pregnancy status of ewes is a powerful management tool as it allows you to put in place measures to influence lamb survivability, which is directly related to birthweight and in turn, ewe nutrition. This is particularly important for twin-bearing ewes.

"Every producer should be undertaking condition scoring at scanning time. It's easily learnt and producers can undertake this themselves giving very cost-effective data collection.

"If a twin-bearing ewe's condition score is 2, her lamb survivability is likely to be quite low at under 50 per cent. However, if you take her up to a score 3, you can increase lamb survivability rates to well over 60 per cent.

"Single-bearing ewes in condition score 2 are likely to achieve lamb survival of around 70 per cent, but this can increase to around 90 per cent by increasing condition score to 3.

"Identifying your twin-bearing ewes and matching nutrition to their requirements is the best return on investment for feeding or pasture management."

CONTROL THE CONTROLLABLE

Dr Gole said the best time to undertake pregnancy scanning is 90 days after the rams go in. This gives the most accuracy as the oldest lambs are about the size of a can - any bigger and the soundwaves can't see if there is more than one lamb.

"Knowing the pregnancy status of a flock is an effective risk management tool because if you've had a really poor joining, it's better to know 90 days after the rams went in than 150 or 170 days after," Dr Gole said.

"If you get a poor scanning result, you can work your way back from scanning to assess the likely impacting factors.

"There are a number of factors to consider, and the first should be condition score. Comparing the score of each ewe at scanning to their score at joining can yield valuable insights.

"Producers should also look at nutrition because there's a direct correlation between nutrition and conception rates.

"External factors can also play a role, so review the calendar and examine climatic conditions at joining, particularly heat."

Dr Gole said producers should also look at their ram team and investigate any possible diseases that can impact fertility, such as ovine brucellosis.

Pre-joining ram examinations should be undertaken 12 weeks before joining. If

producers are achieving good scanning results but a low lamb marking result, disease testing can be undertaken.

Key diseases behind lamb losses and late abortions can include ovine vibriosis, a campylobacter infection; toxoplasmosis, which is associated with feral cats; and pestivirus.

SETTING BENCHMARKS

Dr Gole said scanning data helps producers set their own benchmarks.

"When you start generating data from your own flock it's always a challenge, particularly for wool producers, to identify what's normal for your flock," Dr Gole said.

"You've got the classic rubber band - there's reproductive performance on one side and wool production on the other. If you select constantly for heavy wool cutting sheep, it sometimes comes at the expense of reproductive performance.

"That's why I think generating your own results is beneficial because it allows you to compare like with like and set benchmarks.

"At scanning time, you can look to budget and do cost-benefit analysis and see where big gains can be made.

"There were studies done at Trangie Agricultural Research Centre that found a massive difference between the top 25 per cent and bottom 25 per cent in terms of your flock, and the big difference came in the number of lambs reared as wool production remained relatively stable. The research found a \$436 difference in lifetime value, with most of that figure based on net reproduction rates.

"For the data it gives you, it's rewarding. There has been some really big uptake of pregnancy-scanning programs in western NSW, because lamb production as sale of offspring makes up such a significant proportion of income now."

The two articles on this double page spread were originally published in 'Flock Talk', a publication by Leading Sheep, AWI's grower extension network in Queensland.



Dr Tim Gole, Western Rivers Veterinary Group, teaching vet student Andrew Pegg about scanning.

CROPS, RUMPS AND WOOLLY JUMPERS

Meet three southern NSW farmers that we've been tracking for more than four years – and learn how sheep are adding notable value to their mixed farming enterprises.

Three mixed farmers from southern NSW feature in a new video series 'Crops, Rumps and Woolly Jumpers' examining the challenges and benefits of adding sheep to their farming enterprises.

The short film series was launched by AWI's grower network Sheep Connect NSW in front of 180 farmers and researchers at the Graham Centre for Agricultural Innovation's Livestock Forum in Wagga Wagga in July. The series is a collaboration between Sheep Connect NSW, the Graham Centre and the NSW Department of Primary Industries. This is the second 'Crops, Rumps and Woolly Jumpers' series; the first series was released in 2012.



Re-introducing sheep to their mixed-farming enterprise was a daunting prospect for Culcairn-based farmer Murray Scholz but the decision has reduced risk, increased profits and helped their cropping enterprise to be more sustainable.

MURRAY AND EMMA SCHOLZ, CULCAIRN

“If you'd asked me about sheep five years ago, I would have said they were hard work and wouldn't fit within our farming system,” Murray said. “But in 2014 we began considering if sheep could add value to our existing dryland cropping and beef enterprise by allowing for winter crop grazing and providing another option to help control herbicide resistant ryegrass.”

Murray said the decision was carefully considered with a clear set of goals in mind.

“We made the decision that if we were going to go into sheep we were going to do it properly. The new enterprise needed to fit into our existing operations without causing compromises that would have an impact on total farm profitability.”

“An important thing that we've found very useful has been doing an AWI Lifetime Ewe Management course and it's been extremely

helpful for us to learn about exactly how the sheep system works and for condition score information.

“Importantly we made the decision to invest in a new set of sheep yards knowing that poor infrastructure makes tasks difficult, and that was something we didn't want in this new enterprise.”

Mr Scholz said the farming mix has evolved over time to include more lucerne and grazing crops, narrower row spacing, and more recently the use of cover crops.

“Making a change can mean stepping out of a comfort zone and adding challenges to the decision making. But in our experience, incorporating a sheep enterprise has been very successful and we have found more synergies between cropping and sheep than between cropping and cattle.”

RUPERT AND CLARE MCLAREN, BARMEDMAN

Barmedman farmer Rupert McLaren, who with his wife Clare runs a little over five thousand Merino wethers and crops about two thousand hectares of mainly wheat and canola, says in the years from 2012-16 they almost doubled the number of sheep in their family farming operation.

“We've gone from being almost continuous cropping 90% of the enterprise, to 70% cropping and 30% livestock. We had to change our enterprise because we hit a wall and we could no longer control the weeds in our cropping, whereas the sheep provided stability and have recently proved to be very financially rewarding,” says Rupert.

“Over the 2012-16 period, the cropping areas have remained static but the sheep numbers have almost doubled and the area under-sown with the view to going out to pasture has almost tripled.

“I've grown to love my Merino wethers. They are simple to run, they fit into my enterprise and they are as tough as old boots. It suits our overall operation because we have multiple enterprises and they have to link together.”

The McLarens have started to invest a lot more in their sheep enterprise: fencing, yards, but the big-ticket item has been a new shearing shed. “I wouldn't regard that it is a luxury, I would regard that as a prudent business investment,” Rupert said.

Clare says that cost control is something that's very much ongoing, because you can't control anything else essentially.



“Farmers are always at the mercy of the elements. You don't know what your yields are going to be, you don't know what the price at harvest is going to be, but as you're going along through the year you know how much you can spend so you've just got to keep focused on costs.”



ANDREW AND MANDI BOUFFLER, LOCKHART

Andrew Bouffler places great importance on new technology in their sheep enterprise and has redesigned their Merino ewes to make them a better, dual purpose, maternal type of animal.

“We’re still a mixed farming business in that we’re about 50/50 land use between pastures or livestock and the cropping component. But we get contractors in to do the cropping part and we specialise in the sheep breeding part of the deal,” Andrew said.

Andrew did an AWI-funded Nuffield scholarship ten years ago and the results of his studies sent him in the direction of trying to breed a dual purpose maternal type of a Merino sheep.

“Four years ago I started on a journey to really put those traits into our breeding objectives. Now we’re seeing the result of that breeding program actually express itself, and there’s been a marked change in the type of sheep that we’re breeding.

“It was just fortunate at that time some pretty handy research was coming through with regards to building those maternal traits of more fat, more muscle and more growth into the ewe. It’s really just breeding that ewe a bigger fuel tank, a bigger capacity, a bigger reserve so that you can grow that wool and raise those lambs well.”

Andrew has introduced six months shearing. He says shearing costs cancel out the gain from the extra wool being cut. So why does he do it?

“It’s once again this maternal behaviour. Now we’ve got the great opportunity that we can join and lamb about six weeks off shears and that is when sheep are just absolutely doing their best. It’s one of the greatest management things we have introduced, along with using Wedgetail wheat, that has transformed what we do more than anything.” **E**

MORE INFORMATION

Both the 2012 and the new video series are available on the YouTube channel of Sheep Connect NSW. Note: the footage for the current series was recorded in 2016 after a run of favourable seasons; since this time, farmers across NSW have experienced a period of significant drought.

BREEDING LEADERSHIP APPLICATIONS OPEN



Participants at the 2018 Breeding Leadership course at Clare in South Australia.

Applications are now open to young woolgrowers from across the country to join AWI’s 2020 Breeding Leadership course in Clare, South Australia, aimed at helping foster the next generation of leaders within the wool industry.

If you are passionate about your industry and want to develop your skills to make a difference in the future, AWI’s Breeding Leadership professional development course is for you!

Breeding Leadership is designed for anyone 25 to 35 years old currently working in agriculture with a focus on the wool industry. Held every two years, the course is next being held from Sunday 9th to Friday 14th February 2020 in Clare, South Australia.

It is an excellent opportunity to network with more than 20 like-minded people from across Australia. Participants will get the opportunity to learn from skilled deliverers and be trained in areas such as people management, corporate governance, strategic planning and time management. The week’s events involve a mix of both classroom and field-work and, as well as excursions to stud and commercial operations, there will be an exposure to a variety of non-woolgrowing enterprises.

At the end of the course, participants will

have developed foundation leadership skills that will enable them to become enthusiastic, influential, dynamic and dedicated leaders within the wool industry and their local community.

More than 150 young Australians have attended the course to date, with many previous participants now holding leadership positions within business and industry.

Breeding Leadership was established in 2002 by the South Australian Stud Merino Breeders Association and became a national program through the Australian Association of Stud Merino Breeders in 2004. Since 2012, AWI has funded the course.

Participants are required to pay a course fee of \$420 (GST inclusive) which contributes to the cost of the program.

Applications close on Wednesday 30th October. **E**

MORE INFORMATION

The application form is available at www.wool.com/breedingleadership

COORDINATION TACKLING WILD DOGS AND PIGS

Wild dog management groups are turning traditional pest management on its head by taking an integrated multiple pest species approach to tackle feral pigs as well as wild dogs.

The new Western Snowy Wild Dog and Pig Control Group, which covers almost 114,000ha of some of Eastern Victoria's most remote farming land and wilderness, is the latest AWI-funded group of land managers to tackle not only wild dogs but feral pigs as well.

Department of Environment, Land, Water and Planning's AWI-funded Community Wild Dog Control Coordinator for Gippsland, Brian Dowley, said a rapid increase in wild dog impacts and new incursions of feral pigs reported by producers from north of Gelantipy and Wulgulmerang, to south of Buchan and Nowa Nowa, had necessitated the Western Snowy group's new focus.

"At the southern end of the group's range near Nowa Nowa, more than 40 dogs have been controlled in the past couple of months," he said. "I believe that, due to the drought, they're coming out of the coastal zone into bordering grazing areas.

"Feral pigs have always been a significant issue in Victoria but we're seeing their populations increase and spread from Buchan north west towards Gelantipy, Suggan Buggan and into Omeo Valley.

"Our work strengthening the links between public land managers and producers, to implement coordinated wild dog and pig control programs, has never been more important."

Pigs are a major factor in the spread of pests and diseases on farms, pose a threat to sheep flocks during lambing, cause pasture damage and undermine wild dog control efforts by destroying fences and consuming baits intended for wild dogs and foxes that have little effect on feral pigs.

In NSW, this multi-pronged strategy to more effectively manage invasive pests was embraced last year when a new wild dog and pig control group formed at Ashford, in the Northern Tablelands.

Established by AWI's North East NSW Wild Dog Facilitator Dave Worsley, the group involves about 40 producers managing about 160,000ha. It cooperates with two more neighbouring wild dog management groups, Nullamanna Wellingrove to Inverell's north and Atholwood, north of Ashford.

"It was essential for us all to work together to ensure we managed the problem and didn't just move it somewhere else," Dave said.

The approach is so successful more producers



Feral pigs can have a devastating effect on lamb marking percentages, but there are control techniques available which can be effective. Photo: Steve Maxwell, supplied by CISS

have been keen to come on board with yet another new Northern Tablelands group being formed at Ashton, filling a pest control gap between Ashford, Emmaville and Mingoola.

"We had 13 producers attend our first meeting and when they actually sat down and shared their stock losses and experiences, they were quite startled at the whole picture," Dave said.

"Wild dogs had attacked or killed more than 100 sheep this year and one producer had lost more than 60 which, on top of the drought, had been very stressful.

"Our work strengthening the links between public land managers and producers, to implement coordinated wild dog and pig control programs, has never been more important."

Brian Dowley, AWI-funded Community Wild Dog Control Coordinator, Gippsland

"Predation was clearly widespread but because of distance and lack of communication, people weren't aware others were going through the same thing."

Dave said these producers were already proactive, baiting on their properties but would benefit enormously by being able to coordinate efforts with neighbours and from using FeralScan, an online suite of reporting and recording tools used to inform control strategies.

National Wild Dog Management Coordinator Greg Mifsud said the National Wild Dog Action Plan (NWDAP) provides a framework that enables groups to navigate "often hugely conflicting and emotional issues" to implement best practice wild dog

management strategies, enabling them to work collaboratively and effectively across landscapes.

"As wild dog issues are becoming manageable within these groups, the relationships established between group members, land managers and government agencies provides them with the confidence to use the NWDAP framework to tackle other pests," Greg said.

"We're seeing this unfold across Victoria and NSW and, as groups in other states mature, we'll see more integrated multiple pest management programs emerge."

AWI Vertebrate Pests program manager Ian Evans added: "Without action now, when the drought breaks, feral populations including pigs, rabbits, deer and mice, could explode. So the more we can reduce the populations during the drought, the smaller the base they grow from and the longer it takes for a feral population to begin to cause damage to agricultural production systems, the environment and native species in particular."

MORE INFORMATION:

For more on how to tackle feral pigs, visit www.pestsmart.org.au/pest-animal-species/feral-pig



Community members discussing the plan for the new Western Snowy Wild Dog and Pig Control Group.

EXTENSION TO WA EXCLUSION FENCE BEGINS

With key equipment provided by AWI, work is under way on the 660km Esperance extension to WA's State Barrier Fence to help prevent wild dogs from moving into the state's agricultural areas from the north-east.



The AWI-funded Caterpillar skid steer loader with a hydraulic rock hammer used for installing fence strainers. Pictured are AWI director **David Webster**, SBF manager **Craig Robins** (obscured, driving the bobcat), SBF maintenance **Paul Clune**, WA Agriculture and Food Minister **Alannah MacTiernan**, WA Wild Dog Action Plan project manager **Matthew Stadler**, DIRPD Invasive Species director **Victoria Aitken** and AWI Vertebrate Pests program manager **Ian Evans**.

The WA Department of Primary Industries and Regional Development (DPIRD) in May commenced the extension of the State Barrier Fence (SBF), that will go east from its current end near Jerdacuttup, then north around Salmon Gums to terminate east of Esperance near Cape Arid National Park.

This extension will complete fencing that already stretches from north of Kalbarri. It will help protect farming properties from wild dogs entering the state's agricultural region in the south, from the rangelands.

DPIRD is coordinating the construction of the 1.35-metre-high fence, after final environmental approval was granted in April. Construction is expected to take two-and-a-half years to complete.

"The fence will bring confidence back into the livestock industry and it's good news for the Merino industry."

Scott Pickering
President of the Stud Merino Breeders' Association of WA and Chairman of the Esperance Biosecurity Association

The State government has contributed \$6.9 million, the Federal government \$1.955 million, while the Esperance Shire allocated \$1.5 million in kind for grid construction and the Ravensthorpe Shire gave \$280,000. AWI has provided its specialised Caterpillar fencing machine suitable for the terrain. The unit, worth about \$205,000, will be managed under a lease arrangement by the SBF unit of DIRPD.

"We have seen State Government work with industry, Federal and local governments to provide a funded fencing solution so farmers can take advantage of booming sheep meat and wool prices," said WA Agriculture and Food Minister, Alannah MacTiernan.

"This project forms part of a strategic

approach through the WA Wild Dog Action Plan, to support industry and landholders to manage wild dogs in agricultural and pastoral areas of WA."

AWI-FUNDED EXCLUSION CONSTRUCTION FENCING UNIT IN WA

The exclusion fencing construction unit (EFCU) includes a loader, hydraulic rock hammer for driving in strainers and fast fencer.

"A completed Esperance extension will provide confidence for the sheep industry for new investment, increased wool production, regional jobs and economic growth," AWI Vertebrate Pests program manager Ian Evans said.

This state-of-the-art fencing machinery will enable stronger fence strainers to be used, greater distance between fence strainers and 500 metre fence rolls to be safely rolled out. The Caterpillar loader is capable of completing five to six kilometres a day on a clear site, but that distance will vary depending on the path it travels.

"More than 90% of the sheep in WA are behind the fence, and WA now has a golden opportunity to get rid of those wild dogs within the fence, as long as there is good support from the farming community.

"It's not going to be easy, but if the Recognised Biosecurity Groups (RBGs) have a good two to three years of 90% participation by landholders, they could eradicate the wild dogs."

The provision of the EFCU by AWI for this WA project complements the provision of another AWI-funded EFCU that has been operating in Queensland for more than 2½ years.

The collaboration in WA supported two DPIRD staff to visit Queensland, assess and bring back innovations in barrier fencing technology which could be adapted to WA conditions and maximise the efficiency of this large fencing project.

DIRPD Invasive Species director Victoria Aitken said the equipment was on site and being used.

"The machinery will enable faster, safer and more cost-effective works to be undertaken. An extended and enhanced State Barrier Fence will support Recognised Biosecurity Groups and farmers in targeting their efforts against wild dogs," Ms Aitken said.

President of the Stud Merino Breeders' Association of WA and Chairman of the Esperance Biosecurity Association, Scott Pickering, took part in the unveiling ceremony in May and said the fence will have a positive effect on woolgrowers in the region.

"The fence will bring confidence back into the livestock industry and it's good news for the Merino industry," Mr Pickering said.

AWI-FUNDED EFCU IN QUEENSLAND

The AWI-funded EFCU in Queensland has continued to be based with Longreach Regional Council (LRC) and has been used by woolgrowers in the Central West of Queensland at a minimal cost thanks to a grant from AWI and management by LRC.

LRC has informed AWI that an estimated 70% of the potential exclusion fencing is now complete and demand for the unit has declined significantly. As a result, AWI is evaluating requests for access to this equipment from South Australia for replacement of the SA Dog Fence and from NSW for extensions to the NSW Border Wild Dog Exclusion Fence.

MERINO LIFETIME PRODUCTIVITY PROJECT UPDATE



MLP FAST FACTS

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

The highly successful MLP field days held in the first half of 2019 showcased the project ewes and their early results. MLP field days are open to the wool industry and provide the opportunity to receive the latest project results, network with other Merino enthusiasts and talk with project team members.

The display of the project ewes is always of great interest to attendees who take the opportunity to undertake their own hands-on inspection. Ewes have been generally penned in their sire progeny groups with accompanying wool and carcase results.

Sires in the MLP project have been specifically selected in order to generate ewe progeny that are both industry relevant and representative. The sires were chosen at each site to include a range of Merino types, skin types, performance, age, horn status, industry usage and breeding philosophies. This diversity of genetics means the drivers of lifetime productivity can be fully

explored, along with any trade-offs between production elements. Introduction to each sire at the field days is important and enables attendees to appreciate where that sire fits in with the objectives of the project.

An introduction of each sire is held next to the pen of his progeny at each MLP field day with presenters outlining the reason the ram is being researched, as well as running through the results on display and progeny group observations shared by one of the site classers. This process has received overwhelming positive feedback from field day attendees.

MACQUARIE - SHOWCASING SIRE BY EWEE TYPE INTERACTION

The July field day at the Macquarie site was the first public inspection of the 2018 drop progeny with each sire's progeny group

FIELD DAY SNAPSHOT

- The Macquarie and New England MLP sites recently hosted field days, following a March field day at Temora hosted by MerinoLink, and a project showcase at Balmoral's February Sire Evaluation Field Day.
- 2,700 ewes penned across the sites and available for hands-on inspection.
- 59 progeny groups displayed: 16 at Macquarie, 30 at New England and 13 at Temora.
- 59 sires introduced pen-side with accompanying project results.
- With additional displays by reproduction results and sire x ewe type.
- 450 woolgrower and industry attendees.
- Upcoming field day: Pingelly WA, 25 October.

PEN-SIDE SIRE INTRODUCTIONS



Ben Swain, AMSEA Executive Officer in the pens at New England, June 2019.



Site classer Chris Bowman on the microphone at Macquarie, July 2019.



Ben Swain, AMSEA Executive Officer (far right) at Macquarie, July 2019.



MLP project F1 ewes returning to the paddock in dry conditions following the New England field day, June 2019.

2018 Drop F1 ewes in the paddock after being on display at the Macquarie field day, July 2019.

additionally split into the two ewe types used in the trial. Macquarie’s field day was hosted by the Macquarie Sire Evaluation Association and NSW DPI at the Trangie Agricultural Research Centre (TARC).

Macquarie Sire Evaluation Association site chairman David Greig outlined the background to the ewe base.

“The base ewes for the site were sourced from the commercial clients of two bloodlines. One ewe base was sourced from large framed, heavy cutting Merino flocks that averaged between 20.5 and 21.5µm, whilst the other was sourced from all purpose Merino flocks which averaged between 18.0 and 18.5µm.”

“The ewes from these two bloodlines were equally allocated to each sire,” David explained.

Chris Bowman, the professional classer, at the Macquarie site commented during the

pen-side sire introductions that some sires had clicked better with one type of ewe compared to the other.

“There were a couple of very productive skin type sires that clearly showed how important it is to consider the ewe type when you are making joining decisions,” Chris said.

“The progeny from the heavier skin type sires over the plainer, longer stapled ewe type produced a much better result, and vice versa. Stud masters, in general, understand this when considering skin type (productive supple skins vs plainer, flatter skins) when making joining decisions.”

NEW ENGLAND - TRENDS AND CHANGES TO CLASSER’S GRADE

The New England’s June MLP field day hosted by the New England Merino Sire

Evaluation Association and CSIRO, was run in conjunction with the MerinoLink conference. Both the 2018 and 2017 drop ewes were on display in an extensive penning of 30 progeny sire groups.

The field day featured the second year of classing results for the 2017 drop. The Classer’s Visual Grade results in Table 1 below shows some sires of the 2017 drop achieving a consistently good classing performance across both years, whilst others have had dramatic improvements from their yearling (Y) to adult (A2) classing.

Jock McLaren, MLP sire entrant and AMSEA Chairman, attended both the New England and Macquarie field days.

“The presentation of the ewes at the Macquarie and New England sites was a credit to the site hosts, NSW DPI and CSIRO, particularly in these ongoing tough drought conditions. Thanks must go to AWI which has made additional contributions to the feeding costs at all three drought-affected MLP sites,” Jock said.

“I was also really encouraged to see so many young faces at the field days,” added Jock.

“We had a group of students from Farrer Memorial Agricultural High School at the New England field day. They spent time with Angus Carter from Landmark who is one of the classers involved with the site and with Ben Swain from AMSEA learning about the results. That’s a great feature of sire evaluation and the MLP project – these days provide a good balance of information along with a chance to network and ask questions.”

Table 1: New England 2017 Drop Classer’s Visual Grade Results – June 2019

BREEDERS FLOCK, SIRE NUMBER	PROGENY NO	TOPS (%)		CULLS (%)	
		Y	A2	T	A2
Connemara Poll, 140257	51	-11	-7	11	4
Conrayn, MVB123	48	5	-3	-12	0
Cressbrook, 140055	44	2	0	1	7
Egelabra, HEK 1.36	49	-7	3	18	-1
Grindon, 150017	47	-14	-20	13	33
Karori, 140188	54	5	-8	11	1
Miramooona, 140012	40	25	16	-20	-8
Mirani, 120021	59	-9	-12	2	1
Moorundie Poll, NE73	29	10	24	-1	-6
Nerstane, 150073	41	2	11	-11	-8
Petali Poll, 150697	48	4	-3	-14	-15
Trefusis, 150282	57	0	18	2	-7
Trigger Vale Poll, 140477	42	-13	-15	-1	5
West Plains Poll, 110004 (Mercenary)	49	0	-4	1	-4
Yalgoo, 150313	53	-1	2	-1	-2
AVERAGE	47	17	19	23	22

Table 1 is an excerpt from the New England MLP Field Day Report showing the Classer’s Visual Grade results at the Yearling (Y) and Adult2 (A2) stage for the 2017 drop F1 ewe progeny. These results are presented as adjusted sire means and reflect deviations from the overall group average (also shown). Dark blue highlighted cells show trait leaders. This report is available for download via www.wool.com/MLP

MORE INFORMATION
www.wool.com/MLP

FUTURE MLP FIELD DAYS

Western Australian Merino enthusiasts are invited to attend a MLP field day at UWA’s Ridgefield Farm, Pingelly on 25 October. Details will be available via www.wool.com/MLP

AWI GROWER NETWORKS

PRODUCERS LEARNING FROM PRODUCERS

- AWI grower networks are present in each wool-growing state.
- They aim to increase the long-term productivity and profitability of producers.
- All woolgrowers are encouraged to get involved.

AWI-supported extension networks provide opportunities for producers to get involved in practical programs that focus on making positive changes to on-farm production and management practices.

Be involved as little or as much as you like: sign up for newsletters about local issues, attend local field days and workshops.

The networks are fundamental to:

- the spread of new ideas
- continuing education
- the adoption of best practice
- giving AWI a direct link to what is happening on-ground.

Ongoing strong partnerships with state departments of agriculture, private providers and woolgrowers help ensure the grower networks continue to generate increased participation and reported benefits by woolgrowers.



To learn more about the networks and how to get involved, refer to the website of your state network, or contact the network coordinator below.



NEW SOUTH WALES
Coordinator: Megan Rogers
0427 459 891
admin@sheepconnectnsw.com.au
www.sheepconnectnsw.com.au
@sheepconnectnsw
@sheepconnectnsw



TASMANIA
Coordinator: James Tyson
0477 764 072
sheepconnect_tas@wool.com
www.sheepconnecttas.com.au
@sheepconnect



SOUTH AUSTRALIA
Coordinator: Ian McFarland
0437 659 353
ian.mcfarland@sa.gov.au
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WESTERN AUSTRALIA
Coordinator: Andrew Ritchie
(08) 9736 1055
andrew@sheepsback.com.au
www.sheepsback.com.au
@sheepsback
@sheepsback



QUEENSLAND
Coordinator: Andrea McKenzie
(07) 4530 1262
andrea.mckenzie@daf.qld.gov.au
www.leadingsheep.com.au
@leadingssheep



VICTORIA
Coordinator: Lyndon Kubeil
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AWI GROWER NETWORKS PERFORM ABOVE TARGET

All AWI's state-based grower networks are performing well above target with average annual cost saving to the businesses of woolgrowers participating in the networks in 2018/19 being \$3,682.

AWI-supported extension networks continue to provide opportunities for producers to get involved in practical programs that focus on making positive changes to on-farm production and management practices.

Networks are present in each wool-growing state and all woolgrowers are encouraged to get involved – see above for contact details.

The AWI-supported extension networks had another successful year in 2018/19, with nearly 100 events held throughout the year. The satisfaction rating of participants with the events was rated 8.7 out of 10, which is an increase from the previous financial year.

The national average annual cost saving to the businesses of producers participating in the networks in 2018/19 was \$3,682, which was an increase in cost saving of \$764 from 2017/18 and well above AWI's targets.

The events run by the networks cover a broad range of topics applicable to wool-growing enterprises. Not surprisingly, a key focus of events over the past year has been on providing advice on how to manage poor seasonal conditions.

Another key focus has been the rolling out, in conjunction with leading deliverers, of AWI's 'RAMping Up Repro', 'Picking Performer Ewes' and 'Winning With Weaners' workshops. These workshops have been developed to help woolgrowers identify key practical actions to implement on-farm to achieve improved productivity.

Webinars are proving to be an increasing and cost-effective method of communicating with woolgrowers, with recordings of webinars often made available online to those woolgrowers who could not attend the original webinar.

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*Bayer data on file. ^When applied within 24 hours of shearing.

'JUST IN CASE' LICE TREATMENTS: TAKE THE PLUNGE, AND STOP

Many properties have eradicated lice forever and never apply a 'just in case' treatment annually, but some producers are yet to take the plunge.

If there has been no evidence of lice at shearing for a few years, it is time to reconsider whether you need annual treatments.

WHAT DRIVES THE NEED TO TREAT 'JUST IN CASE'?

A common misconception is that if lice are not treated at this shearing, there will be significant fleece damage from lice by next shearing. However, that may not be the case.

If lice are present, but not detectable after carefully examining the most rubbed sheep in the mob, and shearers have not seen them, then lice will be in very low numbers on any sheep. The fewer sheep infested at that time, the longer they will take to spread across the mob and cause damage.

You can use the LiceBoss Long Wool Tool to assess likely cost of fleece damage, based on the number of sheep rubbing.

A second misconception is that a treatment applied at shearing will protect the sheep against re-infestation. While most sheep lice treatments provide a few weeks' protection, they don't have a long residual period effect. Therefore, sheep are not protected for most of the wool-growing year anyway, despite treatment.

SPREAD OF LICE WITH INTRODUCED SHEEP

Often, lice are introduced on just a small number of sheep, such as strays or rams, resulting in a much slower build-up of lice than if a large number of infested sheep are introduced, such as with a mob purchase.

Similarly, the number of lice on each sheep being introduced will affect the rate of build-up across the flock.

A heavy infestation will create a larger base population of lice, which will increase faster than from sheep that have a light, undetectable infestation.

The time of introduction also matters; introductions earlier in the wool-growing year will have longer to build than



Modern lice treatment chemicals are highly effective if applied properly. Viper® backline application, image courtesy of Bayer Animal Health.

recent introductions.

Also consider the likelihood of introductions. While you directly control bought-in sheep, straying generally depends on sheep being on neighbouring properties and the quality of your boundary fencing.

Before a 'just in case' treatment, consider whether introduction of lice has even been likely in the past year, as well as the timing and potential numbers of sheep bringing in lice and their possible level of infestation.

ONGOING LOW-LEVEL LICE INFESTATIONS

Where treatment occurs each year, but doesn't actually eradicate the lice, there are two likely causes:

1. The entire flock was not treated correctly, despite using effective chemicals

When some sheep miss treatment or are poorly treated, lice can remain to re-contaminate the flock. With lice present since this treatment, it is more likely that lice will be detectable at the next shearing. This still may not be causing extensive fleece damage, but should be treated,

with attention to complete musters and thorough application.

2. The product used was not completely effective

Resistance to Synthetic Pyrethroids (SP) is widespread and resistance to the Insect Growth Regulators (IGR) is common. If an SP or IGR has been your recent treatment product, many of the sheep may have a surviving lice population, which is quite likely to be detectable by the next shearing. Consider changing to a known-effective product for your next treatment, combined with complete and effective application, then reconsider annual treatments in the following year. It's also possible that you may have been using these products annually, just in case, with no lice present anyway – you may have eradicated lice years ago.

TAKING THE PLUNGE

Consider taking the plunge away from lice treatment at your next shearing; be ready to treat if lice are found, but prepared not to.

1. Check before shearing

A few weeks before shearing, catch the 10 scruffiest, most rubbed-looking sheep and

liceboss

Tools to help you assess & manage lice in your flock



LAMBING AND LICE A BAD COMBINATION

The Ewe/Lamb Treatment Tool assists you to choose a treatment strategy when lice are found in pregnant ewes or ewes that have lambs at foot. It helps you to find the right products and the right timing for treatment so that lice are not passed between generations after treatment.

You will be asked for your lambing, weaning and shearing times, which are used to establish the best lice eradication program. It allows you to consider multiple scenarios to see which fits best within your farm program.

This tool reminds you of the length of protection period and the time required for all lice to be killed by a product and consideration of the WHP and ESI when selling lambs.

It's a useful tool with the ability to work through wide ranging scenarios. If you have lice in your ewes, now is the time to give it a go.

Below: Your Ewe/Lamb Treatment Tool report shows your choices, the recommendations, and it can be printed.

MORE INFORMATION
www.liceboss.com.au/tools

Report
Generated 14th of August 2019

Based on these details:

Will the ewes be treated within 6 weeks after shearing?	Ewes are less than 6 weeks offshears or can be shorn before treating
When will the ewes be shorn and treated?	When the ewes have lambs at foot
When will the lambs be shorn?	The lambs will be shorn at or within a month after weaning
Lambs shorn at weaning	Lambs will be weaned when ewes are shorn

Both lambs and ewes will be shorn at weaning

Treat the lambs and ewes after shearing with any registered treatment.

The weaners will not be in contact with the ewes, so they can be treated with different chemical groups.

Consider the health of the weaners if dipping due to the stresses of shearing and weaning at the same time.
If selling lambs then consider meat WHPs and ESIs when treating

thoroughly check them for lice: 10 wool partings x 10 cm each on both sides of these sheep. If one louse is positively identified, you can stop checking and plan to treat at shearing.

2. Be ready to treat

Have product on hand, but most rural retailers will allow you to return it if unused.

3. Aim to eradicate

Get a clean muster and ensure staff know how and are motivated to treat effectively, just in case treatment is required.

4. Check at shearing

In advance, offer a generous reward to the shearer who finds the first louse.

5. If no lice are seen, don't treat.

6. Check again (as per point 1) after four months, then twice monthly until next shearing

MORE INFORMATION
www.liceboss.com.au

liceboss

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



BREECH FLYSTRIKE PREVENTION PUBLICATIONS

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

Here is a selection of the available publications:



PLANNING FOR A NON-MULESED MERINO ENTERPRISE

(March 2018)

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



MANAGING BREECH FLYSTRIKE

(June 2017)

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



DEALING WITH DAGS MANUAL AND FACTSHEET

(August 2019)

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



BREEDING LOWER WRINKLE AND DAG

(June 2017)

PAIN RELIEF: FREQUENTLY ASKED QUESTIONS

(March 2017)

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



AWI'S BREECH FLYSTRIKE RD&E TECHNICAL UPDATE PRESENTATION

(July 2018)

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



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

(June 2019)

LOW WRINKLE-HIGH FLEECE WEIGHT PRODUCTIVE SIRES EASIER TO FIND

(June 2019)

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

Still using the same fly strike treatment?

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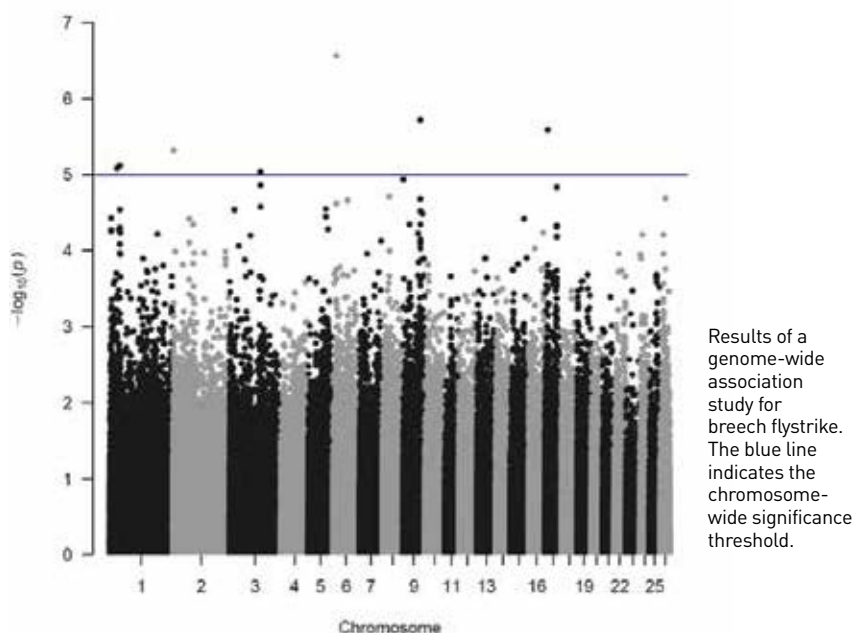


CAN GENOMICS ASSIST WITH REDUCING THE RISK OF BREECH FLYSTRIKE?

KEY FACTS

- In a recent AWI-funded study undertaken by CSIRO, the use of the genomic information for breech flystrike resistance was explored, based on 1,500 sheep from the Breech Strike Resource flocks in NSW and WA.
- The research indicates that unfortunately there are no 'major' genes associated with breech flystrike, breech wrinkle, breech cover and dag; instead these traits are influenced by many genes, each with small effects. Therefore, a genetic marker-assisted selection approach will be largely ineffective in breeding for breech strike resistance.
- However, a genomic breeding value (GEBV), which looks like an ASBV and is used in exactly the same way, will be a more effective tool to add information about the associated traits of wrinkle, cover and dag but, it requires an expensive reference flock where sheep are monitored for the appearance of breech strike. Ways to create a cost effective 'reference flock for breech flystrike' will be explored.

Breech flystrike resistance is a difficult and expensive trait to measure and new research indicates that a genetic marker-assisted selection approach to breeding for breech flystrike resistance will be largely ineffective. However, genomic breeding values, well suited to hard to measure traits, may have a role to play because they harness all the sheep's genomic information.



BACKGROUND

Genetic improvement is a safe and permanent method to improve breech flystrike resistance in Merino sheep.

SheepGenetics currently provides Australian Sheep Breeding Values (ASBVs) for the breech flystrike resistance indicator traits of breech wrinkle, breech cover and dag. These are useful and drive genetic improvement, however, the most effective genetic response can be achieved by selecting for breech flystrike resistance itself, but it is very difficult to do commercially.

Routine data recording for genetic improvement of breech flystrike in untreated sheep is labour intensive and expensive on commercial sheep properties and falls into the basket of a very "hard to measure trait".

With the rise of genomic selection tools, often well suited to hard to measure traits, the question was asked: "Can genomics assist with breeding for reduce risk of breech flystrike?"

WHAT IS GENOMICS AND HOW DOES IT WORK?

Technologies for genomic and marker assisted selection have improved dramatically in recent years. Genomics can provide selection tools for difficult or expensive to measure traits, offering opportunities to increase the accuracy of identifying genetically superior animals for important traits.

What is 'genomics'? In a practical sense, it means that the DNA or genome of an animal is analysed for thousands of genetic markers, which are landmarks that describe the DNA profile.

When a producer undertakes a genomic test, a tissue sample often from the ear or a drop of blood is collected on a card and submitted to a service provider who then establishes the information at all the genetic marker sites chosen in the test (tests vary in size from 800 to 15,000 to 600,000 SNPs or sites).

There are two potential avenues for how genomic information can be used in breeding for breech flystrike resistance, as a:

1. **genomic breeding value (GEBV)**, which looks like an ASBV and is used in exactly the same way and does not require an animal to have breech flystrike phenotypes
2. **genomic test**, which is possible if a few genetic markers have a large effect on breech flystrike resistance and the test predicts the level of breech flystrike resistance.

One requirement for a GEBV, is a reference population, which consists of several thousand animals that have been genomically tested and have been recorded for breech flystrike, such as the Breech Flystrike Resource flocks. With both approaches, breeders only require a genomic test, no phenotype, on their rams to obtain a genomic breeding value or a prediction of breech flystrike resistance.

EXPLORING GENOMIC TOOLS FOR BREECH FLYSTRIKE RESISTANCE

In 2005, AWI initiated the Breech Flystrike Resource flocks in NSW and WA. The Breech Flystrike Resource flocks now represent more than nine years of selection in divergent lines for breech flystrike resistance and its indicator traits, and can be used as a reference population. The flocks form a unique resource to explore the genomic differences for breech flystrike resistance and they provide the opportunity to develop genomic selection tools.

Consequently, AWI has invested in obtaining genomic information in the form of high density DNA profiles on more than 1,500 sheep from the two flocks.

"This is an incredible resource to explore genomic approaches for breech flystrike resistance," said lead researcher Dr Sonja Dominik from CSIRO Agriculture and Food. "Genomic information can potentially fast-track permanent and accumulative improvements not just for breech flystrike itself, but also for the indicator traits of breech wrinkle, breech cover and dag."

In a recent study, the use of the genomic information for both the estimation of

GEBVs or as a genomic test as a tool for direct selection on breech flystrike was explored based on the 1,500 sheep from the flocks.

THE RESEARCH RESULTS

The genome-wide association study for breech flystrike, breech wrinkle, breech cover and dag demonstrated that there appears to be no major genes associated with these traits. This implies that these traits are instead influenced by many genes, each with small effects, suggesting that a marker assisted selection approach will be largely ineffective in breeding for breech strike resistance.

Instead, the results indicate that GEBVs will be an effective tool to further increase genetic progress in breech flystrike resistance (along with phenotypic selection for low wrinkle, cover and dag) by identifying genetically superior sheep for breeding for breech flystrike resistance.

"We were not surprised that we didn't find genes of major effect that would have enabled the development of a genomic test," said Dr Dominik. "We are dealing with a very complex trait that is genetically influenced by thousands of genes.

"However, genomic breeding values harness all the genomic information and they can be

used just like a traditional breeding value."

The combination of genomics with pedigree information would provide a powerful tool to select animals accurately and directly for breech flystrike resistance in addition to wrinkle, breech cover and dags and provide faster genetic progress.

"Genomics is the ideal tool for breech flystrike resistance because it is such a difficult and expensive to measure trait," said Dr Dominik. "To obtain the relevant information for the estimation of genomic breeding values breeders only have to collect a drop of blood on a card."

Genomic profiles from more animals would be needed to increase the accuracy of any breech flystrike resistant GEBVs. However, breech flystrike resistance in Merino sheep is a great example of how a comprehensive toolbox can be built with the addition of new research and technology developments to address an industry problem. AWI continues to investigate options of how a genomic resource flock for flystrike could be generated and maintained. **E**

MORE INFORMATION

View the project report *Genotyping of breech flystrike resource* at www.wool.com.

FLIES AND MAGGOTS - SEND US YOUR BEST



This is your chance to get involved in Australian sheep blowfly research targeting insecticide resistance by submitting samples of maggots and/or flies during the upcoming flystrike season to two AWI funded collaborative projects.

CALLING ALL MAGGOTS!

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Determine the most cost-effective blowfly treatment for your property.

This project aims to determine the insecticide resistance profiles of blowflies across all wool producing states.

By participating in this research and providing live maggot samples, you will receive test results for your property **which show the chemical groups that are most effective for your flock.**

Contact Narelle Sales at DPI NSW to request a postage paid maggot collection kit or for more information on how to get involved:

narelle.sales@dpi.nsw.gov.au OR (02) 4640 6446



Department of
Primary Industries

WE WANT YOUR FLIES!

WHY?

To contribute to a blowfly genetics project providing critical information for the future implementation of effective blowfly management control strategies, including containment of blowfly resistance outbreaks and development of a flystrike vaccine.

All you will need to do is collect the trapped blowflies at three different times, then simply send to University of Melbourne. **A fly trap, collection tubes and reply-paid post bags for the samples will be provided.**

Contact the University of Melbourne for more information on how to get involved:

blowfly-collection@unimelb.edu.au OR (03) 8344 2362





DAGS. DON'T GET CAUGHT UP S**T CREEK

Crutching costs, reduced fleece value and treatment costs associated with dags impact farm profitability. Preventing scouring and dag formation is also vital to sheep health and well-being, including decreasing their susceptibility to breech strike. *PHOTO: John Larsen*

While there are many causes of scouring and dags in Australian sheep, high worm burdens are the main reason. Spring is when there are the most infective worm larvae on the pasture, so now is the ideal time to review your management of dags, which you can do with the help of two new publications from AWI.

In southern Australia, managing sheep to prevent scouring and dag formation is vital to sheep health and well-being, including decreasing their susceptibility to breech strike. It will also save you from an unpleasant task of crutching and its associated labour costs, devalued wool and treatment costs.

AWI recently completed a review of the causes, diagnosis, management and treatment of scouring in sheep. The review was conducted by Dr Joan Lloyd, Dr Caroline Jacobson, Dr John Larsen and Dr Brown Besier. From the review, a manual for advisors about dealing with dag and a related fact sheet for woolgrowers have been produced.

The review team said there are many and varied causes of scouring and dags in sheep.

“High worm burdens are the main cause of scouring and dags in Australian sheep, but are not the only cause,” Dr Lloyd said.

The formation of dags is related to the

consistency of faeces, with softer faeces sticking to the wool leading to accumulation of dags. Sheep that are scouring can rapidly form dags, and once dags start forming, more faeces stick to existing dag and the problem gets worse.

Dr Larsen said the direct financial costs (see Table 1 opposite) of dags accrues from the need for crutching and the loss of value for the wool, along with treatment costs, and importantly, an increased susceptibility to breech strike. There may also be additional costs at slaughter.

DIAGNOSING THE CAUSE

“Diagnosing the cause of scouring in a mob of sheep need not be a daunting prospect,” Dr Besier said. “In most cases, taking a systematic approach, working through the potential causes and considering appropriate risk factors – such as age of the sheep and proportion of the mob affected; region, type of pasture and rainfall; and the time of year – will elucidate the most

likely cause.

“In many cases, the cause of scouring will be relatively simple and directly related to a break-down in on-farm worm control programs leading to excessively high burdens of intestinal parasites.”

As such, the best approach to dealing with dags begins with considering the history of the flock and a faecal worm egg count. Results showing high counts (typically >500 eggs per gram) indicate that intestinal worms are the likely cause of scouring. In such cases, drenching with appropriate treatments can be expected to rectify the problem. However, the researchers warn that the link between scouring and worm burdens is complex, and that there are other causes of scouring and dags.

“Even on farms with good worm control programs, scouring and dag can be observed in up to 70% sheep, depending upon the area, seasonal conditions and availability of pasture,” Dr Larsen said. “In south-eastern Australia,

Two new documents from AWI are available to help with managing dag:



DEALING WITH DAG ADVISOR MANUAL

This 44-page manual reviews the causes, diagnosis, management and treatment of dags in sheep and provides a guide for people helping woolgrowers to manage and prevent scouring and dag formation in their animals.



DEALING WITH DAGS - A FACTSHEET FOR WOOLGROWERS

A two-page summary document for woolgrowers of the Dealing with Dag manual.

TABLE 1. THE TOTAL COST OF DAG FOR EWES IN EACH DAG SCORE CATEGORY.

Adapted from Larsen et al. (1995a) using 2019 wool prices and 2018/2019 recommended wages

ITEM	DAG SCORE					
	0	1	2	3	4	5
A. Cost of crutching (c/head)	10	20	30	60	90	90
B. Dag-weight (g)	68	115	204	380	737	1225
C. Wool yield (%)	36.4	28.5	22.9	19.8	13.6	14.4
D. Clean wool in crutchings (g) (B x C)	25	33	47	75	100	176
E. Foregone value of crutched wool* (c/head)	14	19	42	67	89	156
TOTAL COST OF DAG (C/HEAD) (A + E)	24	39	72	139	179	246

* Price of fleece wool 1200 c/kg clean, crutchings from ewes with a dag score ≤ 1 and ≥ 2 are 52% and 26% of this price, respectively.

higher pasture availability with a predominance of perennial pasture species tends to be associated with more dag. In south-western Australia, the risk of dag increases in late winter or early spring with higher availability of mixed pastures (annual grasses and legumes)."

There are also circumstances in which scouring is associated with low worm burdens.

"Hypersensitivity to recently-ingested larval worms has been shown to occur in south-eastern and south-western Australia, chiefly in sheep old enough to have developed immunity to worms," Dr Larsen said. "Worm hypersensitivity scouring should be considered when all other potential causes of scouring have been ruled out in sheep with low faecal worm egg counts. Over time, breeding programs that select against dag will help minimise the problem."

It is noteworthy that the ASBVs for worm resistance and for dag formation are different, and that selection for both traits needs to be included in breeding programs to help move towards lower dag scores in a flock.

Dr Jacobson said that when faecal worm egg counts are low, the presence of other risk factors should be considered and sampling for protozoa or bacteria may be warranted.

"Scouring due to bacterial or protozoal infections may require veterinary treatments, or changes to management routines and plans for paddock use," she said.

"Protozoa and bacteria infections rarely cause scouring in older sheep. For older sheep with low worm egg counts, close examination of the diet of the sheep may uncover a cause for scouring.

"The relationship between pasture and scouring is complicated. The specific nutritional components of pasture that may trigger scouring have not been clearly identified. There also appears to be a complex relationship between diet and infections that influence severity of scouring, but these have not been well studied. Nutritional scouring is often a diagnosis of last resort, after other common causes of scouring have been excluded."

Sudden changes in diet, grain feeding and specific pasture plants may be associated with scouring. Due to the many and varied factors involved, the best option for producers is to seek expert advice from an animal health advisor or veterinarian.

Regardless of the cause of scouring in sheep, it is important to remember that in southern Australia scouring and dag formation are the major risk factor for breech flystrike, making dealing with dags a priority for sheep producers. **B**

MORE INFORMATION

The 44-page Dealing with Dag manual and 2-page fact sheet are available at www.wool.com/flystrikelatest or by phoning the AWI Helpline on 1800 070 099.

For more information, contact Eastern Australia: Dr John Larsen 0408 534 361 and Western Australia: Dr Brown Besier 0427 778 406 or Dr Caroline Jacobson 0418 953 173.

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1. Refer to registered label. 2. Porter, C.J., et al. (2007). Lipids and lipid-based formulations: optimising the oral delivery of lipophilic drugs. *Nature Reviews Drug Discovery*, 6(3):231. 3. Torchilin, V.P. (2001). Structure and design of polymeric surfactant-based drug delivery systems. *Journal of Controlled Release*, 73(2):137-172. 4. Rangel-Yagui, C.O., et al. (2005). Micellar solubilisation of drugs. *J. Pharm. Pharm. Sci.*, 8(2):147-163. 5. Virbac data on file. ©Tridectin is a registered trademark of Virbac. VIR19349

ARTIFICIAL INTELLIGENCE POTENTIAL TO AID SELECTION

Favourable results have been achieved in an AWI-funded pilot study of whether artificial intelligence (AI) technologies can identify several key phenotypic traits in young sheep. The project concluded that over the next five years the technology has considerable potential to progress to a stage where it could aid selection and productivity management decisions in a commercial wool-growing environment.

The aim of the pilot project was to provide an evaluation of whether deep learning AI technologies could accurately predict performance indicator traits of young sheep, from analysing digital photographs of several different views of the sheep. In particular, the project examined whether AI could determine bodyweight, body wrinkle, neck wrinkle, face cover and identify individual sheep.

“There has been no other research of this kind done before with sheep,” said lead researcher Dr Mark Ferguson of neXtgen Agri. “It’s exciting that the project provided proof of concept that the technology works. It could potentially be adapted for commercial sheep farming systems and therefore unlock a new horizon for the Australian sheep industry.”

“We are confident that in the space of a few years we could develop a model that could outperform humans in both accuracy and speed.”

Dr Mark Ferguson, neXtgen Agri

The device that was used on-farm by the researchers was a crate that held the sheep, and four fixed cameras – placed above, to the side, in front and to the rear of the sheep – to semi-automatically capture high resolution images and link them to sheep electronic identification (EID). The device also allowed

the semi-automatic recording of bodyweight.

Using this system, the researchers created an image library of 1,482,041 images from 4,072 sheep. All sheep were weighed at the time of image capture, and subjectively scored for face cover (1-5), neck wrinkle (1-5) and body wrinkle (1-5) and identified to EID.

PROJECT RESULTS

The AI algorithm could match anonymous face and body images with 94% and 98% accuracy respectively to sheep EID, and 99.7% when both face and body information was used. However, when images from the same sheep were tested five months later, accuracy was considerably lower (<10%) unless images from both time points were included in the training data set (accuracy increased to 90-98%), suggesting that a much larger training data set is needed with repeat images of sheep over time.

Using both side and top cameras, the AI algorithms could predict bodyweight with an accuracy of 86% and 87% respectively. Combined information from top and side cameras resulted in an accuracy of 89%.

For neck and body wrinkle, the AI algorithms were able to allocate animals to either a high or low wrinkle class with 73%-90% accuracy depending which camera angle and wrinkle trait was predicted. Using the full scale of wrinkle score (1-5) prediction accuracy was lower at 38%-58%.

PROSPECTS FOR THE TECHNOLOGY

“While AI technology is not yet ready to be deployed in the wool industry, this pilot project has clearly demonstrated that it has considerable potential,” said Professor Raadsma of University of Sydney, who was also a joint lead researcher on the project.

“With the correct training data set, machine learning AI models will be very powerful in predicting a range of informative traits from image-based inputs of sheep. We are confident that in the space of a few years we could develop a model that could outperform humans in both accuracy and speed.

“As object detection algorithms improve, it could be entirely feasible to collect data in



Example of head and body capture from the original image taken by the front camera.

commercial settings from moving objects and make assessments instantaneously allowing for drafting and classification ‘on-the-run’. In addition, movement may provide additional information on sheep health and welfare attributes.”

“The technology of artificial intelligence lays the foundation for completely new ways to assess traits in sheep without additional time and effort from managers.”

**Professor Raadsma,
University of Sydney**

The aim of this pilot project was to provide a proof of concept and investment strategy for further consideration.

“The benefits from this project will flow in subsequent projects to this one,” said Dr Ferguson. “These benefits include the potential to remotely and automatically weigh and identify animals without extensive infrastructure. It will also lay the foundation for completely new ways to assess traits in sheep without additional time and effort from managers.”

Professor Raadsma added: “The concepts initiated in this project will transform the decision-making capacity of the Australian sheep industry in both the tactical management of sheep within a production season as well as the strategic breeding decisions. Once completely developed, the concepts initiated here will augment decisions being made by sheep managers on a daily basis.”



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AWI SMART TAGS UPDATE

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

The development of the AWI smart tags has progressed significantly this year. The design of the ear tag has been improved to reduce the risk of solar panel losses. Readers have been enhanced by the addition of a GPS module and different antennas are being tested to increase the range.

Mothering up functionality has been refined to optimise data collection and package transfer from tags to readers ensuring the information is secured even when the sheep are out of range.

In addition, three new research projects using AWI smart tags have started. These projects will use the data collected from the tags to understand and optimise the remote detection of sheep behaviour. The behaviours that are being investigated in the projects relate to grazing, reproduction and predation/welfare.

OPTIMISING GRAZING STRATEGIES

The first new project, with Murdoch University and the Department of Environment, Land, Water and Planning (Victoria) and suitable titled 'Grazing Bytes', will extend the capacity of the AWI smart tags to enable woolgrowers to optimise grazing decisions.

It will generate smart tag data across a range of grazing situations and use this data to train machine learning algorithms that can accurately predict feed on offer and detect grazing behaviour.

Ultimately, these algorithms will be deployed to help woolgrowers optimise grazing strategies in real time and in doing so optimise both pasture and animal performance.

An initial feed intake pilot will be undertaken using feed tracers, through the Merino Lifetime Productivity (MLP) Add On project. Using the data collected from the ear tags and the feed tracers will start to allow the training of machine learning algorithms.

Trials with the tags will be conducted on woolgrowers' properties across five different farm regions: mixed farm WA, high rainfall SA, mid-rainfall mixed farms Victoria, semi-pastoral NSW and pastoral Queensland. This is so that changes dependant on farm region can be made to ensure accuracy and completeness for the tags.

The project commenced in April this year and will run for three years.

IMPROVING REPRODUCTIVE MANAGEMENT

The second new project, with the University of Sydney, aims to understand male and female reproductive behaviour and how it can be detected using AWI smart tags.

Monitoring such behaviour has historically been time consuming and labour intensive, however this project is exploring how AWI smart tags could be implemented so woolgrowers could increase the reproductive efficiency in their flocks.

Experiments have been conducted to measure the physical event of rams mounting ewes, with tags on both the ewes and rams. Researchers are developing algorithms to accurately identify the mounting event.

Further research will be aimed at the detection of oestrus, assessment of ram libido, identification of sire at point of mating and the efficacy of oestrus synchronization protocols and time of ovulation (including PMSG-free synchronization).

The project commenced in April this year and will run for three years.

PREVENTING PREDATION AND INCREASING WELFARE

In the third new project, CQUniversity researchers are assessing the ability of AWI smart tags to help woolgrowers detect animal health and wellbeing issues faced by sheep.



CQUniversity researcher **Dr Jaime Manning** is assessing the ability of AWI's smart tags to enable woolgrowers to make an early detection of wild dog predation and diseases in their sheep.

Predation by wild dogs and animal health issues (worms, flies, lice) are major headaches for the wool industry with significant impacts on profitability, animal welfare and woolgrowers' emotional wellbeing. However, AWI smart tags have the potential to provide woolgrowers with an early warning of behaviours associated with predation by wild dogs or the development of more subtle welfare issues in individual sheep in their flock.

This project is aimed at developing algorithms that provide alerts to changes in sheep behaviour ahead of predation or disease events. This will enable producers to detect and manage problems well before they turn into more significant issues.

AWI smart tags have the potential to give woolgrowers the opportunity to monitor their sheep as if they were shepherds in the paddock. The key benefit of the sensors is that they monitor sheep activity, behaviour and health 24 hours a day, seven days a week.

The researchers are currently taking steps to ensure that the tags can more accurately recognise normal behaviour: walking, grazing, standing etc. This is important as it provides a baseline, which will make detecting changes in behaviour easier and more accurate.

The project commenced in February this year and will run for three years.

INNOVATIVE SHEARING SHED FOR ALL

Shearing contractor and woolgrower Hilton Barrett, with support from AWI, has designed a shearing shed which addresses worker safety and animal welfare concerns, while also achieving improved shed efficiency and wool quality. The designs of the shed are available free to all woolgrowers.

FAST FACTS

- With AWI support during the past 18 months, Hilton Barrett has designed a shearing shed which improves the efficiency of workers and the flow of livestock – while optimising worker safety, animal welfare and the quality of wool preparation.
- The design was developed following extensive industry consultation with shearers, wool handlers, classers and woolgrowers, plus reviews of existing working sheds. Multiple trials led to refinements and a final design.
- The blueprints of the shed's design are available free on the AWI website. The internal fit-out, incorporating the stands and yards, has been designed to have its own structural integrity so it can be built within any suitable pre-existing shell.
- In July, 400 people attended an open day at Hilton's shed that was built based on his designs.

Former world record shearer and shearing contractor Hilton Barrett from Dubbo in Central West NSW has more than 30 years of wool harvesting experience. Hilton also operates a mixed farming and grazing operation near Dubbo where he shears between 2,000 to 7,000 head of sheep and lambs each year.

With this breadth of experience and having shorn in a vast range of sheds, Hilton was keen to develop a world-class design to address common issues that arise in traditionally designed sheds.

OPTIMISING THE SHEARING SHED

Over time, some of these issues have become more apparent, limiting Hilton's ability to optimise the efficiency and health of his staff and sheep.

Key areas of concern for Hilton included:

- significant injuries caused to staff due to shed layout and design, particularly shearers dragging heavy sheep around corners from catching pens to the board
- inefficiencies during penning up, which can considerably slow down shearing
- the long distances walked by some of the shearing team each day (for example from the board to the wool table carrying fleeces), many kilometres in some cases.

Factors contributing to these issues include:

- larger sheep, particularly relatively new composite meat breeds
- a growing number of ageing sheds, many that may not have been well maintained in the past 20-30 years
- an ageing workforce
- a general shortage of experienced workers and issues retaining staff
- more rigorous quality targets to improve woolgrower returns through less wastage, contamination of wool and animal stress

- an increased awareness of animal welfare issues.

Hilton recognised that solutions were needed to provide:

- more efficient and safer working environments that minimise injuries, prolong professional careers and improve worker retention
- improved efficiency to minimise wool harvesting costs and make flexible and affordable state-of-the-art shed designs readily available
- a high standard of animal welfare, including reduced stress
- less contamination and improved wool quality
- greater efficiency and through-put (higher daily shearing tallies which benefits the shearer and woolgrower).

THE DESIGN PROCESS

After sharing his vision with AWI and local project management consultants Schuster Consulting Group, 13 wool harvesting experts including shearers, wool handlers, woolgrowers and classers, were invited to tour six shearing sheds in Central West NSW. The objective of the tour was to identify the key design features of each shed which influenced sheep flow, efficiency, wool quality and the welfare of both sheep and workers. Each expert provided an independent assessment of the sheds from their own professional perspective.

"We went to multiple sheds and picked out the best parts out of them."

Hilton Barrett

An online survey of shearers, wool classers, wool handlers and woolgrowers was also conducted. Respondents were asked to rate specific features of sheds in terms of the impact they have on the shearing process, worker safety, animal welfare and wool quality.

Critical design features consistently raised by respondents included:

- optimising lighting and ventilation
- minimising noise
- eliminating sharp edges and catch points
- reducing the length of drag and number of turns between the catch point and the workstation
- improving the flow of sheep (during filling, catching, drag and let-go)
- enhancing wool room design.

The outcomes of the shed review and survey



More than 400 woolgrowers, brokers, shearers and wool handlers turned up at the 'Arrow Park' open day in July to see the shed in action.



The design of **Hilton Barret's** woolshed aims to improve efficiency, worker safety, animal welfare and wool quality.

were used to develop a prototype shearing stand complete with catching pen and let-go chute. This was trialled and refined several times before the draft plan was made available for public comment.

"It's interesting how small changes in measurement make a huge difference to your comfort as a shearer or even the area you have to work in."

Jason Wingfield
Australian shearing team

Further feedback was incorporated and once again trialled before being incorporated into a six-stand design which Hilton then built on his 'Arrow Park' property. The experts who were involved in the initial tour and who were consulted throughout the design and build process were invited back to observe and participate in the first trial shearing using all six stands. Further modifications were made as a result of this final trial before the shed was completed.

THE FINALISED DESIGN

The resulting design not only achieves many positive worker safety and animal welfare outcomes, but it also provides greater efficiency and improved wool quality.

"This design works well for all of the team, making the whole wool harvesting process run more smoothly and safely," said Hilton.

Key features of the shed design that address the issues identified through the research include:

- a sloped, front-fill catching pen which encourages sheep flow and presents sheep to the shearer
- an almost straight drag to the workstation through catching pen doors designed to minimise impact on the shearer
- smooth surfaces and recessed chutes that do not protrude into catching pens
- wide chutes (80cm wide) with a 30cm drop

off which ensures sheep are released with minimal effort

- minimal travel distance from the point of shearing to the wool table and then from the wool table to the wool press
- minimal light pollution from under the shed and floor grating, but with bright, diffracted overhead lighting
- good ventilation with windows designed to naturally encourage airflow
- timber components to minimise noise
- ample room for wool storage
- amenities to ensure a comfortable and safe work environment.

The greater workflow efficiency achieved by the design reduces shearing time and the cost to the woolgrower. It also means sheep spend less time yarded and are turned out more quickly after shearing.

"Sheep aren't penned up for as long as they are in some traditionally designed sheds which improves animal welfare. The aim is to move them through as efficiently as possible," said Hilton.

"It's going to be a winner for the farmer and the shearer. There's going to be less injuries and shearers are going to last longer."

Cartwright Terry
Former world shearing record holder

THE DESIGN IS AVAILABLE TO ALL

The internal fit-out, incorporating the stands and yards, has been designed to have its own structural integrity meaning it does not rely upon the shed's superstructure and can be built within any suitable pre-existing shell. This means woolgrowers can install or repurpose an off-the-shelf or existing shed, allowing them to achieve the most cost-effective solution for their own particular circumstances.

The designs (technical drawings for a six-stand shearing shed, plus the floor plan for Hilton's 'Arrow Park' shearing shed) are available free on the AWI website.

"It does improve everything that's really a drama. It's a good sloping pen, it's a good drag, the pens are a good size, and you don't really have to push the sheep down the chute, they sort of just fall down the chute."

Bill Hutchinson
Former Australian shearing team member

Woolgrowers can take the free design to specialist wool shed builders or any number of general builders to ensure a competitive tendering process for shed construction. The builder or contractor will be able to build as designed or extract certain elements of the design to suit specific on-site requirements.

"The sheep are all facing away from you so you can go straight in, just grab the head and straight back out. Your handpiece is there, pick it straight up and you're right to go. I'd just love to see this design more, throughout NSW and all over Australia."

Billy McDougall, shearer

By working with all parties involved in the wool harvesting process and striking a balance between worker safety, efficiency, wool quality and animal welfare, sustainable wool harvesting now has a bright future.

"The benefits are available to all of the wool industry – shearers and producers," said Hilton.

MORE INFORMATION

Technical drawings of the shed, plus a video about its design, are available at www.wool.com/sheddesign

SHEARER AND WOOL HANDLER TRAINING REMAINS A PRIORITY

AWI funds training for shearers and wool handlers to attract and retain new entrants into the wool harvesting industry, build the capacity and longevity of existing staff, and increase returns to woolgrowers through improved clip preparation practices.

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

AWI therefore funds hands-on practical training for shearers and wool handlers in the shed, aimed particularly at increasing their productivity, skills development and professionalism.

In the past financial year, more than 1,500 days training (with more than 5,600 attendances by shearers and wool handlers) were delivered through AWI-funded programs across Australia – a similar amount to the previous year. The delivery was a combination of in-shed training, novice schools and workshops. AWI-funded training in the Shear-Jitsu technique, the new way to perform the catch and drag, expanded during the year.

“The training for harvesting staff is provided through AWI’s Independent Coaching Program and also by Registered Training Organisations,” AWI’s shearing industry development coordinator Jim Murray says. “Training covers a wide range of experience, from learner to professional shearers and novice to professional wool handlers. It is also offered as short term, intensive workshops across a range of skill levels.”

In addition to the above face-to-face training, AWI also funds online training through the Lojik training website (www.lojik.com.au) and Facebook page run by world shearing record holder and top shearer trainer Dwayne Black. More than 3,300 views by shearers during 16 online training sessions were held during the past financial year. The popular online learning resource for shearers helps them perfect their techniques, which in turn improves the quality of woolgrowers’ clips. **B**

MORE INFORMATION

Phone the AWI Helpline on 1800 SHEARS (1800 743 277) to make contact with a training organisation in your local area.



AWI wool-handling trainer **Amanda Davis** and shearing instructors **Kevin Gellatly** and **Todd Wegner** with 10 trainees at an AWI-sponsored shearing school held in July at the Epasco Farms shed near Condingup in WA, which was co-ordinated by Esperance grower group ASHEEP and its executive officer **Basil Parker**. PHOTO: Dorothy Henderson/Countryman

FREE HARVESTING VIDEOS FEATURE TOP TIPS

A series of short training videos for shearers and wool handlers, to promote better techniques and improve clip preparation practices in the industry, is available free from AWI.



Woolgrowers are reminded that a comprehensive series of about 200 short videos to improve skills in shearing sheds are available free from AWI on a USB.

The AWI videos cover all aspects of wool harvesting and are a complete reference guide for shearers, wool handlers, woolgrowers, instructors and students working in various areas of wool harvesting.

Packed with tips, hints and practical advice, the videos include advice from experienced shearers, wool handlers and wool classers including Shannon Warnest, Dwayne Black and Racheal Hutchison.

“People working in shearing sheds have traditionally learnt their skills ‘on the job’ by being shown; these videos use the same approach,” Jim Murray says. “Available on USB, they are a great way of getting information to people working in the industry as the videos are suitable to be watched in the shearing shed on laptop computers.”

The USB includes videos in the following sections:

- Basic wool handling
- Novice shearing
- Improver/professional shearing
- Wool handling and shed skills
- Experting and grinding
- Wool industry
- Crutching

Also available on the USB is a series of four training videos that highlight the Shear-Jitsu technique which is a new way to perform the catch and drag. Shearers can utilise the technique to help them prevent injury and increase the longevity of their careers. **B**

MORE INFORMATION

The USB is available free to shearers, wool handlers, trainers and woolgrowers by calling AWI on 1800 070 099.

The videos are also available to view on the AWI YouTube channel www.youtube.com/AWIWoolProduction

TRAINING IS A SHEAR DELIGHT

The AWI-supported Wool Works Shearing School held at Glen Innes in northern NSW – attended by 24 students, the NSW Deputy Premier and NSW Agriculture Minister – has helped raise the profile and status of the shearing industry.

When Deputy Premier of NSW John Barilaro and Agriculture Minister Adam Marshall visited the Wool Works Shearing School at Glen Innes on the Northern Tablelands of NSW at the end of June, their reaction was one of shear delight.

The school was facilitated by the Regional Development Australia Northern Inland (RDANI) and held at the NSW Department of Primary Industries' Glen Innes Agricultural Research and Advisory Station.

AWI supplied the shearing gear and funded experienced shearers Ross Thompson and Leo Fittler who instructed and supervised the students. Experienced TAFE trainers Pauline Smith and Kim Jenkins showed what working the shearing shed floor entails.

Wool Works was initially trialled in 2017 and was also held last year, with support from AWI. It introduces high school students to the skills of shearing and wool handling and the political leaders recognised it as a measure of inspiration that the industry needs.

"This is fantastic! This school is about introducing young people to the skill of shearing and a possible future in agriculture," Mr Barilaro said. "I saw kids here who were smiling, they were engaged and they wanted to be there. I think this particular program, with all the stakeholders coming together, has touched on something that gives us hope for the future of agriculture and our kids in the bush."

This year, the school was attended by three students from Glen Innes, three from O'Connor Catholic College in Armidale and 18 from Inverell's Macintyre High School. Mr Barilaro commended the approach of inspiring young students by giving them practical rural skills early on.

"If you plant a seed early, you can nurture their interest and see it grow. This is really hands-on; they can see, hear, smell, feel, experience and respect the shearing and wool handling skills in the shearing shed," Mr Barilaro said.

As Agriculture Minister and Member for Northern Tablelands, Adam Marshall also praised the Wool Works Shearing School, after both politicians had rolled up their sleeves and had a go.

"Look, it is tremendous. It was great to see the number of girls turn up. That is reflective of the trend in agriculture, generally. Women are playing an increasingly important role in our agricultural industries and I think that is brilliant."

AWI Shearing Industry Training Development Coordinator Jim Murray said AWI funds training for shearers training for novice, improver and professional shearers and wool handlers across the country – see opposite page.

"The Wool Works school is particularly good at promoting shearing and wool handling as a desirable profession and we hope it attracts new workers into the wool harvesting industry," he said. "Ultimately our funding of shearer and wool handler training aims to improve returns to woolgrowers by increasing the value and quality of their wool clip."

The Wool Works Shearing School is possible through collaboration between RDANI, NSW DPI, AWI, Northern Tablelands Local Land Services, TAFE New England, Glen Innes Severn Council, GLENRAC, Prime Super and Heiniger. Sheep were supplied by John Newsome of Elders Glen Innes.

Project Coordinator and RDANI Executive Director Nathan Axelsson said that there are three more Shearing Schools planned for 2019, with one locked in for October. "We want to hear from any interested high school teachers or students from years nine to 11."



The AWI-supported Wool Works Shearing School in June 2019 hosted 24 students, Deputy Premier of NSW **John Barilaro** and Agriculture Minister **Adam Marshall**.



Deputy Premier of NSW **John Barilaro** was under close supervision as he had a crack at shearing.



Inverell's Macintyre High School Year 10 students **Jessika Coakes**, **Alison Sims**, **Sara Johnson** and **Sophie Kastellan** with AWI-funded shearing instructor **Ross Thompson**.

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COMPETITIONS PROMOTE EXCELLENCE

AWI provides support to shearing and woolhandling competitions at local, state and national levels. The aim is to promote excellence and encourage better techniques in shearing and woolhandling.

AWI sponsored the Australian National Shearing and Woolhandling team at July's World Championships, which were held in France for the first time in its 40-year history.

John Dalla (SA) placed a creditable fifth in the individual blade shearing competition and fourth in the team event with Ken French (Victoria). Jason Wingfield (Victoria) and Daniel McIntyre (NSW) represented Australia in the shearing competition, placing 15th and 16th respectively. In the woolhandling competition Racheal Hutchison (NSW) placed 9th and Mel Morris (Tasmania) 13th.

AWI provides support for the team and the National Shearing and Woolhandling Championships – plus many local competitions across the country and the state championships in every state – with the main aims of promoting excellence within the shearing industry, and to encourage young people to join the industry.

In the 2018/19 financial year, AWI provided support to 46 local shearing competitions

across the country (NSW 17, Vic 9, WA 9, SA 9, Tas 3), which includes payment of entry fees for novice shearers and 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." **B**

MORE INFORMATION

To apply for AWI support for local or regional shearing or woolhandling competitions, complete the form at www.wool.com/competitionsupport



John Dalla of South Australia finished fifth in the blade shearing final at the World Championships in France. PHOTO: Kylie Rigby



The AWI-supported shearing competition at the Kojonup Show in WA.



The AWI-supported shearing competition at Tamworth Show in NSW.

WOOLMARK BALE STENCIL

AWI and The Woolmark Company are offering Australian woolgrowers a free stencil of the Woolmark logo for use on their wool bales, to identify and brand their wool fibre as being proudly grown in Australia.



The Woolmark logo is world-renowned and the most recognised label for fibre quality in the textile industry. If you are an Australian woolgrower, AWI encourages you to apply for a stencil.

By branding your bales with the Woolmark logo, you proudly identify your wool as Australian grown and connect your greasy wool to this global branding opportunity.

The new Woolmark bale stencil will, over time, form part of a broader supply chain integrity program that has been initiated by AWI.

Woolgrowers are eligible to apply for a stencil if they have paid more than a total of \$100 in wool levies over the past three financial years.

Eligible Australian woolgrowers should head to www.wool.com/stencil and order their Woolmark stencil.

You can order up to two stencils per order and you'll need to provide your AWI Shareholder or Levy Payer Reference Number on application. For further information, contact the AWI Helpline on 1800 070 099. **B**

MORE INFORMATION
www.wool.com/stencil
stencils@wool.com



The new Woolmark stencil proudly displayed on the bales from 'Tintara', Ben and Esther Creek's wool-growing operation at Boyup Brook in the south-west of Western Australia.

AVERAGE MONTHLY EMI COMPARISON

EMI'S ROBUST PERFORMANCE HITS BUMP

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 (May 2019 – July 2019) in Australian dollar terms compared with the previous five years May 2014 to April 2019 (circles) and the decade to that, May 2004 – April 2014 (squares).

For the past three months, the monthly EMI averaged at \$18.12, tracking at the 86th percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current \$18.12 (May 2019 – July 2019) for 86% of the time.

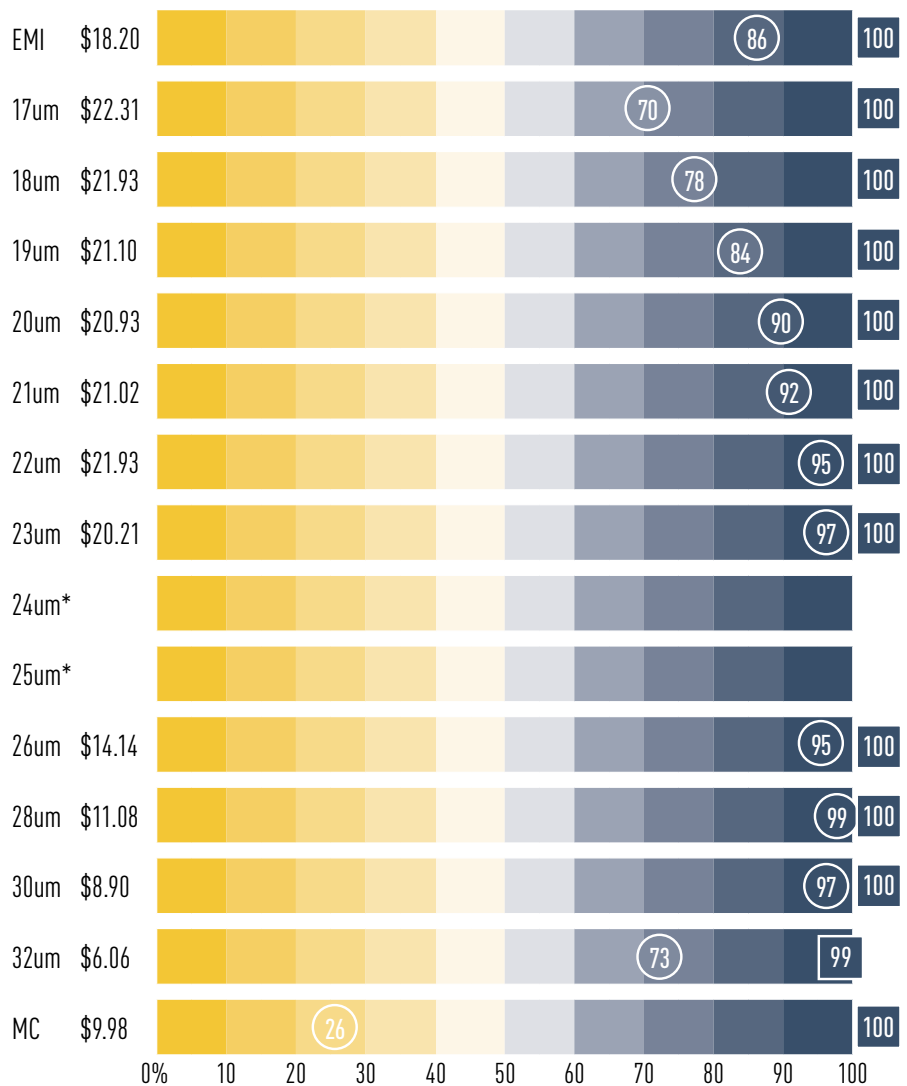
While the EMI is tracking at the 86th percentile over the previous five years, it is still at the 100th percentile when compared to the decade May 2004 – April 2014. This means the current EMI of \$18.12 (May 2019 – July 2019) is higher now than it was for all that decade.

The finer microns have weakened somewhat during the past three months, while the mid and stronger micron wools remain more robust.

For the past three months, 18 micron averaged at a monthly value of \$21.93 (78th percentile for the previous five years and 100th percentile for the decade before that), 21 micron averaged at \$21.02 (92nd percentile for the previous five years and 100th percentile for the decade before that), and 28 micron averaged at \$11.08 (99th percentile for the previous five years and 100th percentile for the decade before that).

Merino Cardings (MC) have slipped further from the record prices received in the past few years. For the past three months, Merino Cardings averaged at \$9.98, operating at the 26th percentile for the previous five years but still at the 100th percentile for the decade before that.

AVERAGE MONTHLY EMI FOR MAY 2019 – JULY 2019 COMPARED WITH
 ● PREVIOUS 5 YEARS MAY 2014 – APRIL 2019
 ■ THE DECADE MAY 2004 – APRIL 2014



*insufficient data

MARKET INTELLIGENCE: FREE VIA SMS

In an initiative launched in 2017, AWI is sending wool prices and market intelligence direct to about 5,000 woolgrowers' mobile phones.

The woolgrowers receive the latest movements in the EMI in a simple text message (see left image), including a link to a full price report that provides more detail about price movements (see right image).

If you would like to subscribe to the free SMS service, visit www.wool.com/sms where you will be asked to input your name and the mobile phone number to receive the SMS.

You can unsubscribe from the service at any time by replying to the AWI SMS message.

MORE INFORMATION
www.wool.com/sms



WHO MADE MY CLOTHES?

WOOLQ DELIVERS THE EDGE TO WOOLGROWERS

Consumers are not asking anymore: “Where did you get your top from?” They’re now asking: “How was your top made?” The fashion industry is changing fast, pushed by consumers wanting transparency in their supply chains. WoolQ gives woolgrowers the edge in supplying wool that can be traced from the sheep’s back to the shop floor.

In the past, a lack of transparency in a company’s supply chain could be seen as a competitive advantage. Businesses wanted to keep insight into their suppliers and manufacturers as opaque as possible.

If no one knew where supplies were coming from, no one could build identical apparel. And this thinking extended to customers; out of sight meant out of mind when it came to worries about ethical sourcing and manufacturing in the fashion industry.

It’s clear from the Fashion Revolution’s 2018 EU Consumer Survey¹ there has been a shift in the way consumers view transparency. 77% of people would like fashion brands to make it clear where they source materials, ingredients and components from, and who manufactured the product.

It’s now a clear business advantage for everyone to know where clothes come from. Companies like Patagonia and Everlane tout sustainability and supply chain transparency as a selling point.

This thirst for traceability will only grow and it’s not just niche brands. H&M has an end goal to become 100% transparent². Amanda Nusz, vice president of product quality and responsible sourcing at Target Corporation, states of forming a company-customer alliance: “It’s not only good to do, it’s good for business... people will be loyal to ethical brands.”²

Greater transparency in supply chains will create new incentives for companies to change the way they do business and even

how they view themselves as an organisation.

Take Nike, for example. They don’t position themselves as an apparel company anymore. Instead, they talk about themselves as a tech company that just so happens to make clothes. Their clothes and shoes often come equipped with sensors for tracking heart rate, miles run, or calories burned. That’s because data is now the most compelling business model.


The lesson here? The companies that will thrive in the coming years are those that can reinvent themselves to keep up with changes in technology and society. With these changes in mind, AWI CEO Stuart McCullough says AWI had commenced a number of projects focussed on traceability during the past five years.

“We recognise that generation Ys and generation Zs are going to be more interested in the source of materials in the future. They will want to know where something has come from, how it was treated, what the supply chain did with it and where it is going to at the end.

“The first stage of the traceability journey is AWI’s WoolQ project which is designed to offer clean digital data straight from the farm.”

WoolQ is an online platform that provides woolgrowers with a number of tools to allow them to make more informed decisions regarding the preparation and sale of their wool. Traceability on WoolQ starts in the shed with the WoolQ eSpeci. The clip information is digitised on shearing using a mobile device – tablet or phone.

This digitisation of the wool clip information or ‘wool specification’ provides many benefits. One of the most valuable is that it delivers a clear and easily utilised starting point for traceability in the supply chain. In the not too distant future, wool will be able to be traced from the sheep’s back to the clothing tag in the high street. Woolgrowers able to provide this level of traceability will be increasingly sought after by buyers looking to satisfy traceability requirements from global brands.

If you haven’t used WoolQ or the WoolQ eSpeci, simply head to www.woolq.com to learn more. 

77% of people would like fashion brands to make it clear where they source materials, ingredients and components from, and who manufactured the product.

Fashion Revolution’s 2018
EU Consumer Survey

Sources:

¹ www.fashionrevolution.org/resources/consumer-survey

² www.vogue.co.uk/article/sustainability-transparency-traceability-fashion



WoolQ can help improve transparency in the wool supply chain, which is something brands and consumers are increasingly demanding.

MORE INFORMATION
www.woolq.com

A VOLATILE MARKET

Up until 12 months ago, the price of wool had been on a relatively steady rise for about six years, culminating in a record EMI of 2116ac in August 2018. Since then there has been a period of volatility with prices falling, then rising, and more recently falling away again. What has caused this volatility?

Volatility is a factor across most markets and usually restricted to just supply and demand. The wool industry is somewhat unique though in that it has a third contributing factor and that is the volatility of the wool type produced.

This factor impacts on supply volume, given Australia produces more than 700 types and descriptions of wool when the old AWC scheme types are applied. This variable is almost always dependent upon the extremes of the climactic conditions under which wool is produced in Australia.

These three variations of volatility all impact on wool manufacturing and therefore price. An overview of some of the fundamental drivers of recent price trends, supply volumes and wool type production follows.

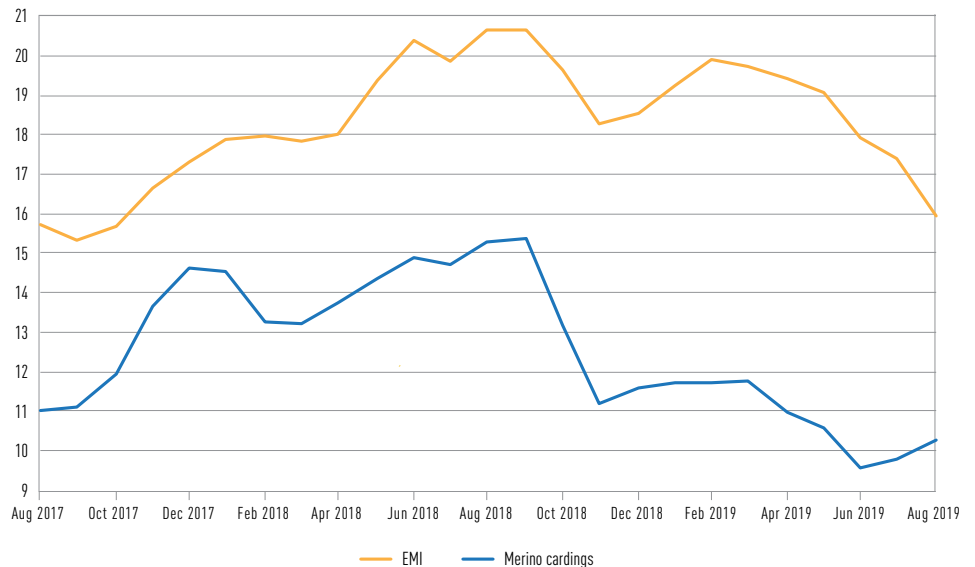
PRICE VOLATILITY

The severely negative events of the first few weeks of the 2019/20 selling season needs to be looked at in context and relativity. The combination of fickle demand and supply in wool (and most commodity markets) means that, at least in the short term, unanticipated changes in demand or supply can generate large price swings. The price decay was largely anticipated but it is the speed and magnitude of that demise that was, in hindsight perhaps flagged but nevertheless, unpredicted by all.

Beginning seven years ago in August 2012, wool entered a strong and sustained uptrend. Commencing at an Eastern Market Indicator (EMI) level of 934ac, the market climbed consistently to a peak of 2116ac seven years later in August 2018. This was on the back of a demand that had built steadily. Traditional wool use in knits and woven wear was joined in the consumer markets by creative and innovative products previously made with other materials. Retailers and the wider public started to recognise and pay for the additional benefits that the properties of wool supplied.

In isolation though, the past two years perhaps gave us the biggest clue as to what was to follow. Just 12 months ago, prices peaked, but a large part of Australia was gripped by drought with sheep numbers and wool production dropping sharply. Yet prices also lowered, albeit in a generally orderly and perhaps disguised or subtle manner as the daily prices being offered at auction were considered "still too good to have to think too hard to decide to sell".

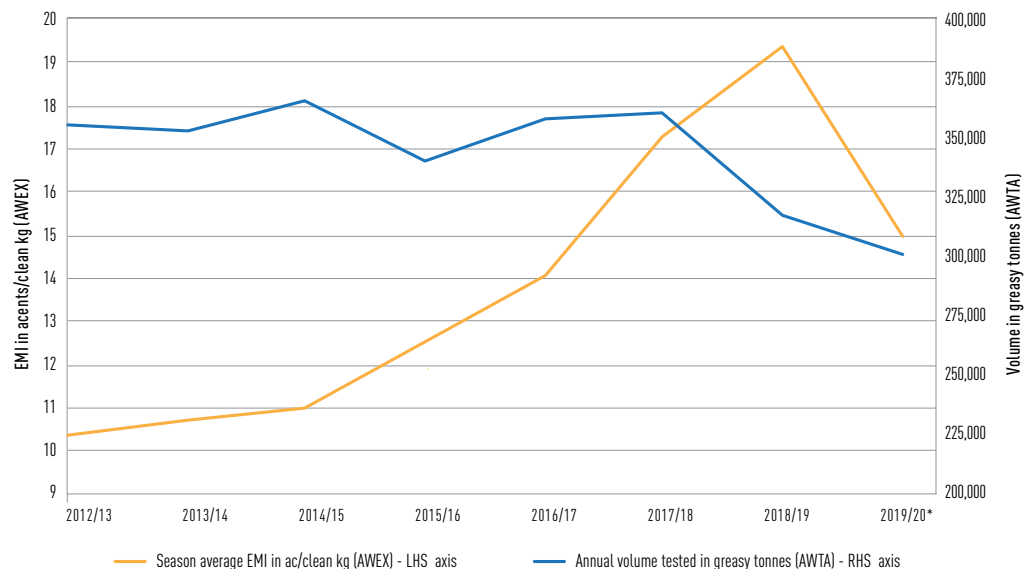
MARKET INDICATORS DURING PAST TWO YEARS AUD/CLEAN/KG



The previous six years had featured substantial gains amidst a remarkably stable supply, but when that supply fell 12% in just 10 months the price had deteriorated to the order of 13.6% by the season's end, totally against trend and totally against standard Supply v Demand scenarios in the purest sense. This alone should have been recognised as a market in demand distress.

Throw in the rumblings caused by the Sino-US trade imbalance dispute, Brexit, the ban of wool from the Republic of South Africa to China, Middle East tension and inverted bond yields, and the perfect storm hit consumer confidence globally. These factors caused wool markets to accelerate the already negative price trend signals and prices fell another 14.9% in just four sale weeks.

WOOL PRODUCTION V EMI SUPPLY V DEMAND (including 2019/20 projections*)



MARKET EXPLAINED

SUPPLY VOLATILITY

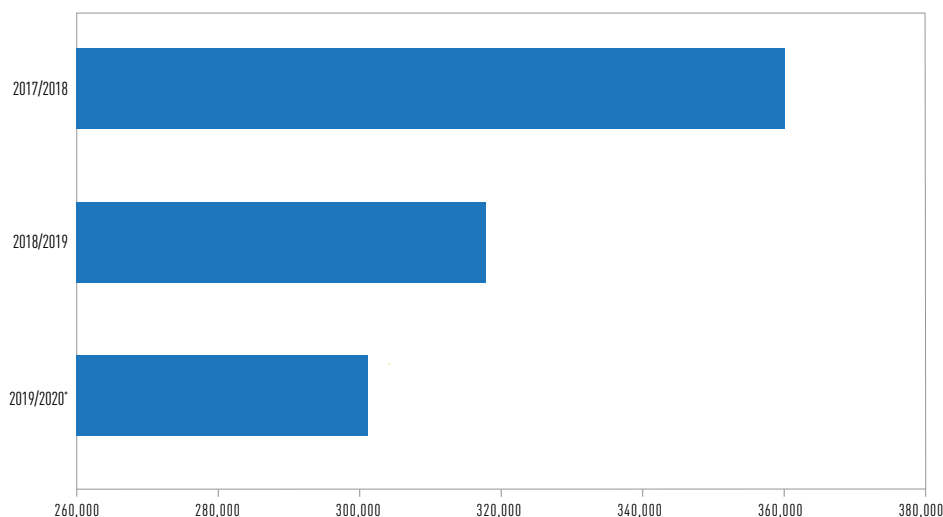
Whereby wool price is variable due to a range of complicating factors, supply can be relatively easier to gauge. Landowner intent surveys, Australian Wool Production Forecasting Committee reports, Australian Wool Testing Australia (AWTA) key test data and slaughter rates are all tools usefully applied to accurately assess the likelihood of supply. Climate though is the biggest influence upon supply volatility.

Drought at present has played havoc with wool sheep retention numbers and as such kgs on each sheep's back, stock left alive and individual woolgrower's sheep breeding programs have been hard to record with any degree of certainty.

What is estimated though is somewhere between 16% and 20% will be wiped off Australia's wool supply in just a three-year period. That figure may regrettably become much worse if a break in the season doesn't occur soon.

Since the onset of the supply breaking downward, away from an era of eight years of stable production, the market has entered a period of demand decay which has over-ridden the usually normal positive effects that a lower supply has on inelastic demand.

AUSTRALIAN PRODUCTION
AWTA KEY TEST DATA - GREASY TONNES
(including 2019/20* estimate)

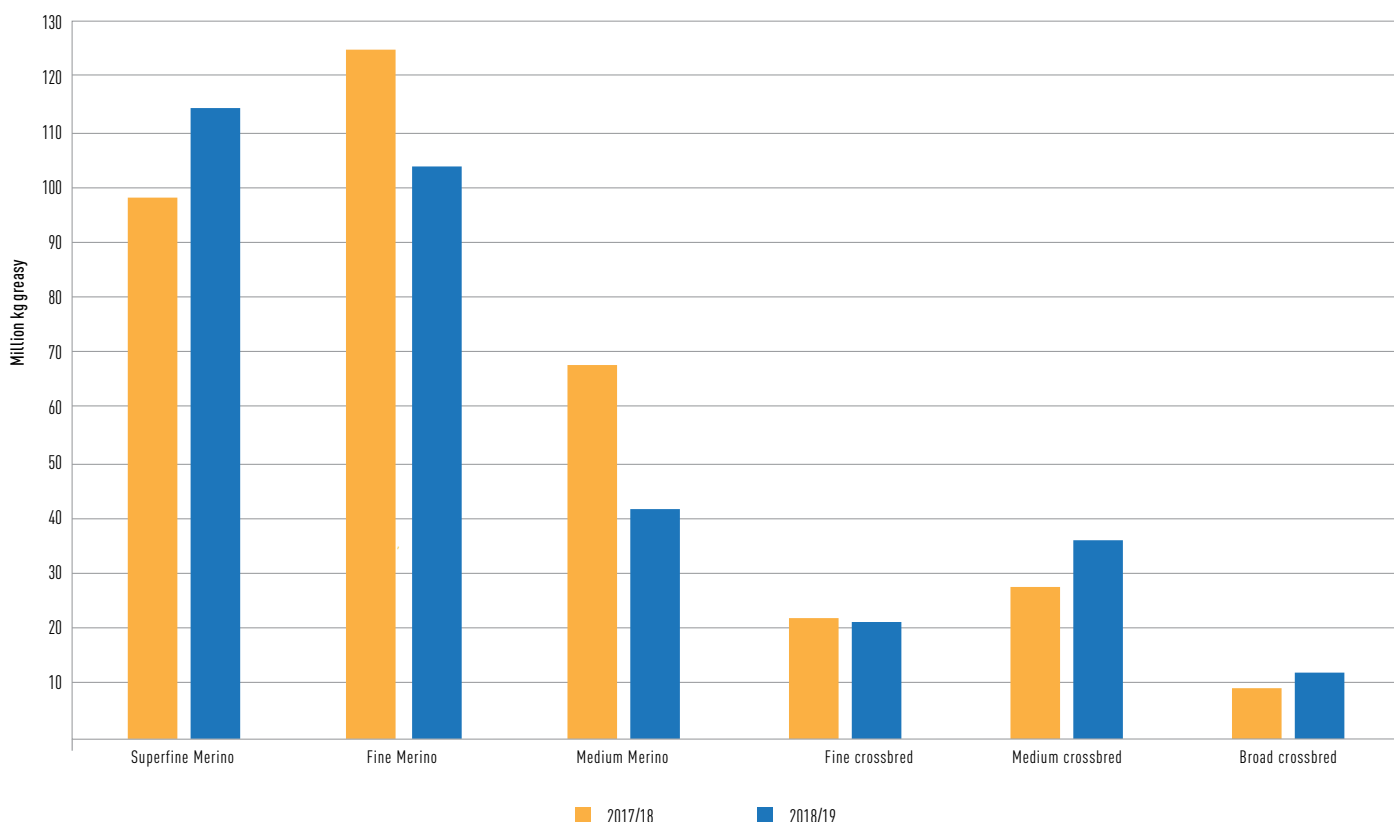


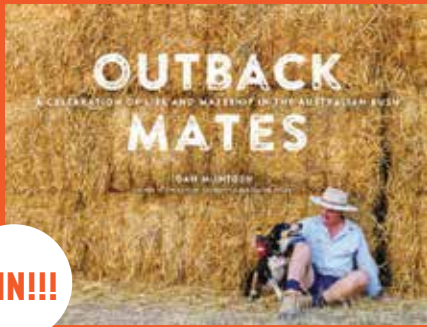
TYPE VOLATILITY

The effects of climate dually affect the types and descriptions of wools on offer. Protein levels in bought-in feed can influence largely the specifications of wool, and that results in finer microns, lower processing yields due to increased dust and dirt content and a lowering of tensile strengths if changes in feed and pasture are not carefully monitored and managed.

A drastic result of the two-year long drought has been the escalation in volumes of superfine Merino wool (18.5 micron and finer) and the significant reduction in fine and medium Merino wool descriptions. This situation creates pressure on price gaps between the micron groups as the major commodity types for our largest customer, China, is the sector which has seen the supply drop away.

AUSTRALIAN PRODUCTION YEAR ON YEAR - BY TYPE





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.

HAPPY BIRTHDAY TO EWE, SAMANTHA!

Georgie Nekel of **Denmark** in **WA** sent in this photo of her granddaughter **Samantha** on her 12th birthday. She spent the day at a shearing school being held at the Rylington Park Institute of Agriculture at Boyup Brook. She is pictured here with shearing legend and AWI shearer trainer Dwayne Black.



CECIL


This is Cecil, a painting by Jill Richardson who lives with her husband Richo in western Victoria on their family sheep and cropping farm with their four children. Cecil is an acrylic on canvas (182x170) – check out Jill's other artwork at www.jillbarberrichardson.com



READERS' PHOTOS!

Have you got any interesting photos that you'd like to share with other readers of *Beyond the Bale*?

If so, please email the image and a brief description to the editor of *Beyond the Bale* Richard Smith at richard.smith@wool.com.

 **Beyond the Bale has its very own Instagram account.** You can follow [@beyondthebale](https://www.instagram.com/beyondthebale) on Instagram and also tag us in your photos for your chance to be featured. We will also be showcasing on Instagram some photos emailed in to Readers' Photos (we'll ask your permission first), so you can keep emailing them in.

THALLON'S MERINO SILOS

Margot and Glen Rubie from 'Lachlan Merinos' in **Forbes, NSW**, were delivering Merino rams into **Queensland** earlier this year when they came across the amazing silo art at **Thallon**. The artwork was featured last year on an Australia Post \$1 stamp. Apparently, it took 500 litres of paint and 500 spray cans to paint the four 30-metre-high silos.



PRIDE OF THE BRIDE

AWI-supported 2013 Young Farming Champion **Adele Offley** married **Jeshua Smith** last year, pictured here surrounded by a beautiful Merino flock at Michael and Codie Reynolds' property 'Toompang' near **Young** in **NSW**. Adele is the Wool Technical Officer with Moses & Son at Young. The photo was taken by Rachael Lenehan Photography.



BEFORE THE BREAK

Corinne Heintze of **Minyip** in **Victoria** was fortunate to take this beautiful photo of her ewes coming across the dusty paddock to the feed trailer, just on sunset at the end of April. Since then the Wimmera has had good rains and suddenly it is verdant green once again.



A REMARKABLE VIEW

A beautiful shot of **Mt Remarkable**, viewed from the property of **Peter McCallum** between Melrose and Booleroo Centre in the Southern Flinders region of **South Australia**.



A VISIT TO HONG KONG

While in **Hong Kong** on holidays, **Jenny and Bevin Bury** from 'Jaburee' at **Wilmington** in **South Australia** stopped in at The Woolmark Company's office – pictured here is Bevin examining a 'KnitWarm' jacket that incorporates electric self-heating technology. The Burys also attended the latest Merino awards at the Hong Kong Design Institute. "It was absolutely fantastic to see new innovative ideas and changes of cultures in wool production and designs," the Burys said.



ON THE LOOKOUT

Anthony and Jenny Websdale who run a small sheep farm at **Lindenow South**, west of Bairnsdale in **Victoria**, took this early morning photo of their kelpie **Bundy**, perched high on the bike and keeping an eye on the Merino ewes.



BLADES OF GLENCOE

Nicki Guttler was one of the 70 shearers (35 female, 35 male) blade shearing at this year's 'Blades of Glencoe' shearingathon in **South Australia**, an event to raise awareness for mental health in the farming industry. Nicki has been shearing full time for the past three years, but only started to blade shear especially for this event. The photo was sent in by her parents **Helen and Paul Guttler** from **Boree Creek** in the Riverina of **NSW**, who are very proud of their daughter in the career she has chosen.



WOOL JACKETS PERFECT FOR SERRA TERROR

Elders Hamilton District Wool Manager **Andrew Howells** with teammates who successfully completed the two-day 70km Serra Terror endurance event in the **Grampians National Park**. Andrew said the team's 100% wool water-resistant jackets were perfect for hiking in. Check out page 13 for details.





Join the 'Q'
at www.woolq.com

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