

Beyond the bale

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PROFIT FROM WOOL INNOVATION

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**SCHOOL MERINO
WETHER CHALLENGE**

Beyond thebale

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FRONT COVER

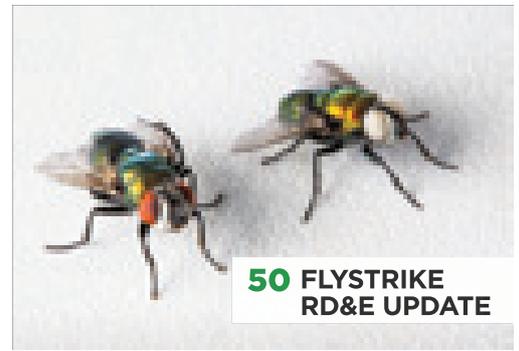
This photo was taken by Melise Coleman (www.melisecoleman.com) of Jodie Green at 'Aloeburn' at Boree Creek in NSW. The photo captures the mood of the moment and also the caring bond between farmer and animal. "This photo wasn't set up, it's just a poddy lamb who knew exactly what time it was, who meets her humans each day at the yards," Melise said.

Melise has uploaded this photo on Instagram, saying: "Farming is not a job, it's a way of life. Thank a farmer, it might be just what they need to get through their day, and because they.. so.. so.. bloody.. deserve.. it. This love exists on Aussie farms, and I wanted you to see it."

ISO This magazine is printed on PEFC (Programme for the Endorsement of Forest Certification) paper stock.



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AWI INVESTMENT STRATEGIES

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



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REVIEW OF PERFORMANCE RECOMMENDATIONS

AWI'S PROGRESS OF IMPLEMENTATION

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

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

Further information is available at rop.wool.com

99%
OVERALL
IMPLEMENTATION
PROGRESS

(as at 27 April 2020)



THEME IMPLEMENTATION PROGRESS



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

REVIEW OF WOOLPOLL

AWI welcomed the announcement in April by the Department of Agriculture, Water and the Environment to review WoolPoll, as an opportunity for woolgrowers to provide their ideas to improve how WoolPoll is conducted. WoolPoll is the three-yearly poll through which wool levy payers vote on their preferred rate of wool levy.

The Department of Agriculture, Water and the Environment issued a discussion paper in April, in which it stated: "This review will examine whether WoolPoll remains an appropriate and contemporary process that provides government with assurance about what wool levy payers want their levy rate to be. The review will make recommendations to the department, AWI and the wool industry about how to optimise the WoolPoll mechanism."

The Department invited all wool levy payers and interested wool industry stakeholders to contribute their perspectives by 29 May. The Department stated it will review all the responses and written submissions and that it expects to hold targeted meetings (using phone and video) in June and will use these to follow up on key issues raised in submissions as required.

The Department will outline the review's findings and any recommendations in a report, which it expects to publish in September 2020.

The Department is reviewing WoolPoll to deliver on a recommendation made in the 2018 Review of Performance.

NEXT GEN CONTRIBUTE TO LONG-TERM PLAN

More than fifty wool industry leaders met (online) on 30 April to chart the Australian wool industry's 10-year strategic plan.

AWI's Woolgrower Consultation Group (WCG) – which is a broad-based group that includes representatives of national, state and regional woolgrower groups and the Department of Agriculture, Water and the Environment – was joined at the meeting by 21 representatives of the wool industry's 'next generation' from across Australia who have been identified as future leaders by WCG members.

The development of a strategic long-term vision for the wool industry was one of the recommendations from the 2018 Review of Performance. AWI is facilitating the development of the 10-year industry plan, while the WCG is the principal oversight body for the project.

"AWI is proud to listen to and work with representatives across the length and breadth of the wool industry," said AWI CEO Stuart McCullough. The outcomes from the meeting will contribute to the development of a series of five discussion papers to be provided to WCG members for debate and feedback. Further consultation with wider industry stakeholders will occur throughout the plan's development process, with delivery of the strategy expected in late 2020.

MORE INFORMATION
www.wool.com/2030

AWI'S RESPONSE TO THE IMPACT OF CORONAVIRUS



Stuart McCullough
Chief Executive Officer
Australian Wool Innovation

The coronavirus pandemic is both a terrible health crisis and a major economic shock to the world economy. Here I provide an important update on how AWI has adapted to these challenging times and is getting on with its business of R&D and marketing for the benefit of Australian woolgrowers.

AWI REMAINS OPEN FOR BUSINESS

Throughout the global coronavirus pandemic, AWI is continuing to work for woolgrowers to ensure the sustainability of our industry and the profitability for your enterprises.

Your interests and future remain the focus of all AWI staff in Australia and across the world. They all continue to work hard for you, albeit currently from home for most them. We are an agile company and have the digital support infrastructure and frameworks to ensure productivity while staff work remotely. Regular internal meetings and communication now occur online, keeping everyone engaged and supported.

Although most of our offices around the world, including our Sydney office, currently remain closed and face to face meetings are suspended, rest assured that the company remains very much open for business. All staff can still be contacted via email, phone and our website. Our usual AWI Helpline number for woolgrowers is also still available during business hours on 1800 070 099.

Woolgrowers can stay up to date on AWI's activities and market intelligence via our regular e-newsletters (subscribe at www.wool.com/subscribe), our recently revamped website www.wool.com, The Yarn podcast, and our various social media channels including Twitter and our newly launched Facebook channel. AWI's grower networks in each state also very much continue to operate – their website and contact details are available at www.wool.com/networks.

MARKETS TAKE A BIG HIT

The global coronavirus pandemic affects the wool industry in many ways, but the way that it affects most profoundly is in the reduced purchasing of garments by consumers. Due to social distancing and lockdowns in so many countries, people have simply been unable to get to stores to buy garments. Furthermore, global economies have been badly shaken and many people do not have the spending power they once had. Fiscal concerns and potential unemployment weigh heavily on many consumers. Make no mistake, retail sales have been hit very hard indeed and it looks like overall consumer demand for wool will be weak for at least the next four months or so.

On the bright side, some governments, such as the UK government, have been very proactive in trying to support business and protect jobs which will help people's on-going capacity to consume beyond basic needs. It was also fortunate the pandemic hit during the spring of our all-important northern hemisphere markets rather than the high turnover autumn/winter seasons for wool.

The pandemic has impacted some countries more than others. At AWI, we are looking to ensure that we identify markets and sectors that will recover quickly and drive demand as we come through this unprecedented disruption. I think China in particular has got the potential to recover most quickly which would be great news due to the size of its economy and its importance for Australian wool as both a big consuming and processing market. Other markets about which I am hopeful are Germany and the Nordic countries which seem to have weathered the virus better than many. While the US has been badly hit by the virus, it will be interesting to

see if it can recover as quickly as it did coming out of the GFC. Unfortunately, two of our biggest markets, the UK and Italy, have been badly hit by the virus and each had to impose severe lockdowns which has badly reduced consumer spending there.

MARKETING PROJECTS REVIEWED

AWI must be smart about when, where, and indeed whether it is prudent to actually spend woolgrower funds – and this is especially the case with our marketing activities at the moment. Given the drop-off in consumer spending across the globe, I asked our marketing teams at the start of March to review all our current marketing campaigns and collaborations, and stop any expenditure on projects that rely on face to face shopping or were no longer expected to produce a return on investment. There is no point spending money marketing a product if consumers cannot buy it. Those marketing funds are better held back and spent at a later time when it is more likely an investment will yield results. Once we see a market recovering, we will deploy the marketing funds that we held back as quickly as we can and try to stimulate demand.

There is a lot of uncertainty about the market outlook at the moment and we don't want to invest woolgrowers' funds if we have imperfect information. We have therefore set up a special business intelligence unit dedicated to collecting information to help us during this unique global situation. The unit has been reaching out to AWI staff across the world who have been focused during the past two months on collecting the best intelligence they can get on markets and businesses. This will enable us in due course to begin releasing marketing funds again

in the most effective manner – at the right time, in the right locations, with solvent business partners, in optimum retail sectors – but only when there has been a thorough evaluation of the merit.

ADAPTED MARKETING IN THE SHORT TERM

When the full impact of the coronavirus pandemic first hit in March, we switched our focus in the short term to retailers and brands that have proven digital retail platforms, because online purchasing has not been hit as hard as brick and mortar stores. While so many people have been isolated at home, online shopping and social media has been key to our promotion and messaging to sell product.

Our marketing teams have worked hard to tap into what people are likely to purchase online while at home and identify opportunities for wool. We have tried to be in step with the mood of consumers and have been highlighting wool's health and wellness benefits, its suitability for comfort in the home and whilst exercising, its benefits for rest and sleep, and hand knitting for keeping busy and easing anxiety. We have also been promoting wool's natural eco-credentials.

ON-FARM: R&D CONTINUES, EXTENSION AND SELLING TURNS DIGITAL

Most of our on-farm R&D projects continue as normal and we closely monitor their progress and budgets. However, during the past three months, many face to face industry events and activities for woolgrowers have had to be postponed or cancelled due to government social distancing guidelines. AWI has responded quickly and made many of its own events available online instead. Examples include the Back to Business series of 12 webinars (see page 32) that were originally scheduled as workshops throughout bushfire and drought impacted regions. Another example is AWI's popular RAMping Up Repro workshop (see page 61) that was held online as a webinar in early April. All these webinars are recorded and made available to be viewed free at any time by woolgrowers wherever they are in the country. Once social distancing measures have been relaxed in Australia, AWI will resume its attendance at wool industry events nationwide.

The decision by the Federal Government to allow shearing to continue under strict health and hygiene protocols was a great result for the industry. AWI worked closely with other organisations to push the case. However, we have suspended our face to face in-shed shearer and wool handler training during the past two months, but as an alternative have recorded and rolled out a series of well-received online training videos (see page 44).

While rural areas thankfully do not seem to have been directly affected by coronavirus infections as much as metropolitan areas, it is important that people remain vigilant. On pages 38, we provide information for woolgrowers on how to help ensure that their farming operations, staff and contractors, family and friends are as protected as possible.

Wool auction rooms posed a challenge in terms of managing social distancing but they have remained open. During this period, we have worked hard with industry on the WoolQ platform to offer WoolQ Market (an online auction for the sale of wool) as a contingency to the open cry auctions. Successful trials of the WoolQ Market auction system took place with brokers and buyers in April and WoolQ began conducting regular weekly auctions at the end of that month (see page 70). It has always been WoolQ's aim to complement all the strengths of the existing open cry auction system at the same time as delivering additional services, rather than a replacement.

SUPPORT TO THE TRADE

Much of our off-farm textile innovation R&D projects across the world continue as normal under close monitoring. However, many of our trade and designer partners have been badly affected by the global lockdowns and we are doing what we can to support them. For instance, the expertise of our global technical team is being promoted to our partners, and communications have been sent to Woolmark licensees offering our support in supply chain management, staff education and training.

Trade education is an important part of what AWI does. While we have had to cancel face to face education workshops, we are fortunate to have previously converted many of our training resources into a digital format and launched our online Woolmark Learning Centre (see page 23). This has enabled us to easily provide access to comprehensive online educational resources for all levels, from student to professional, as an alternative to our usual face to face training.

With so many students across the world studying at home, we have sent communications to all our education databases (students and teachers) highlighting the digital learning opportunities available via our online education platforms including the Woolmark Learning Centre, Learn About Wool, Wool Performance Challenge, Wool4School and Woolmark.com websites. For younger children at home, we have been publicising the Shaun the Sheep online games for children at Supernaturalwool.com (see page 19).

International trade shows at which we would have normally exhibited during the coming few months have been postponed until later in

the year – these include Milano Unica (high end textile and fashion) in Milan and Première Vision (woven fabrics and wovenwear) in Paris. We will be ready to resume our presence at trade shows once they open again, but in the meantime have been working on digital alternatives.

LOOKING TO THE FUTURE

I hope you have all been safe and well during these unprecedented times and remain so. The situation changes daily and we are all continually working to adapt to the new normal. 2020 will be a tough year for everyone, markets and woolgrowers. Despite the coronavirus pandemic being a major shock to key macroeconomies, I am quite confident that the wool industry and woolgrowers are more than robust enough to get through the crisis.

Although the EMI has dropped, I am encouraged as to how well the wool market has held up compared to other markets during these extraordinary times. There are still wool processors buying our raw wool and I am sure they believe, like me, that there is decent underlying demand for the premium and natural qualities of our fibre along the supply chain right through to consumers. Furthermore, the positive relationships AWI has built along the supply chain during the past decade will help ensure a positive outcome for Australian wool in the future.

RECOVERING FROM DROUGHT AND BUSHFIRE

While there has been much focus by the business on the effects of the global coronavirus pandemic, I am still deeply concerned with the circumstances of the many woolgrowers and rural communities that have been struggling from the effects of ongoing drought conditions and then bushfires.

A wetter start to 2020 has eased the severity of short-term rainfall deficiencies over much of eastern Australia. However, the lack of rainfall over an extended period was so severe that recovery will be a slow process. Furthermore, while many parts of the country have recently received some reasonable falls of rain, there are areas that have not been so lucky.

Whether you are still suffering or recovering from drought and/or bushfire, I urge you take advantage of AWI resources. Refer to our website at wool.com/droughtresources and www.wool.com/bushfires for further information. 

BOOSTING YOUR IMMUNE SYSTEM WITH SLEEP

MiniJumbuk's wool quilts incorporate Airlight Technology™ which helps regulate sleeping temperature.

Leading Australian wool bedding brand and Woolmark licensee MiniJumbuk is reminding consumers that a good night's sleep strengthens the immune system and is therefore integral to building a good defence against colds and the flu.

We all know that when we have a good night's sleep it makes us feel and function better during the day, but did you know sleep is integral in building your immune system too? Studies¹ have shown that people who get poor quality sleep are more prone to catching colds and flu viruses.

With that in mind, an easy way for all of us to increase our immune system and health is through improving the quality of our sleep each night.

SLEEP AND THE IMMUNE SYSTEM

The science shows that while you sleep, your immune system produces proteins called cytokines, a specific type of protein that helps fight against colds, flu viruses and other infections to keep you healthy.

A study conducted by The University of California² found evidence that indicated poor sleep was the number one factor in determining whether someone would get sick after being exposed to the cold virus.

The study showed subjects who slept less than six hours a night were 4.2 times more likely to catch a cold compared to those who got more than seven hours of sleep - see graphics below.

WOOL AND IMPROVED SLEEP QUALITY

MiniJumbuk Managing Director Darren Turner says that through its unique, natural properties, wool can assist people to improve their sleep quality and gain a better night's sleep.

"At MiniJumbuk, we consider that sleeping

with wool is the best way to guarantee a great night's sleep. By simply choosing to sleep in, on and under wool, we believe that you will achieve a deeper, more restful sleep.

"Ultimately, this can help you to build your immune system."

Mr Turner says the advantages of sleeping with wool stem from the fibre's two unique properties: its moisture absorption abilities and its dynamic thermal capacities.

"Wool is able to absorb up to about 30% of its own weight in moisture, while remaining dry to the touch. As you sleep with wool, any perspiration is drawn away from the skin, helping to maintain a consistent level of humidity in your bed. Your skin remains dry, improving your comfort as you sleep.

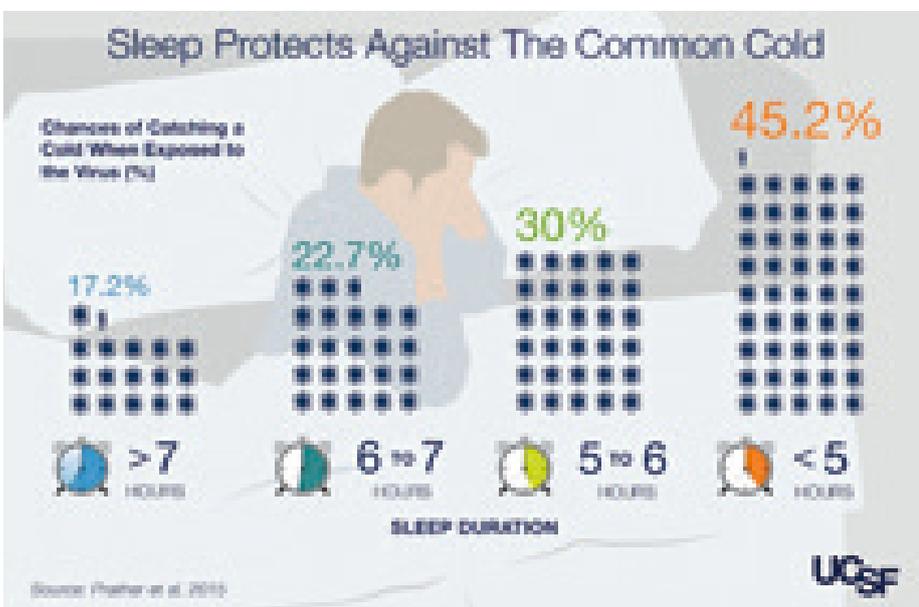
"Furthermore, by constantly absorbing and releasing water vapour, wool acts as a buffer effectively helping to minimise changes in body temperature."

MINIJUMBUK'S 45 YEARS WITH WOOL

MiniJumbuk was established in 1975 in the country town of Naracoorte in South Australia by local sheep shearer Don Wray. Today, MiniJumbuk is still proudly based in Naracoorte and has grown to become a global leader in the design and manufacture of premium wool bedding products.

The company specialises in wool quilts, mattress toppers and pillows. Its products are sold in the major department stores and homewares retailers in Australia, such as Myer, David Jones and Adairs, as well as online.

"It's our attention to detail and quality that has given us the reputation we have today. Our staff have a genuine commitment to



providing excellent customer service and top quality products that we are truly proud of," Mr Turner said.

"Each of our wool quilts incorporate Airlight Technology™ that provides superior insulating properties while allowing for the creation of lighter, more comfortable quilts that perfectly regulate sleeping temperature.

"MiniJumbuk was founded on wool, and the fibre continues to be the focus of the company. We source the best possible Australian wool – much of it from the local area. I believe that MiniJumbuk being based in a small regional town in the heart of Australia's prime wool-growing areas plays a big part in the brand. Customers like authenticity, they like traceability." **B**

References:

¹ Sleep Health Foundation, *Sleep to Boost Your Immunity*, www.sleephealthfoundation.org.au, 13/3/20

² University of California San Francisco, *Short Sleepers Are Four Times More Likely to Catch a Cold*, www.ucsf.edu, 31/8/15

MORE INFORMATION

www.minijumbuk.com.au

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All enquires should be directed to MiniJumbuk via info@minijumbuk.com.au or phone 1800 088 834.

SCIENCE BACKS SLEEPING IN WOOL

The results of scientific studies funded by AWI during the past few years have shown that a better night's sleep is achieved when sleeping wearing wool.



reduced time to fall asleep



less fragmented sleep



less wakefulness

Sleeping in wool sleepwear has been scientifically proven to improve your sleep. PHOTO: andresr

During the past few years, scientific studies funded by AWI have tested the sleep of both older and younger adults and found that wearing wool is conducive to restful sleep, attributed to the properties of wool fibres that keep the body in the 'thermal comfort zone'.

"The great value of these research investments on behalf of Australian woolgrowers is that we are now building a very solid and contemporary body of scientific evidence which supports claims that wool is beneficial to a good night's sleep, which should help build consumer demand for wool," said AWI's Program Manager for Fibre Advocacy and Eco Credentials, Angus Ireland.

The results of the most recent AWI-funded study, focusing on older adults, were published last year in the journal *Nature and Science of Sleep*. The study by the University of Sydney compared the effect on sleep quality of wearing single jersey Merino wool, cotton and polyester sleepwear, in warm conditions (30°C and 50% humidity) for participants aged 50-70 years old.

In older adults with no health concerns, sleep disturbances are often linked to the thermal environment that is vital for sleep maintenance. Sleeping outside the optimum temperature range can negatively impact the sleep of older adults, as they are more vulnerable to heat stress.

The key findings were:

- **Sleeping in wool reduced the time taken to get to sleep** compared with sleeping in cotton and polyester for older participants

aged ≥65 years (12 minutes in wool, 27 minutes in cotton and 22 minutes in polyester).

- **Sleeping in wool resulted in less fragmented sleep** compared to sleeping in other fabrics, especially between wool and polyester sleepwear.
- **Sleeping in wool resulted in less wakefulness** for poor sleepers after sleep onset, compared to sleeping in cotton.

Overall, wool performed better than cotton and polyester for the majority of the 11 sleep quality parameters, while neither cotton nor polyester was better than wool for any parameter.

The results of a previous AWI-funded study, also undertaken by the University of Sydney, but this time focusing on healthy younger adults, were also published in *Nature and Science of Sleep*, in 2016.

Seventeen healthy young adults underwent nine nights of polysomnography testing and it was found that the time it took to fall asleep was significantly shortened when sleeping in superfine Merino wool, with trends of increased total sleep time and sleep efficiency compared to cotton sleepwear.

"While these two studies have shown wool sleepwear promotes better sleep, particularly in older adults and poor sleepers, another AWI-funded study that is under way might also identify benefits of sleeping in wool for menopausal women who often experience hot flashes and disturbed sleep. Future studies might also identify benefits for other people, such as shift workers who have disrupted circadian rhythm," Angus added. **B**



Recently launched **singlets** from Merineo are made from Australian superfine Merino wool.

compared to other products. I put this down to wool's inherent benefits supported by medical research to say babies sleep better in wool, combined with the swaddling design of the sleeping bag. Midwives all say newborns settle better if swaddled."

Since the launch of the first Merineo swaddle, the brand's product range has evolved to now include a 'wingless Merineo' basic sleeping bag for newborns, a sleeping bag (arms in or out) for older babies, and a sleeping bag for toddlers.

"The swaddle and sleeping bags for babies (which are suitable for infants under six months) have been formally acknowledged by the International Hip Dysplasia Institute as 'hip-healthy'," Claire said.

"I have also embarked on a new strategy to sell to obstetricians who in turn gift to their babies."

All the products are designed and manufactured in Australia, are machine washable and are available in a range of colours and trims.

In July 2018, the Merineo newborn swaddling bag was displayed at Italy's main textile trade fair, Milano Unica.

"Merineo was selected for display at Milano Unica because of its innovative use of mesh style fabric, a highly breathable knit, often used for activewear as a next-to-skin garment," Claire said. "Closer to home, in Bendigo last year, I was honoured that Merineo was featured in the Australian Sheep and Wool Show fashion parade, thanks to AWI."

The latest development from Merineo was the launch in February of a range of singlets for children. Available in sizes 000 to 7 and machine washable, they are also made in Australia from 100% superfine Merino wool, in a 'cool mesh' fabric and are luxuriously soft.

"When we designed these singlets we wanted something long-wearing because we know how quickly children grow out of their clothing, particularly newborns. Our singlets are slightly longer than other singlets on the mainstream market and ours are made with a super stretchy fabric, designed to fit comfortably around the chest and waist to suit the growing baby, achieving longer wear," Claire said.

More new childrenswear will be launched later this year. **B**

MORE INFORMATION

www.merineo.com

The Merineo **swaddling bag** is made from Australian superfine Merino wool and designed to help parents settle their baby quickly and easily in a natural, breathable fabric.

PHOTO: Bianca Dickinson of the_dickinson_klan

ALL GO FOR MERINEO

A childhood on the family wool-growing property was inspiration for Claire Hausler to create the initial Merineo swaddle for newborns, made from Australian superfine Merino wool. Three years later, the Merineo brand has grown to now produce a range of baby sleeping bags and has also recently launched a new range of singlets.

Merineo founder Claire Hausler grew up on her parents' wool-growing property 'Murrumbereck' in Minhamite, western Victoria, and has therefore always known and been passionate about the natural benefits of superfine Merino wool.

In 2016 when she couldn't find suitable Merino sleepwear for her and her husband's newborn son, Jack, she saw a gap in the Australian market for wool swaddles (sleeping bags for newborns). After further research and development, Claire devised Merineo – a world-first design embracing the traditional swaddling method and the modern sleeping bag.

Knowing babies sleep better in superfine Merino wool (due to its softness, breathability, thermal qualities and elasticity), Claire sourced 17.5 micron Merino wool from a mill to which the family farm supplies. And so, Merineo – a play on the words Merino and Neonate – was born.

"My parents, Ken and Marjorie Hausler and three brothers Alan, Stephen and Glenn are all woolgrowers," said Claire. "By creating the Merineo brand, I want parents to experience

premium Merino wool and hopefully become repeat users of the fibre, ultimately supporting the Australian wool industry."

An early accomplishment for Claire's business was when she teamed up with the Knox Private Hospital in Melbourne to supply Merineo newborn sleep swaddle bags (with the hospital's branding) to its newborn babies.

"I contacted the hospital and presented the idea; they liked it because of the health benefits of wool. Part of the work with the hospital involved running a pilot program where we tested the usability of the Merineo on newborn babies," Claire said.

"It was enormously rewarding when the majority of parents responding to the survey said their baby settled better in a Merineo



WOOL READILY BIODEGRADES IN MARINE ENVIRONMENTS

Research funded by AWI has shown that machine-washable wool fibres as well as untreated wool fibres readily biodegrade in the marine environment, in contrast to synthetic fibres that do not. The research found no evidence to support the idea that the polyamide resin used as part of the machine-washable wool treatment forms microplastic pollution.



Residues from **machine-washable wool** (top) and **polyester** (bottom). The degradation of wool is clear, as is the lack of degradation of the synthetic fibres.

It is estimated that 0.6-1.7 million tons of microfibrils are released into the oceans every year. An important source of this pollution is fibre shedding during the laundering of apparel.

This seemingly ubiquitous contamination of the environment with fibres and fragments from textiles, especially from synthetic fibres, is of growing concern amongst brands and consumers.

Previous studies have already shown that wool biodegrades in the natural marine environment, which is good news for the wool industry and the planet. However, the aim of this new study, undertaken by AgResearch and funded by AWI, was to measure the *rate of biodegradation* (in the marine environment) of wool relative to competing fibres, and study the residues produced.

“One of the main objectives was also to disprove the idea that machine-washable wool might create a form of microplastic

pollution,” said AWI’s Program Manager for Fibre Advocacy and Eco Credentials, Angus Ireland.

“It had been suggested that the commonly used polyamide resin (Hercosett) on machine-washable wool, which prevents the wool felting, might break into fragments as the wool fibre degrades. It was important that this suggestion be examined and refuted scientifically.”

RESEARCH PROCESS

Scientists from AgResearch undertook the study using a method based on an established standard for measuring marine biodegradation. Residues were examined using scanning electron microscopy (SEM) and energy-dispersive X-ray spectroscopy (EDX).

The samples used in the study were sourced from comparable lightweight base-layer fabrics, each made from the six fibre types being studied:

- two types of Merino wool: machine washable wool and untreated wool
- viscose rayon, which is made of cellulose derived from plant sources such as wood pulp
- three synthetic fibres: polyester, nylon (a polyamide) and polypropylene.

The fabrics had been deconstructed (shredded) to remove any possible interference from the way the fabrics were structured. Furthermore, the fabrics had been washed repeatedly before testing, to simulate a partial garment lifetime.

The average biodegradation of three samples for each of the six fibre types was measured relative to a ‘positive control’ (ie a sample known to biodegrade readily). In this study, the positive control was kraft paper pulp.

RESEARCH RESULTS

Table 1 (right) provides the amount of biodegradation of the six fibre types during the 90-day trial period, expressed relative to the ‘positive control’.

“The study shows that both types of wool

biodegrade to a high degree, as does the cellulose-based viscose rayon. Synthetic fibres show little or no biodegradation,” Angus said.

The treatment that makes wool machine-washable (the application of a thin polyamide film to the fibre surfaces), actually caused the wool to biodegrade more rapidly than untreated wool. The scientists believe this is probably because the treatment process removes some of the fibre’s cuticle (its armour plating), rendering it more susceptible to microbial degradation. It is important to note that the polyamide resin used in the machine-wash treatment for wool is very different from common commercial polyamides.

“Significantly, the scientists did not detect any formation of microplastic polyamide fragments resulting from the biodegradation of machine-washable wool,” Angus said.

Based on observations from soil biodegradation, the scientists expect that over a relatively short time wool will biodegrade completely in the marine environment. The rate of biodegradation for untreated wool is likely to increase to be similar to that of machine-washable wool once its cuticle is broken down.

ANOTHER STRING IN WOOL’S BOW

The results of the new study complement previous AWI-funded research into microplastic pollution from textiles, which recommends an increased use of natural non-synthetic materials, such as wool, in global textile markets.

“This is yet another study that helps demonstrate the eco-credentials of natural fibres in a world where there is increasing concern about the effect on the environment of synthetic textiles,” Angus said.

It is part of a larger body of work by AWI towards better accounting for the use phase in Life Cycle Assessment (LCA) of apparel.

“Natural fibres such as wool readily biodegrade and consequently don’t amass in the environment. This important difference between natural and synthetic fibres needs to be accounted for in Life Cycle Assessment for the LCA to be credible and scientifically defensible,” Angus added. E

Table 1: Relative biodegradation of fibre types

Fibre type	Relative biodegradation
Control (paper pulp)	100
Untreated wool	20.3
Machine-washable wool	67.3
Viscose rayon	64.5
Polyester	6.3
Nylon	0.8
Polypropylene	1.8



Considerably more severe skin injuries to military personnel in the Middle East (where battle techniques such as improvised explosive devices were used) occurred when synthetic base-layers were worn, compared to wool base-layers, as synthetic base-layers can melt onto the skin at high temperatures. PHOTO: Frank Rossoto Stocktrek

WOOL PROTECTS SKIN FROM FLAMES

STUDY PROVES SUITABILITY FOR MILITARY AND FIRE FIGHTERS

AWI has funded a new scientific study into the fire resistance of various fabrics used as base-layer garments for military and first responder personnel such as firefighters. The study concluded that the wool and wool rich fabrics in the study performed the best, while the 100% synthetic fabrics (polypropylene and polyester fabrics) performed the worst due to their propensity to melt and damage the skin.

From the Battle of Waterloo to the Korean War, wool's inherent ability to protect the wearer from hostile environments, including extreme cold and fire, made it the military's fibre of choice for outer layer garments. Nowadays, the military and first-responders are looking to base-layer wool garments due to the health and safety benefits offered by this 'last line of defence'.

"This growing market demand for wool base-layer garments relates to the already well-researched benefits of superfine Merino wool, including its softness next to the skin, moisture management, breathability – and fire resistance," said AWI's Program Manager for Fibre Advocacy and Eco Credentials, Angus Ireland.

The increased demand has in part been driven by the incidence of injuries to military personnel in the Middle East, where battle techniques such as improvised explosive devices (IEDs) were used. Considerably more severe skin injuries occurred when synthetic base-layers were worn, as they can melt onto the skin at high temperatures.

A review in 2017 by AgResearch of base-layer undergarments worn by the military, fire service and police first responders revealed that, worryingly, there are often no required specifications or test method standards relating to these important protective garments. This results in cotton or synthetic base-layers often being chosen by some military and emergency service personnel.

Some personnel choose cotton because it is the cheaper alternative and perceived as being a cooler option. However, there is the risk of large amounts of sweat/moisture building up in a cotton garment when worn in a layered system, which at high heat intensities increases radiant heat transfer and can lead to steam burns and increased levels of stress.

There's also a trend for personnel to choose synthetic 'moisture management' (wicking) sportswear garments. The key concern with synthetic fibres (even flame-retardant ones) is that, when they are exposed to flame or extreme heat, they melt and drip which can result in molten polymer coming into contact with the wearer's skin and burning it.

"In contrast, wool fibres are known to have a natural resistance to burning, even when exposed to an ignition source for long periods. This is due to wool having a high ignition temperature, high limiting oxygen index and its self-extinguishing behaviour," Angus said.

"Wool fibres are known to have a natural resistance to burning, even when exposed to an ignition source for long periods."

Angus Ireland, AWI

THE NEW STUDY

AWI has funded a new scientific study, undertaken by AgResearch, to test the fire resistance of nine fabrics (see Table 1) used as base-layer garments for military and first responder personnel.

To enable a realistic assessment of the protection offered by the base-layer garments, a new 'skin simulant' test method was designed using fresh pig skin. The test method involved two techniques to simulate the skin's exposure to, firstly, a

naked flame ignition source and, secondly, an accelerant fuelled threat (such as an IED or petrol bomb).

Once cooled, the most visibly damaged area of skin for each test was sampled using an 8mm biopsy punch and examined by AgResearch using a microscope.

The results showed that the worst performing fabric was the polypropylene fabric closely followed by the three UK uniform polyester fabrics.

The fabric that performed best overall was the Zirpro®-treated wool (100%) fabric which showed no apparent differences compared to the undamaged control samples (see A and B in Figure 2), in both the naked flame and accelerant tests.

The second-best performing fabric was the double knit of the Merino/fire resistant treated viscose blend (B in Figure 1). The rib knit of the Merino/fire resistant treated viscose, the Modacrylic/rayon/nylon and Nomex® fabrics were the joint third ranking fabrics.

Angus says the results show that there is significant potential for wool base-layers to be used for protection as well as comfort by the military and emergency responders.

“This new test method demonstrated that while synthetic fabrics might be the most cost effective with regard to procurement, they offer very little protection to the wearer under the applied test conditions,” Angus said.

“It also highlights that an expensive fibre such as Nomex® is not the only option for protection, as the wool/viscose blend fabric of comparable density can offer the same or better level of protection.”

The results of this study, along with a detailed video, are being publicised by AWI in trade publications, at trade shows and distributed to partner brands (such as Aclima – see page overleaf) for use in their own marketing.

Figure 1: Naked flame impacts on exposed skin

The Merino wool blend covered skin (B) is very similar to the undamaged control (A), whilst the military polyester (C) and polypropylene (D) covered skin clearly both have damage as evidenced by the splitting of the upper layer (epidermis), loss of voids and discoloration of tissue below.

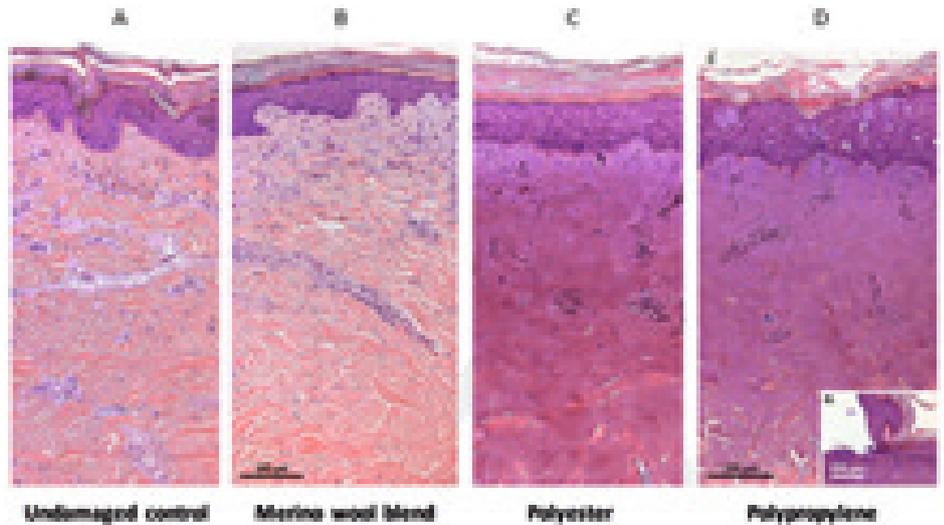


Figure 2: Accelerant fuelled impacts on exposed skin

The 100% Zirpro®-treated Merino covered skin (B) is very similar to the undamaged control (A), whilst the military polyester (C) and polypropylene (D) covered skin clearly both have severe damage.

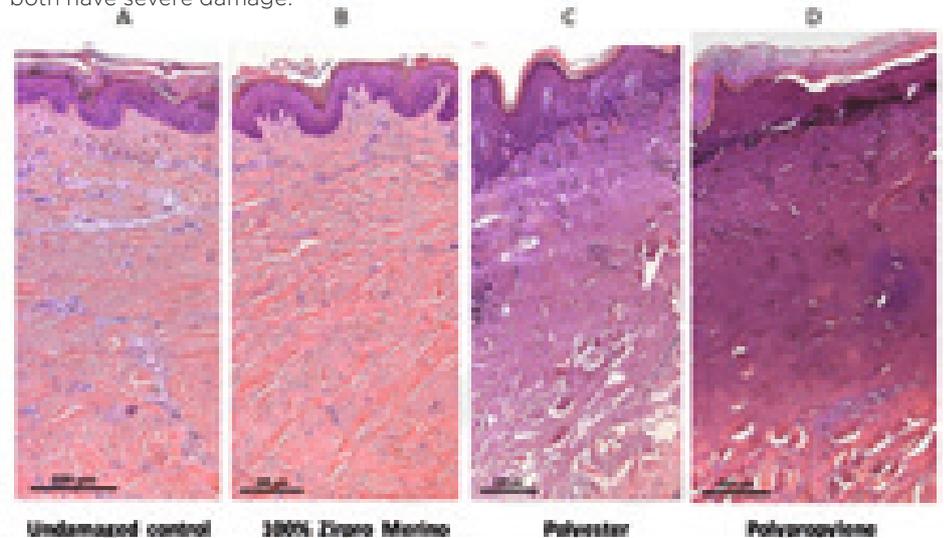


TABLE 1: The nine fabrics used in the AgResearch study

MARKET	COMPOSITION	FABRIC STRUCTURE	Measured mass (g/m ²)
Outdoor	100% polypropylene	Rib	175
British Forces	100% polyester	Fleece	180
British Forces	100% polyester	Fancy knit	160
UK Police	100% polyester	Fancy knit	146
US Military	Modacrylic/rayon/nylon	Single jersey	184
US Military	Nomex®/spandex (97/3)	Fancy knit	223
Protective/outdoor	Merino wool/fire resistant viscose (50/50)	Double knit	230
Protective/outdoor	Merino wool/Fire resistant viscose (50/50)	Rib	220
Protective mid-layer	100% Zirpro® treated Merino wool	Single jersey	440

ACLIMA'S AWARD WINNING BASE-LAYERS



The Woolmark Company is helping award winning outdoor brand Aclima to promote its Merino wool apparel, focusing primarily on two categories: its lightweight summer tops and its base-layers for professional users.



Aclima's WoolNet garments are designed for high intensity activities when moisture transport, weight, ventilation and functionality are the most important.

Aclima is a Norwegian knitwear manufacturer and Woolmark licensee that specialises in sports base-layers and mid-layers, with Merino wool in most of its products. Founded in 1939, the company is very well established in technical and functional apparel.

The Woolmark Company has been working with Aclima to increase consumer demand for its Merino wool products. This is primarily being achieved through promotion of Aclima's LightWool range for Spring/Summer and its WoolNet range for professional users.

A secondary goal of the collaboration has been to build consumer, retailer and trade understanding of wool's properties and benefits, which will result in a longer term and wider increase in demand through the distribution of wool products by more retailers and contract business.

"The cooperation with The Woolmark Company has always been good," said Aclima CEO Hans Petter Jacobsen. "We have experienced benefits in our marketing and packaging using the Woolmark symbol. The input from The Woolmark Company's laboratory and research personnel is also valuable. When working with professional buyers from police and military, these objective results and data are most valued."

LIGHTWEIGHT SUMMER BASE-LAYERS

As with most wool focused brands, the challenge for Aclima is to maintain demand for wool products in the warmer seasons, outside the traditional peak wool selling seasons of autumn and winter.

The Woolmark Company has been assisting Aclima promote its LightWool collection, which has been specially engineered to work well in the warmer seasons.

LightWool garments are made from superfine 17.5 micron Merino wool yarn and weigh only 140gsm, meaning these lightweight and soft garments are ideal for activities like running, cycling or golf during the summer months or as soft, warm everyday clothes. The garments are machine washable.

One of Aclima's LightWool garments is the award-winning LightWool Sports T-shirt (for men and women) that won the Apparel category for Spring/Summer 2020 at the Scandinavian Outdoor Award. The Awards have been held since 2005 to support product innovations and are highly respected in both the manufacturing and retail industries.

The Aclima Sports T-shirt is a 100% Merino wool garment that has Merino wool mesh strategically placed under the arms and partly on the back for optimal ventilation and breathability. The Scandinavian Outdoor Award jury stated: "Combining knitted Merino fabric and Merino mesh has been

around for a while but it has never been executed as well as in the apparel winner of this year."

BASE-LAYERS FOR PROFESSIONAL USERS

A different market altogether is the professional user market in which there are opportunities to increase wool in work wear and specialist clothing.

Aclima has been targeting this sector in recent years and sees a great potential in it for wool. Most of the wool innovations that have been developed for the outdoor market during the past 10 years are also readily applicable to the Police, Defence Force and Rescue services.

The main product line in achieving this goal for Aclima is its WoolNet range that delivers warmth without weight. The mesh construction of the base-layers provides excellent breathability and is very light and comfortable to wear. The Norwegian military has used Aclima WoolNet garments for decades.

One of Aclima's WoolNet garments is the award-winning WoolNet Overall (for men and women) that was the grand champion winner for Autumn/Winter 2020/21 at the Scandinavian Outdoor Award. "The best overall I have worn so far," raved one jury member. "The stretchy, soft WoolNet fabric used throughout the one-piece base-layer garment does not get soaked when sweating during high activity, dries quickly, and insulates well."

The Woolmark Company has been providing marketing support to Aclima in this professional user category. Of particular interest, The Woolmark Company provided Aclima with video footage regarding the flame-resistant properties of wool compared to fabrics made from other fibres (see previous page). This footage has been used by Aclima to promote its Merino wool base-layers at security and safety trade shows such as Milipol in Paris in November last year.

MORE INFORMATION
www.aclima.com



The Aclima team after their 17.5 micron LightWool Sports T-shirt (also pictured at top of page), which combines Merino wool fabric with Merino mesh under the arms and partly on the back, won the Spring/Summer 2020 Scandinavian Outdoor Award in the Apparel category.

WOOL WITH BANG: ULVANG

Norwegian-based sports and outdoor brand Ulvang, whose business is wholly based on wool, is expanding into new geographical markets and sports sectors, with support from The Woolmark Company.

Ulvang takes its name from its high-profile founder, Vegard Ulvang, one of the most successful cross-country skiers of all time – he won three Olympic gold medals in 1992 as well as World Championship gold medals in 1991 and 1993.

But Vegard is also a big adventurer. He has climbed in the Himalayas and the Caucasus Mountains, reached the South Pole, crossed Greenland and the Northwest Passage on skis, and spent countless hours in the mountain ranges of Norway. He has also starred on travel and adventure TV shows.

As an athlete and adventurer, Vegard considers wool as the only fibre that is good enough in competitions and for expedition.

In 1995, Vegard developed the first Ulvang product: a wool sock. Fast forward 25 years and the brand now produces a wide range of wool base-layers, mid-layers and accessories (socks, hats etc) and is very well established in the ski and outdoor sectors. Wool is totally engrained in the Ulvang business, so

much so that its slogan is 'We are wool!'.

Vegard is still part of the team at Ulvang and is involved in product development, testing and sales, as well as being its key ambassador.

"The brand's aim has always been to facilitate great experiences for our customers in nature – and I am very proud to have contributed to the movement away from synthetic base-layers to wool products," Vegard said.

Ulvang's base-layer products and some mid-layer products and accessories are made from Merino wool, with the brand's marketing very much focused on the fibre's inherent natural properties and its next-to skin benefits.

As well as the natural benefits of wool, environmental protection, social responsibility and animal welfare are also pillars in the brand's philosophy.

Ulvang's 'Rav 100%' base-layer series uses 100% Merino wool and is one of its customers' favourites.



Ulvang founder and Olympic gold medallist **Vegard Ulvang**: "From an environmental perspective, wool comes out very well."

"I believe it will be very important in the future for brands and consumers to know about the environment in which the sheep are raised, that the wool is produced to a proper standard. I believe the customer will be attracted to those that have got their values in order and are in control of their supply chain," Vegard added.

AWI's marketing arm The Woolmark Company has been supporting Ulvang's marketing initiatives to help increase the volume of Australian Merino wool garments sold.

Ulvang aims to increase its focus on high intensity sports such as cross-country skiing, and expand into warmer season sports such as running, highlighting the trans-seasonal properties and benefits of wool. All its products are Woolmark-certified.

Ulvang already has a large presence in North European countries and aims to expand further into other European markets and also take its first steps into China.

As part of its marketing, Ulvang has been highlighting the traceability of its apparel back to the origin of the fibre. This has included a video and feature on its website of one of the Australian properties, 'Nanimia' in Victoria (see picture below), that supplies Merino wool to the brand. **B**

MORE INFORMATION

www.ulvang.com



One of the properties from which Ulvang sources its Merino wool is 'Nanimia' at Snake Valley in central Western Victoria, owned by **Alan Pitcher** and his son **Russell**. The Pitcher family typically runs about 5,000 sheep of 18-19 micron on their 800-hectare property.



INSTAGRAM INFLUENCER MARKETING

The Woolmark Company is joining with key 'Instagram influencers' in the United States to promote commercially available wool products to their large fan bases.

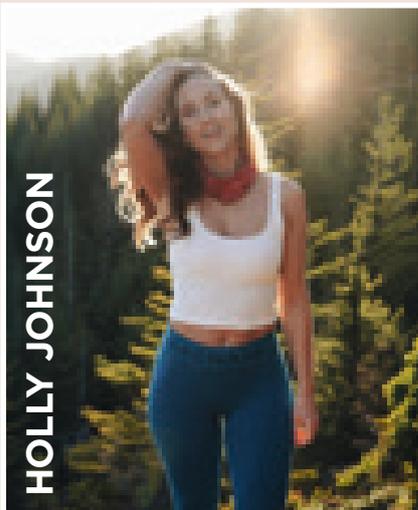
As an image-driven social media platform, Instagram offers a modern and novel opportunity for AWI's marketing arm The Woolmark Company to influence consumers' purchase intent.

As well as having its own Instagram channel, The Woolmark Company partners with other key Instagram channels, selected due to their established credibility and large audiences.

The images and posts that these 'Instagram influencers' post onto their channels can be very impactful upon their fans, and through this partnership are being used to increase consumer awareness and purchasing of wool products.

The Woolmark Company joined in March with three high profile opinion leaders in the United States, who each have large Instagram followings, to share their experiences with wool and showcase wool products from partner brands. **Here are some of the images and experiences they have shared with their followers.**

B

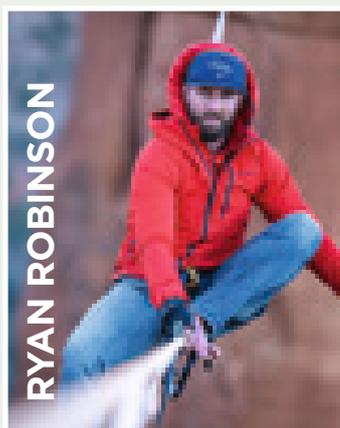


Holly Johnson is a Washington state native and nature lover who enjoys hiking and backpacking. She will promote wool product from partner brands such as **Nagnata, Tracksmith, Black Diamond** and **Lululemon**.

307k

INSTAGRAM FOLLOWERS
@missholldoll

If you've been following me for a while, then you know I'm a big fan of merino wool. It's breathable, moisture-wicking, odor resistant, environmentally-friendly, etc. The list goes on with this 100% natural, renewable and biodegradable fiber... and I'm excited to tell you guys all about it! Over the course of the next few months, I'll be partnering with @TheWoolmarkCompany and sharing the benefits of Australian wool, introducing you to some great brands using Aussie Merino wool (like @nagnata_) and showing you how I incorporate it into my lifestyle!



125k

INSTAGRAM FOLLOWERS
@handsomerobinson

Ryan Robinson is a professional highliner, adventure athlete, photographer, and three-time American Ninja Warrior finalist. He will promote wool product from partner brand **Black Diamond**.

Well, the seasons just got a whole lot comfier... I'm excited to announce that I am now part of the @TheWoolmarkCompany ambassador team! It's a proud opportunity to work with a brand built on values surrounding connection, unity, and collaboration to bring Australia's best wool to the high performance space. What's more is they've now joined forces with @BlackDiamond to bring a whole new level of performance, comfort, and sustainability to an already amazing product line by using Australian Merino Wool, which is 100% natural, renewable and biodegradable (Mother Earth says thank you!) I'll be sharing more on this in my stories today so make sure to follow along. Proud to be part of the team!



383k

INSTAGRAM FOLLOWERS
@trashisfortossers

Lauren Singer is the CEO and Founder of Package Free Shop, and will advocate for natural fibres through her completely plastic free lifestyle. She will promote wool product from partner brands such as **Phillip Lim, Wardrobe NYC** and **Everlane**.

I don't believe that you should ever have to sacrifice personal style and creativity to be sustainable, and because of secondhand shopping and innovative new brands that are made from fully natural fibers, I've found that I haven't had to ... I'm excited to partner with the non profit, @thewoolmarkcompany, to help raise awareness of natural fibers like wool so you don't need to buy synthetic fabrics. For example, these @31philliplim pants were made in partnership with Woolmark using Australian merino wool - a 100% natural and renewable fiber. The look is aesthetically aligned with my style and the materials are aligned with my values ... Over the next few months I'll be featuring a range of brands that use merino wool.

RYAN ROBINSON: LIVING ON THE EDGE

PROFESSIONAL HIGHLINER AND ADVENTURE ATHLETE

Ryan Robinson is one of The Woolmark Company's new global ambassadors who are sharing their experiences with wool and showcasing wool products to consumers (see opposite page). Here, Ryan tells us why he has joined the ambassador program and why he lives Merino wool.

Why have you partnered with The Woolmark Company?

Woolmark isn't just a name, it's a lifestyle. We live in a world where so many are trying to create synthetics that try and recreate what wool does naturally. It's the answer to so many challenges faced, not only as an athlete, but as someone that cares about the environment, sustainability, and performance. I'm proud to be on the Woolmark team and represent a brand, a lifestyle, whose ethics and values guide them to creating such awesome products.

What do you love about Merino wool?

The things I love most about Merino wool is one, its ability to wick moisture while also regulating temperature (there are few things worse than getting the cold shivers on the way down after sweating my way up a mountain), and two, the odour resistance. Especially on multi day adventures (and as much as I will dirt bag with the best of them), it's nearly impossible to stomach the smell of synthetic fibre clothing for a second day... let alone the first.

Why is Merino wool the perfect performance fibre for your area of expertise?

I LOVE highlining in Merino wool, for one main reason: I forget I'm wearing it. It doesn't distract me from what I'm doing in the slightest. Merino wool allows me to enjoy the experience I'm having up there balancing in the sky without having to worry that I'm overheating, or that I'm freezing, or that my shirt won't dry, or that it smells bad (my arms are up nearly the entire time I walk the line!) It's the perfect fibre for putting everything out of my mind except the job I'm there to do, no matter what environment I'm in.

When I'm walking a highline, it's an

incredibly zen moment for me. My senses are heightened, and I try to minimise as many sensations as possible so that I can perform well. Because of this, I have a tendency of easily feeling claustrophobic, and can easily be taken from those zen moments due to something as simple as wearing the wrong clothing.

Merino wool literally eliminates any concerns of those negatives entering my zen space. The breathability is key; I need to feel the elements like wind breezing through the fabric, but also stay warm enough at my core. Merino wool doesn't stick to my skin like other fabrics (which all give me the feeling of being trapped underneath the shirt... being constricted gives me so much anxiety). It's light and comfortable, warm and cool, the balance of opposites and the perfect fibre for high performance.

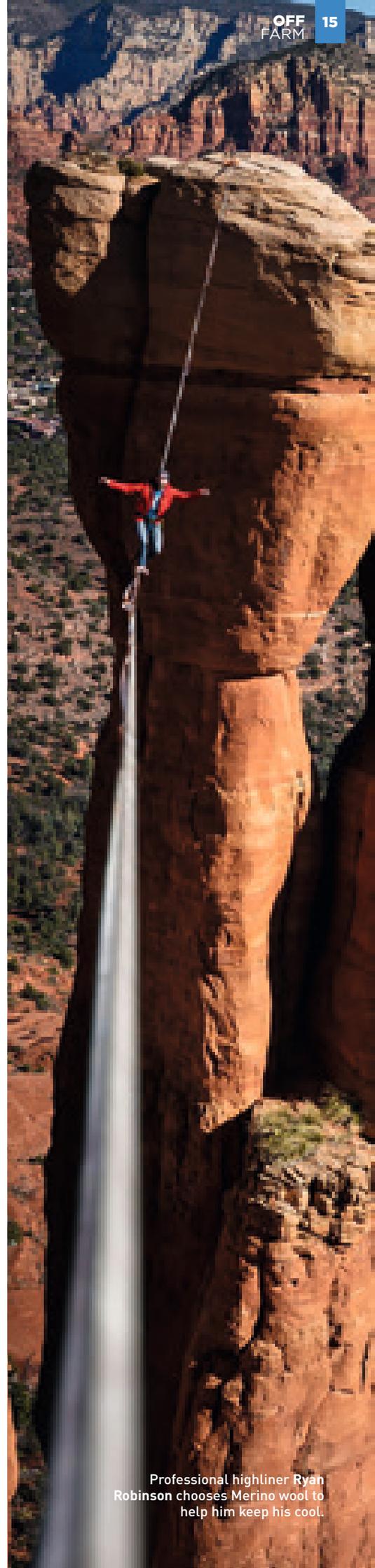
Why is choosing natural so important?

How many reasons do I need? It seems like obsessive amounts of time/resources are spent attempting to create synthetics that simply don't perform the way natural ones do. It's perplexing. What's more is the incredible sustainability factor of wool, all while eliminating needless waste that comes with the production of synthetics.

Why exhaust efforts and resources when nature creates the perfect fibre sustainably and efficiently for our exact needs?

What are your top tips for enjoying a plastic-free fitness regime?

Constantly being conscious of it is the big thing for me. Actively seeking out the better alternatives to plastics, being mindful to continue on a better trajectory than the past. And leaving every place better than we find it!



Professional highliner Ryan Robinson chooses Merino wool to help him keep his cool.

Steve and Alice Noble from Gippsland, pictured with their son Tim, have started their own apparel business currently selling 100% wool flannel bush shirts. PHOTO Megan Lee

BUSH SHIRTS PROVIDE EXTRA INCOME

Young couple Steve and Alice Noble set up their own clothing brand Hugh Charles during the drought as a source of extra income. Sales have been so good that they hope the enterprise could provide enough funds for them to become full-time farmers.

Just before the drought hit, Gippsland couple Steve and Alice borrowed \$800,000 to purchase 105 hectares of land and stock at Briagolong. But after three years of record dry conditions, it was time for them to diversify or give up. However, this young couple weren't giving up.

They are both from the land. Steve was brought up on the family farm, also at Briagolong, which at the time comprised Merino sheep, commercial cattle and small acre cropping. The property continues to be run by his father Barry, with Steve and Alice helping out. Alice grew up on a farm south of Tamworth that was a combination of Hillcrest Hereford Stud and a Merino sheep enterprise.

Steve also works as a travelling fertiliser salesman and agronomist while Alice is at home looking after their young son Tim.

"We set up Hugh Charles for many reasons," Steve said.

"It was partly as another source of income to help while times were tight during the drought. The research and setting up of the company were a good distraction from the grind.

"Our mission is to provide quality clothing, made from natural fibres, particularly wool, that last for many years. We have a commitment to not use polyester in our products where possible. We go as far as using metal buttons to avoid plastic.

"We also want to prove that it's still possible to run a successful company from a small rural area."

The company is named Hugh Charles after Alice's late father William 'Hugh' Tanner who died in a farming accident, and Steve's father Barry 'Charles' Noble.

"Both men represent what our clothing label is all about: tough, dependable, and genuine," Steve said.

The Hugh Charles range is relatively small at the moment as Steve and Alice are mindful of not expanding too quickly, especially in the current economic climate. All items are designed by the couple.

"Sales are fantastic. It has been very promising, especially as we have been selling winter wool products in February and March."

Steve Noble, Hugh Charles

Their main product is a 100% wool flannel bush shirt which they say has the warmth of a wool jumper with the style and flexibility of a flannel shirt. It has a long tail, is available in a red check or navy, and comes in sizes XXS to 3XL. A 100% Merino wool beanie, in navy or black, is also available.

"All items are 100% new designs by us that are manufactured in China. We spent a great deal of time trying to find local manufacturers, but it just wasn't viable. We are still looking now and hope to make limited edition runs of Australian made and sourced products," Steve said.

"There are plans for more wool products, which include variations of our beanies and wool flannels. Vests, gloves and scarves have

all been put forward as possible new lines. Wool products will always be the premium items in our range."

The business was launched at the end of January and the couple are very pleased with how things are going.

"Sales are fantastic. It has been very promising, especially as we have been selling winter wool products in February and March," Steve said.

"Our story has really hit a chord with people and we actually had to slow a lot of our marketing just to be sure there would be enough supply for everyone. The reviews from sales have been encouraging too.

"When you purchase our products, the money is going into a small community in East Gippsland, not a multinational conglomerate."

Their products are currently only available online, but Steve says they have had some initial discussions with stores that might look at selling their products.

"It is likely that at some stage next year we will expand into some local independent stores and build from there."

Steve says their end goal changes a lot, but at this stage it's to establish themselves as full-time farmers one day and to carry on the legacy of both their families.

"We hope that our story can also inspire others in rural areas to create their own businesses," Steve added.

HOME COMFORT WITH EMU AUSTRALIA

EMU Australia's sheepskin boots, slippers and wool sneakers are renowned for their comfort, which makes them ideal for working or relaxing at home.

EMU Australia last year launched wool sneakers for women and kids that are lightweight, comfortable, machine washable and are available in a range of colours. Pictured is the Barkly wool sneaker.



Australian sheepskin and Australian Merino wool, from which most of the company's products are made, are world renowned for their super-natural qualities including lush, next-to-skin softness. Even the company's suede Chelsea boots are lined with 100% Australian Merino wool to keep feet warm and comfortable.

"We're so proud to be celebrating our 25th anniversary here at EMU Australia. It's a great testament to our amazing staff, beautiful designs as well as the quality of natural product from Australia," commented Global Marketing Manager for EMU Australia, Rebecca Fett.

"The first EMUs were drawn from nature's own designs and constant innovation has enabled us to stay pertinent. We're excited to see what the next 25 years brings."

The company has looked to its heritage and been inspired by innovating with natural, renewable and biodegradable materials to create quality products that last. For EMU Australia, creating quality products that last means allowing people to make a more sustainable choice when they invest in their footwear rather than cycling through fast fashion.

The company believes that nature is the best inventor and the company is just following her lead. However, just as nature evolves, so does EMU Australia. It was the first company to create a water-resistant sheepskin boot and continues to be at the forefront of innovation by adding waterproof tech to fashion style boots and kids' products.

Last year, it launched a range of wool sneakers, for women and kids, that are lightweight, comfortable and best of all machine washable. 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.

EMU Australia's online store remains open and the company's service teams are available to help customers. **E**

MORE INFORMATION
www.emuaustralia.com.au



Four examples of the many Instagram posts that people enjoying their EMU Australia footwear at home have recently posted on Instagram, tagging #emuaustralia.

Iconic footwear brand and Woolmark licensee EMU Australia was established 25 years ago, 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 in South Geelong, Victoria.

During the past quarter of a century, its footwear has been worn by film stars and Olympians and has even been seen on the

runways at New York Fashion Week.

But its products are loved by people from all walks of life and right across the world. This has never been demonstrated more than in the past couple of months when so many people have been spending the majority of their time working and relaxing at home in social isolation. EMU Australia's sheepskin boots, slippers and Merino sneakers are famous for their coziness – and people have been slipping them on for all-day comfort.

KEEP YOUR FEET TOASTY AND SKIN HEALTHY THIS WINTER!

Many woolgrowers are no doubt familiar with the premium woollen bedding products of Australian company Woolstar. However, the Woolmark licensee also produces a range of accessories, and this winter is offering woolgrowers a special \$25 combo deal (plus postage) on its wool footwarmers and lanolin cream.

“In recognition of the challenging times that Australian woolgrowers have had to endure recently with drought, bushfires and now the unprecedented COVID-19 pandemic, we would like to offer woolgrowers a special offer for the coming winter,” said Woolstar founder and managing director Graeme Kerr.

Woolstar is offering woolgrowers a combo-deal on its wool footwarmers and lanolin for \$25, which would normally retail for a total of \$43.95. (There is a flat rate \$15 nationwide postage charge.)

“The Woolstar Footwarmers are made of 100% Australian wool pile and are made in Australia. They can be worn like slippers around the home or worn to bed to keep your feet warm at night. They help with poor circulation and are also suitable for diabetics and arthritis sufferers. They are machine washable too,” Graeme said.

“Our Lanolin cream is a unique blend of natural Australian Lanolin and Vitamin E specially formulated to preserve the health of your skin. Lanolin works to keep skin hydrated giving skin its suppleness and elasticity. Vitamin E assists in retaining the skin's natural moisture content. Our cream comes in 100g jars and can be used all over the body, is non-greasy and has a soft, pleasant fragrance.”



HOW DO I PURCHASE A COMBO?



ONLINE

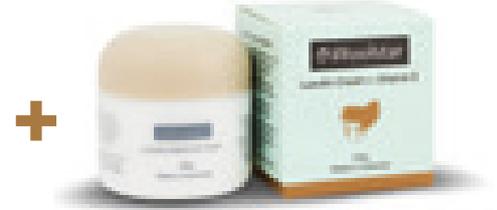
Head to the Woolstar website at www.woolstar.com.au, select the two products and proceed to the checkout. Enter the billing and shipping details and the discount code BTB20 and complete the purchase.



PHONE

Freecall 1800 998 883 and quote the discount code BTB20 to the customer service operator. You can arrange payment by credit card or bank transfer.

All enquiries should be directed to Wool Products Australia Pty Ltd via sales@woolproducts.com.au or phone on (02) 9829 6199.



The Woolmark licensee is offering woolgrowers a special \$25 combo deal (plus postage) for its wool footwarmers and lanolin cream.

ONLINE WOOL WEAVING TUTORIAL

With so many people across the world self-isolating at home, now has been the perfect time to teach them, online, how to weave their own piece of wonderful wall art with wool.



Australian artist **Natalie Miller** shows how to weave a simple piece of art with wool.

Equal parts relaxation and eco-friendly art, knitting and weaving have sprung to prominence in recent times. As Australian artist Natalie Miller says: “I believe people now want to make handmade, not just buy handmade. It’s a reaction against technology, and craft can be the answer.”

Having gained a significant profile for her large-scale textile artworks that are big, bright and, above all else, touchable, Natalie has been sharing her skills via workshops across the world. Now, she has brought the tutorial directly into people’s homes (via the Woolmark.com website) through The Woolmark Company’s Dreamweaving project.

From complete beginners to experienced weavers, they have been set a challenge: to create a unique piece of all-natural wall art for their home, using wool.

The timing could not be more suitable.

Isolated in their own homes, countless people have had time on their hands with many seeking a creative and tactile outlet.

Through the project, Natalie shows people what they need and takes them through the process step by step. While the basics will get people started, the end result is their own to define: they can choose a colour palette that suits their home and their mood. With written, photo and video guides, they won’t get lost along the way.

Wherever they are in the world, people can access the step-by-step guide for free on the Woolmark.com website at www.woolmark.com/dreamweaving.

MORE INFORMATION:

Learn more about the project, Natalie Miller and some of the world’s other leading textile artists at www.woolmark.com/dreamweaving.

AWI's Shaun the Sheep-themed marketing campaign has proved to be out of this world with massive appeal, especially in the UK, China, Germany and Japan.

The centerpiece of the marketing was a unique short animation film titled 'Super Natural Wool', which complemented and coincided with the global roll-out of the award-winning Shaun the Sheep movie titled 'Farmageddon'.

Aardman Animations, the world-renowned animators of Shaun the Sheep, created the unique short film with AWI's marketing arm The Woolmark Company to showcase the natural benefits of wool. The short film was distributed on social media, as well being featured at premieres of the movie worldwide. It has to date received more than 17 million views globally.

The Woolmark Company also developed Shaun-inspired educational materials and online games hosted on a campaign website www.SuperNaturalWool.com (see box below) and invested in a global media campaign to amplify awareness of Merino wool's benefits as a 'super natural' fibre.

The marketing campaign achieved 'positive engagement' (an engagement is a like, comment, share, video view or link click) of more than 10 million, surpassing AWI's target by 3 million.

The paid social campaign has also blown away industry benchmarks. After seeing the campaign:

- Consumers' intention to buy Woolmark-certified products is 9.5 points above the industry benchmark at 16.3%
- Favourability of the Woolmark brand is 9.0 points above the benchmark at 27.6%
- Recollection of the advertising is 12 points higher than the benchmark at 18.3%.

AWI's General Manager of Marketing Communications Laura Armstrong says the link with Shaun the Sheep has been a natural fit and it has exceeded expectations.

SHAUN THE SHEEP



MARKETING RESULTS ARE 'ASTRONOMICAL'

AWI's partnership with Shaun the Sheep during the global roll-out of his award-winning movie 'Farmageddon' proved to be a winner for wool, with the company's marketing initiatives exceeding its targets.

"Brand sentiment for Woolmark dramatically increased after viewing the ad (ten times the industry standard) and desire to purchase Woolmark products lifted by nine-and-a-half points beating the industry standard."

These are impressive figures and are indicative of a successful campaign to increase the demand for wool.

"The advertising campaign was designed around creating an emotional bond with parents and grandparents through fun, captivating content. The campaign aimed to drive the sales of Merino wool product by

leveraging the association with the world's most-loved sheep, plus educating the future generation of consumers about wool's natural benefits."

The campaign also included decking out 19 electric taxis in Central London for a month to transform them into moving billboards for super-soft wool and the Woolmark brand. Once inside, passengers could view advertising on super natural wool with a total impact of 2.4 million. 

MORE INFORMATION:

www.woolmark.com/shaunthesheep

SHAUN-THEMED EDUCATION WEBSITE HAS ENDURING APPEAL

To support its Shaun-inspired marketing campaign, The Woolmark Company developed an educational website www.SuperNaturalWool.com for young children to discover where wool comes from and its super-natural benefits such as being 100% biodegradable.

Available in English, Mandarin, Japanese and German, the website hosts digital games and a suite of downloadable activity sheets, as well as the Super Natural Wool short film, for parents and children to learn all about wool with Shaun and the flock.

Although the Farmageddon movie's run at the cinema has ended, the long-term charm of Shaun the Sheep

still makes the fun and educational materials always relevant.

Indeed, with so many children stuck at home at the moment due to the coronavirus situation, AWI has once again been highlighting the Shaun the Sheep online games and activities as a resource to educate and keep kids amused during the lockdowns – or flockdowns, as Shaun might say. 

MORE INFORMATION:

www.supernaturalwool.com



A post on The Woolmark Company's Facebook channel (which has 795,000 followers) advertising the educational games available on the website. This was posted in April while many people were in lockdown due to the coronavirus situation.

STAY FRESH WITH WOOL

Whether you are on a multi-day trek in the mountains or simply lounging at home, wool garments help you stay fresh for longer compared to garments made from other fibres, due to wool's unique odour resistant properties.



Perspiring is a natural way the human body regulates its temperature, especially in response to hot conditions or strenuous exercise. However, high levels of perspiration lead to liquid sweat which is the driver of body odour. Sweat itself has no odour, but if it remains on the skin, the humid environment is perfect for bacterial growth, leading to body odour.

Wool has a number of unique properties that minimise the effects of body odour:

1. Wearing wool means less sweat and hence less body odour

Wool fibres can absorb large quantities of water vapour (up to 35 per cent of its own weight) – twice as much as cotton and thirty times as much as polyester. This helps to keep the skin surface drier and prevent the build-up of sweat, thereby discouraging bacteria and unpleasant smells.

2. Wool absorbs and 'locks away' odours

The unique chemical structure of wool enables it to bind odours within the fibre where bacteria do not thrive. The garment not only remains fresher for much longer, it also requires less washing which is good for the planet.

3. Wool garments respond well to washing

Odours are significantly released from wool garments when laundered. This means wool garments retain less odour than cotton and synthetics after washing.

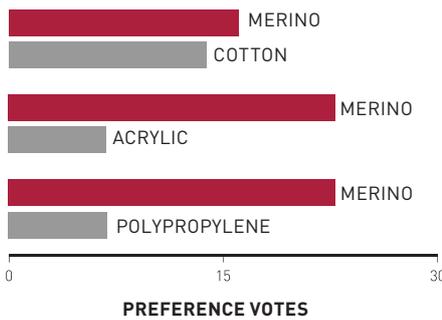
Less breathable fabrics such as many synthetics cause the wearer's skin to become more moist, encouraging bacterial growth and odour development.

Athletes such as mountaineers, who wear clothing for long periods without washing, report less odour build-up when wearing wool apparel compared to synthetics. And while odour resistance makes wool garments very suitable for sports and travel, it also makes Merino wool ideal for everyday next-to-skin items such as underwear, base-layers, socks or T-shirts.

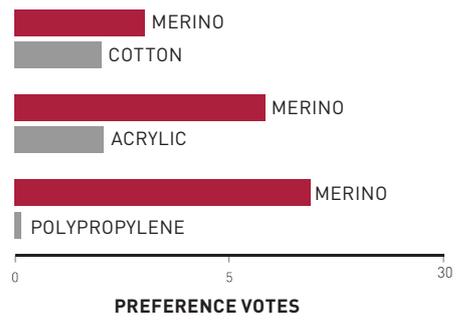
WEARER TRIALS - SOCKS

Odour-wearer trials conducted by the CSIRO show that Merino wool socks were preferred for both lack of odour after **wearing** as activewear (left) and also for lack of odour after **washing** (right), especially when compared to synthetic socks.

PREFERENCE AFTER WEARING

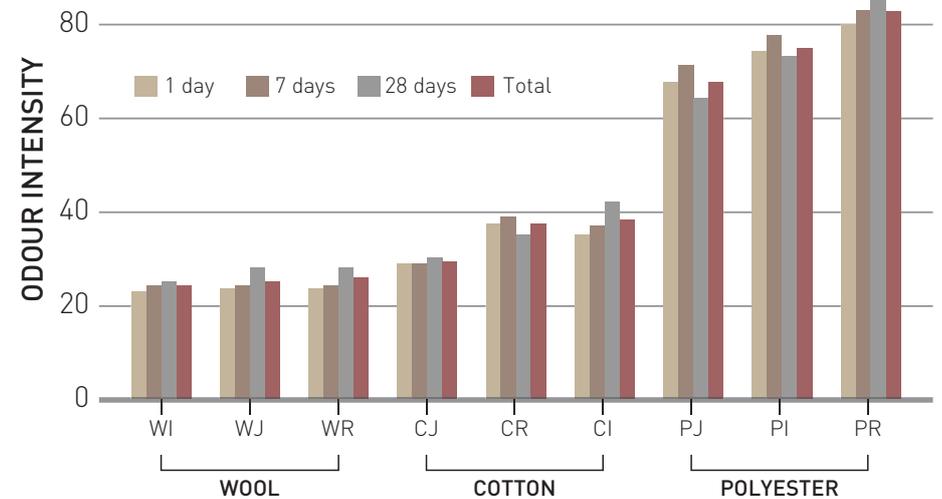


PREFERENCE AFTER WASHING



WEARER TRIALS - APPAREL FABRICS

A New Zealand study which involved 13 skilled olfactory (smell) assessors testing the odour of wool, cotton and polyester across a range of storage periods, found that wool fabrics on average retained 66% less body odour intensity than polyester fabrics and 28% less than cotton fabrics. Three fabrics for each fibre type were tests: Interlock (I), Jersey (J) and Rib (R).



Source: McQueen, R.H., Laing, R.M., Brooks, H.J.L, and Niven, B.E., Odour intensity in apparel fabrics and the link with bacterial populations, 2007, Textile Research Journal, 453.

MORE INFORMATION

The information in this article is sourced from a fact sheet that AWI's marketing subsidiary has produced to promote the use and purchase of wool. View this and other fact sheets about the properties of wool at www.woolmark.com/factsheets

CHAMPIONING SUMMER WOOL

Zegna Baruffa Lane Borgosesia, a world leader in the production of fine yarns for top-quality knitwear, has launched with the support of The Woolmark Company a new range of Merino wool yarns that are designed for summer.



The Zegna Baruffa Lane Borgosesia stand promoting the new spring/summer range of Merino wool yarns at the Pitti Immagine Filati trade show in January.



Italian company Zegna Baruffa Lane Borgosesia is one of the most prestigious yarn manufacturers in the world. Each year it buys approximately 10 million kilograms of raw Australian Merino wool for its yarns.

To enhance its efforts to promote Merino wool as a fibre suitable for the warmer seasons, AWI's marketing arm The Woolmark Company joined forces with Zegna Baruffa Lane Borgosesia for the launch of the spinner's Spring/Summer 2021 collection of yarns.

The collection's marketing campaign was launched to the textile trade at the Pitti Immagine Filati knitting yarn and knitting trade show in Florence in January. The campaign included a video and digital promotion, including distribution through Zegna Baruffa Lane Borgosesia's worldwide social media channels.

"Let's abandon the stereotype that identifies wool as a fibre suitable only for cold seasons. Thanks to its intrinsic characteristics, Merino wool is suitable for infinite applications and for all seasons," stated Zegna Baruffa Lane Borgosesia.

"With a shared passion for Merino wool, The Woolmark Company have supported our challenge for the Spring/Summer 21 collection to enhance the natural characteristics of Merino wool so to obtain yarns with exceptional breathability, lightness and adaptability suitable for all seasons.

"Naturally biodegradable and renewable, wool represents the natural choice to respect the planet while wearing a comfortable and luxury garment."

As well as targeting the textile trade, the project will also educate the final consumer about the benefits of wool for summer thanks to the creation of smart tags (which include a QR code that links to the campaign website) that will be delivered to brands that use the yarns.

The collaboration with The Woolmark Company also included the organisation of educational workshops at Zegna Baruffa Lane Borgosesia offices across the world, to promote and educate its staff about the benefits of wool. **B**

MORE INFORMATION

<https://lanadestate.baruffa.com>

Campaign imagery emphasised various characteristics of the Zegna Baruffa Lane Borgosesia new spring/summer yarns, including breathable, well-being, crease-resistant, sustainable and (pictured left) performance.

The Zegna Baruffa Lane Borgosesia campaign highlights the multiple natural characteristics of wool that make it ideal for summer knitwear apparel, as follows:

BREATHABILITY

"Breathability is the foremost characteristic of wool that makes the natural fibre so pleasant to wear. Worn directly in contact with the skin, it 'adapts' to changes in body temperature thanks to the fibre's ability to transfer moisture away from the skin."

ELASTICITY

"The natural elasticity of wool makes it a fibre that can be used for multiple technical and creative purposes. Taking advantage of the versatility, elasticity and resilience of Merino wool allows the fibre to be enhanced and altered to create very light veils and elegant and structured garments."

LIGHTNESS

"Lightness on the skin and the feeling of well-being, this is our concept of summer wool. A woollen garment is anti-crease and adaptable to body shapes and movements. Wool as skin care: Merino fibres are finer than other types of wool."

PERFORMANCE

"The term 'high-performance' conveys the essence of this fibre. Perfect for many different activities, wool can take on different applications without losing its characteristics. Our vision is to discover the multiple opportunities that this fibre offers, from the athleisure garment to the classic travel and easy care Merino wool."

SUSTAINABLE

"Our commitment to an increasingly transparent and sustainable production process is constant. All production takes place in our Italian facilities, driven by the search for an excellent quality product with the greatest attention to detail. We work to create an eco-friendly product with the aim of reducing the impact of fashion on the planet. Ours is a promise of sustainable global growth. We constantly strive to improve the use of resources within our production cycle, without compromising the quality and reliability of the product."

India's first footwear brand to make shoes with Australian Merino wool, Neeman's, has launched a humorous digital marketing campaign that features Indian comedian Vir Das championing the fibre's benefits in footwear.



Indian celebrity Vir Das was the face of the digital campaign – rolled out across web (pictured above) and social media – showcasing the new range of shoes made from Australian Merino wool.

WOOL SHOES

ADD POP OF COLOUR TO INDIAN MARKET

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

Neeman's, an eco-conscious company which is leading a culture of sustainability and comfort in the footwear space in India, has now extended its collection of Merino wool shoes by introducing wool shoes for women and new colours.

Neeman's has collaborated with The Woolmark Company on the new collection, titled 'A Pop Of Colour', that contains men's and women's sneakers, joggers and loafers in a colour palette ranging from bold tones like coral red to subtle hues like ivory cream. Neeman's shoes are suitable to wear throughout the year.



The new collection is inspired by the tones of nature and showcases the versatility of Australian Merino wool.

CELEBRITY HUMOUR ADDS COLOUR

To complement the collection's launch, a digital campaign was rolled out featuring Vir Das, using his humour to spread awareness of the natural benefits of the shoe and the brand's eco-credentials. Merino wool's properties such as natural, comfortable, stylish, odour resistance and the ability to run sock-free are presented in a quirky and humorous fashion.

"I am extremely glad to be a part of this association with Neeman's and The Woolmark Company," Vir Das said about the campaign. "I wish to digitally spread the message as far and wide as possible, especially regarding sustainability, which is something I feel passionate about."

"Neeman's Pop Of Colour collection is so young, vibrant and easy going. The shoes have a great sensibility of style and comfort, blended together effortlessly thanks to the inclusion of Merino wool. I would encourage each one of you to give them a shot."

INSPIRED BY NATURE

Neeman's founder Taran Chhabra says the new collection allows the brand to continue to be inspired by nature for both design and style.

"With Neeman's, we've created a ground-breaking collection of shoes by using the naturally versatile fibre, Australian Merino wool. We are focused on bringing truly comfortable footwear that looks good, feels good and is good for the planet," he said.

"This collection is nature at its best. Our philosophy at Neeman's is all-inclusive and therefore we have the same colours for men and women. Our customers resonate with our vision that if a colour talks to you and appeals to you then it's yours, no questions asked. Be a part of our colour and style revolution."

TAPPING INTO THE FOOTWEAR MARKET

AWI Country Manager for India Dilip Gianchandani said The Woolmark Company's relationship with Neeman's first began in 2018.

"We are extremely pleased that Merino wool has continued to remain a staple of Neeman's conscious footwear collection and highlights the eco-credentials of the fibre," he said.

"We are very excited that through this association with Neeman's we are tapping into the footwear category in India and reaffirming Merino wool as versatile and a clever alternative to other fibres. The range of Merino wool shoes by Neeman's and The Woolmark Company showcases a young, vibrant vibe with a multi-functional superior comfort."

Neeman's was presented with the Extraordinaire 'Game Changer' award in the Emerging Category at 4th Annual Brand Vision Summit 2018-19. The company's wool shoes have been widely reported in the Indian press such as GQ and CNBC.

MORE INFORMATION
www.neemans.com

WOOLMARK LEARNING CENTRE

SHOWS ITS WORTH IN THIS NEW AGE OF DIGITAL EDUCATION

With there never being a better time to learn online, the Woolmark Learning Centre is open for business. This web-based education platform – which can be accessed anywhere, any time – contains wool-related coursework and resources for students and professionals all along the textile supply chain.



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

The Woolmark Learning Centre is a web-based hub that houses free world-class educational resources about wool for learners at all levels, including those entering the global textile industry as well as those already in it.

“Education is a key strategic pillar within our business and the Woolmark Learning Centre facilitates the education of all stakeholders in the global wool industry – from woolgrowers to textile engineers, fashion design students, trade, designers, brands and retailers,” said AWI General Manager for Processing Innovation & Education Extension, Julie Davies.

“Free to access, the platform is an exciting development that is structured to facilitate both fundamental and masters-level education.”

DIGITAL LEARNING

Technology has revolutionised teaching and learning, with studies indicating that 60% of millennials believe that in the next five years all learning will be done on mobile devices.

“The web-based Woolmark Learning Centre has been developed over the past few years after recognising the lack of up-to-date, relevant, accessible information on the journey the wool fibre takes through the supply chain, as well as understanding the global shift in education towards agile, self-paced, digital learning,” Julie said.

“But the recent suspension of so much face to face schooling in countries across the globe due to the coronavirus pandemic demonstrates how important platforms such as the Woolmark Learning Centre now are for education.

“During the past few months, we have had to suspend our face to face seminars and workshops for students and the textile trade, so we are fortunate to have already transferred many of our training resources into a digital format for use on the Woolmark Learning Centre. This has enabled students and professionals along the supply chain to continue to learn about wool during this disruptive and difficult time.”

The Woolmark Learning Centre is optimised for use on a smartphone and tablet, as well as a desktop or laptop computer, and is available 24 hours a day, seven days a week, wherever and whoever you are in the world.

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

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

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

Since its launch in mid-December 2019, the Woolmark Learning Centre has had more than 26,000 registered users, 46,000 sessions and 215,000 page views. The top countries accessing the site are Australia, India, United States, United Kingdom and China. **E**

MORE INFORMATION

Access the Woolmark Learning Centre at www.woolmarklearningcentre.com

CUTTING EDGE CONTENT

Developed by industry experts, the coursework focuses on the following key content pillars:



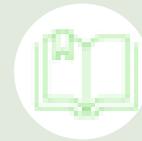
Fundamentals of Wool
An in-depth look at the wool fibre and its journey from farm to fashion.



Science and Technology Program
Courses about the wool fibre and textile manufacturing processes.



Insight Series
Masterclass interviews with industry leaders.



Resources
Video content, factsheets and more...



“I’m absolutely addicted to the Woolmark Learning Centre. I’m so grateful to be able to access so much knowledge about Merino wool and the wool sector in general, textile industry and fashion. The Insight Series is genius!”

Annabel Le Gall, 4th year BA (Hons) Design for Textiles student
Heriot Watt University, Scotland

WOOL SEMINARS INSPIRE STUDENTS

AWI educates tertiary textile and fashion students about the natural properties and benefits of Australian wool as well as various employment opportunities within the industry – providing the students with a knowledge of and connection with the fibre which will stay with them as they progress through their professional lives.



240 students attended and learnt all about wool at the Naturally Inspiring seminar in London.

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

The seminars not only offer students the chance to learn about wool and the numerous ways to work with the fibre, but also give exclusive insights into the fashion, retail and textile industries from experts in the field – each bringing to the mix their own career journey and assisting AWI nurture the future talent of the wool industry.

In February, AWI hosted Naturally Inspiring seminars in London, UK, and Nagoya, Japan, increasing AWI's engagement with the next generation of decision makers, whilst educating them about Merino wool's provenance, benefits and place in contemporary fashion and textiles.

Unfortunately, other Naturally Inspiring seminars scheduled for Melbourne and Istanbul had to be cancelled due to the coronavirus situation. Alternative remote online educational facilities, including AWI's

Woolmark Learning Centre, were made available by AWI to students and teachers in these and other cities across the world.

UK SEMINAR

Building on the success of previous Naturally Inspiring seminars held in the UK, this year's seminar in London focused on wool's eco-credentials and how the use of wool fits into a more environmentally conscious industry.

The thought-provoking seminar was held at the University of Westminster and welcomed 240 students from across the UK studying courses such as textile design, fashion design for menswear and womenswear, sportswear design and future fabrics.

The speakers at the seminar included:

- **AWI Country Manager for the UK and Turkey, Matthew Pedersen** – who outlined the benefits of The Woolmark Company's resources for students, and also explained the nature of wool-growing in Australia.
- **Textile design expert Sheila-Mary Carruthers** – who gave a presentation titled 'Wool is Natural', detailing the natural attributes and benefits of the fibre in each stage of the supply chain.
- **Creative Director of luxury brand Johnstons of Elgin, Alan Scott** – who talked about the positive influence of wool throughout his career.
- **Explorer George Bullard** – who is taking part in the 'Dark Ice Project', an expedition to the North Pole in winter, while wearing Merino wool-rich apparel.
- **Managing Director at UK sports brand ashmei, Elliot Welland** – who passed on to the students his insights into sustainable performance sports apparel.

A panel Question & Answer session was held during which the students put their questions to the guest speakers.

"The enthusiasm of the students and the buzz around the event was palpable"
Seminar attendee

Each session was filmed and will be used as part of the The Woolmark Company's Wool Performance Challenge webinar series (see opposite page), as well as added to the company's digital learning platform, to maximise reach.

Feedback included: "These Naturally Inspiring seminars are a great asset for reinforcing the value of wool as a fashion textile of preference for young designers" and "Great seminar, very engaging and interesting."

JAPAN SEMINAR

The first ever Naturally Inspiring seminar was held this year in Japan, as part of the official program of the Bishu Exhibition and Japan Yarn Fair located in Bishu, the biggest production region for wool fabric in Japan, near Nagoya. 54 students and their tutors from nine fashion and textile schools in the region attended the 2½ hour seminar which had the theme 'Keep it Local'.

The Woolmark Company's Product and Education Extension Manager Tomohiro Nishizawa provided to the students an overview of Australian wool from farm to fashion.

Two key professionals from two local wool textile manufacturers, **Satoshi Kuzuya from Kuzuri Keori** and **Kimihiko Nakashima from Nakaden Keori**, also presented to the students, discussing their respective company's woven wool operations and how local manufacturers can support local designers.

There followed a panel discussion during which the students could ask questions from the three presenters.

The seminar received a lot of positive feedback from the students who previously had little knowledge about the source of wool fibre. The students said the seminar provided them with a good knowledge about the natural properties and benefits of wool, such as breathability, and they were enthralled by the videos of Australian farms and sheep shearing.



AWI Product and Education Extension Manager Tomohiro Nishizawa educating students at the seminar in Japan about the source of Australian wool.



"I have a completely new appreciation for wool. Now I want to wear wool!"
Italian student workshop attendee

In the UK, the Masterclass workshops were delivered to 125 students from six of the UK's leading educational institutions, while in Germany six workshops were attended by 185 students from seven universities.

WEBINARS

In addition to the workshops, a series of webinars are this year being delivered to registered students by industry experts. These webinars are recorded and made available online, along with 17 recorded webinars from previous years. Some of the key recent webinars have included:

- **Wearable technologies & integrating sustainability into creative products**
Peter Bona, former professional snowboarder and current Head of Design at BOSS Athleisure
- **Sustainable sourcing**
Megan Stoneburner, Outerknown's sustainability and sourcing manager
- **We wool win: an athlete's perspective with Jessie Zapotechne**
Jessie Zapotechne, performance running coach
- **Performance enhancing knitwear**
Phoebe Edwards, Woolmark Performance Challenge 2018 finalist
- **The future of fabrics**
Sheila-Mary Carruthers, textile design expert

STUDENTS TAKE UP THE 2020 CHALLENGE

In 2020, 116 educational institutions from 24 countries have registered for the competition. Student registrations have increased this year, to 1,131 student registrations to date. The large and diverse range of applicants for the program highlights the thirst students have for both education and innovation as they plan the early stages of their careers.

There have been more than 100,000 views of webpages on the Woolmark Performance Challenge website since this year's competition was launched, which is more than double the views of the previous two years together. This is another indication that interest in the program continues to build.

Once submissions for this year's competition have closed, the judges will deliberate hard as to who should be the 10 finalists. The chosen finalists will be announced in July and they will then attend further workshops hosted by The Woolmark Company to help develop the finalists' knowledge of Merino wool and their capacity as innovators and creative thinkers. The final will be judged and the winner announced at the final event to be held in November.

A Woolmark Performance Challenge 'Masterclass' workshop in Italy.

PHYSICAL EDUCATION IN MERINO SPORTSWEAR

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

The Woolmark Performance Challenge is an annual competition for tertiary students from across the world to develop innovative new product applications for Merino wool within the sports and performance market.

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

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

"The Woolmark Performance Challenge is a very exciting initiative that enables young talent to learn about Merino wool and push the fibre's possibilities into uncharted territories in sportswear."

Stuart McCullough, AWI CEO

Available for the winners of the competition are a cash prize, an industry internship and ongoing training support, plus

the opportunity to sell their idea to The Woolmark Company or that year's competition sponsor.

To enhance the impact of the initiative in 2020, The Woolmark Company is proud to partner with Norwegian brand Helly Hansen, which has been at the forefront of technical innovation and high-performance apparel since it was established in 1877.

WORKSHOPS

Through a series of Woolmark Performance Challenge 'Masterclass' workshops (which are aligned with the company's other educational activities), The Woolmark Company earlier this year educated students across the world about wool – to not only arm them with information to assist in their competition entry, but to also encourage and inspire them to think about wool in their future careers.

The three main regions that held innovation workshops are Italy, the UK and Germany. However, Japan, India, Vietnam and Australia also hosted activities.

In Italy, more than 1,200 students participated in Masterclass workshops to introduce students to wool and the Woolmark Performance Challenge. From November to February, 15 workshops were held at 15 university campuses. Following the Coronavirus lockdown in Italy in February, six Masterclass workshops were held online to continue the work.

RAVE NEW WORLD

Linus Leonardsson knitwear from the Young Talent Collaboration with THE GUESTLIST for his 'Rave New World' collection at this year's London Fashion Week. The garments incorporate 100% Merino wool yarns from Südvolle Group.

The Woolmark Company has collaborated with one of the best fashion schools in the world, the Royal Academy of Fine Arts Antwerp in Belgium, to promote the use of Merino yarns to its students, with the aim that they continue to use the fibre as they progress through their careers.

The elite Royal Academy of Fine Arts Antwerp has one of the most prestigious fashion schools in the world. It encourages not only students' individual expression but also an international outlook. Throughout its history, it has produced a crop of talented designers who have become renowned in the world of fashion.

The Woolmark Company, along with leading

German yarn manufacturer Südvolle Group, last year sponsored an award at the Royal Academy's graduation fashion show. The award was supported by German knitwear manufacturer Peterseim Strickwaren.

As part of the sponsorship, Südvolle Group supplied free Merino yarns to nine of the students who, with their knitwear teacher, developed their knitting techniques. The

students' garments were then showcased during their graduation show in front of 2,000 guests from the Belgian and international fashion industries.

"By working with esteemed industry partners and exposing the very best students to Merino wool early in their careers, we aim to educate and inspire future generations about the attributes, benefits and possibilities of Australian wool," said AWI Country Manager for Benelux & Germany, Ingrid Oomen.

The 'Südvolle Group and The Woolmark Company Award' was presented to the two students who showed the most creative use of Merino wool yarns in their collections: Linus Leonardsson from Sweden and Sam Slegers from Belgium. Both Linus and Sam investigated a range of knitting techniques within their collections and aspire to become specialists in this field.

INDUSTRY CONNECTS WITH DESIGNERS

As part of their prize, the two winning students visited the Südvolle Group headquarters at Nuremberg in Germany to learn about spinning technologies, Merino wool insights and possible applications.

"We are happy to share our expertise about Merino wool, spinning technologies, yarn features and business experience, to enable these young designers and to ease their entry into a professional career. Apart from that, we also learn from these creative minds," said Südvolle Group sales manager Ibrahim Sönmez.



The winning graduate collection of **Linus Leonardsson** incorporated Südvolle Group's 100% Merino wool yarns. This coat from the collection transitions both in colour and density, starting with a felted and brushed beige top section into a blue, more airy bottom section.



The winning graduate collection of **Sam Slegers** had Merino wool knitwear in all of her eight looks, mainly as under layers. Colour and graphic composition were very important for Sam in the collection.

Linus and Sam then visited knitting manufacturer Peterseim Strickwaren at Mühhausen in Germany, where they were introduced to German-born, New York-based designer Karim Guest, who has worked alongside many of the fashion greats in his time. The two young designers were both invited to create three new designs with Karim Guest, using Südwole Group's 100% Merino wool yarns, for a special project: Young Talent Collaboration with THE GUESTLIST.

THE GUESTLIST (www.theguestlist.com) provides a platform for selected designers to make steps into the world of high-end fashion. Following a showing at London Fashion Week 2020, Linus's garments were featured on THE GUESTLIST in February. Sam's are to be featured soon. Garments from both collaborations will be made available via THE GUESTLIST's online shop.

YOUNG TALENT COLLABORATION WITH THE GUESTLIST

Linus's edgy knitwear pieces for THE GUESTLIST feature in his collection 'Rave New World'. The 23-year-old Swede, now based in London, taps into what he says are "the colours of the Scandinavian sky in the summertime and the promised freedom of rave parties amongst the trees".

Creating a feast and fantasy for the eyes, his beautiful knitwear collection is both impactful and relative to the world in which we all live.

"The collection for THE GUESTLIST is made from the softest Merino wool. Small details, such as frays or plated ribs, add texture to each piece," commented Linus.

"The kind of person who would wear this line is somebody who wants to have fun with fashion and doesn't take themselves or their style way too seriously but tries to play around with it. When people wear my clothes I want them to feel joyful and 'seen', I don't make clothes for invisible people and I really want them to feel like everybody around them notices."

During its showing at London Fashion Week in January 2020, the collection *did* get noticed, and Linus was subsequently interviewed about his Merino wool creations by leading fashion titles such as *Vogue Italia*, generating much interest through his innovative, fresh ideas.

The Woolmark Company and Südwole Group are also sponsoring the next cohort of students at the Royal Academy of Fine Arts Antwerp who will graduate this year. Südwole Group has supplied yarns to 20 students and a Wool Appreciation Course webinar was presented to the students in April.

MORE INFORMATION

www.antwerp-fashion.be/show2019
www.theguestlist.com/pages/shop-theguestlist

RED HOT ENTRY WINS BRADFORD WOOL AWARD

Through sponsorship of the prestigious Bradford Textile Society Awards, AWI continues to promote Merino wool to tertiary textile students in the UK.



Textile student **Elizabeth Alexander's** award-winning entry.

The bushfires that devastated parts of rural Australia six months ago were not only news in Australia, they were also widely reported across the world. Up in Scotland, textile student Elizabeth Alexander of Heriot-Watt University was so moved by the events that they inspired her entry in this year's Bradford Textile Society Awards.

Her distinctive design certainly caught the eye of the judges – she won The Woolmark Company Award in the renowned competition. Entrants had to create an innovative wool-rich fabric which can be used for fashion/accessories or for interior products. The fabric had to contain a minimum of 60% Merino wool and highlight the versatility and natural benefits of the luxury fibre.

"This project came from a desire to raise awareness of the increasing occurrences of extreme weather due to climate change. When I was researching wildfires, I found out about the devastating effects they were having on Merino wool sheep livestock and I wanted my collection to help raise awareness of this. I wanted to translate the movement and the patterns I found in wildfires and I wanted to convey the emotions I felt when reading about them," said Elizabeth.

"It was important to me when designing

my collection that it be sustainable and as minimally damaging on the environment at every point in the lifecycle of my fabric, from fibre through to finished fabric through to its end of life. In order to achieve this, I did a lot of research into the qualities and environmental impacts of different natural fibres and Merino wool became the obvious choice.

"I thoroughly enjoyed working with Merino wool and have personally always preferred working with wool in general."

The Woolmark Company sponsors the award to promote Merino wool amongst the next generation of designers. The awards offer an excellent opportunity for future textile designers to have their work recognised by the most important people within the industry. As part of the prize, Elizabeth has the opportunity to complete one week's work experience with a well-known brand.

"Elizabeth's designs stood out for being of the moment having taken her inspiration from the catastrophic bushfires across Australia. Elizabeth demonstrated a mature and innovative response to climate change. Her use of colour was particularly striking," added The Woolmark Company's Product and Education Extension Manager for the UK, Louise Campbell.

CLEAR FOCUS ON MERINOS

When asked for his top three reasons why he runs Merinos, Andrew Scanlon from Wagin in Western Australia is very clear: **“Gross margin, gross margin and gross margin.”**



Andrew Scanlon runs 7,000 Merino ewes on a 4,000 hectare mixed cropping and livestock enterprise south west of Wagin in Western Australia.

Wagin farmer Andrew Scanlon doesn't mince his words, farming is his business and he runs Merinos because they are the most profitable breed.

“I'm not here for lifestyle reasons, I'm here to earn a quid so it comes down to functionality and what earns the most money,” Andrew said.

“I've not seen any WA benchmarking information that says anything beats a Merino.

“If you do swap out your wool for a meat component, then you don't get the lambing percentages to compensate for it.”

Andrew and Tegan Scanlon run a mixed cropping and livestock enterprise across 4,000 hectares at 'Quailerup', south west of Wagin, where the average annual rainfall is 450mm.

They crop a 2,200 hectare program and run 7,000 Merino ewes, with any culls used in a small crossbred operation.

Currently in a 60/40 cropping to livestock split, the Scanlons are making some big changes to introduce high input pastures and increase their stocking rate.

In the short-term, this will increase the cropping component of the business to 70%, but the overall goal is to return to a 60/40 split.

Andrew said they planned to seed their pasture-paddocks with ryegrass and oats before applying high input levels of fertiliser and urea.

“At the moment our stocking rate is 11DSE and we're hoping to go plus 15DSE, it won't help our sheep gross margin all that much, but we'll get a few hundred hectares of extra crop in,” he said.

“I will need to increase ewe numbers to get back to that 60/40 mix, as we'll need that to help us to deal with weedy paddocks.

“The other term for weeds is grass, which is very useful for the other 40% of our farm.”

“There's plenty of money in Merinos. People are quick to blame sheep for not making any money, but it's all to do with management.”

Andrew Scanlon

The Scanlons have been farm and sheep benchmarking since 2002 and Andrew is a big advocate for the tool, believing that without it, farmers are “flying blind”.

They are part of a benchmarking group with 65 other local farmers, comparing notes and sharing information within the network for the betterment of their enterprises.

“The state benchmarking average is deplorable,” he said.

“That's because sheep are usually just a fallow tool in most farms, whereas our sheep gross margin is well ahead – it's beaten canola and has beaten barley in the past and most likely will again this year.”

On their patch, an adjusted routine for lambing in order to increase stocking rates begins with joining in February/March at 2% (slightly more with maiden ewes).

“We're aiming to sync peak sheep demand with peak feed supply,” Andrew said.

Lambs receive 3 in 1, Eryvac® and Gudair® over the cradle and Weanerguard at weaning and all the ewes will get a booster going forward, to help them manage the protein hit from the high input pastures.

“Our sheep gross margin is well ahead – it's beaten canola and has beaten barley in the past and most likely will again this year.”

Andrew Scanlon

Their average lambing percentage sits at around 90%, with lambs weaned just before harvest onto standing lupin stubble, another method which they have found valuable.

“That's been revolutionary,” he said.

“You essentially prolong their spring putting them on the lupin stubble. The big issue with late lambing is weaner survival, so this makes a huge difference and gets them going.”

Andrew said he believed nutrition was critical for maximising condition score and subsequently increasing lambing percentages and wool cut.

They buy lupins in for supplementary feed. The ewe lambs are put on stubbles when they are strong enough, with the rest of the lupin feed directed to the wethers.

All lambs are held carried through until shearing, which takes place in February/March and as soon as they are deemed ready, two thirds of the wethers are sold to the export market.

The remainder are ideally sold before green feed appears.

“Yes, it's annoying spending over \$20,000 on a truck load of lupins but you've got to look at the upside,” he said.

“The more you feed them, the more you earn – that's the good thing about the gross margin at the moment.”

“We had a pretty good sheep year last year and I spent one year's allocation of machinery money on my sheep enterprise and completely updated our infrastructure with new yards, weights, scales, laneways.”

Andrew Scanlon

The Scanlons' wool clip averages 19 micron and is marketed straight after shearing.

Andrew focuses on kilograms per hectare as opposed to cut per head and he's not one to dwell on sale results but prefers to look at the bigger picture.

"Production is king, regardless of whether it's cropping or sheep," he said.

"There's plenty of money in Merinos. People are quick to blame sheep for not making any money, but it's all to do with management.

"I would happily go 100% sheep if it wasn't so hard over summer.

"We had a pretty good sheep year last year and I spent one year's allocation of machinery money on my sheep enterprise and completely updated our infrastructure with new yards, weights, scales, laneways.

"With that, I've set my farm up for my generation and possibly the next one – for the same price of only one year's worth of machinery.

"That's the part that's annoying about cropping, you don't keep your money, but with sheep, it all goes back into your pocket."

This case study was created in November 2019 as part of the Australian Society of Stud Merino Breeders' 'Breed More Merino ewes' campaign, supported by AWI. The campaign highlights that Merinos are achieving profitable results for producers compared to other breeds and enterprises across Australia in a range of production systems and rainfall zones. More information and case studies are available at www.merinos.com.au. **B**

A MARRIAGE OF SHEEP AND CROPPING



On 11 March, AWI General Manager for Woolgrower Engagement, Marius Cuming, presented at

Liebe Group 2020 Crop Updates at Dalwallinu in WA about the role of sheep and wool in the wheatbelt.

The Liebe Group is a grower driven organisation servicing more than 100 farming businesses within the Dalwallinu, Coorow, Perenjori and Wongan-Ballidu Shires of WA, encompassing a land area of more than one million hectares.

While he was there, he interviewed the Executive Officer of the Liebe Group, Katrina Venticinque, and Chairman of WA's Grower Group Alliance, Kevin Goss. Listen to the interviews in episode 120 of AWI's The Yarn podcast at www.wool.com/podcast

NEXT GENERATION ON THE HORIZON

Samarah Thrift from the New England region of NSW is the 2020 recipient of a Horizon Scholarship sponsored by AWI, in recognition of her leadership potential and commitment to Australian agriculture.



Samarah Thrift is studying for a Bachelor of Rural Science at the University of New England.

The Horizon Scholarship is an initiative of AgriFutures Australia and aims to support the next generation of agricultural leaders.

Under the scholarship, AWI is supporting Samarah throughout her Bachelor of Rural Science course at the University of New England by providing her with a financial bursary and professional support in the form of mentoring, professional development workshops and industry placement.

"I have grown up on farms and within the farming industry my whole life, mainly in areas around Tamworth in NSW," Samarah said. "I have been involved with Merino sheep this entire time. Whilst my family and I have never owned a farm of our own (I have always lived on one through my dad's work), that has not stopped my family from running our own small Merino enterprise.

"I have a passion for animal genetics and nutrition, specifically within the sheep industry. I would love to have a career in either of these areas after I graduate – and would also love to have my own farm and Merino stud."

Samarah said she is thrilled to receive the Horizon Scholarship and thanked AWI.

"A really exciting part of all this is being sponsored by AWI and I am really excited to meet people from this industry to gain real industry experience. I'm very excited to see where this opportunity will take me and the many doors that it will open.

"I have watched other students from my university go through the Horizon program and the skills and abilities that they gain from it are unimaginable."

In coming months, students on the AgriFutures Horizon Scholarship program will attend a four-day workshop focused on leadership and personal development. The workshop will feature special guest speakers, industry experts, field trips and the opportunity to network and discuss innovations and challenges in the agricultural sector.

"I'm excited to meet other students involved in the program, take part in placements and to gain new skills that will give me the leading edge when I enter the workforce," Samarah added. **B**

MORE INFORMATION
www.agrifutures.com.au/horizon

A bushfire burning in the distance on Kangaroo Island, six months ago. PHOTO ozflash

KANGAROO ISLAND BOUNCES BACK

A proud wool-producing region, South Australia's Kangaroo Island is continuing to recover after a summer that will not be forgotten in living memory.

Australia's third largest island was, like many areas, hit very hard with bushfire this summer with the loss of two lives, almost 60,000 of the 600,000 sheep on the island, more than 80 houses and extensive loss of sheds, and many thousands of kilometres of fencing.

Many of Kangaroo Island's 300 farmers grow wool as it is the highest value per kilogram product that can be produced, therefore reducing the per unit cost of freight – a very important consideration when everything you produce has to be shipped off an island.

With such a significant loss of infrastructure and sheep still needing to be shorn, AWI relocated its two-stand, mobile shearing trailer (normally used for events and training) to the island. The shearing trailer is being held at Elders Kingscote and is available to anyone needing a shearing plant.

Martin Kay of Elders Kingscote said the two-stand shearing trailer has been a fantastic option for various woolgrowers who have lost sheds and infrastructure.

"People are generally very upbeat and are putting one foot in front of the other to get things done," Martin said. "The AWI shearing trailer has saved people having to truck sheep to other places and so it's been great. In the last couple of months, we have seen a lot of sheep purchased and come to the island, and I'm hopeful come springtime we might not be too far behind where we were last year in terms of numbers."

The main agricultural group on the island, Agriculture Kangaroo Island (AgKI), ran a technology day in mid-March at which AWI was present to promote new shed design ideas and the AWI Woolgrower Menu which provides a list of resources offered by AWI to support woolgrowers' businesses. (A copy of the Woolgrower Menu was posted out to all woolgrowers with the March edition of *Beyond the Bale*).

AWI has been working for months with MLA, PIRSA and Livestock SA to roll out

bushfire recovery sessions in the form of small groups of farmers in a facilitated group, learning their priorities during this rebuilding phase. The advent of the coronavirus situation has necessitated these groups move online as the only current option to continue the sessions.

Many farmers and members of the general public have travelled to Kangaroo Island to help with fencing, and whilst BlazeAid still has various teams on the island, there are hundreds of kilometres of fencing still to do. The Australian Army had a large presence on the island for many weeks and cleaned up sheds and houses.

Knowing how to assist after such devastation is not easy but the response from across Australia has been very significant according to Lyn Dohle from PIRSA Rural Solutions. Having been on the island for more than 30 years in a professional capacity, Lyn said Kangaroo Island is continuing to recover, with everyone moving forward at their own pace.

"Everyone is recovering in his or her own way, at his or her own pace. Farmers are working long hours to undertake a massive rebuild from the fires whilst still maintaining business as usual," Lyn said.

"But for many who have seen a lifetime's work wiped out, it's understandably very hard to take. But if there is one thing I've learnt in my time on Kangaroo Island it is that our farmers are incredibly resilient and we have a strong community spirit that will get us through these tough times." **B**

MORE INFORMATION

For woolgrowers recovering from bushfire, AWI provides a range of resources, plus links to useful external websites at www.wool.com/bushfire

Hear more how Kangaroo Island is approaching a massive rebuild in Episode 116 of AWI's The Yarn podcast at www.wool.com/podcast.



The AWI two-stand shearing trailer in action on Kangaroo Island.



DROUGHT RESOURCES

For woolgrowers going into, enduring or recovering from drought, AWI provides a range of drought planning and management resources, plus links to useful external resources. Listed below are a few from AWI. Access all the resources and links at www.wool.com/drought

PLANNING FOR PROFIT

A practical guide offering a series of step-by-step, cost-effective breeding and pasture management options for producers to consider post drought.

MANAGING SHEEP IN DROUGHTLOTS

A best-practice guide that highlights the purpose, benefits and experiences of woolgrowers managing sheep in confined areas during drought.

MANAGING FODDER PRICES FOR DROUGHTS

A guide to strategies that help manage fodder prices and supply risks during droughts.

STOCK WATER - A LIMITED RESOURCE

A fact sheet that helps calculate stock water budgets, especially when droughtlotting sheep.

FEEDING AND MANAGING SHEEP IN DRY TIMES

A publication with practical guidelines and examples on feeding and managing sheep during dry seasons and drought years, with a focus on containment feeding.

BUSHFIRE RESOURCES FOR WOOLGROWERS

For woolgrowers recovering from bushfire, AWI provides a range of resources, plus links to useful external websites. Access the resources at www.wool.com/bushfire



PHOTO: Jamesbowyer

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ONLINE ADVICE TO REBUILD

FROM NATURAL DISASTERS

A series of 12 'Back to Business' webinars offering livestock producers practical tips to help rebuild on the back of bushfires, drought, floods and storms have been running each week from 24 March to 9 June. The free webinars were recorded and are available now to all producers across the country.



Recordings of the 12 'Back to Business' webinars are available free on the Sheep Connect NSW at www.sheepconnectnsw.com.au/tools



AWI and MLA are working in collaboration to provide livestock producers with practical advice to help rebuild their businesses after drought, bushfires and other natural disasters. PHOTO: kristypics

Hosted by Meat and Livestock (MLA), AWI, AWI grower network Sheep Connect NSW and Integrity Systems Company, with support from NSW Department of Primary Industries (DPI), Local Land Services (LLS) and NSW Farmers, the hour-long webinars form part of a broader collaborative response package to support livestock producers during these challenging times.

Originally scheduled as face to face workshops throughout bushfire and drought impacted regions, the revised webinar format provides the best alternative for livestock producers to access the same expert information and speakers, given restrictions on travel and gatherings due to the coronavirus situation.

The webinars were recorded and are available to be viewed free at any time on the Sheep Connect NSW website. When viewing, you can pause and go back to a previous section in the webinar if you want to recap a particular point.

"From pastures and nutrition to the purchase of new livestock, there are many considerations when it comes to livestock producers getting back to business," said AWI's Program Manager, Research and Extension, Emily King.

"With expert information to help build resilient livestock businesses, this series of webinars provides woolgrowers with practical tools and advice on decision making, rebuilding, and setting their business priorities. Information on health and wellbeing and accessing financial and government assistance is also available.

"The webinars provide woolgrowers with the opportunity to get back to business now and plan for a resilient, productive and profitable future."

In addition to the Back to Business webinars, Back to Business podcasts are available. Both the webinars and podcasts are available at www.sheepconnectnsw.com.au.

THE 12 BACK TO BUSINESS WEBINAR TOPICS

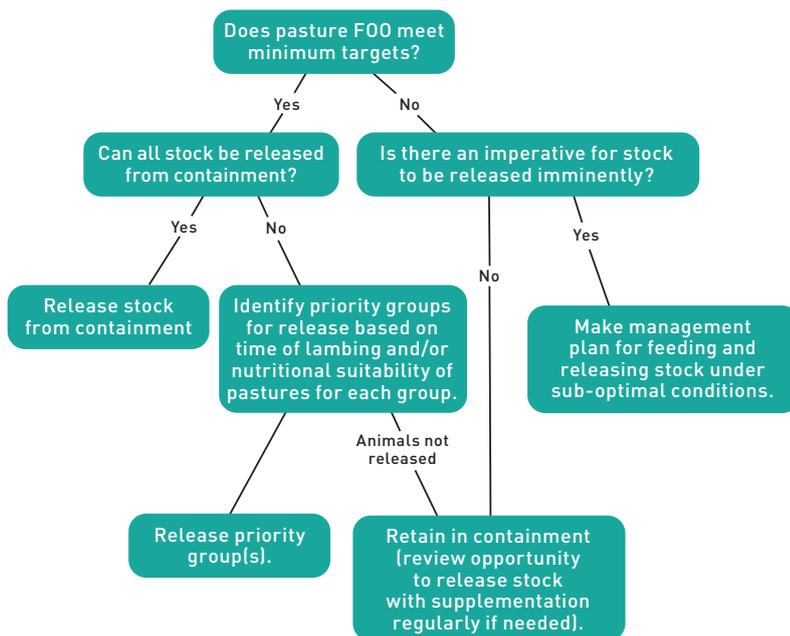
1. **Cashflow is king** – strategies to keep yourself and your business moving forward in the early stages of recovery from disaster.
2. **Accessing support** that's available for you and your business.
3. **Planning for a resilient future** – what's possible now? Personal and business direction following disaster.
4. **Prioritising infrastructure for rebuild** – sheds, water, fences and shelter.
5. **Livestock health, welfare and biosecurity** during the rebuild.
6. **Livestock nutrition and feeding options** during rebuild.
7. **Grow more feed** – pasture recovery, redevelopment, forage crops and purchasing fodder.
8. **Opportunities to drive livestock operations** – enterprise options and genetics.
9. **Making use of short-term business resilience opportunities** – cashflow, feed/sell/agist, market scenarios and season forecast.
10. **Building long-term business resilience** – budgets, business structure, farm management and succession planning.
11. **Rebuilding your herd or flock** – using management and genetics to achieve the best reproduction results.
12. **Maintaining integrity of Australia's red meat and wool industries.** **B**

MORE INFORMATION

View recordings of the webinars at www.sheepconnectnsw.com.au/tools

TRANSITIONING FROM CONTAINMENT TO PASTURE

Containment feeding can be a useful strategy during dry times. However, once sufficient rainfall has been received to initiate pasture growth, managing the transition from containment areas to pasture must be done carefully to minimise the risk of any animal health issues, particularly for pregnant ewes, as well as ensuring that wool quality is not affected.



Decision tree for key considerations of when to release stock from containment

Depending on the seasonal timing of a break, **paddock conditions** can rapidly change (or not) and therefore assessments of the paddock should be reviewed regularly throughout the transition from containment to pasture. Key considerations of paddock conditions to consider should include feed on offer (FOO), pasture growth rate and pasture quality.

Key **animal health** issues to be considered when assessing whether sheep should be released from containment include the current condition score of sheep, their nutritional requirements and the stage of production within the farm operation. It is also critical to consider any **farm operations** that might limit the management of releasing stock from containment, such as time of lambing or labour shortages due to other activities.

The decision support tree above should assist in the key decision-making processes regarding whether stock should be released or continue to be containment fed.

Once a decision has been made that stock are going to be released from containment, the next

key consideration is planning the release to manage the health and productivity of stock.

The main considerations are to ensure that the diet transition from a containment ration to green feed is done as smoothly as possible and that animal health issues such as pulpy kidney, pregnancy toxæmia and hypocalcaemia are avoided.

BEFORE THE MOVE

Sudden changes in feed quality, particularly where sheep move rapidly from dry to fresh, green pasture, can increase the risk of pulpy kidney. If stock have not been vaccinated in the three months prior to release, vaccination at least 10 days prior to release is advisable.

To minimise gorging of pasture when stock are first introduced to the paddock, ensure that sheep have ad lib access to good quality, palatable hay for 24-48 hours prior to release from containment to ensure stock are not hungry when they move onto the pasture.

If stock are moving onto calcium deficient pastures (requiring calcium supplementation), then the provision of the calcium supplement

prior to release for familiarity for stock may be recommended (seek advice if other supplements are also being provided).

RELEASE

To minimise gorging of pasture when stock are first introduced to the paddock, feed animals in the morning in the containment pens then release animals from containment onto pasture late in the day when they are not hungry.

Particularly for pregnant ewes, wherever possible minimise any stress involved in the move from mustering, handling, etc.

Some producers have found that moving stock onto pastures for short periods of time initially and increasing the time each day can assist the transition from containment. Where this can be easily achieved, it may provide good results. However, it is often an impractical strategy and can result in more disturbance of the animals through increased handling if stock must be moved long distances.

AFTER THE MOVE

Supplementation in the new paddock with the containment ration should be continued for a minimum of a week after releasing stock from containment to assist the nutritional transition. The containment ration should be provided in the paddock immediately for stock to ensure consistency of feeding.

Particularly where grain is fed, this is important to minimise the risk of acidosis. Ensure that all stock have access to any supplementary feed. Where FOO or the nutritional quality of the pasture warrants supplementing stock with feed beyond the first week after release, this should be continued in a consistent manner to ensure animal health and productivity.

Where sheep are released onto calcium deficient pastures, such as cereal crops and occasionally grass-dominant pastures, supplementation with a high calcium and magnesium content supplement should be provided.

Other nutritional imbalances should be assessed given the pasture to be grazed and any deficiencies managed appropriately. **B**

MORE INFORMATION

Read AWI's 12-page booklet **Releasing sheep from containment feeding**, available at www.wool.com/droughtresources

Hear the perspective of woolgrower **Rob Kelly from Guyra in NSW** of his experience of containment feeding breeding ewes and the transition from containment to pasture following rain, in a recently recorded webinar available on the Sheep Connect NSW website at www.sheepconnectnsw.com.au/tools/77

Hear advice from Dr Jillian Kelly about moving from containment, in Episode 127 of AWI's The Yarn podcast at www.wool.com/podcast.



DON'T BE A BASIL FAWLTY!

HOW TO GREET NEW ARRIVALS TO YOUR PROPERTY

Buying, bringing home or agisting sheep after a change in season is in many ways like a hotel manager accepting a tour bus of visiting guests. If the hotel manager doesn't manage the welcome and check-in process properly, there can be all kinds of problems and customer complaints.

Similarly, without appropriate preparation and careful management, issues such as plant poisonings, resistant worms and brucellosis could trouble your new arrivals and result in stock and financial losses. With this in mind, here is a step by step guide to making sure your 'guests' settle in well.

STEP 1 - ASSESSING THE RISK OF THE 'PASSENGERS ON THE BUS'

Who is getting off the 'bus'? Are there passengers or stowaways you don't want? Different regions within Australia and different classes of sheep have different risks to your enterprise; for example a trade mob of ewes and rams from western NSW might have a lower OJD risk but higher risk of bringing in brucellosis than a mob from Victoria.

What are the big diseases you need to worry about buying in? The big five are:

- Brucellosis
- Footrot
- Lice
- Resistant worms
- Ovine John's disease (OJD).

Pink eye is another disease that is worthy of assessing the risk.

Can you plan for the risk? Yes, that is exactly what an on-farm biosecurity plan is for and Sheep Health Statements are the best tool for assessing the risk. Further information about on-farm biosecurity plans, including templates and reference documents, is available on the Farm Biosecurity website www.farmbiosecurity.com.au. For an excellent practical example of how to read and assess your Sheep Health Statement, view the recent Back to Business webinar 'Livestock health' by Dr Jill Kelly (see page 32).

STEP 2 - MAKING SURE THE 'PASSENGERS ON THE BUS' ARE HEALTHY AND SAFE

Diseases love the stressed and vulnerable, and big changes in environment place sheep into both categories. MLAs guide 'Is the animal fit to load?' (www.mla.com.au/isitfittoload) gives a good overview of the expectations and

guidelines for all parties to manage any trip.

But sadly, sometimes things do go wrong. The main problems to be concerned about during transport are:

- Injuries
- Metabolic disease, such as hypocalcaemia
- Salmonella, a bacteria that causes scours, sepsis and severe fever
- Pneumonia.

Injuries and diseases like pneumonia and salmonella are best managed by following low stress stock handling and proper pre-trip preparation.

Anti-inflammatories are useful in certain situations because they reduce the amount of inflammation and, like analgesics, reduce pain, particularly with injuries. What this means is the animal can heal faster and put weight on quicker, as well as address any welfare concerns. Different antibiotics treat different bugs, so speak to your veterinarian regarding the right type of antibiotics to use for sick animals.

Timeliness of treatment for all these conditions is the key to successful outcomes, so being prepared to treat any sick sheep is not only good stewardship but also makes good business sense to minimise losses and protect your new investments.

What is hypocalcaemia? The body runs the levels of important chemicals in what we call 'tight homeostasis' which means it controls levels of chemicals like calcium with white knuckle tight reins. Throw in a management event, transport or a sudden change to a chronically low calcium diet (like grain) and suddenly the blood levels can drop dangerously low. One of the main jobs of calcium is muscle function. Low calcium blood levels can cause collapse and sometimes tremors.

As always, the aim is to 'control the controllables' and be prepared. This means, have:

- calcium and salt ready when the sheep arrive, particularly scanned in lamb (SIL) ewes

- calcium, magnesium and glucose bags handy to treat any that have metabolic issues or weakness
- antibiotics and analgesics/anti-inflammatories ready for any injuries or sick animals.

If you have dealt with pregnancy toxaemia, you will know what a difference the oral drench can make, so it is worthwhile giving it to any down sheep as well, if handy.

STEP 3 - HITTING THE 'BUFFET BAR' TOO HARD: DISEMBARKING IS THE DANGER PERIOD FOR POISONINGS

Why do feed poisonings occur? Sheep eat things that are bad for them when they lose their ability to selectively graze, because for instance:

- they have little choice of what to eat, such as during drought/monoculture
- they get offered too many goodies at once (grain poisoning)
- recent rain makes bad things look really tasty
- we have sprayed herbicides and now bad things are tasty
- they are hungry after transport or a management event.

Anyone who has stared at a roadhouse hotbox while hungry knows how tempting a food that could reduce your life expectancy can be... sheep are no different.

Nitrate poisoning is one of the most common toxicities; it occurs when certain plants accumulate high levels of nitrate. This can be because of high levels of fertiliser, long overcast conditions (young oat crops) or in this context high amounts of urine and faecal matter as is common in yards and holding paddocks. Basically, when eaten, a chemical reaction occurs which depletes red blood cells' ability to

WHAT TO PREPARE FOR YOUR 'GUESTS'

1. Hay: 2% of body weight per day, in multiple locations.
2. Calcium/salt/magnesium supplements.
3. Calcium/energy bags.
4. Farm animal first aid kit: antibiotics and analgesics/anti-inflammatories.

give oxygen to the body. The most common offender weeds are pigweed, cat head, button grass, capeweed and variegated thistle.

What is pulpy kidney? Rapid changes in feed or going on to large amounts of green feed can quickly cause an explosion in the population of bacteria (called the clostridials) in the rumen and intestines, which releases toxins into the blood stream causing sudden death.

STEP 4 - WHAT TO DO DURING THE 'CHECK-IN' PROCESS

What are the main 'check-in' protocols you need to follow when the sheep have arrived?



If you are not 110% sure of their vaccination and drenching history, experience has shown it is better to not assume too much. Generally the check-in process lasts 24-72 hours; holding them in the yards/holding paddocks gives sheep plenty of time to settle. For a good check-in, you need:

HAY AND LOTS OF IT

There is a famous saying of veterinarians: "The solution to pollution is dilution". The goal is to fill the sheep with hay so there is less room to eat large quantities of toxic plants/rich green feed all at once. This gives the animals time to get over the trip and let the rumen adjust to the new feed.

Quality is not that important when compared to quantity and access points. Average quality hay or straw is fine. However, high quality lucerne hay and the like might actually be dangerous to start them on. This is because: (a) we are looking to start up the chemical reactions in the rumen softly and slowly, and chewing achieves this, and (b) we are not feeding for growth, that's what the green feed they are going on to is for. NSW District Veterinarian Dr Jill Kelly makes the following point: "Breaking up bales, using racks or converted shuttles is a good way to get multiple access points. Not having enough access points will cause the bullies to gorge while the shy ones are getting hypocalcaemia out the back."

If you are looking for a rough rule of thumb for how much hay to put out, then sheep eating 2% of their body weight in straw/hay per day is a good place to start as a minimum (ask a nutritionist for advice if needed and get feed tests done for accuracy). A 350kg round bale of hay/straw will feed approximately 250 60kg ewes per day during induction.

MINERALS

After a long trip, the body's chemicals can be depleted, especially of calcium. Having calcium, salt and magnesium available in one tub per 100 sheep in the holding yards can be beneficial if they, especially SIL ewes, have low levels. Your nutritionist can advise you on specifics.

VACCINATE FOR 6 IN 1

When we change a flock's diet quickly, we expose the sheep to the risk of pulpy kidney. A change of season to green feed is a good example of this. You don't have to prevent many losses to make the benefit-cost ratio of vaccinating very obvious.

WORMS

As the WormBoss website says: "Resistant worms: you can breed them or buy them in." As one of the biggest causes of loss in the sheep industry, you must take this risk seriously. An introduction of resistant worms hinders all sheep production and can cause deaths. The

standard quarantine drenching is: use four unrelated chemical groups and hold the sheep in containment paddocks for three days before putting them out to pasture. WormBoss has an excellent resource on this; search "Quarantine drenches" at www.wormboss.com.au.

LICE

Avoiding the introduction of lice might not be as 'life or death' an imperative as feeding to prevent a poisoning, pulpy kidney or worm burdens, but it is still a very important risk that needs to be mitigated. See pages 56-57 and LiceBoss at www.liceboss.com.au for details.

STEP 5 - SHOWING THEM TO 'THEIR ROOM'

Once stock have been checked in, it is time to show them to their 'room'. Good customer service is about doing the simple things right:

- A welcome drink – make sure to push sheep on to water so they can get a drink and know where it is. Do it twice just to be sure and check them regularly.
- Room service – if you need to get them to their paddocks quickly, remember "The solution to pollution is dilution" so make sure they are full up on hay. Sheep do most of their grazing in the morning, so to manage the risk of overindulgence take them to their paddock in the afternoon.
- Offer a full breakfast – "Nutrition can be an art as well as a science," says Dr Jill Kelly, so putting hay out even when on green feed/ grazing crops allows them to selectively graze and allows for good fibre uptake.

TWO EXTRA POINTS TO CONSIDER

Like all good trips, having a "weather contingency plan and transit insurance" is a smart move, says Brett Smith from Elders. Significant rainfall events can increase the likelihood of a mishap and a significant disruption to the check-in process.

Most infectious diseases show themselves within 21 days, so keep your new arrivals separate from your other sheep before mixing during this period. Pink eye is a good example of this. Two notable exceptions that could get missed in a 21-day quarantine are virulent footrot in a non-spread period, and brucellosis which requires palpation and blood testing of the rams. Regular checking of the stock during this period is the key.

By managing the risk and process of onboarding new sheep well, you can minimise the potential for losses and maximise the chance of getting healthy sheep ready to perform... and get a good rating on Sheep TripAdvisor!

AWI is grateful to Dr Tim Gole for the preparation of this article. Tim is head veterinarian and principal of For Flocks Sake, a sheep production services and consultancy firm based in Dubbo, NSW.



BETTER MANAGEMENT WITH AG360

RECORD THE PAST - PREDICT THE FUTURE

As well as enabling livestock producers to record their farm management, a new web-based management tool uses customised weather forecasts to help producers predict their pasture, livestock and wool growth up to six months in advance.

Ag360 is an exciting new web-based management tool for livestock producers, launched in May as a commercial spin-off from the University of New England (UNE). Ag360 had its genesis within the Sheep CRC, which developed the first-generation product, ASKBILL. Since the conclusion of the Sheep CRC, UNE has been custodian for the software and has continued to expand its functionality.

Ag360 records farm management as well as providing predictions (up to 6 months in advance) on a paddock by paddock basis for:

- Rainfall and soil moisture
- Pasture availability
- Sheep and cattle live weight, carcase weight, fat cover and condition score
- Wool growth
- Health risks, such as blowflies, worms, heat and cold stress.

The predictions are based on a weather forecast (derived from Bureau of Meteorology data) that is customised to within 5 km of a farm location, in conjunction with powerful and accurate scientific models that have been well validated by the team at UNE.

HOW DO I ACCESS AG360?

Ag360 is simple to set up and use. The annual subscription cost is \$500 excluding GST. To register, go to Ag360.com.au and create an account.

The software will automatically guide you through the set-up process in which you map your property and enter pasture and livestock information. Online assistance is available.

For advisors and service providers interested to partner with Ag360, please make contact through the website.

Information can be shared with trusted advisors to the business. The software provides alerts (via text and email) when feed availability, animal growth or condition score are falling behind target or a threat such as flystrike or worms emerges. There are problem-solving tools to resolve these issues through changed management, application of a preventative treatment or supplementary feeding.

The software allows you to enter future grazing rotations as well as actual pasture biomass estimates, animal weights, treatments and joining dates recorded on the property. This information becomes a record of farm management and is also used in predicting future pasture availability, animal growth, condition score and health threats, such as blowflies or worms.

Ag360's go-to-market strategy is to partner with others in the supply chain such as: advisors, agronomists, processors and livestock agents who can support their clients to use the software but also add value to their clients' business through knowing the challenges and opportunities that are predicted over the coming months.

This is the first software product that combines **Recording the Past** with **Predicting the Future**, allowing producers and their advisors to be well prepared to respond to future challenges and opportunities in the business as well as ensure the highest standards of animal management and wellbeing.



Ag360 is available at www.ag360.com.au.

THE BENEFITS OF AG360 FOR WOOLGROWERS

- 
CUSTOMISED
To your property location and paddocks
- 
PLANNING & BUDGETING
Stocking rate reports, rotational grazing planner and feed budgeting
- 
DATA
Data sharing with trusted advisors
- 
PASTURE PREDICTIONS
6-monthly rainfall, soil moisture and pasture growth prediction using scientifically validated models
- 
GROWTH PREDICTIONS
6-monthly predictions of livestock growth, carcase compliance and turn off times using scientifically validated models
- 
TARGET ALERTS
Alerts if you are falling behind targets
- 
RISK ALERTS
Alerts for animal health risks
- 
ANIMAL WELFARE TOOLS
Tools to solve animal health and nutritional challenges

DAVID MCKEMEY, GUYRA, NSW

Woolgrower David McKemey has been a regular user of ASKBILL and is looking forward to using the new functionality in Ag360

David McKemey runs 2,800 Merino breeders and 80 cows on 800 hectares in the high rainfall zone at Guyra in northern NSW. He runs an intensive rotational grazing system and is constantly keeping an eye on pasture availability and the feed budget, as he rotates his sheep and cattle across the property.

David found ASKBILL invaluable during the recent drought to:

- keep an eye on the rainfall forecast and resulting soil moisture

- assess how much pasture he would have and how many stock he could carry
- calculate the feed requirements of sheep in drought containment areas.

He also used the ASKBILL soil moisture predictions to plan his oat sowing program and has found the warnings for flystrike to be very reliable.

David has been and is looking forward to using the new functionality in Ag360, particularly the paddock-based pasture predictions and keeping a record of his grazing rotation using the Click and Drag function to move mobs.



FLYSTRIKE RISK ALERT

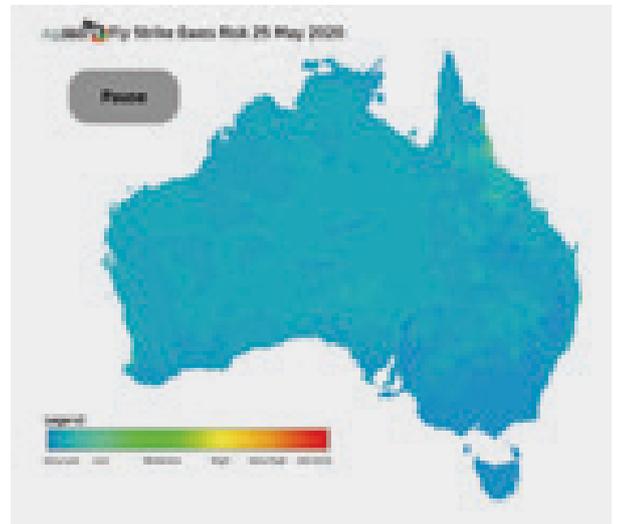
If you have an Ag360 property account, you can view the risk of flystrike for each mob on your property up to six months in advance, based on:

- forecast rain, warmer temperatures and higher humidity
- your on-farm prevention practices, eg crutching, treatments
- body and breech features of each sheep mob.

Ag360 also alerts you (by text or email) at least two weeks ahead of a high risk of flystrike so you can keep your most

susceptible mobs safe and well.

Ag360 also provides generic national maps that provide predictions of flystrike and extreme weather across Australia. These generic risk maps predict the risk of flystrike from rainfall and temperature forecasts in the coming five days and will also be available on FlyBoss (www.flyboss.com.au).



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WOOLGROWERS AND CORONAVIRUS

While many rural areas of Australia currently do not seem to have been directly affected by coronavirus infections as much as metropolitan areas, it is important that people remain vigilant. Here we provide information for woolgrowers on how to help ensure that their farming operations, staff and contractors, family and friends are as protected as possible.

Woolgrowers should be proactive and already have plans in place to ensure that their farming operations, staff and contractors, family and friends are as protected as possible. However, the following points are useful as a guide to help ensure your farm's planning has been robust.

The following points are not an exhaustive list. Use these points as discussion topics with your team, agree on actions, and then put the actions in place. Act now!

While the coronavirus seems to be on the wane in Australia, it is important that a 'second wave' of coronavirus cases is avoided. As the coronavirus pandemic is rapidly evolving, we suggest you keep up to date on official government announcements. This article should only be used as a general aid and is not a substitute for specific advice.

PROTECTING STAFF FROM EXPOSURE

- Employers and employees all have a legal responsibility to help provide a safe workplace.
- Employers and employees all have a moral responsibility to help reduce the spread of coronavirus throughout the community and protect health and lives.
- Are all members of your team taking coronavirus seriously and taking reasonable actions now?

MANAGING VISITORS, TRIPS OFF YOUR PROPERTY AND CLOSE CONTACTS

- Consider how you manage people coming from overseas or from areas that put them at higher risk of having the disease. This could include any city, town, or your local area.
- If team members generally pick up parts or supplies, how can those purchases be planned ahead to be done differently? Could you instead get things dropped off or left outside instead to reduce the exposure risk?
- Would it be useful to enhance your existing farm biosecurity measures and further restrict visitor access to your farm/business

or put signage and processes in place to advise visitors of your protocols on arrival?

- How do team members and their close contacts plan to manage their personal lives and trips to grocery stores? Each workplace is a community that will need to work together to look after each other. Different people will have different ideas about managing risk and the level of risk involved. Try not to butt heads – make sure everyone has access to up-to-date information on coronavirus and a good understanding of how it may impact the business and the people in each team member's network.

GOODS & SERVICES YOUR BUSINESS NEEDS

- What goods (eg chemicals, fertilisers, equipment) do you rely on to keep your business going in the coming months? Consider contacting suppliers to discuss if there will be any impact on availability or to let them know what you will need.
- What services (eg mechanics, shearers, fuel deliveries, agents, advisors) do you require over the coming months? Can you arrange systems so that they can service you without coming on farm? If they need to come on farm, are they aware of the processes you have in place to reduce the risk to your team? Do you know their expectations around protecting their staff? Is there an alternative service provider available in the case that the one you normally use can no longer deliver the service?
- Contact your major suppliers and services providers now to find out how they are preparing and talk to them about your requirements.
- If you are a farm service provider, consider contacting your clients now to ask if they have new protocols in place for property access and to let them know about how your business is responding to deliver continuity of service and minimise risk of spread.

CHANGING HOW YOU USE SHARED SPACES & SURFACES

- Do you have shared vehicles, work spaces, hand-washing facilities, bathrooms or kitchen facilities and are they set up to reduce risk of transmission?

- Are there processes in place to clean down shared surfaces regularly or to reduce the need to share them? For example, think about things multiple people touch like door handles, taps, food surfaces, steering wheels, operating screens, switches, the inside of vehicles, the fuel bowser.
- Could you stop team members sharing vehicles and machinery, or could you clean the cabs, hand rails and door handles down between operators?
- Can your team members adequately clean their hands before they eat or after they have touched shared surfaces?
- How are shared / staff meals being prepared and are there adequate hygiene practices in place?
- Consider ensuring that soap and hand sanitiser are readily available and whether you need protocols in place to ensure they are used regularly and correctly. If you can't get hand sanitiser at the shop, are there other ways you could source or safely make it?
- Could you replace shared hand-towels with disposable paper towels?
- Are all members of the team and their close contacts practicing social distancing of one person per 4m²?
- If you have shared accommodation, has it been set up to reduce risk of transmission?
- What measures could you put in place to protect other staff in shared accommodation if one of them developed symptoms or tested positive?

RESPONDING TO MEMBERS OF THE TEAM BEING OUT OF ACTION

- How would the business be impacted by limited labour due to staff having to self-isolate, or the closure of schools or childcare? What can you do to prepare?
- How could you respond if one of your team members or someone they have regular contact with was required to isolate or tested positive?
- How could you respond if a team member displayed symptoms?
- What policies are in place for sick or 'isolation' leave? If there are none in place or you work with casuals, will they feel financial pressure to keep working if they feel unwell? Would putting a plan in place reduce this risk?

RESPONDING AS THE SITUATION CHANGES AND KEEPING THE TEAM INFORMED

- Are you regularly accessing accurate and useful information in order to update your team and your business continuity plan?
- Is the information you are accessing from a reliable source?

- If you need to make changes to your business's response to coronavirus, how will you communicate it with your team to make sure everyone is on the same page?

SUPPORTING EACH OTHER

- How could you support a team member if they or their family are required to isolate or tested positive?
- Are there members of your team who are not coping well due to stress or anxiety?
- How can you keep a sense of team and social contact while social distancing measures are in place?
- How could you support a farm neighbour or a similar service provider if their business is impacted and they are struggling to deliver their farming program or business services?

B

FURTHER INFORMATION

The AWI website at www.wool.com/covid-19 provides links to several useful resources issued by external organisation, including:

AUSTRALIAN GOVERNMENT DEPARTMENT OF HEALTH

- COVID-19 resources
- COVID-19 health alert
- COVID-19 frequently asked questions (5-page fact sheet)

POSTERS FOR YOUR FARM PREMISES

- How to avoid infection or spreading the virus (healthdirect)
- Hand hygiene (Chamber of Commerce and Industry WA)

ADVICE AS AN EMPLOYER

- Coronavirus and Australian Workplace Laws (Fair Work Ombudsman). For employers and employees under the national industrial relations system, ie those on the Pastoral Award 2010 for companies.
- Coronavirus (COVID-19): Advice for Employers (Safe Work Australia)
- COVID-19 Employer Guide (Australian Chamber of Commerce and Industry)
- Farmhub COVID-19 resources (National Farmers Federation)

OTHER INFORMATION

- COVID-19 advice (NSW DPI)

SHEARING OPERATION PROTOCOLS

IN RESPONSE TO CORONAVIRUS

The following protocols were issued in March by AWEX, WoolProducers Australia, Sheep Producers Australia, The Shearing Contractor's Association of Australia and WA Shearing Industry Association.

1. MAINTAIN 1.5 METRE DISTANCE BETWEEN PERSONNEL AT ALL TIMES

Shed staff considerations:

- Travelling separately in vehicles unless the vehicle can allow for 1.5 metre distancing, eg bus.
- Wool handlers waiting until the shearer is in the catching pen before they pick-up.

Woolgrower considerations:

- Only using every second shearing stand.
- Must have own rooms in camp out jobs (consider utilising other buildings).
- Meals – ensure eating areas can provide 1.5 metre distancing.

2. IMPLEMENT AND FOLLOW STRICT HYGIENE REGIMES

Shed staff considerations:

- Wash frequently with soap and water, before and after eating and after using the toilet.
- Bring own soap, alcohol-based hand sanitiser and towel.
- Don't share cups or water bottles.
- Encourage sweat band use and use of own towels – the virus cannot be transmitted from an infected person through sweat alone but can be transmitted through coughing or sneezing.

- Keep gear separated – workers to bring storage bags or tubs for their gear.

Woolgrower considerations:

- Provide running water (no basins), soap, alcohol-based hand sanitiser and paper towel.

- Ensure adequate space in eating rooms to enable 1.5m distancing between staff.

3. OVER-COMMUNICATE

Talk to staff each day

- Remind them to practice social distancing and/or isolation each night in suburban jobs – recommend that people don't visit friends and family.
- If they feel unwell do not come to work, or leave work if feeling unwell.

- Don't pressure staff to work – if they are nervous and don't want to work, find alternative workers.

Contractors & woolgrower communication

- Forewarn, accept and manage for lower productivity/higher costs – safety and welfare are prioritised over profits and time. Considerations for woolgrowers include animal welfare and additional labour costs.

- Plan for several months ahead.

- Plan to be restricted to 'essential shearing only'.

- Encourage communications via phone where possible.

- Essential personnel only – do not allow people that are not essential to the wool harvesting process, ie visitors, children etc into the shearing shed, especially older people.

4. WHAT TO DO IF SOMEONE BECOMES UNWELL AT WORK

- Isolate as soon as possible.

- Notify relevant people including contractor or woolgrower.

- Follow dept of Health procedures: www.health.gov.au/resources/collections/novel-coronavirus2019-ncov-resources

B

THE YARN PODCAST: SHEARING IN ISOLATION

In April, AWI General Manager for Woolgrower Engagement, Marius Cuming, spoke to shearing contractors across Australia about how they are handling social distancing in shearing sheds, smoko rooms and living quarters: South Australian Glenn Haynes of the Shearing Contractors' Association of Australia, Robbie Crouch

of A-Team Shearing Contractors in Victoria, Darren Spencer of the WA Shearing Industry Association, and also AWI's Program Manager for Wool Harvesting Training and Development, Craig French.

MORE INFORMATION

Listen to the interviews in episode 123 of AWI's The Yarn podcast at www.wool.com/podcast





Merino fleece freshly shorn by **Damien Boyle**, with his son **Zac Boyle** and father **Don Boyle**. The fleece is one of the first to be harvested at the newly built woolshed. *PHOTO: Bob Garnant*

BOYLES MAXIMISE EFFICIENCY AT RINA DINA

Shearing is in the blood of the famous Boyle family at Broomehill in WA, but they also run a successful flock of their own. When designing a new shed for their own property 'Rina Dina', they were able to draw on their many years of experience working in sheds to build something special.

Don Boyle, along with sons Damien and Brendon and their families run a flock of 11,000 Merino breeders at Broomehill in southern Western Australia.

Now nearing 70 years old, Don left home at age 15 to take up shearing as a means of



The **wool room and board** with minimal distance travelled by shed staff.

earning a good living. He has had a famously illustrious shearing career and now designs and builds woolsheds. His son Damien is a multiple award-winning competitive shearer and along with Brendon, who operates Boyle Shearing Contractors with about 32 wool-growing clients, takes on the annual shearing duties during the family's 700-bale wool harvest at 'Rina Dina'.

The family's collective experience in the wool harvesting industry has provided the Boyles with a unique insight into the efficiency of a range of shearing sheds, an insight Don called upon when the time came to upgrade their own facilities.

"Sheep have got to flow and working with the natural behaviour of the animal makes it much easier," said Don.

"We wanted to avoid back filling pens as sheep are very reluctant to move towards the shearing noise. Front fill pens are the first preference, but side fill is also good if space in the shed is limited.

"We use wider, 3-inch (about 7½ cm) slats

on the floor which are far easier and more comfortable for sheep and people to walk on when penning up. The wider slats also reduce the amount of light coming up from under the floor by about half.

"Combined with even overhead lighting which minimises shadows, these wider slats laid across the direction of sheep flow can significantly improve the movement of sheep through the pens."

The Boyles have settled on catching pens no bigger than about 2.1m wide by 3m deep which can hold 15 woolly sheep. The size of the catching pen means the shearer only needs to take one or two steps to catch a sheep and does not need to remove the harness to reach the sheep as it can swing back overhead into and above the catching pen.

Fill pens are the same size as the catching pens which means shed hands don't have to split pens or move individual animals. Catching pen doors are lower than the shearers' elbows to avoid impact when dragging back and split to be 50cm and

30cm rather than even in width, to allow the doors to open and close without the right-hand door interfering with the shearer's workstation or handpiece while releasing earlier as the sheep is dragged past.

Once a sheep is shorn, it is released into a recessed chute that is set about 10cm into the board. There is also a vertical drop of 10cm from the board into the chute before the slope increases down the chute.

"The chute is 60cm wide, which creates fewer shadows than narrower chutes and encourages sheep to move into and down the chute, I wouldn't build them any narrower," said Don. As a result, the shearer doesn't need to force sheep down the chute as often.

"Over the years, I noticed that in most situations, shed hands were working harder than they needed to. With this design, shed hands only need to take one step from each stand to the wool table, which really reduces how much walking they do each day," said Don.

The raised board is 70cm above the wool room floor. "This board height, which is lower than most other raised boards, means shed hands do not have to stand on the tips of their toes to lift the fleeces from the board. This puts much less pressure on their feet over the course of a day's shearing," said Don.

The wool press is accessible from the wool table so the classer can fill the press with the main line without needing to double handle fleeces. Wool bins are used for oddments only.

Don always tries to keep the cost to a minimum when building sheds. His own new shed was primarily built using off cuts and readily available materials, as well as some timber milled from his own property.

"It took me a bit of time to source some of the materials, but it only cost about \$50,000 to construct the four-stand shed," said Don.

Don also experimented with a semi-circular board but not being a qualified builder, he found this design more complex to construct.

"My first piece of advice is to consider the existing inefficiencies in your shed, particularly areas that restrict the movement of sheep and where people are walking further or working harder than necessary," said Don. "Then use portable panels or temporary structures to test out your layout before making the fixtures permanent."

Shearing contractors and staff can also provide valuable feedback about how to achieve greater efficiency and improve work health and safety by drawing on their experiences. Seek advice from trusted



The catching pen, with slats running to the board. The boards run across the flow of sheep in both the catching pen and the fill pen reducing the light visible below the shed as sheep move through.

sources when identifying issues and potential improvements.

MORE INFORMATION

View this and other shearing shed design case studies at www.wool.com/sheddesign

Hear more of Don Boyle's thoughts on shearing shed design in Episode 80 of AWI's The Yarn podcast at www.wool.com/podcast



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The graduates with AWI trainers and supporters of the camp at the Walker family's shearing shed at 'Warranine Park' near Brookton in the Upper Great Southern of WA.

WA SHEARING CAMPS RESULT IN EMPLOYMENT

Shearing camps in Western Australia are supporting training opportunities for Aboriginal young people and encouraging new entrants into the shearing industry, with many of the students being directly employed following the latest camp at Brookton.

Following on from the successful trial shearing and wool handling camp for young indigenous and local youth in January at Northampton in the state's Mid-West, a second camp was held in March at the Walker family's 'Warranine Park' property near Brookton, 130km south-east of Perth.

The camps are the result of a collaboration between the WA Department of Primary Industries and Regional Development (DPIRD) and AWI, in partnership with local Aboriginal groups, shearing contractors and local farmers.

Shearing contractors attended both camps and provided shearing demonstrations and

motivational talks – and scouted for talent whilst in attendance.

CAMP LEADS TO JOBS

There were 12 students at the Brookton camp, all of them keen to gain knowledge and skills during the two-week wool harvesting course aimed at increasing employability. Following the camp, seven of the participants directly entered industry employment as they were job ready and local contractors had immediate opportunity to place them in the South East Wheatbelt area.

AWI shearing and wool handling trainers Kevin Gellatly, Todd Wegner and Amanda Davis led the training team at Brookton, with support from Pingelly aboriginal mentor and shearer Barry Ugle.

Barry was delighted to be part of the Brookton camp, stating how pleased he was with the attitude of the participants, and how the camps will help the aboriginal youth of regional and remote areas, such as Brookton.

"I myself started shearing pretty young, my father was a shearer and a local contractor," Barry said. "As the weeks have gone on, these youngsters at Brookton have got better at

everything they are doing, and they'll get plenty of work if they do the right thing."

Alister Williams, an 18-year-old from Wagin, has a history of shearing in his family background. Pleased to be part of this camp, Alister said he is "over the moon with this opportunity" and "can't wait to shear full time". Showing great promise with how well he did at the camp, he is now working with local Wagin shearing contractor Helen Walker.

"I am working as a wool handler at the moment. I enjoy this work, at least it's a start, better than sitting around. I am earning good money, enough to buy myself my own shearing gear, so I will be ready when my turn comes to shear," Alister said.

IMPORTANCE OF TRAINING

Darren Spencer, president of the WA Shearing Industry Association (WASIA), knows how important it is to train and educate in regional and remote areas of the state.

"We are in desperate need of new entrants to the industry," Darren said. "I think it's really important out here where there are plenty of kids who want to work in the

shearing industry. You only have to look at the aboriginals playing AFL football and with some basic training and some natural ability, shearing really lends itself to these kids.”

Darren has even gone so far as to take on one of the students from the camp: Oliver Thomas, a 22-year-old from Yankalilla, 70km south of Adelaide. Oliver had been working at Lake Grace in the sheds, but wanted more experience and to learn how to shear a sheep himself.

Oliver says his experience learning and working at the camp was fantastic. “It is honest work. I love it. I want to be a professional shearer. I started in one of



AWI shearing trainers **Kevin Gellatly** and **Todd Wegner** teaching student **Alister Williams** of Wagin who went on after the camp to get a job with a local Wagin shearing contractor.

Darren Spencer’s teams in the Lake Grace area, the camp has made me more employable and now I’m keen to do an improver level at school, so I can fulfill my dream of becoming a full-time shearer,” Oliver said.

COORDINATED ORGANISATION

Both Alister and Oliver want to thank all the trainers, supporters and sponsors of the camp, as well as the Walker family at ‘Warranine Park’ for the use of its facilities and allowing them to shear their sheep.

Ellen Walker from the property said she was impressed with the quality of the shearing and wool preparation from all participants, stating she “will definitely run another camp next year if needed” and wants to assist with the training and development for future generations and the community.

The effort and dedication to the organisation of these camps is critical to their success. The collaboration between the DPIRD and AWI has proven to be productive and positive, with the camps proving to be very successful.

Ashley Talbot, Aboriginal Economic Development Project Manager at DPIRD, has been instrumental in the coordination of the camps.

“Both regional shearing hub trials were beneficial as they kept young Aboriginal



AWI wool handling trainer **Amanda Davis** testing student **Oliver Thomas** about the different types of wool.

people in their local area to build employment skills and kept them connected to their local community,” Ashley said.

“The aim is to continue this model in other WA regions. Given the current COVID-19 measures in place, a planned camp in the Great Southern has been postponed, but the team is looking forward to helping deliver this one and more in the future.”

MORE INFORMATION

View videos of both camps at www.youtube.com/AWIWoolProduction

TRAINING AT STEAM PLAINS

For the seventh year in a row, Paraway Pastoral’s ‘Steam Plains’ station near Conargo in NSW hosted an AWI shearing and wool handling school for two weeks.



AWI runs three schools at Steam Plains, with this school for novice shearers and wool handlers held in March, just prior to the suspension of face to face in-shed training (due to government social distancing guidelines). The course was filled by 20 students from areas ranging from northern Victoria and the Riverina across to Bigga and Goulburn in the Southern Tablelands of NSW. Demand for the school exceeded the available places. There were three AWI trainers: Brian Sullivan, Sam Walker and Mike Pora.

“Having completed the novice school, several students are keen to return for any improver schools that are run,” Mike said. “A key to the success of the Steam Plains school is the support of shearing contractors who send their future shearers to be trained knowing the ‘camp out’ situation will have students prepared for real industry experience. The contractors also appreciate any in-shed training that AWI provides after the schools.”

ONLINE TRAINING

FOR SHEARERS AND WOOL HANDLERS

With face to face in-shed training currently suspended due to government social distancing directives, AWI has launched a series of online training videos to promote best practice shearing and wool handling techniques.

An important part of AWI's Wool Harvesting & Quality Preparation program is the funding of hands-on practical training for shearers and wool handlers in the shed, aimed particularly at increasing their productivity, skills development and professionalism. In the 2018/19 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.

However, face to face in-shed training had to be suspended two months ago due to government social distancing guidelines. The in-shed training will resume once the government relaxes its guidelines.

In the meantime, AWI has shifted its approach online. In collaboration with Shearing Contractors' Association of Australia (SCAA) Shearer Woolhandler Training Inc (SWTI), AWI's shearer and wool handler trainers have created and rolled out

a series of videos packed with tips, hints and practical advice on a range of topics, from to setting up a grinder to performing at your best in competitions.

The trainers include the likes of five-time national shearing champion Daniel McIntyre and national wool handling champions Mel Morris and Racheal Hutchison.

"These new videos are a great way of reaching people in the industry who we can't currently train face to face due to the coronavirus restrictions," said AWI Program Manager for Wool Harvesting Training and Development, Craig French.

"But the videos are suitable for anyone who works in shearing sheds who would like to brush up their own skills. The aim of these videos is to promote better techniques and

improve clip preparation practices in the industry, and good training is essential for both new and experienced workers."

Launched on SWTI's Facebook channel, the videos have been very well received by novice to professional shearers and wool handlers alike. The videos are also available via the AWI website and can be viewed at any time in any location. When viewing, you can pause and go back to a previous section in the video if you want to recap a particular point.

This new series of videos complements AWI's other shearer and wool handler training videos that are available on the AWI website or on request via a USB. **B**

MORE INFORMATION
www.wool.com/training-resources



AWI trainer **Paul 'The Pope' Hicks** from WA in one of the new videos showing how to set up a grinder using the AWI template.



Back Up Charlie – Flexible Sheep Movement System



Adjustable race width



BUC hock bars

Flexible BUC panels, that lengthen and shorten



New strap panels

What is Back Up Charlie?
Back Up Charlie is a flexible dual lane lead up race for sheep handling applications requiring consistent forward flow of sheep.

- Easily transportable
- Flexible to any sheep yard scenario
- Eliminates physically handling sheep into sheep handlers
- Can be assembled in a straight line or curved bugle format
- Creates a safe low stress environment for you and the sheep
- A labour saving system that increases sheep yard efficiencies
- The lightweight hock bars stop sheep turning around or backing up
- Proudly Australian owned, designed and made in Lockhart NSW
- Henty Machinery Field Days – 2016 Machine Of The Year WINNER!



FALL ARMYWORM MARCHES SOUTH

A new invasive pest to Australia, the fall armyworm, has recently been reported in some northern parts of Queensland, Western Australia and the Northern Territory. AWI, along with other stakeholders, are monitoring the potential impacts on the sheep industry should the pest spread further south into sheep-producing areas.

The fall armyworm (*Spodoptera frugiperda*) is native to tropical and subtropical regions of the Americas. Since 2016 it has rapidly spread to and throughout Africa, the Indian subcontinent, China and Southeast Asia.

In January, it was identified in areas of northern Queensland (it has now been reported as far south as Richmond, Bowen, Emerald and Bundaberg) and subsequently was identified in areas of the Northern Territory and northern Western Australia (Kununurra and Broome).

The fall armyworm can feed on approximately 350 plant species hosts. While it is currently not present in Australia's sheep producing regions, adult moths are capable of flying long distances and it is anticipated that the pest will spread south, but it is not known how far and how established it will be during the year.

The impacts on grazing industries are uncertain at this stage. However, grasses are the primary host for fall armyworm, especially tropical and sub-tropical grasses, but also fescue, rye and kikuyu as well as important legumes such as lucerne, clovers and forage crops.

Given the current limited population groups of the pest in Australia and observed differences in their host preference, there is uncertainty how this will affect its impact on different regions and pasture species' composition. It is also unknown how native species of grasses and plants will be affected.

However, US experience shows that fall armyworm can devastate pasture in days if infestation is heavy. More intensively managed pastures (fertilised and irrigated) and pastures with dense canopy are most at risk, as the larvae prefer fresh growth, especially following rain which aids survival of eggs and young larvae.

As fall armyworm can feed on a wide range of economically important cultivated grasses – such as maize, rice, sorghum, sugarcane and wheat, and also other vegetable and fruit crops

and cotton – a wide range of Australia's agricultural industries might possibly be impacted by its spread. Keen to limit the impact of fall armyworm, government and agricultural organisations in Australia are keeping a careful watch on the issue.

AWI will continue to liaise with agricultural industry organisations regarding the matter and distribute any information about the pest's spread, control and management to Australian woolgrowers as soon as it becomes available.

This is a good reminder of the importance of putting in place biosecurity best practice actions to prevent the entry, establishment and spread of pests and diseases on your property. See www.farmbiosecurity.com.au for further information.

If you find something you believe could be an exotic plant pest, call the Exotic Plant Pest Hotline immediately to report it to your local state or territory government on 1800 084 881. **B**

MORE INFORMATION

www.dpi.nsw.gov.au/fall-armyworm
www.business.qld.gov.au/fallarmyworm
www.agric.wa.gov.au/plant-biosecurity/fall-armyworm-declared-pest



NSW DPI has issued this poster to help with identification of the fall armyworm. It can be downloaded from www.dpi.nsw.gov.au/fall-armyworm.

WHAT TO LOOK FOR:



PHOTO: G. Goergen, IITA

LARVA (EARLY DEVELOPMENT)

- Adults 38-51mm in length.
- Light green to brown in colour.
- White lengthwise lines.
- Dark spots with spines develop as larvae mature.
- Distinctive pattern of four spots on second to last body segment.
- Inverted 'Y' shape pattern on its head.



PHOTO: G. Goergen, IITA

MOTH (ADULT)

- 32-40 mm from wing tip to wing tip.
- Brown or grey forewing.
- White hind wing.
- Males have more patterns with a distinct white spot on forewings.

MERINO LIFETIME PRODUCTIVITY PROJECT UPDATE



FAST FACTS

- The AWI-funded MLP project is a \$12 million (\$7 million from AWI plus \$5 million from partners), 10-year partnership between AWI, the Australian Merino Sire Evaluation Association (AMSEA), site committees, nominating stud Merino breeders and site hosts.
- 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.

Balmoral – ‘Tuloona’, Harrow, Vic
 Hosts: Balmoral Breeders and Tuloona Pastoral

Pingelly – UWA Farm Ridgefield, Pingelly WA
 Hosts: Murdoch University, UWA and Federation of Performance Sheep Breeders (WA Branch)

MerinoLink – ‘The Vale’, Temora, NSW
 Hosts: MerinoLink Inc, Moses and Son, Bluechip Livestock

Macquarie – Trangie Agricultural Research Centre, Trangie, NSW
 Hosts: NSW DPI and Macquarie Sire Evaluation Association

New England – ‘Chiswick’, Uralla, NSW
 Hosts: CSIRO and New England Merino Sire Evaluation Association

- A full suite of assessments will be undertaken. A unique and extensive dataset will result and be used to enhance existing Merino breeding and selection strategies, to deliver greater lifetime productivity and woolgrower returns.

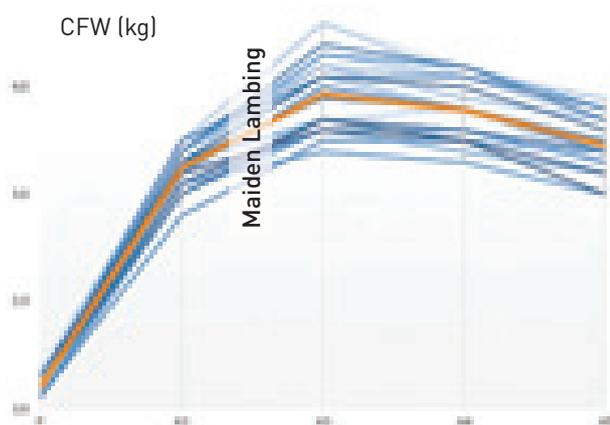
REPORT UPDATES ACROSS THE SITES

- The latest MLP reports are now available for the Balmoral, Pingelly, MerinoLink and Macquarie sites, including the latest wool, carcase and reproduction information.
- Reports include data collected out to the fifth adult year at Balmoral, the fourth year at both Pingelly and MerinoLink, and the third at Macquarie.
- A New England update is scheduled for mid-year (following shearing).

BALMORAL

Balmoral’s updated report for the 2015 drop ewes includes five wool assessments and three reproduction cycles, plus annual carcase measurements. The 2016 drop ewe results are just one year behind.

Table 1, below, is a subset of Adjusted Sire Means from the Balmoral Report giving the 2015 drop averages for Clean Fleece Weight (CFW), Fibre Diameter (FD) and Body Weight (WT) across the age stages. Adjusted Sire Means account for whether the ewe was born and raised as a single or multiple, the age of their dam, the number of lambs that the ewe has delivered and raised, plus management groups.



Figures 1 and 2: Balmoral 2015 drop F1 ewe adjusted sire mean data graphed by sire groups at each age stage for Clean Fleece Weight (top) and Body Weight (bottom). The drop average, shown in orange and reported in Table 1, tracks a general data trend

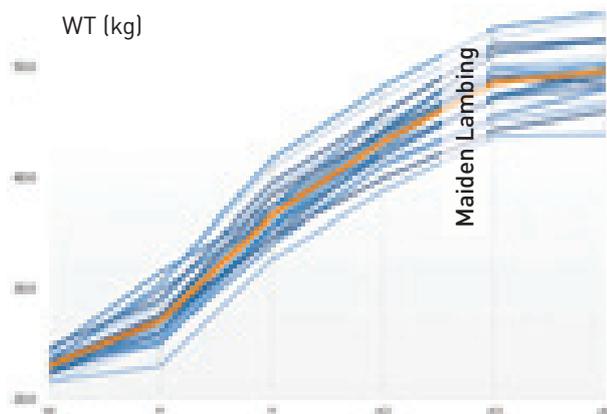


Table 1: The 2015 Drop ewe averages from Balmoral’s updated report

Balmoral 2015 Drop F1 Ewes	CFW (kg)				
	P	A2	A3	A4	A5
Adjusted Sire Means					
Drop Average	1.2	3.3	3.9	3.8	3.5

FD (µm)				
P	A2	A3	A4	A5
15.3	16.4	17.8	16.9	16.6

WT (kg)					
W	P	Y	A2	A3	A4
23.0	27.1	36.5	43.2	48.7	49.7

Wool growth in months:		Post Weaning	
Adult2	12	Adult4	12
Adult3	11	Adult5	12

Age Stages:		P	Post Weaning
A2	Adult (1.5 -2.5 years)	A4	Adult (3.5 -4.5 years)
A3	Adult (2.5 -3.5 years)	A5	Adult (4.5 -5.5 years)

The CFW and WT from the Balmoral 2015 drop show overall data trends starting to emerge, revealing that performance is changing over their lifetime. Each blue line on the graph is the average for a sire group and the orange line displays the drop average (outlined in Table 1). Figure 1 shows this drop of ewes may be peaking for clean fleece weight in the third adult year, and in Figure 2 an annual increase in body weight across the drop can be observed. There are also early indications that some sire results are changing, observable in changed rankings over the age stages. This data is from just 550 of the 5700 F1 ewes in the project and it will be interesting to observe if similar data trajectories occur across the other MLP ewe drops and sites.

The project sets out to explore fleece and growth trajectories and to question whether current selection systems are able to identify animals at a young age that are productive through life. This question, along with many others, is featured in the *MLP Project Analysis and Reporting Plan* which has recently been made available for download from www.wool.com/mlp. Feedback is welcome, contact AWI's Program Manager for Genetics, Geoff Lindon, at geoff.lindon@wool.com.

PINGELLY AND MERINOLINK

The Pingelly and MerinoLink sites have updated their reports to include the 2019 data. For the 2016 drop, this includes four years of wool and carcase assessments, plus the scanning and weaning data from two reproduction cycles. The 2017 drops have three wool assessments and their maiden reproduction results reported, plus carcase data.

The 2020 pregnancy scanning results from these sites are now available in Table 2. Pingelly joined in February under unusually dry conditions, and ewes were scanned at the end of April. MerinoLink joined in drought conditions prior to Christmas, with ewes scanned and moved out of containment feeding in mid-March.

MACQUARIE

Macquarie's updated report was released at their well-attended MLP Field Day held on 4 March. The field day showcased both the 2017 and 2018 drops alongside their latest results. The 2017 drop reported three wool assessments, two reproduction cycles and corresponding carcase assessments. The 2018 drop had two wool assessments and corresponding carcase assessments, plus a maiden joining. The report included pregnancy scanning results from 2020. The Macquarie site has experienced a wet start to 2020 (333ml to the end of April 2020 against an annual average of 496ml), ewes lambing onto some available paddock feed.

NEW ENGLAND

A change in seasonal conditions has also spread to the New England MLP site. Early 2020 rainfall was significantly higher than for the previous 18-month period (452ml to the end of April 2020 against an annual average of 859ml) and the ewes have moved onto green feed. These conditions are timely in the lead-up to joining. A New England report update is scheduled following shearing. **B**

MORE INFORMATION

www.wool.com/mlp
www.merinosuperiorsires.com.au/mlp-reports

Table 2. Pingelly (April) and MerinoLink (March) 2020 pregnancy status, weights & condition scores

PINGELLY				
Drop	Pregnancy Status	Ewe Number	%	Average Condition Score
2016	Dry	13	4%	3.0
	Single	152	42%	3.2
	Multiple	192	54%	3.2
	Drop Average	-	-	3.2
2017	Dry	33	6%	3.0
	Single	360	66%	3.0
	Multiple	150	28%	3.0
	Drop Average	-	-	3.0

MERINOLINK				
Drop	Pregnancy Status	Ewe Number	%	Average Condition Score
2016	Dry	18	6%	2.7
	Single	137	42%	2.7
	Multiple	167	52%	2.8
	Drop Average	-	-	2.8
2017	Dry	54	14%	2.7
	Single	183	46%	2.8
	Multiple	161	40%	2.9
	Drop Average	-	-	2.8



Macquarie's 2018 Drop F1 ewes on display and field day crowd, March 2020.



FUTURE MLP FIELD DAYS

New England 2020 MLP Field Day.

An online field day will be hosted in August 2020 in light of the current isolation restrictions. This event will be open to all of industry.

The **MerinoLink** and **Pingelly** sites currently have field days tentatively scheduled for later in the year.

Updates will be announced on www.wool.com/MLP and via the AMSEA and MLP email [subscribe at www.bit.ly/AMSEA_Subscription].

MERGING MLP DATA INTO MERINOSELECT

Collected MLP project data has been submitted for inclusion in the MERINOSELECT analyses and is now available on the Sheep Genetics website.

The process involved the merging of all MLP repeat adult data for wool, body weight, worm egg count, visual traits and reproduction into the MERINOSELECT analyses, as well as the addition of the genotypes of the 5,700 daughters (the MLP ewes). This is in addition to the results collected and submitted previously as part of the sire evaluation phase.

MLP data will now be submitted as it is collected by the project in line with the regular MERINOSELECT analyses.

The inclusion of the MLP data also coincides with a methodology update for the calculation of the Fleece Weight traits.

Research Breeding Values of the three component traits for Number of Lambs Weaned, Conception, Litter Size and Ewe Rearing Ability will be introduced in late June.

MORE INFORMATION
www.wool.com/MLP-SG

WORLD'S OLDEST FROZEN SEMEN

TRIALLED IN MERINO SIRE EVALUATION AND RESULTS ARE NOW AVAILABLE

The Balmoral Breeders' trial used artificial insemination (AI) to join 20 sire entries for a 2018 drop of progeny. One of these entries came from semen frozen in 1968 at the University of Sydney when the science of using frozen semen was being developed by Dr Steven Salamon. It is understood to be the oldest semen in the world, of any species. The entry costs of the 50-year-old semen was funded by AWI.

The semen was a mix from four rams including a purchased sire from Boonoke (1959 drop), another from Merryville (1963 drop) and a son from both rams out of Woolaroo stud ewes. The rams were owned by the Walker family of Ledgworth, Yass NSW (formerly 'Woolaroo').

The other 19 sires used in the Balmoral trial were rams currently used in the industry and nominated by Merino breeders to be benchmarked against other genetics. This trial combination of current and historical genetics has allowed the direct comparison of genetics that are more than 50 years old to current industry sires.

SEMEN VIABILITY

The 50-year-old semen was used to AI 56 Merino ewes. Of these, 34 conceived achieving a 61% pregnancy rate. At pregnancy scanning, 46 fetuses were scanned giving a 82% scanning rate.

The overall trial averaged a pregnancy rate of 59% and a scanning rate of 80%. So it seems as though the 50-year-old semen viability was not impacted by its long-term storage and it was as good as the day it was frozen!

Pregnancy and scanning rates from 50-year-old semen compared to the trial average

SEMEN TYPE	PREGNANCY RATE	SCANNING RATE
50-YEAR-OLD SEMEN	61% (34/56)	82% (46/56)
TRIAL AVERAGE	59% (652/1104)	80% (888/1104)

REPORT RESULTS

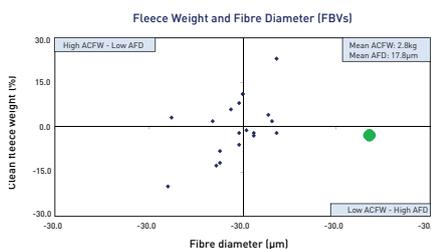
Assessment of the trial progeny was completed under the Australian Merino Sire Evaluation Association (AMSEA) framework. Assessment commenced at lamb marking with breech traits being scored, then visual classing and wool measurements were

undertaken at the Post Weaning and Adult stages plus carcase measurements collected at the Yearling stage.

Below is a snapshot of the Balmoral Breeders' 2018 Merino Sire Evaluation trial results with the 50-year-old semen results highlighted in green. Fleece weight, fibre diameter and body weight are reported as flock breeding values (FBVs) and breech wrinkle as a deviation (Dev) from the average score of the drop.

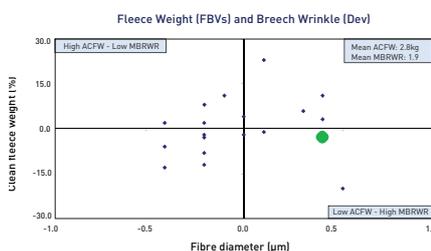
ADULT CLEAN FLEECE WEIGHT (ACFW) AND ADULT FIBRE DIAMETER (AFD)

The 50-year-old genetics (green marker) are significantly higher in fibre diameter than the other sires, whilst being just below average for fleece weight.



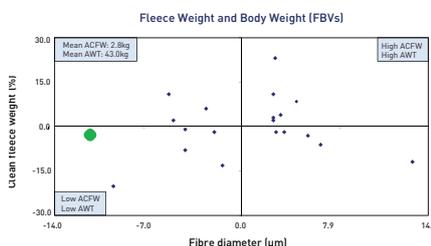
ADULT CLEAN FLEECE WEIGHT (ACFW) AND MARKING BREECH WRINKLE (MBRWR)

The 50-year-old genetics (green marker) carry more wrinkle than most of the other sires.



ADULT CLEAN FLEECE WEIGHT (ACFW) AND ADULT BODY WEIGHT (AWT)

The progeny carrying the 50-year-old genetics (green marker) are the smallest animals in the trial.



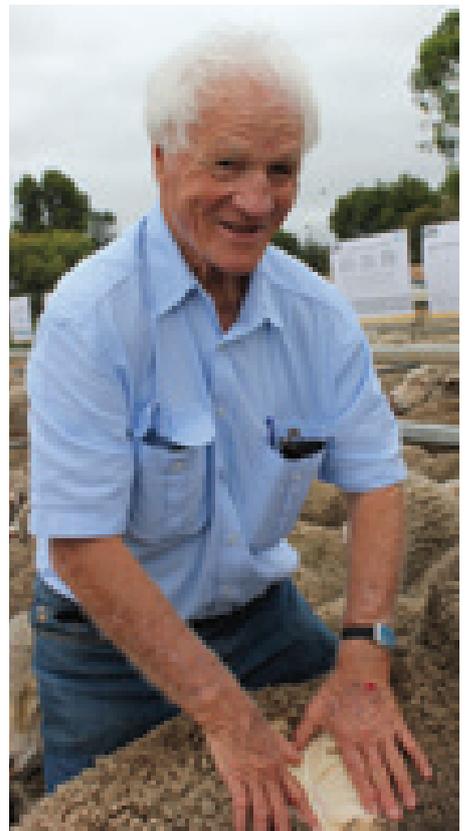
The progeny of 50-year-old frozen ram semen have been assessed for visual, wool and carcase performance and trialled against contemporary Merino sires currently in use in the industry, at Balmoral Breeders' 2018 Merino Sire Evaluation trial in Victoria.

Visual scores for fleece rot, wool colour, wool character, body wrinkle, breech wrinkle and breech cover indicate that there has been significant progress in these traits over the past 50 years. This progress can be seen when comparing the scores of current genetics to the average for the four sires from the 1960s.

The 2018 Balmoral Breeders' trial was hosted by the Mark Bunge and his family on 'Koorringal' near Coleraine in Victoria. Mark was eagerly anticipating the results of the trial as he had noticed a significant difference in the paddock. "The visual difference in the progeny was obvious, so it is interesting to see that the measured results confirm the productivity differences between this group and other entrants," Mark said.

MORE INFORMATION

Download the full Balmoral Breeders' 2018 Drop Adult Assessment Site Report at www.merinosuperiorsires.com.au.



Peter Walker, whose family owned the rams that provided the semen 50 years ago, inspecting the progeny.

AWI BREECH FLYSTRIKE STRATEGY

2019/20 - 2024/25

AWI recently endorsed an updated Flystrike Research, Development, Education, Extension and Communication Strategy 2019/20 to 2024/25. It will guide AWI investment in evidence-based research, development and extension (RD&E) to minimise the health and welfare impacts of flystrike on the Australian sheep. This diagram summarises the five key pillars of AWI investment for the flystrike program.

AWI FLYSTRIKE RESEARCH, DEVELOPMENT, EDUCATION, EXTENSION AND COMMUNICATION STRATEGY 2019/20 TO 2024/25

VISION

ENSURE THE LIFETIME WELFARE AND PRODUCTIVITY OF SHEEP AND REDUCE THE RELIANCE ON MULESING.

BREEDING AND SELECTION

THE AIM: Long term solutions to advance lifetime welfare.

- Understand the performance and economic impacts of breeding for reduced flystrike.
- Investigate the, as yet unknown, factors that cause flystrike.
- Improve the accuracy of selection for flystrike resistance traits through phenotyping and genotyping.
- Better understand how to reduce the incidence of dags and urine stain through breeding.
- Track genetic trends for breech wrinkle, breech cover, dags and higher productivity.

BREECH MODIFICATION PROCEDURES

THE AIM: Breech modification procedures to improve lifetime resistance to flystrike.

- Undertake further R&D of the animal welfare impacts of breech modification procedures.
- Undertake further R&D to refine the application protocols for breech modification procedures.
- Support best practice mulesing training.



NON-INVASIVE MANAGEMENT PRACTICES

THE AIM: Improved management practices to reduce the risk of flystrike.

- Monitor and define blowfly resistance to chemicals.
- Refine blowfly chemical resistance best practice management advice.
- Invest in early trials of new potential actives and parasitic control treatments and vaccines.
- Complete a population study of blowflies to identify potential genetic differences to inform blowfly management programs.

EDUCATION, EXTENSION AND PROMOTION

THE AIM: Adoption of best practice strategies to improve the lifetime welfare of sheep, reduce reliance on mulesing and support transparency in the supply chain.

- Develop and implement education, training and extension strategies to improve lifetime welfare of sheep.
- Monitor, evaluate and improve the success of education, training and extension strategies.
- Engage with woolgrower advisors on the RD&E program.
- Ongoing engagement with domestic and international stakeholders to ensure they understand best practice management of flystrike and the welfare implications.

ANALGESIA AND ANAESTHESIA

THE AIM: Improved provision of analgesia and anaesthesia for surgical husbandry practices.

- Investigate longer acting, cost effective anaesthesia and analgesia options.
- Extend advice on analgesia and anaesthesia to woolgrowers.

FLYSTRIKE RD&E PROGRESS

AWI's flystrike research, development and extension (RD&E) program is achieving significant and incremental progress in a wide range of research projects and trials conducted on farms and in laboratories. Read here the latest updates from the program.

Flystrike continues to be a major disease and welfare risk for the sheep industry. Each year, prevention, treatment and lost production costs associated with flystrike are estimated to exceed \$173 million.

The Australian wool industry is determined to ensure woolgrowers have access to the latest in best practice welfare-improved flystrike prevention practices, informed by a robust research, development and extension (RD&E) program. The RD&E program pursues the principles of integrated pest management in the search for practical solutions for woolgrowers to prevent flystrike, whatever their sheep type, environment or business priorities.

Since 2001, AWI has invested \$70 million in sheep health and welfare RD&E, including \$40 million specifically in RD&E related to flystrike. It is aimed at providing woolgrowers with a range of options for ensuring the lifetime welfare of individual sheep, whilst reducing reliance on mulesing – addressing supply chain expectations and increasing the demand for Australian wool.

AWI has recently endorsed an updated *Flystrike Research, Development, Education, Extension and Communication Strategy 2019/20 to 2024/25* to guide investment in evidence-based RD&E to minimise the health and welfare impacts of flystrike on the Australian sheep flock (see previous page). This strategy update is largely a continuation of AWI's previous flystrike strategy, with industry continuing to support a balance between long- and short-term investment in flystrike RD&E.

One of five pillars of the strategy is Education, Extension and Promotion, with an aim for:

“Adoption of best practice strategies to improve the lifetime welfare of sheep, reduce reliance on mulesing and support transparency in the supply chain.”

A key activity under this pillar is AWI's Flystrike RD&E Update forum which has been held every two years since 2008. The one-day forum is regularly attended by more than 100 woolgrowers, researchers, consultants, commercial providers, veterinarians and animal welfare advocacy groups. The forum includes presentations

and discussion of the latest in AWI-funded RD&E developments and trial results and updates in industry adoption of best practice management of flystrike prevention.

Unfortunately, due to government social distancing guidelines regarding coronavirus, the 2020 Flystrike RD&E Forum, intended to be held in April, had to be cancelled. Instead AWI-funded researchers were invited to submit written reports providing their updates on recently completed or current projects.

These summary project reports will be available on the AWI website at www.wool.com/flystrikelatest. Some of the RD&E highlights since the last forum are as follows:

MORE THAN 90% USE ANALGESICS AND/OR ANAESTHETICS

Woolgrower adoption of analgesics and anaesthetics for mulesing continues to grow. More than 90% of respondents to a national online survey, undertaken by the University of New England (UNE), of Australian sheep producers to benchmark their 2018 parasite control practices, reported using pain relief (analgesics and/or anaesthetics) when mulesing their wether lambs. This is a significant increase from a similar 2014 survey, reporting on 2011 practices, (2014 Benchmarking Australian Sheep Parasite Control) in which 64% of respondents reported using pain relief when mulesing wether lambs. In the 2017 AWI Animal Husbandry Practices Survey 84% of respondents used pain relief for their wether lambs.

NATIONAL WOOL DECLARATIONS INCREASE

The proportion of woolgrowers declaring their wool through the National Wool Declaration (NWD) continues to increase. The NWD creates transparency and choice in the marketplace for retailers and suppliers wanting to source wool that has been produced using husbandry practices preferred by the buyer. The declaration by woolgrowers of their use of Analgesics and/or Anaesthetics (AA, previously Pain Relief) for mulesing is increasing, as is the proportion of Non Mulesed (NM) declarations (see Table 1 below).

BREEDING UPDATE

A project completed in late 2019, led by the University of Adelaide, investigated the rate of genetic gain in reducing breech flystrike. It demonstrated that if a ram breeder's flock was fully measuring pedigree, key production traits and the three breech flystrike indicators, it would take 10 years to move to an increasingly productive and naturally resistant flock in low dag environments starting with fine/medium type sheep. The report also showed that superfine sheep in high dag environments could take four decades to breed productive and naturally resistant sheep. Clearly there is a range of other management options used for these sheep types to move to a Non Mulesed enterprise. See the final report on the AWI website for more information. The MLP Project is collecting a large amount of data on reproduction, productivity, breech strike traits (including urine stain), which will improve breeders' ability to select for more highly

Table 1. National Wool Declaration rates by Mulesing Status (Source: AWEX)

	2008	2011	2017	2019 YTD* (2019/20)
Non Mulesed	3%	6%	12%	14.1%
Ceased Mulesed	3%	2%	3%	3.5%
Analgesic and/or Anaesthetic	3%	12%	32%	37.9%
Mulesed	29%	24%	20%	17.5%
Not Declared	62%	56%	34%	27.0%
Australian Clip	38%	44%	66%	73.0%

Figures based on % sum of bales, all breeds and wool types, first-hand offered, P & D Certificates
* YTD = as at 30 April 2020

fertile, low wrinkle animals. Ram breeders are increasingly collecting data on the three breech flystrike resistant indicator traits of wrinkle, dag and breech cover. The genetic trends in these traits are moving in the right direction but it will take time to build the genetic momentum across a national flock. The options for a breech flystrike genomic flock continue to be reviewed and the coming Data Quality Index in MERINOSELECT will be an important part in that process (ram breeders meeting high data quality criteria are potential co-operators in any 'virtual' future genomic flock).

GENE EDITING TECHNOLOGY PROGRESS

A project, completed in 2018, successfully developed protocols for use of the 'CRISPR' gene modification technology in blowflies. Use of CRISPR in blowflies has broad implications for identifying and better understanding the function and purpose of potential gene targets, making the formulation and registration of new flystrike prevention chemicals easier. University of Melbourne researchers knocked out the eye colour (*white*) gene and produced a blowfly with white eyes, an easily observed marker to show that the technique is working. They also successfully deleted the *Orco* gene, producing blowflies that cannot smell.



GENES IDENTIFIED UNIQUE TO BLOWFLY

An update to the blowfly genome, which was completed in 2019, identified 572 genes that are unique to the blowfly and which could be targeted by new chemical treatments or vaccines. Outcomes from this project are already being used to identify potential flystrike vaccine candidate genes that might impact larval growth and development, in a collaboration between the University of Melbourne and CSIRO to develop a flystrike vaccine (see below).

FLYSTRIKE VACCINE DEVELOPMENT UNDER WAY

A preliminary 4-year research program to develop a blowfly vaccine, that commenced in January 2019, is already achieving valuable outcomes. CSIRO researchers have identified key proteins in blowfly larvae that are important for their growth and development and have developed and tested prototype flystrike vaccines that help the sheep's immune system build a defence mechanism



that will target and destroy these proteins. The University of Melbourne research team meanwhile have been focused on collecting, identifying and characterising blowfly samples from across Australia as well as looking at the molecular processes these parasites use to survive on sheep. Working with CSIRO, the University of Melbourne population sampling work is already informing the selection of effective vaccine candidate genes, ensuring the proteins they are targeting are the same in blowfly populations across Australia.

CHEMICAL RESISTANCE MONITORED

A project to update our understanding of increasing chemical resistance in blowflies is nearing completion. This project, co-funded and delivered by NSW DPI, is providing evidence of increasing blowfly resistance to currently available chemicals. Increasing chemical resistance is driving industry adoption of integrated pest management approaches to preventing flystrike, which hopefully will be bolstered by a flystrike vaccine. Outcomes from this project have already contributed to the development of information for growers on resistance management strategies, available through FlyBoss (www.flyboss.com.au).

FLYSTRIKE RISK FACTORS REVIEWED

A comprehensive review of the predisposing risk factors for breech flystrike, undertaken by a team of flystrike experts, led by the University of Queensland, was completed in 2019. The review noted that AWI has supported significant RD&E towards better flystrike control methods and reducing the welfare impacts of flystrike over many years. Whilst it was acknowledged that a significant portion of the overall variability between sheep in the incidence of flystrike remains unexplained, the report identified a number of recommendations for further research in flystrike, some of which are already being addressed by current AWI funded research, with others still under consideration.

BEST PRACTICE VIA PARABOSS

ParaBoss, funded by AWI and MLA, and delivered by UNE, continues to regularly promote best practice advice on flystrike prevention through both FlyBoss (www.flyboss.com.au) and WormBoss (www.wormboss.com.au). In addition to its website(s), e-newsletter and Facebook page, ParaBoss in 2019 launched a series of podcasts (called Wormcasts) that included episodes relevant to flystrike prevention (www.paraboss.com.au/multimedia).

COMMUNICATION OF BEST PRACTICE

AWI continues to regularly distribute information for woolgrowers and their advisors on best practice flystrike prevention practices. AWI staff and researchers have presented at various industry events across the country, including in WA, SA, Victoria and NSW. Available on the AWI website at www.wool.com/flystrikelatest are recent flystrike prevention publications, project final reports and relevant *Beyond the Bale* articles. Flystrike prevention publications that are available include:

- Plan, prepare and conduct best practice lamb marking – 80-page training guide (February 2020). See page 55.
- Dealing with dag – 44-page advisor manual (August 2019)
- Managing breech flystrike – 44-page manual (February 2019)

Relevant *Beyond the Bale* articles include:

- Anaesthetics and analgesics including FAQs (December 2019)
- Can genomics assist with reducing the risk of breech flystrike? (September 2019)
- Genetically reducing breech flystrike (June 2019)
- Flystrike treatments during drought (March 2019)
- Tail docking – don't cut it short (March 2019)
- How well performing are your blowfly and lice treatments? (September 2018)
- Premiums and discounts for mulesing status (September 2018)

MORE INFORMATION

Further information on the above projects and others that make up AWI's current diversified investment portfolio in flystrike prevention RD&E, is available on AWI's website at www.wool.com/flystrikelatest.



BREEDING NATURALLY

BREECH STRIKE RESISTANT MERINOS

Breech Wrinkle 2 score and less, Dags 2 score and less, Urine Stain 2 score and less and Breech Cover 3 score and less are the key targets to reduce the risk of breech strike to low levels. The lower the score the lower the risk.

This article looks at breeding for lower wrinkle, productivity and fleece weight. An article looking at dags and wrinkle will be in the September edition of *Beyond the Bale*.

Woolgrowers have many questions about breeding animals naturally resistant to breech strike.

- Can I breed low wrinkle, high fleece weight Merinos?
- Why aren't there more low wrinkle, high fleece weight Merino Sires?
- I cannot find high index, moderate body weight, fine wool, low wrinkle rams?

The best source of objective information on finding resistant Merinos, despite some limitations, is obtained using the MERINOSELECT animal search function. It provides growers with information on top sires that are involved in breeding the next generation of Merinos, many have semen available and are breeding reasonable numbers of flock rams.

The limitations are that only 30% of Australia's ram breeders have animals in the MERINOSELECT system (although 70% of semen sellers are members) and not all these

animals have records for the breech traits, reproduction and adult fleece weight. Very low wrinkle animals that are all score 1 and without variation in a management group cannot get Australian Sheep Breeding Values (ASBVs) for wrinkle. This impacts on very low wrinkle Merino and Dohne breeders. These breeders need to enter sires in Sire Evaluation as a means to create Breech Wrinkle ASBVs for their animals or they can provide neck wrinkle scores as it is highly correlated with breech wrinkle.

The sire ASBVs required by a Merino breeder to breed progeny that are wrinkle score 2 or less varies due to variations in the environment across Australia. For example, in high wrinkle country target ASBVs are -0.8 to -1.0, moderate wrinkle country -0.7 and low wrinkle country around -0.3. These are generalisations that need to be modified according to every woolgrower's own environment and their country's risk factors for breech strike. Across a range of environments and sheep types, trials have shown that mulesing reduces breech wrinkle by around 1.0 wrinkle score and dags by 0.4 dag score.

So can woolgrowers breed productive, naturally low wrinkle, high fleece weight Merinos?

Table 1 shows the Average ASBVs of the top 10 sires and was created by searching the MERINOSELECT database for all sires with more than 15 current progeny, ranked in the Merino Production Plus index order. There were 2,641 eligible sires in the unrestricted search. Their average ASBV for ACFW is 34.5 and Wrinkle is +0.3.

When the database search criteria on the upper limit of Breech Wrinkle was changed progressively from +0.2 to an improved -1.0, the average Adult Weight (AWT) ASBV in the top 10 sires moved from 5.4 to 9.2%.

Cross-checking this AWT% range against the MERINOSELECT ASBV percentile bands in Table 4, shows a 5.6% AWT reflects rams in the top 30%, and a 9.1% AWT reflects rams in the top 5%. Adult Fleece Weight, however, fell but remained in the top 10% (+25), Fibre Diameter fell from the top 25% to the bottom 25% (-1.6 to -0.4), Wrinkle improved from the bottom 15% to the top 1% (+0.3 to -1.1), Dags largely remained at breed average 50% (-0.1) and the MP Plus Index fell from the top value but remained in the top 5% (224 to 177).

This database search analysis shows that breeding productive low wrinkle naturally breech strike resistant Merinos can be achieved in low dag country using existing sires based on the MP Plus index but with a large increase in Fibre Diameter and Adult Body Weight.

The ASBVs of some of the leading low wrinkle sires are listed in the bottom half of Table 1. Sire A is in the top 1% for fleece weight and top 1% for Wrinkle. It is a young sire from a ram breeder in low dag country who is putting large selection pressure on high fleece weight and low wrinkle. Progress is easier for medium wool Merinos in low dag environments.

Table 2 was created by searching all sires with more than 15 current progeny, ranked this time in the Dual Purpose Plus Index order. There were again 2,641 eligible sires in the unrestricted search and the average ASBVs of the top 10 sires are listed. For the top 10 sires the average ASBV for Adult Clean Fleece Weight is higher at 29.6, Fibre Diameter higher at -1.2, yet the Wrinkle ASBV is lower at -0.2 compared in Table 1.

The upper limit search criteria for Breech Wrinkle was progressively changed from plus 0.2 to minus 1.0. The impact this had on the top 10 sires average results based on the DP Plus Index are listed in Table 2. In percentile terms Adult Weight remained in the top 1 to

Table 1. All Merino Types, Average ASBVs of top 10 sires with more than 15 progeny based on MP+ Index for each search criteria

Search Criteria	Total No of Sires Meeting Criteria	Average ASBV of top 10 sires in each search					
		AWT %	ACFW %	YFD	EBWR Sc	LDAG Sc	MP+ Index
Open unrestricted search	2641	5.4	34.5	-1.6	0.3	0.2	224
Breech Wrinkle <= +0.2	1910	8.6	26.2	-1.2	-0.2	-0.1	215
Breech Wrinkle <= -0.1	1362	9.7	24.5	-1.1	-0.3	0.0	215
Breech Wrinkle <= -0.4	809	10.4	23.4	-0.8	-0.6	-0.1	208
Breech Wrinkle <= -0.7	349	10.4	25.2	-0.2	-0.9	0.0	196
Breech Wrinkle <= -1.0	112	9.2	22.1	-0.4	-1.1	-0.1	177
Leading Low Wrinkle Sire A		11.6	34.3	-0.5	-1.3	0.0	186
Leading Low Wrinkle Sire B		10.2	28.4	-0.5	-1.1	-0.3	174
Leading Low Wrinkle Sire C		12.3	24.1	-1.0	-0.7	-	229
Leading Low Wrinkle Sire D		9.4	26.5	-0.4	-0.7	-0.2	202
Leading Low Wrinkle Sire E		14.3	26.2	0.3	-0.7	-0.2	214

5%, Fleece Weight fell from top 1% to top 30%, Fibre Diameter fell from top 40% to bottom 20%, Wrinkle improved from average 50% to top 1-5%, Dags improved from bottom 20% to top 30% and the DP Plus Index remained constant from the near top value to top 1%.

This database search shows that breeding productive low wrinkle Merinos can be achieved using existing sires based on the DP Plus index with a fall in fleece weight and large increase in fibre diameter.

Table 1 and 2 show that reducing wrinkle and increasing fleece weight is difficult if you are breeding fine wool sheep as there were large increases in fibre diameter. There are very few ultrafine and superfine animals in MERINOSELECT with wrinkle scores less than zero so a similar process for Table 1 and 2 was not possible for superfine Merino types.

So for the superfine Merino type, a different approach was undertaken. The upper fibre diameter limit was reduced progressively from -2.0 to -4.0. The Wrinkle Score of the highest FP Plus indexing sires remained in the bottom 10%

and nearly all sires were higher than +0.3. High Indexing, low wrinkle superfine sires are difficult to find and breed, but ram breeders are taking up the challenge. There is evidence in the pedigree of the leading superfine sires that 'outcross' sires are being used to reduce wrinkle, increase fleece weight, while attempting to minimise the increase in fibre diameter in superfine Merinos.

Fine wool Non Mules breeders have long used other management strategies to help reduce the risk of breech strike, such as chemical prevention, additional crutching and can mostly provide closer supervision of their animals. Breeding naturally breech strike resistant low wrinkle fine wool Merinos will take some considerable time. Much of the fine wool environment is low phenotypic wrinkle country; cold, wet, windy and wormy and ASBVs of -0.3 to -0.5 are likely to be sufficient. In addition much of the country suited to fine wool is also high dag country and wrinkle is only part of the solution. Breeding for lower dags will be addressed in an article in the next edition of Beyond the Bale.



Along with reducing wrinkle; reducing dags, chemical resistance and the large price discounts on non mulesed Merinos in many regions, remain the key barriers in moving to a Non Mulesed Merino enterprise.

MORE INFORMATION

- MERINOSELECT Animal Search <http://sgsearch.sheepgenetics.org.au/?dataset=5>
- Breeding for Breech Strike Resistance resources on the AWI website www.wool.com/flystrike-breeding
- Stockmanship and Merino Visual Classing workshop resources on the AWI website www.wool.com/stockmanship

Table 2. All Merino Types, Average ASBVs of the top 10 sires with more than 15 progeny based on DP+ Index for each search criteria

Search Criteria	Total No of Sires Meeting Criteria	Average ASBV of top 10 sires in each search					
		AWT %	ACFW %	YFD	EBWR Sc	LDAG Sc	DP+ Index
Open unrestricted search	2641	9.1	29.6	-1.2	-0.2	0.1	234
Breech Wrinkle <= +0.2	1910	9.9	22.8	-0.9	-0.4	0.0	232
Breech Wrinkle <= -0.1	1362	9.9	22.7	-0.9	-0.4	0.0	231
Breech Wrinkle <= -0.4	809	10.4	23.1	-0.8	-0.6	-0.1	226
Breech Wrinkle <= -0.7	349	10.2	21.1	-0.4	-0.9	-0.1	212
Breech Wrinkle <= -1.0	112	9.7	18.8	-0.3	-1.1	-0.2	196
Leading Low Wrinkle Sire A		11.6	34.3	-0.5	-1.3	0.0	193
Leading Low Wrinkle Sire F		11.9	27.3	0.5	-1.1	-0.1	210
Leading Low Wrinkle Sire G		9.4	26.5	-0.4	-0.7	-0.2	218

Abbreviations: DP+ Index - Dual Purpose Plus index

Table 3. Ultrafine/ Superfine Type, Average ASBVs of the top 10 sires with more than 15 progeny based on FP+ Index for each search criteria

Search Criteria	Total No of Sires Meeting Criteria	Average ASBV of top 10 sires in each search					
		AWT %	ACFW %	YFD	EBWR Sc	LDAG Sc	FP+ Index
Yearling FD <= -2.0	139	0.4	17.8	-3.0	0.6	-0.1	179
Yearling FD <= -2.5	87	0.5	16.5	-3.1	0.6	0.0	178
Yearling FD <= -3.0	37	1.2	11.0	-3.5	0.5	-0.1	172
Yearling FD <= -3.5	24	0.0	2.2	-4.0	0.3	-0.1	158
Yearling FD <= -4.0	14	-0.7	-8.9	-5.2	N/A	N/A	131
Leading Low Wrinkle Sire H		-1.5	-0.8	-3.6	-0.2	0.0	144
Leading Low Wrinkle Sire I		3.2	6.6	-4.3	-0.1	-0.2	160
Leading Low Wrinkle Sire J		0.7	10.6	-3.5	0.2	0.1	175

Abbreviations: FP + Index - Fine Production Plus Index

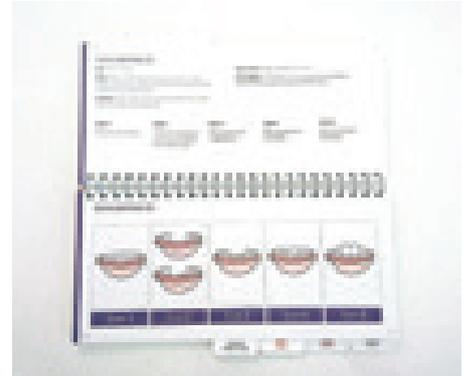
Table 4. MERINOSELECT ASBV percentile table for 2018 drop. (21st April 2020)

PERCENTILE	AWT %	ACFW %	YFD	EBWR Sc	LDAG Sc	FP+	MP+	DP+
TOP VALUE	21.9	51.1	-6.1	-1.7	-0.8	201	224	244
TOP 1%	11.4	33.1	-3.3	-1.2	-0.4	172	188	194
TOP 5%	9.1	27.9	-2.5	-1.0	-0.3	161	174	178
TOP 10%	7.9	24.8	-2.2	-0.8	-0.3	155	166	169
TOP 20%	6.6	21.1	-1.8	-0.6	-0.3	148	158	160
TOP 30%	5.6	18.2	-1.5	-0.5	-0.2	143	125	153
TOP 40%	4.7	15.7	-1.2	-0.3	-0.1	139	147	148
TOP 50%	3.9	13.3	-1.0	-0.2	-0.1	136	143	144
TOP 60%	3.1	10.8	-0.8	-0.1	0.0	132	138	139
TOP 70%	2.2	8.2	-0.6	0.0	0.0	128	133	134
TOP 80%	1.2	5.1	-0.3	0.2	0.1	123	127	129
TOP 90%	-0.2	0.8	0.2	0.4	0.2	115	119	121



Left: The new Producer Version of the **Visual Sheep Scores** booklet.

Below: An excerpt from the updated Visual Sheep Scores booklet, displaying the newly included **Teeth Eruption (TE)** trait page.



VISUAL SHEEP SCORES

NEW VERSION NOW AVAILABLE

An updated **Producer Version** of the **Visual Sheep Scores (VSS)** booklet is now available. **VSS** is a pocket guide for commercial and stud breeders, providing a standardised framework for assessing and scoring visual sheep traits.

UPDATES IN THE LATEST VERSION INCLUDE:

- improvements to the usability of the booklet
- inclusion of scores for Teeth Eruption (TE) and Horn (HORN)
- allowance for both undershot and overshot jaw scores
- inclusion of scores for the new lambing traits Maternal Behaviour (MB) and Lambing Ease (LE)
- further clarifications to trait definitions and scoring diagrams.

The Visual Sheep Scores (VSS) booklet has been redeveloped after receiving industry feedback which was incorporated into an extensive review process. Sheep classers along with commercial and stud breeders across the industry were involved. Recent experience with Merino Sire Evaluation and the Merino Lifetime Productivity (MLP) project was also considered in the review. The Research Version is now being updated to include the changes made to the Producer Version.

The review of the Producer Version included clarifications to trait descriptions and diagrams to bring them up to date with industry requirements, along with the

consideration of a number of new traits. Some new traits were included in this version and others will require further development as additional research is completed.

The result is a set of current and applicable scores of fresh descriptions and diagrams all presented in a user-friendly booklet, with sections now separated with a tab for easy look-up. New scores are outlined for the now-included visual traits: Teeth Eruption (TE), Horn (HORN) and lambing scores for Maternal Behaviour (MB) and Lambing Ease (LE). Classing grades have also been further defined into Overall Selection Grade (SGRADE) and Classer's Visual Grade (GRADE).

A standardised scoring framework enables visual assessment results to be compared between sites and locations, as well as across industry. Commercial and stud breeders can use the Visual Sheep Scores as a selection tool in their own operations by focusing on selecting traits that have commercial value for their operation. However, it is important to maintain a selection balance and be mindful of all the traits that determine profitability and quality in the flock.

VSS is extensively used by members of MERINOSELECT, DOHNE and LAMBPLAN to score a range of traits. It is also used for Merino Sire Evaluation classing for a wide range of visual assessments completed under the Australian Merino Sire Evaluation Association (AMSEA) banner and is also used

by classers at each of the five MLP project sites and for MLA's Genomic Resource Flock. Classing activities include scoring wool quality, conformation, breech cover and wrinkle, plus pigmentation assessments.

Updates will be used in 2020 classing activities at AMSEA and MLP sites, with the collected data then able to be submitted to the Sheep Genetics MERINOSELECT database as visual score data and genetic information. This is then used to progress development of Australian Sheep Breeding Values (ASBVs). Developed by Sheep Genetics, ASBVs enable ram breeders and commercial sheep producers to compare the genetic potential of rams and ewes for a range of production traits, independent of the environment and location.

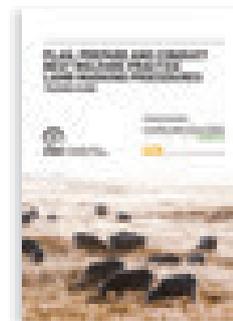
VSS was first developed by AWI and MLA in 2007 to be used across the sheep industry by stud and commercial sheep breeders by providing a standard set of scores to assess the phenotypic or visual sheep traits. The review in 2012 has now been superseded by this 2019 update. B

MORE INFORMATION

Download the VSS booklet at www.wool.com/genetic-evaluation, or at www.merinosuperiorsires.com.au/resources where you can view additional information outlining the newly incorporated changes. You can request a hard copy by emailing merinosuperiorsires@bcsagribusiness.com.au.

LAMB MARKING TRAINING GUIDE RELEASED

AWI in partnership with WoolProducers Australia and the Livestock Contractors Association have updated the National Mulesing Accreditation Program Manual and released it as a Lamb Marking Training Guide which can be accessed via the AWI website.



The new 80-page Lamb Marking Training Guide is available to download as a PDF at www.wool.com/markings-guide

The new 'Plan, Prepare and Conduct Best Welfare Practice Lamb Marking Procedures – Training Guide', for woolgrowers and their contractors, is an update of the National Mulesing Accreditation Program (NMAP) Manual from 2007. It was updated by AWI in partnership with WoolProducers Australia and the Livestock Contractors Association.

The NMAP Manual has in the past only been available to those attending the NMAP training. Making this guide more freely available to all woolgrowers is seen as the best way to continuously improve the on-farm practices for lamb marking and mulesing.

This Training Guide is designed to assist woolgrowers and their contractors perform lamb marking and mulesing procedures with the utmost care and attention to ensure the best short- and long-term welfare outcomes for the animal.

The Guide has been made available to rural Registered Training Organisations, as use as a core reference in the provision of competency-based training for the formally registered competency 'Plan, Prepare and Conduct Mulesing Procedures (AHCLSK334)', and can be accessed on the AWI website at www.wool.com/markings-guide.

The Training Guide includes sections on:

- Overview of lamb marking
- Work health and safety
- Legislation and Codes of Practice
- Preparation and planning
- Lamb marking and mulesing equipment
- Chemical and animal health product use (disinfectants, insecticides and analgesia/ anaesthetics)

- Lamb marking and mulesing procedures
- References
- Chapters from the Australian Animal Welfare Standards and Guidelines for Sheep relating to responsibilities, tail docking, castration and mulesing.

MORE INFORMATION

- Access a PDF of the 80-page Lamb Marking Training Guide at www.wool.com/markings-guide
- Access a PDF of the related 4-page 'Anaesthetics and Analgesics: widely adopted by woolgrowers' article including frequently asked questions (FAQs), published in the December 2019 edition of Beyond the Bale, at www.wool.com/adoption

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:



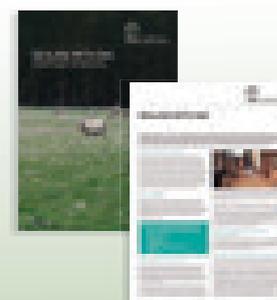
ANAESTHETICS AND ANALGESICS
(December 2019)



MANAGING BREECH FLYSTRIKE
(June 2017)



PLANNING FOR A NON-MULESED MERINO ENTERPRISE
(March 2018)



DEALING WITH DAGS MANUAL AND FACTSHEET
(August 2019)

LICE TREATMENT PRODUCTS

WHAT DRIVES THEIR CHOICE?

When it comes to choosing lice treatments, one size does not fit all. Each property should consider how the following key factors will affect treatment outcomes on their property.

APPLICATION METHOD

Lice eradication is quite achievable with a backline applicator, a plunge dip or an immersion (cage) dip. While some automatic jetting races (AJR) and shower dips claim to eradicate, failures are common and correct setting up and operation is critical; also, short wool lice treatments are not registered for use

in AJRs. Hand jetting or fire-fighting pumps have no chance of success.

The first imperative, however, is to properly maintain and use the correct equipment and to have operators trained for and committed to the task. After that, preventing re-introduction of lice from straying or purchased sheep is essential.

TABLE 1. COMMERCIALY AVAILABLE CHEMICAL GROUPS AND ACTIVES FOR LICE TREATMENT IN AUSTRALIA AND THE LEVEL OF RESISTANCE TO THEM

CHEMICAL GROUP	CHEMICAL ACTIVES	PROPERTIES WITH REPORTED RESISTANCE IN AUSTRALIA
Neonicotinoid	Imidacloprid Thiacloprid	None or extremely few
Spinosyn	Spinosad	None or extremely few
Organophosphate	Temephos Diazinon	None or extremely few
Macrocyclic lactone	Abamectin Ivermectin	None or extremely few
Magnesium fluorosilicate/sulphur	Mgfsi, Sulphur, Rotenone	None or extremely few
Insect growth regulator	Diflubenzuron Triflumuron	Many
Synthetic pyrethroid	Cypermethin Alphacypermethrin	Many

CHEMICAL GROUP

Of the seven chemical groups available for lice control (see Table 1), five have no or extremely few reports of lice being resistant to them. However, resistance is widespread against Insect Growth Regulators (IGRs) and Synthetic Pyrethroids, making them a poor choice to eradicate lice.

A new multi-active (combination) product contains both abamectin and imidacloprid. The chance of finding lice resistant to this combination is extraordinarily low, and development of resistance to this double-active should take many years longer than to its single-active components.

CO-TREATMENT OF WORMS

Products containing abamectin can simultaneously treat worms, but may also contribute to an increase in the proportion of abamectin-resistant worms. The incidence of abamectin-resistant barber's pole worm is almost universal in summer rainfall areas and is increasing in southern areas. Abamectin-resistant brown stomach worms are also being reported in southern Australia.

When an abamectin-based lice treatment is applied, drench at the same time, except in the pastoral areas, where there is little exposure to worms. Use a product that contains drench group/s different to the macrocyclic lactones and that is effective on that property; this will achieve a combination drench effect. This is particularly important for treatments:

- where barber's pole worm is present
- where abamectin resistance is known to occur
- just before lambing and weaning
- between November and March in winter-rainfall areas.

TIME OF APPLICATION

Backline/spray-on type formulations must be applied within one of the following three



liceboss

Tools to help you assess & manage lice in your flock



LICE TREATMENTS YES OR NO?



Your LiceBoss Treatment Guide report shows your choices, the recommendations, and it can be printed.

Decisions on lice treatments vary. Are these just a few rams, or a mob of introduced ewes. What about your own sheep returning from agistment? Or existing sheep that may have been exposed to strays?

Do they even have lice? What treatments could be used? Could they just be quarantined?

The simple to use online LiceBoss Treatment

Guide (available at www.liceboss.com.au/tools) will assist your decision on whether treatment is required and describes the type of treatment and associated management practices recommended by LiceBoss, plus links to detailed information on treatments. **B**

MORE INFORMATION
www.liceboss.com.au/tools

periods after shearing: 24 hours, 48 hours or 7 days. Dip products must be applied before 6 weeks off shears to achieve effective wetting to the skin; but to avoid infection of shearing cuts, wait 2 weeks off shears. If inclement weather or labour shortages occur at shearing, the later options provide more flexibility.

TIME TO EFFECT OR QUARANTINE PERIOD

Where a lice-infected mob needs to be shorn, treated and then boxed with a lice-free mob, it is important to know how long it takes for all of the lice to die after treatment.

A rapid kill of all lice only occurs when a liquid is applied across the whole sheep at once, such as with dipping. It may take some hours for all lice to die, so a 24-hour quarantine period is prudent.

Backline/spray-on products take 3 to 6 weeks (except IGRs, which take much longer) for all lice to die because the chemical must first disperse through the fleece to all parts of the sheep.

Beware “rapid knockdown” claims on some backline/spray-on products. One might wrongly assume all lice on the sheep die within hours or days after the treatment. Instead, the lice die rapidly only when the chemical finally reaches them, which is still a matter of 3 to 6 weeks.

The currently available IGR products take up to 18 weeks (4–5 months) for all lice to die as they rely on interrupting the moulting process in young developing lice; the adult lice must die from old age as they do not moult. With widespread resistance to IGRs, newer chemical groups are a better choice.

RESIDUAL PROTECTION

All sheep lice treatments have residual activity, which is essential for lice eradication. None of the chemicals kill lice eggs, but once they hatch in about 12 days after being laid, the residual chemical bound in the wool grease kills the new young lice. The lack of grease on cattle hair is the prime reason a single treatment on cattle will not eradicate their lice.

But this residual protection is short-lived, lasting only a matter of weeks after adults have been killed; don't count on ongoing protection against introduced lice through the wool growing year.

RAINFASTNESS

Heavy rain following treatment can wash product from the sheep resulting in a failure to kill the existing lice or the later newly hatched lice. Consider your weather, the time of application and the rainfastness claims when choosing a treatment product.

CONCLUSION

Eradication of lice is very achievable if you choose an effective product and apply it correctly to every sheep. Then you just have to concentrate on keeping lice out. **B**

MORE INFORMATION
www.liceboss.com.au

LICE BIOSECURITY

THE RETURN OF THE STRAYS

What do you do when your own flock has no lice, but a neighbour calls saying they have some of your sheep that have strayed?

Before that ever comes about, have an advance agreement with neighbours that they never return your sheep directly into your paddock; you will always pick them up from their yards.

Your options vary on what to do with those

sheep, from the highest risk of introducing lice (listed first below) to no risk (listed last). Risk will be in proportion to the neighbours' and their neighbours' flock history of lice and the district prevalence of lice.

When there are initially few lice on a sheep it may take 6 months or so for them to breed to visible levels within the flock.

Early shearing options resulting in premature shorn wool are likely to be the most costly.

YOUR OPTIONS WHEN DEALING WITH RETURNED STRAYS

HIGHEST RISK

- Put the sheep back with your mob, with no quarantine, shearing or treatment.
- Separate (quarantine) the stray sheep from your lice-free sheep for 3 months and if no lice are visible on thorough checking, return them to your mob.
- As above, but 6 months: a longer quarantine increases the likelihood of finding a light infestation of lice.
- Separate (quarantine) the stray sheep from your lice-free sheep now, but shear them within a few months, and properly apply an effective lice treatment, then keep them separate until the treatment has killed any possible lice (check the label for post treatment quarantine period, especially where using spray-ons/backliners), then return the sheep to your mob.
- Separate (quarantine) the stray sheep from your lice-free sheep and sell the sheep at the first opportunity.
- Shear the stray sheep immediately and properly apply an effective lice treatment, maintain in quarantine until the treatment has killed any possible lice, then return the sheep to your mob.
- Shear immediately and properly apply an effective lice treatment, then keep them separate for a further 6 months and check again to be assured no lice have survived, then return the stray sheep to your mob.
- Immediately dispose of the stray sheep: sell, give away, let neighbour keep them, or humanely destroy them. **B**

LEAST RISK

SHEARERS: CHANGE AT THE DOOR, PLEASE

After being caught out with a one-off lice-infestation after years of a lice-free flock, one producer implemented a new policy for his shearers.



Beware! Moccasins can transport lice from one shed to another.

The vast majority of lice incursions are from strays or introduced sheep, but on rare occasions they do come in with shearers.

The producer had no strays, good fences and only rams from a reliable lice-free source – but his shearers came directly from a shed of lousy sheep. Months later, rubbing sheep and lice resulted in costly premature shearing and treatment to ensure eradication.

His new policy: all shearers change into a complete fresh set of clothing outside the shed, moccasins are microwaved and all gear is treated before entry.

PARABOSS REGIONAL REMINDERS

- **Drench Test** in summer-rainfall areas in winter; for winter-rainfall areas at or soon after weaning.
- **Prepare weaning paddocks** in summer-rainfall areas from the day lambing starts. In southern Australia, use WEC testing results during winter to estimate the likely worm contamination for an early summer weaning paddock.
- **Give a pre-lambing drench to ewes** in summer-rainfall areas and mid- and late-lambers in winter-rainfall areas (other lambing times, WEC first).
- **Long acting drenches should be avoided** except for strategic use and very heavily worm-contaminated paddocks.
- **Maintain body condition score 3** in adults to gain useful resistance to worms.
- **Use your regional Drench Decision Guide** to find when to test and drench.
- **Check for lice before shearing**, consider no treatment if lice are not found.

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

PARABOSS: BEST PRACTICE ADVICE FOR MANAGING SHEEP PARASITES



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

The WormBoss, FlyBoss and LiceBoss websites are sources of detailed management information and regional programs that will assist in managing the major parasite risks for sheep.

paraboss



The websites have been developed by expert panels of parasitologists and veterinarians from across Australia.

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

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

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

Listen to Wormcasts, the ParaBoss podcast, and **Snapshots**, short audio presentations, at www.paraboss.com.au/multimedia. They cover parasite management topics: worms, flies, lice, ticks and fluke.

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

MORE INFORMATION
www.paraboss.com.au

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TAKING A CLOSER LOOK AT CHLAMYDIA

A new AWI-sponsored project is investigating the role that *Chlamydia* has on sheep health and lamb losses in Australian flocks, and aims to develop a simple cost-effective test for the disease.

Dr Tom Clune, who is currently undertaking a PhD research project at Murdoch University, will undertake the 12-month project through an AWI-sponsored Science and Innovation Award for Young People in Agriculture.

Growing up on a sheep farm near Geraldton in Western Australia, Tom developed an appreciation for the importance of animal health and welfare from a young age. It led to a career as a veterinarian, and the start of a PhD in infectious diseases recognised for causing reproductive losses in sheep.

"This new project complements my current PhD project and will improve the sheep industry's understanding of how *Chlamydia* infections might contribute to lamb losses," Tom said.

"Reducing lamb wastage is a priority for the sheep industry, as it will improve farm productivity and animal welfare, and address risks to community support for wool production.

"Lamb loss between mid-pregnancy and weaning is associated with a \$1 billion annual productivity loss for Australian agriculture, yet the underlying causes of pregnancy losses and stillbirths remain poorly understood. Preliminary findings from my PhD project have indicated that *Chlamydia* is a disease that might have been overlooked.

"In conducting my PhD fieldwork in 2018-19 on

ten WA farms, I found *Chlamydia* infections were present in more than half of abortion or stillborn cases, suggesting *Chlamydia* might cause significant wastage under some circumstances, although the wider economic impacts of the disease are not known."

"In conducting my PhD fieldwork in 2018-19 on ten WA farms, I found *Chlamydia* infections were present in more than half of abortion or stillborn cases."
Dr Tom Clune

The *Chlamydia* bacteria that causes disease in sheep is different to the bacteria that causes disease in humans. *Chlamydia pecorum* is widespread in Australian sheep, and healthy sheep shed the bacteria in faeces.

The new study will, for the first time, characterise abortigenic strains of *Chlamydia* using genome sequencing tools. The project will utilise the tissue samples already obtained as part of Tom's PhD, reducing costs and risks involved with fieldwork, and with no need for additional animal use.

"Through this project I aim to discover the *Chlamydia* bacteria's distribution, transmission and factors that determine how that leads to abortions or stillbirths or the birth of weak lambs," Tom said.

"This new knowledge will underpin recommendations for sheep producers to manage the disease, with production and welfare implications."

As part of the project, Tom also plans to develop a quick, cheap and portable tool for diagnosing *Chlamydia* in sheep. It will be based upon a test already developed for detecting infections in wildlife and horses.

"It takes about 45 minutes to run, so vets can either take it out onto the farm or take samples and take it back to the clinic," he said.

"There are other diagnostic tests available, but this would be much cheaper and have a quicker turnaround so vets can work with the farmer to make timely decisions about controlling an outbreak."

This project will involve collaboration between Murdoch University, the Department Primary Industries and Regional Development WA and the University of the Sunshine Coast.

The Science and Innovation Awards for Young People in Agriculture are coordinated by ABARES and are open to young people aged 18-35 years working or studying in rural industries. The annual awards aim to encourage the uptake of science, innovation and technology in rural industries.

Thomas was presented with his award in March and he aims to complete the research plus the development of the diagnostic tool by June next year. **B**

Minister for Agriculture **David Littleproud** presenting the award to veterinarian **Dr Tom Clune**.

PHOTO: Steve Keough Photography



MORE INFORMATION
www.wool.com/scienceawards



Dr Tom Clune is undertaking a PhD in infectious diseases recognised for causing reproductive losses in sheep.

RAMPING UP REPRO GOES ONLINE

With restrictions on gatherings in place due to the coronavirus pandemic, AWI's popular RAMPing Up Repro workshop was held online as a webinar in early April. The free webinar, which provided advice on how to improve ram breeding efficiency, was recorded and is available now to all woolgrowers across the country.



Rams are a considerable investment for a woolgrowers' business, with the rams' performance impacted by management and preparation for joining.

To help ensure that woolgrowers get the most from their rams, AWI in partnership with Zoetis Australia in 2017 developed the hands-on RAMPing Up Repro workshop. The half-day workshop is usually made available across the country, in conjunction with leading deliverers, via AWI's State Grower Networks.

However due to restrictions on people's travel and gatherings due to the coronavirus pandemic, AWI's grower network in NSW, Sheep Connect NSW, organised a special RAMPing Up Repro webinar that was held on 9 April.

More than 200 people from across Australia registered to view the webinar which was presented by leading sheep veterinarian Dr Matt Playford of Dawbuts, who was instrumental in setting up and piloting the original RAMPing Up Repro workshops.

"To avoid unnecessary loss of production due to poor reproductive performance, inspection and preparation of your ram team is a critical part of the farm calendar," Matt emphasised in the webinar.

"Rams contribute half the genetics of the progeny and they are the primary drivers for most flocks. They should be treated like the athletes that they are; they are about to go into a six-week athletic performance (five weeks of joining and one week of preparation) and they have to be able to move around to all parts of that paddock and effectively deliver their genetic material to a whole lot of ewes."

RAMPing Up Repro is designed to give woolgrowers the skills across the key components of what drives ram performance and help them manage their ram teams through joining with confidence. Ultimately it aims to improve the profitability of woolgrowers' businesses.

The hour-long webinar was a condensed

format of the usual ½ day hands-on workshop.

"Buckle yourself in because it's going to be a wild ride!" said Matt at the start of the webinar.

Matt presented and talked to 32 slides in that hour, covering the topics of:

- Why you should focus on rams.
- Biosecurity and safe handling.
- Pre-joining ram inspections – including condition score and the 4Ts (teeth, toes, testes and tackle).
- Ram health – including nutrition, vaccination, drenching, Ovine Brucellosis, adaptation to heat, shearing and horn trimming.
- Joining.
- Optimising your investment and ram selection.
- Further resources.

At the end of his presentation Matt also answered questions posed by viewers.

A poll of viewers at the start of the webinar revealed that 45% were advisors, 35% were producers and 20% were educators or other. Of the producers that watched the webinar 83% said they already conduct pre-joining ram inspections, and 71% said they already monitor the condition score of their rams.

Sheep Connect NSW coordinator Megan Rogers said while the webinar viewers obviously couldn't get up close and hands-on with rams, the take home messages were clear and remain the same as what is delivered in the face to face workshops.

"The RAMPing Up Repro webinar aimed to help with best practice ram preparation and performance on commercial sheep properties. It ran viewers through all of the do's (and don'ts) for a successful tour of duty from the rams to ensure that they are in peak performing condition when they are put in with the ewes.

A screenshot from the special RAMPing Up Repro webinar held in April and available now on the Sheep Connect NSW website.

"Rams are an important investment and ensuring that they are giving a solid return on investment – number of lambs on the ground and genetic gain – is paramount to woolgrowers' operations.

"The interaction from the webinar attendees was tremendous and their feedback was excellent. The webinar has received the highest satisfaction rating of any of our activities, 9.35/10."

The webinar was recorded and is available to be viewed free at any time on the Sheep Connect NSW website. When viewing, you can pause and go back to a previous section in the webinar if you want to recap a particular point.

The following related handouts are available at www.sheepconnectnsw.com.au/tools:

- RAMPing Up Repro 'Ram Pre-joining Checklist'
- Lifetimewool's 'Sheep Condition Score Card'
- AWI's 20-page 'Sheep Selection Tools' booklet
- AWI Woolgrower Menu.

Once restrictions on face to face gatherings are lifted, the hands-on workshops will resume across the country.

Another useful related webinar on the Sheep Connect NSW website is 'Ovine Brucellosis - all you need to know!' presented by former Special Veterinary Officer at NSW DPI, Dr John Plant. **B**

MORE INFORMATION

View a recording of the webinar at www.sheepconnectnsw.com.au/tools/84
www.wool.com/workshops



In one of the largest, long-term projects of its kind 132 wild dogs were trapped, fitted with GPS collars and tracked to generate the scientific evidence which supports an optimum rate of 40 baits per linear kilometre.

RESEARCH FINDS BEST BAIT RATE FOR WILD DOGS

Newly published research results have shown the optimum 1080 aerial delivery rate of 40 baits per linear kilometre will successfully eliminate more than 90 per cent of wild dogs, to reduce their impact on agriculture, native wildlife, the environment and community.

NSW Department of Primary Industries principal research scientist, Peter Fleming, says the research was conducted at the request of the Australian Pesticides and Veterinary Medicines Authority (APVMA), which needed scientific data to support the APVMA bait rate.

"In 2008 the APVMA reduced the aerial 1080 baiting rate to manage wild dogs in regional NSW from 40 baits to 10 baits per kilometre, following a national review," Dr Fleming said.

"Now, after conducting one of the largest, long-term projects of its kind we have the scientific evidence to support a rate of 40 baits per linear kilometre.

"From 2007 to 2013, 132 wild dogs were trapped and fitted with GPS collars, and tracked before and after baiting in north-eastern NSW. The study compared the two bait rates by quantifying the mortality rate of wild dogs in aerial baiting areas. Success was measured by the number of GPS-collared dogs which did not survive the baiting.

"The results were very clear, 90.6 per cent the wild dogs exposed to aerial baiting at 40 baits per kilometre died, just 55.3 per cent died at the 10 baits per kilometre rate, and collared

wild dogs which remained outside the baiting zones survived.

"We are confident in recommending aerial baiting at a rate of 40 baits per linear kilometre to effectively minimise wild dog numbers in areas where they impact on the environment and community along the Great Dividing Range."

Land managers should use follow-up control measures, including trapping and shooting, to keep wild dog numbers at acceptable levels.

Previous research has shown wild dog management programs need to reduce wild dog populations by at least 75 per cent to successfully manage the negative impacts of wild dogs.

The use of 1080 in controlling feral animals continues to play an important role in the protection of Australian native animal species – see page 62.

Recently published in *Wildlife Research*, the research was funded and supported by NSW DPI, NSW National Parks and Wildlife Service, AWI and the former Invasive Animals CRC. **E**

MORE INFORMATION
www.publish.csiro.au/wr/WR18188

FUNDING FOR EXCLUSION FENCE NEAR WALCHA

Assisted by the region's AWI wild dog coordinator, Walcha Council has secured \$986,800 from a Federal Government biosecurity program to erect a 44km fence to protect livestock from wild dogs in the Moona-Winterbourne area of the Northern Tablelands in NSW.

The project will deliver a 44km exclusion fence to protect 150 landowners and 110,000 hectares of livestock production from the threat of wild dogs and pests. The linear fence will separate the highly fertile and productive land within Walcha LGA from the Eastern Escarpment.

AWI North East NSW wild dog coordinator Dave Worsley has been instrumental during the project's inception and has led the project scoping and initial stakeholder consultation activities. Project management will be provided in-kind by AWI and Local Land Services; Dave Worsley will lead the project.

There are a number of other key in-kind contributions including NSW Department of Primary Industries, National Parks and Wildlife and landowners, who will all support the project by sharing regrowth control, camera monitoring, and fence maintenance activities.

"The project will provide unprecedented choice of enterprise for landholders in the area and a future in agriculture for the next generation by excluding wild dogs and other pest species from the highly fertile Moona-Winterbourne area," Dave said.

"You cannot put a price on the mental health impacts of wild dog predation or fully understand the impact they can have unless you have directly experienced it. By controlling this threat, our sheep enterprises can generate more employment, meaning jobs for our children and a brighter future for the whole Walcha community."

Every dollar spent to construct the fence is projected to return a benefit in excess of \$3.25 per year for the life of the fence. All project funding will be directed to materials and labour, using local contractors.

The project will commence in July and be completed by December 2021. **B**

WILD DOGS, FOXES AND POISON BAITING



Left: Wild dog looking for prey after the Australian bushfires in February. Photo taken and supplied by Brendan Maunder - www.BrendanMaunder.com
Right: Sheep make up the biggest part of foxes' diet. PHOTO: [pjmalsbury](https://www.flickr.com/photos/pjmalsbury/)

Sodium fluoroacetate (1080) is the major control tool used to manage the impacts of wild dogs and foxes on Australia's livestock industry and to protect threatened native fauna. It can be very effective when used as part of a coordinated effort by landholders along with other control methods such as trapping, fencing, shooting and guardian animals. Here, thanks to PestSmart resources, we provide answers to some of the most frequently asked questions about 1080.

BEST PRACTICE PEST ANIMAL MANAGEMENT

- All Australian states and territories endorse 1080 baiting as part of an integrated approach to pest animal management.
- In Australia, 1080 is a restricted (S7) chemical product and can only be used and purchased by professionals. Only authorised and properly trained operators are permitted to handle 1080 and prepare baits.
- Each Australian state and territory has strict regulations for the manufacturing, labelling, handling, storage, supply, use, retrieval and disposal of 1080 baits.
- 1080 baits can be formulated to be lethal for target pest species and minimise the impact on non-target species such as native wildlife.
- Before 1080 baiting occurs, pest animal managers need to consider lethal poison dosage, pest specific poison carrier palatability, pest specific bait size, time of year and seasonal conditions when used, where and how the bait is placed, buried or tethered, the density of baits placed and when they must be retrieved.

WHY DO WE USE 1080 POISON IN AUSTRALIA AND WHERE DOES IT COME FROM?

1080 is used for wild dog and fox control because it is the most environmentally sensitive and target specific toxin available for wild dog and fox management. It is a naturally occurring odorless compound which occurs in approximately 30 species of native Australian plants. 1080 is biodegradable and although manufactured, it retains all of its natural characteristics including breaking down into harmless compounds in water and being consumed by bacteria and fungi leaving no residual or harmful chemicals in the landscape.

DOES 1080 KILL EVERYTHING AND HOW DO WE PREVENT POISONING OTHER ANIMALS?

No. The dosage used for wild dog and fox control is very low and therefore target specific. There is insufficient 1080 in a wild dog bait or fox bait to kill most Australian fauna, which have varied levels of tolerance to 1080 because it occurs naturally in Australian plants. Further target specificity can be achieved by using meat-based baits, placing baits carefully and strategically, burying or hiding baits, tying them to known locations, and regulating minimum

size of the baits used. State and territory regulations also manage the use and availability of 1080 baits to lower the risks to non-target species.

DOES 1080 STILL WORK BECAUSE WE RARELY, IF EVER, FIND THE CARCASS OF WILD DOGS AFTER A BAITING PROGRAM?

1080 is still an effective and efficient poison for killing wild dogs. Due to the action of 1080 and the period it takes to affect cellular energy production, there is a lag period between ingestion and onset of poisoning. This means they can move considerable distance from where they have taken the bait to where they die. In addition, dogs can exhibit symptoms including uncontrollable running and photosensitivity which means they could end up anywhere, making it hard to find a carcass.

WHAT HAPPENS TO THE POISON IN THE DEAD ANIMALS AND WILL IT KILL OTHERS IF THEY EAT THE CARCASS?

The poison in dead animals is broken down rapidly as the body decomposes, leaving no residual poison in the environment. Poisoning of other animals is unlikely due to the very low dosage of 1080 used in wild

AN ENVIRONMENTALLY RESPONSIBLE CONTROL

- **Natural toxin:** Sodium fluoroacetate (1080) is a naturally-occurring toxin found in more than 30 species of native Australian plants. These plants evolved this compound as a natural defence mechanism to deter mammals and insects from eating their foliage and seeds.
- **Biodegradable:** 1080 is safe in the environment, as it biodegrades quickly and is broken-down into harmless compounds by microorganisms and bacteria when exposed to soil and water.
- **Target specific:** Many of Australia's native fauna have a natural tolerance to 1080 because they have shared the landscape with plants containing 1080 for many thousands of years, unlike introduced species like wild dogs and foxes which are much more sensitive to the poison.

dog and fox baits. Most native scavengers that are likely to eat a wild dog or fox carcass such as goannas and birds are less susceptible to 1080 due to their digestive system or adaptation to 1080 in the environment and are not affected.

DO WE HAVE ANY EVIDENCE THAT WILD DOGS EAT AND ARE KILLED BY 1080 BAITS?

Research across Australia has demonstrated that wild dogs regularly take 1080 baits and are killed. Evidence from firsthand observations, radio collaring of individual dogs, remote camera surveys of dogs and baits, and the retrieval and testing of carcasses has clearly demonstrated that wild dogs will consume and are killed by 1080 baits. Baiting can reduce wild dog populations between 55% and over 90% (Fleming & Ballard, 2014, *An investigation of aerial baiting rates for strategic control of wild dogs*).

WILD DOGS ARE PREDATORS NOT SCAVENGERS SO WHY WOULD THEY EAT A BAIT?

Wild dogs are opportunistic predators that not only hunt a range of prey from mice to buffalo but will also readily scavenge carcasses at any time throughout the year. Wild dogs will scavenge road kill, dead livestock, animals killed by natural causes, rubbish, and scraps left behind by fishermen and tourists. Scavenging behavior may be more prevalent at different stages of their biology (eg when

feeding young pups), can be dependent on seasonal conditions (eg in drought) and may be related to prey availability.

WHICH BAITS WORK BEST FOR WILD DOG AND FOX CONTROL: MEAT BAITS OR MANUFACTURED BAITS?

Manufactured and fresh or dried meat baits can be equally effective at reducing wild dog and fox numbers and their impacts. No one bait type or method is universally superior to another. However, having a range of different types of baits gives greater flexibility when delivering a baiting program. For example, manufactured baits could be more effective in summer when fresh meat baits may be susceptible to flystrike. Bait uptake varies with location and season and different bait types should be tried to see which is more effective at that point in time.

HOW LONG ARE BAITS ACTIVE IN THE PADDOCK?

This can be highly variable and can depend on seasonal conditions and the landscape where the baits will be applied. It will also depend on how the baits are put out as a buried bait will usually lose its toxicity before a surface laid bait. For example, buried baits laid in summer in hot, humid areas may only last up to 3 days because they rot and degrade rapidly. Surface laid baits can last many months in the environment under dry conditions, but most baits will have been eaten or lost their effectiveness before this time. Care must be taken in dry desert or cold environments because they can last much longer as they dry out or don't degrade. As a precaution, working dogs should be muzzled when taken into a paddock that has previously been baited.

HOW MUCH RAIN DOES IT TAKE TO RENDER BAITS INEFFECTIVE?

It is too variable to put a limit on the time that baits remain toxic after rain. Several factors affect this including the amount of rain, the condition of the bait, time of year and the bait type. Although moist environmental conditions do reduce the longevity of toxic baits, rain is certainly no guarantee that baits are no longer toxic. As a precaution, working dogs should be muzzled when taken into a paddock that has previously been baited.

DO WILD DOGS AND FOXES BECOME BAIT SHY AFTER EATING SUB LETHAL BAITS?

There is no evidence that wild dogs and foxes become bait shy at all after eating 1080 baits. Given the time taken for 1080

to act, it is unlikely that a wild dog or fox will associate feeling sick or disorientated with a bait that it consumed hours earlier. In any population of wild dogs and foxes, there are individuals that will take baits and others that will not. This is why wild dog control programs need to incorporate a range of techniques such as trapping, shooting, baiting and exclusion fencing. Using a variety of bait types and delivery techniques, such as Canid Pest Ejectors, may improve the success of baiting programs.

CAN WILD DOGS LEARN TO AVOID CONTROL?

Negative experiences of any kind can lead to avoidance. In order to limit avoidance, best-practice principles should always be followed: traps should be set to maximise the chances of a clean catch and to avoid an animal escaping once caught, and a shot should only be fired when a quick and humane death is certain.

CAN PET DOGS BE POISONED BY BAITS INTENDED FOR WILD DOGS?

Yes. All dogs, domestic or otherwise are susceptible to the 1080 dose in a wild dog bait. State regulations and usage requirements are there to minimise the risk to domestic dogs. A range of notifications and permissions are needed prior to delivering a wild dog control program. The majority of accidental poisonings of domestic dogs occur because they are roaming and enter areas where baiting programs have taken place such as farm lands or forests. It is the responsibility of the owner of the pet or working dog to keep it safe.

DO BIRDS CARRY BAITS AWAY?

Birds may take baits but they are unlikely to be affected by them due to their resistance and digestive systems. They will rarely eat the whole bait and usually drop it nearby. It would be unusual for a bird to carry a bait very far. Regulations dictate the minimum distance baits can be laid near a dwelling in order to minimise this risk. Rural property owners should avoid placing baits close to dwellings or farm infrastructure where working dogs are likely to be used. In some cases, birds (eg currawongs, crows, eagles, and kites) can have impacts on control programs by removing baits aimed at wild dogs and foxes rendering the program less effective. Interference from birds can usually be avoided by burying baits, tying baits, hiding them in places where birds are less likely to see them, or putting baits out at dusk or after dark when they are less likely to find them. E

MORE INFORMATION

www.pestsmart.org.au/1080
www.pestsmart.org.au/field-guide-poison-baiting-wild-dogs-foxes
www.wool.com/wilddogs

MUZZLE

FOR WORKING DOG SAFETY

A new six-minute video ‘Using Muzzles for Working Dog Safety’ is a practical, how-to guide to help livestock managers and stock hands introduce and use muzzles on their dogs without compromising their working performance, comfort or safety.

The video features leading working dog trainer and breeder Joe Spicer, of GoGetta Kelpie Stud in the Western District of Victoria, and National Wild Dog Management Coordinator Greg Mifsud.

Greg and the team of AWI-funded Wild Dog Coordinators regularly have trouble convincing some landholders to use wild dog and fox baits due to concerns about their working dogs, who are valued working animals and companions, eating the baits.

“Ultimately the safest way we can protect the working dog is by using a muzzle,” Greg said. “To know that the dog has got a muzzle on and it’s focused on working and can’t eat a bait through that muzzle is just the extra confidence required to get people to do baiting on a more regular basis.”

“Ultimately the safest way we can protect the working dog is by using a muzzle.”
Greg Mifsud

In the video, Joe points out the features he looks for in a muzzle for working dogs.

“The grating is relatively close together, so it’s highly unlikely that your dog will ever get a bait through the grating. It’s quite lightweight, there’s plenty of room for the

dog to open its mouth and to breathe. But the feature that I look for the most is a nice wide pad on the top of the nose, and that way you won’t get any marks or wearing up on top of the nose,” Joe said.

“You can start the routine of getting your dog used to a muzzle from any age, it doesn’t really matter. Obviously the younger, the more quickly the dog will accept the muzzle.”

Once a dog has been trained and got used to the muzzle, Joe says the routine of putting on the muzzle becomes second nature for both the farmer and the dog.

“I always like to store the muzzle on top of the pen, therefore close to hand, and that way we know that the dog is safe from the time that it gets out of the pen to the time it gets back in the pen,” Joe said.

“When you actually put the muzzle on the dog, the dog actually pushes his nose into the muzzle, because he knows that, ‘Okay, if I get the muzzle put on, I’m going to work and I love working’.

“It’s important when you put the muzzle on that you put the strap through the collar.”

Joe said that there are other advantages of working dogs wearing muzzles.

RECENT PREDATOR CONTROL WEBINARS

Recordings of the following two recent webinars, hosted by AWI’s grower networks in NSW (Sheep Connect NSW) and Victoria (BestWool/BestLamb) respectively, are available to be viewed free by anyone at any time.

Wild dog control 101

Presenters: Wild Dog Coordinator for NE NSW Dave Worsley and the National Wild Dog Management Coordinator Greg Mifsud. Access at: www.sheepconnectnsw.com.au/tools/86

Lift your lamb survival – Best practice predator management

(primarily focussed on managing foxes in Victorian landscapes)
Presenter: National Wild Dog Management Coordinator, Greg Mifsud
Access at: Agriculture Victoria’s YouTube channel

“A muzzle has a huge advantage in the yards, in that it teaches dogs different ways (other than biting) of creating movement with stock. They start barking more when need be, they start positioning themselves better, so they look for other tools to create movement,” he added.

The video was created by the National Wild Dog Action Plan (NWDAP) and the Centre for Invasive Species Solutions (CISS) with funding provided by NSW Local Land Services, WoolProducers Australia, Sheep Producers Australia and Animal Health Australia. **B**

MORE INFORMATION

View the video at www.pestsmart.org.au/muzzles



Left: National Wild Dog Management Coordinator **Greg Mifsud** and GoGetta Kelpie Stud principal **Joe Spicer** discuss the benefits of using muzzles on working dogs. Right: Perfectly comfortable in a muzzle, **Brokenriver Bank** pauses for a quick drink between mobs.

THE 'PAROO MODEL'

FOR BEST PRACTICE WILD DOG CONTROL

Landholders in the Paroo Shire of Western Queensland have been leaders in the development and implementation of best practice control of wild dogs. Learn their management strategies by viewing two new video clips.



Peter Lucas (right), pictured here with his son **Kane**, at 'Cliffdale' at Wyandra, which was one of the original farms to take part in the Paroo model wild dog management program.

The Paroo model for wild dog management is characterised by a high level of community engagement, giving land managers collective ownership in designing, implementing and driving wild dog control solutions in a targeted and coordinated manner.

"The key to its success is land managers coordinating their control programs, communicating with each other and being strategic in their approach," said National Wild Dog Management Coordinator, Greg Mifsud.

"For example, baiting during spring and autumn to capitalise on breeding cycles and being prepared to use other control tools in between, such as trapping, shooting and exclusion fencing to reinforce those major campaigns."

This approach in Paroo Shire, which began in 2003 with the launch of a coordinated baiting campaign, has helped its graziers reclaim their livelihoods by dramatically reducing the wild dog population. Their principles also set the foundation for the National Wild Dog Action Plan (NWDAP) best practice management strategies, which are now being applied by many producers across the country and getting results.

The principles are explained by Paroo producers in two new YouTube clips, and while the clips focus on the drought-affected and wild dog-impacted Paroo Shire in Queensland, the principles are applicable everywhere.

"Back in about 2000, graziers had begun to suffer quite badly from wild dogs, so we decided that the best thing to do was to implement a control program before the problem became

too bad," said Chair of the Paroo Shire Wild Dog Advisory Committee, Peter Lucas, who farms at 'Cliffdale' at Wyandra.

"We had seen some landholders doing small baiting programs in isolation with no coordination. So we went around the Shire and actually got landholders to admit there was a wild dog problem, to get them on board, and then set up a committee to work out a program.

"The first budgeted baiting program that we did was very successful. We ended up with 98% participation and since then our participation has never shifted – and we've seen a massive reduction in the number of wild dogs."

The Paroo model was working and the community continued to adapt, tackling ongoing challenges with new tools and techniques.

"After doing the baiting programs for two or three years, we still had some wild dogs each year, so we got a professional trapper in, after which some areas never had any activity for another 18 months. The landholders could really see the success," Peter said.

Support provided through the NWDAP, AWI and the Queensland Feral Pest Initiative through wild dog management field days and trapping workshops has enabled land managers to learn how to successfully trap wild dogs and deliver control more effectively. They have also acquired a better understanding of how wild dogs operate and what to look for before attacks start, which has enabled the land holders to be very proactive and more strategic in their approach to managing dogs in the Shire.

"The main challenge we have today is probably absentee landholders. But just recently we have seen a few new landholders come into the area that want to run sheep. As soon as we explained the program to them, they jumped on board straight away," Peter said.

Despite the very good control program, Peter and his neighbours in the north of the Shire have decided to enter into a cluster fence agreement and fence themselves in to avoid dogs moving in from shires to the north where there are very low participation rates in control programs.

While wild dog management has been an ongoing activity for most Paroo Shire landholders, the videos show they now have economically sustainable businesses and are confident and energised about the future.

The videos were funded by the Department of Agriculture, Water and Environment through the NWDAP and with thanks to graziers from Longreach, Barcaldine and Paroo Shires for taking part and RAPAD for helping organise the filming locations. **E**

MORE INFORMATION

- View the two new videos at www.youtube.com/PestSmart
 - The Paroo Model (Part 1) – establishing a coordinated wild dog control program in the Western Queensland shire
 - The Paroo Model (Part 2) – new tools for ongoing wild dog control in the Western Queensland shire
- Read a 36-page booklet 'The Paroo model of wild dog control' (published in 2011) at www.pestsmart.org.au
- Get the contact details of your local AWI-funded wild dog coordinator at www.wool.com/wilddogs
- Check out the latest tools, strategies and research for wild dog management at www.pestsmart.org.au



Hear about the NWDAP and effective coordinated wild dog control from National Wild Dog Management Coordinator, Greg Mifsud, AWI Program Manager for Vertebrate Pests, Ian Evans, and woolgrower Geoff Power from South Australia, in Episode 124 of AWI's The Yarn podcast at www.wool.com/podcast

STUDENTS TAKE UP MERINO WETHER CHALLENGE

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

The 2020 School Merino Wether Challenge in NSW is the biggest one yet of this annual competition organised by the NSW Stud Merino Breeders' Association, with support from AWI. The initiative aims to educate and engage students on the commercial production of Merino sheep by giving them a memorable 'hands on' experience covering a broad range of sheep and wool production skills.

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

This year's NSW School Merino Wether Challenge kicked off on 10 March at a training day with industry leaders at the Dubbo

Rural Skills Centre, attended by more than 200 students from 32 schools across the region. Students undertook mini workshops on topics including agricultural careers, sheep selection using measured and visual appraisal, animal husbandry, nutritional requirements, sheep and wool handling and judging, and the profit drivers in Merino sheep production.



More than 200 students from 32 NSW schools attended the first of two training days at the **Dubbo Rural Skills Centre** (pictured). 116 more students from 20 schools attended the second training day at the **Jerilderie Saleyards complex**.

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Students from **Gunnedah High School** at the training day in Dubbo.

Two days later on 12 March, at the Jerilderie Saleyards complex in the Riverina, 116 more students from 20 schools across the region enjoyed a similar training day to that at Dubbo, rotating through a series of mini workshops to learn about the sheep and wool industry.

The training days were organised and run by Ben Watts of Bralca at Molong in NSW, the NSW Stud Merino Breeders' Association and AWI with generous support from property owners.

"Each school team at Dubbo and Jerilderie collected seven Merino wethers from the day which they are now looking after for six months. The students form a close relationship with their three wethers, which provides a unique 'hands-on' experience and insight into key components of good sheep management, in contrast to education in a classroom," Ben said.

"Each team will show their wethers and be judged in a two-day competition at the Rabobank National Merino Sheep Show and Ram Sale in August. Students' efforts will be judged according to the meat and wool quality of the flock."

In particular, the teams will be assessed and four awards presented for:

1. the team with the highest estimated earning capability over a five-year period from both meat and wool.
2. the team with the highest commercial wool value. The wethers will be shorn during the competition, where fleeces will be weighed and valued.
3. the team with the highest commercial meat value.
4. the overall champion team. Points are awarded based on the students' sheep handling, dress and presentation and knowledge of the Merino industry.

"As well as showcasing the Merino breed, it encourages the students to become familiar with, and possibly pursue a career within, the Merino industry," Ben added.

Following its success last year in winning the 'Best Presented' award, Gunnedah High School is taking part again this year. Sixteen of the school's Year 9 students attended the training day in Dubbo and have taken some Merino wethers back to Gunnedah where the students will look after them in preparation for judging in August.

The school's agriculture teacher Nicole Dwyer said Gunnedah High School has participated

WHAT BENEFITS DOES THE CHALLENGE PROVIDE TO STUDENTS?

By attending the **training day** and the **judging event** in Dubbo, and by **looking after their wethers**, the students gain:

- practical, hands-on skills in sheep management
- a better understanding of sheep and wool production as a business
- contact with many aspects of the Merino sheep industry
- a chance to network with industry participants and other students
- an enjoyable experience with Merino sheep and the industry
- a positive perspective on a career with sheep and wool.

in the School Merino Wether Challenge for many years and she has personally taken students since 2017.

"The students get a lot out of participating in this program, from learning about sheep dietary requirements, handling, health and shearing whilst the wethers are at school for nearly six months," Nicole said

"The contacts that they can make with leading industry individuals is very rewarding.

"These opportunities would be hard to provide our students without this program and the involvement of everyone in the Merino sheep industry that gives up their time to pass on some of their knowledge to our students."



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AWI GRADUATE TRAINING PROGRAM

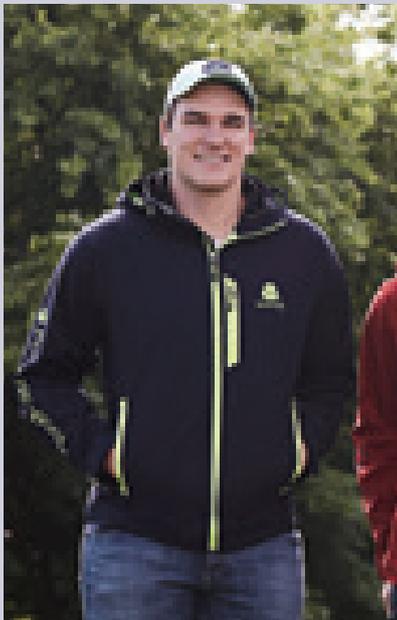
The AWI Graduate Training Program provides successful applicants with a thorough understanding of the wool supply chain from fibre to fashion.

The 18-month program 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.

After a successful inaugural year for the program in 2018/19, read how the two graduates in the 2019/20 intake of the program are getting along.

OUR NEW GRADUATE

A new graduate, **George Lehmann** from Junee in the NSW Riverina, began in the third round of the program in March this year. George grew up on a mixed farming enterprise, combining wheat and canola cropping with Merino sheep. He graduated last year from the University of Sydney where he completed a Bachelor of Food and Agribusiness.



Miles explaining the attributes of wool at the commercial launch of the Luna Rossa wool sailing jacket at the Prada store in Sydney in February.

MILES BARRITT

Miles comes from Broomehill in the Great Southern region of Western Australia where he was raised on his family's sheep and grain farm. He went on to study at the University of Western Australia where he graduated with a master's degree in commerce.

"Since starting with AWI more than a year ago, the wool industry has experienced a range of different conditions in what has been a relatively volatile period for the fibre. With drought, bushfires and now Covid-19 all having a significant impact on wool, my first 12 months have been nothing short of eventful.

"I have spent time in all facets of the business and have enjoyed learning about the global wool supply chain. During my time in China, I learnt about the manufacturing of wool and developed an appreciation for the whole pipeline.

"The graduate program has been a great way to step into the workforce and develop a range of skills that will be useful moving forward. Business and market intelligence has been a distinct area of interest to me and one that I think provides a lot of benefit to the woolgrowers.

"Experiencing the different departments of the business has allowed me to gain a strong base knowledge of the direction AWI hopes to go and how we are going to go about it. I look forward to the coming challenges and seeing what the rest of 2020 will bring to the industry."

The two graduates in the second round of the AWI Graduate Training Program are now halfway through their time with AWI. Here they tell us their experiences of the program so far, in their own words...



Emma showing wool samples to a delegation of students from Asia and University of Technology Sydney, in Sydney last year.

EMMA MURPHY

Emma grew up on a commercial mixed farm in Galong, north west of Yass in NSW, where she gained extensive exposure to wool production. Emma went on to study Agriculture Economics at the University of Sydney.

"Since starting at AWI I have had the opportunity to support global projects across many business units, sharing AWI's understanding about wool and its vast potential with a global network of stakeholders.

"I was fortunate enough to focus a portion of this time supporting the International Woolmark Prize team. This prize brought together the best emerging designers from across the world and developed a fast tracked mentoring and education program. The program challenged designers to develop and importantly to celebrate wool rich collections. The prize assisted finalists in the implementation of best practices to address environmental and social issues with sustainable business growth.

"I feel continually challenged and inspired by the diverse experience this grad program offers. Having been fortunate enough to complete many post-farmgate elements of the program, I look forward to getting stuck in and supporting our on-farm teams.

"I hope to continue sharing these experiences and learning from the diverse industry that we are all immersed in. The shared passion for wool all over the world is incredible and I very much enjoy working for Australian woolgrowers, exploring the potential for wool in the global marketplace."

SELL YOUR WOOL THROUGH WOOLQ

Following successful trials of the WoolQ online wool auction system (WoolQ Market) with brokers and buyers in April, WoolQ is now conducting regular weekly auctions. All woolgrowers are being encouraged to consider using the new online platform to sell their wool.

With the launch of the 'WoolQ Market' online marketplace for Australian wool, the last phase of the development of the WoolQ platform is now complete.

WoolQ Market is a centralised, efficient and easy to use online auction operating outside the open cry market hours, with extensive benefits for buyers, brokers and woolgrowers. WoolQ Market is a modern online selling option that complements the existing open cry auction markets.

While the traditional wool auction rooms have remained open during the current Covid-19 situation, social distancing restrictions meant the Australian wool industry in April trialled a number of selling methods as viable alternatives to open cry trading. WoolQ Market was a feature of these trials.

In April, George Millington of Collinsville Merinos at Hallett in South Australia was one of the first to sell wool on WoolQ Market.



**"We jumped at the chance to list on WoolQ Market."
George Millington, Collinsville Merinos**

"I believe online selling will enable more buyers to access my wool, it's as simple as that. Buyers don't have to be physically in the auction room, so they can be from across Australia," George said.

"I got a real kick out of seeing my wool sell live while sitting at my desk. In this new environment, wool is very well placed for a bright future as a clean, green, renewable and safe fibre."

George says Collinsville has a proud history of innovation and this will continue into the future.

"The global Covid-19 pandemic has shown that digital technologies can enable people to do things differently in business and this applies to the wool industry too. At Collinsville, we already use technology, such as tracking our stock movements, so WoolQ is a natural extension to our processes."

WoolQ is a suite of digital tools that allows all types of woolgrowers and industry participants to easily harness digital efficiencies across the wool-growing and selling cycle. WoolQ Market is the final tool of WoolQ to be launched.

With the latest addition to WoolQ, wool broker Alister Carr of KareeWool believes the woolgrower-owned platform benefits both his business and his woolgrower clients.



**"The digital transfer of data improves my operating efficiency."
Wool broker Alister Carr of KareeWool**

"By providing woolgrowers with a cost effective, trustworthy, modern electronic

selling system that links back to a data repository of their wool production data, informed business decisions can be made quickly; the digital transfer of data improves my operating efficiency too," Alister said.

Senior Executive Kevin Xing of Natsun Australia (Nanshan) said Natsun has been an advocate of digital selling and modernisation of the wool industry.



**"We will continue to support WoolQ. It's reassuring to know we have a viable alternative way to buy wool."
Kevin Xing, Natsun Australia (Nanshan)**

"You can buy almost anything online now. So why not wool?" he said.

"WoolQ is now a proven digital selling option, which is efficient and provides a good user experience. Even if only limited quantities have been sold to date, it's good to have another opportunity to buy wool on an additional day to supplement the open cry system."

WoolQ would like to thank those market participants who have invested their time and resources to understand and trial the WoolQ Market selling option. With the partnership of all market participants, the platform can deliver long-term benefits to industry as we move through the current Covid-19 restrictions. **B**

MORE INFORMATION

Woolgrowers are encouraged to speak to their brokers about selling wool on WoolQ and head to www.woolq.com to check out the latest features, including viewing auctions each Thursday. Reach out to info@woolq.com with any questions.

BENEFITS THAT WOOLQ MARKET OFFERS TO THE AUSTRALIAN WOOL INDUSTRY

- A highly secure longer-term solution that at once complements open cry trading while at the same time addresses some of the immediate challenges facing this traditional method of selling.
- A fully versatile and configurable platform that can be scaled up or down to deal with the volumes of wool available for sale.
- A team of industry professionals is available to assist both sellers and buyers in getting comfortable with this new way of transacting wool.
- Integrated with the whole WoolQ online platform that helps deliver wool and its accompanying data electronically from the shearing shed through to the port for export.
- Free of any exchange or access fees for an introductory period of 6 months.
- Presents the Australian wool industry with a selling option in line with the majority of other industry trading platforms.

WOOLQ ESPECI CONTINUES TO PROVE POPULAR

With growing numbers of WoolQ eSpeci's being submitted across Australia since its launch, it is clear there is an appetite within the Australian wool industry for the introduction of such digital tools.

The WoolQ eSpeci is one part of the WoolQ suite of digital tools. The eSpeci is an alternative to the current paper speci and allows woolgrowers and wool classers to efficiently capture their in-shed clip data at the time of shearing. Since launching in 2018, more than 28,500 bales of wool have been captured and processed using the WoolQ eSpeci.

Feedback from woolgrowers, classers and brokers using the eSpeci has been very positive.

Woolgrower Anna Cotton of Kelvedon Estate in Tasmania commented: "I found the eSpeci really user-friendly. It is extremely logical as it is a step-by-step process. It prompts you along the way and removes the margin of error as everything is pre-set."

Australia's biggest wool handler, AWH, estimates errors made using a paper-based system cost the industry about \$1 million dollars annually.

"No-one sees that, it's a hidden cost and it drives us crazy in wasted time and expense," AWH

national wool manager David Mitchell said. "Wool classer specifications prepared using electronic tools have a significant reduction in errors associated with receiving and preparing wool for sale."

AWH is supporting and strongly encouraging all wool classers and woolgrowers to adopt the new electronic wool classer specification formats.

In August 2018, WoolQ launched **My WoolQ**, a central mailbox and storage point in WoolQ for all data relating to a woolgrower's clip, with simple comparative tools to see what is happening from one season to the next.

"The beauty of WoolQ is having all that data in electronic form in one spot," said Victorian woolgrower Lyndon Kubeil from Violet Town.

"In the past I'd think 'it would be great if I could just go back and look at all my past clips', but it's all sitting in the filing cabinet on paper. It would take too much time to actually find it and then try to analyse it.

"With the help of My WoolQ, I can now track wool cut per head, micron changes and look at variations in staple strengths or length and then correlate them back to some management issues or seasonal conditions. It is really useful for forecasting what sort of test results I might be expecting for different lines or different age groups of sheep."

Having this rich data set available, a woolgrower can use the new WoolQ **Ready Reckoner**, a simple calculator with two tools: the 'Market Analysis' tool that allows woolgrowers to get an instant estimate of the value of their clip from up-to-date market pricing, and the 'Market Results' tool that allows woolgrowers to view recent sale prices to benchmark and evaluate their clip performance against similar wool in the market.

"So as soon as that data is in the WoolQ Ready Reckoner, I get a feel for the current market prices, what it is worth at the moment and I can just keep tracking that as the market changes," Lyndon said.

REGISTER NOW WITH WOOLQ ACCESS ONLINE TOOLS THAT SUPPORT YOU IN THE WOOL-GROWING AND SELLING CYCLE

With the launch of the **WoolQ Market** online marketplace for Australian wool (see opposite page), the last phase of the development of the WoolQ platform is now complete. All components of the WoolQ platform have undergone extensive and ongoing user engagement and testing to ensure the tools are user friendly, intuitive and deliver value.

There are currently more than 970 businesses registered and more than 2,400 active users.

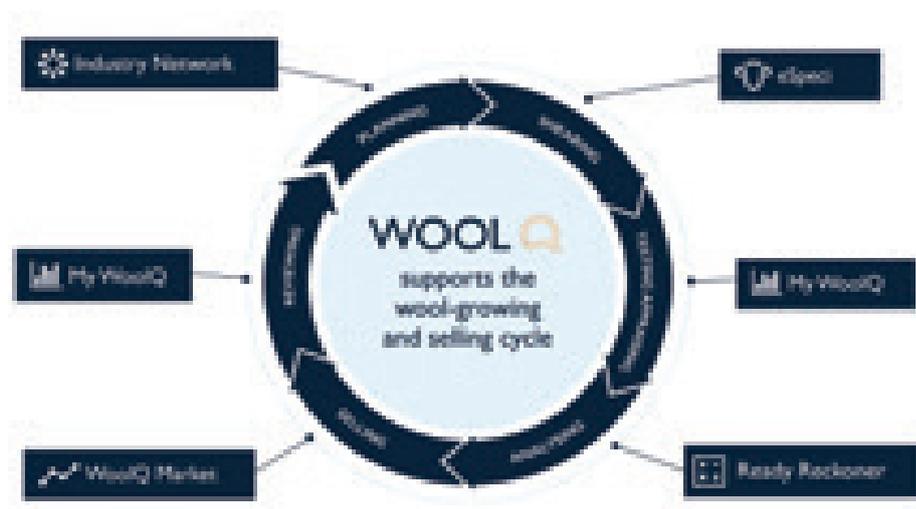
WoolQ has field officers across Australia who make on-farm visits to ensure

woolgrowers are set-up and ready to make the most of the WoolQ tools.

WoolQ can be accessed by any member of the wool industry, from woolgrowers to classers, through to brokers, buyers and industry associations.

HOW DO I ACCESS WOOLQ?

Users first need to register at **www.woolq.com**. Easy-to-follow video tutorials and user guides are available on www.woolq.com along with a customer assistance service.



FROM SHEEP'S BACK TO MILL

HOW HAS THE GLOBAL CORONAVIRUS PANDEMIC AFFECTED THE AUSTRALIAN WOOL SUPPLY CHAIN?

The reaction and decision making from all wool industry participants to the global coronavirus crisis has been swift and decisive and has enabled the trade of Australian wool to largely continue.

With the world under a general lockdown due to the coronavirus pandemic, it has been important for Australian woolgrowers and the broader wool industry that potential blockages to the flow of wool through the supply chain be identified, understood and addressed.

Due to the quick action taken by industry leaders, trade in Australian wool has continued relatively normally, albeit with voluntary restrictions on volumes.

Wool is a significant contributor to the Australian national economy, but more importantly, cash returns from wool sales has allowed previously drought-affected farmers to restock or finance sowing operations for a spring crop. On top of that, most predominantly wool-only producers get paid once a year, so debt repayments and financial obligations can still be met, and wool sheep operations remain viable.

However, at any critical point of the wool supply chain, the industry remains vulnerable to potential cessation of trade if health issues arise. Close adherence to the caveats imposed by authorities is and must be persevered with.

Harvesting is the first critical point of potential blockage of the wool pipeline. Crutching and shearing activities have remained a pivotal part of the essential service status bestowed upon the industry. This sector has been well resourced by many parties, including AWI. Guidelines and protocols have been set, respecting individual State government legislation, with the ban on crossing state boundaries being the major restriction limiting normal operations of shearing teams.

Local transport companies are an integral element in facilitating movement of the cargo off farm to wool stores and they currently remain operational. Restricted contacts and physical distancing at points of despatch and receipt have been instigated and most wool stores now require sign in and sign off.

Wool testing at the AWTA laboratory in Melbourne is crucial as wool is globally traded based on the independent AWTA certificate. Auction buyers operating locally almost entirely rely on the AWTA core test as a minimum to price and trade

wool, as well as depending on additional measurement certificates for assistance in determining wool's quality. A majority of banks that transact wool payments from overseas buyers to local exporters require the provision of an AWTA combined

1. The sheep's back



PHOTO: MookMook

2. Shearing



PHOTO: Michael Hall

5. Auction centres



6. Post-auction logistics



certificate in the shipping documentation. Almost all letters of credit (l/c's) stipulate this term as a condition of honouring the credit. Wool store core sites remain in a dual shift mode with testing teams never crossing paths.

Wool auction centres received clearance and essential service status from the Australian Government very early in the health crisis. This has seen the conduct of physical auctions maintained. Sellers have been mindful of not overloading the market with volume and that strategy has so far been largely successful in receiving support from all segments. Alternative electronic selling systems have been instigated with the woolgrower-funded WoolQ Market online auction platform a significant new entrant. Access to show floors for buyers to value wool sale lots remain open but could impede auctions if infection strikes store persons, sale staff, brokers or buyers.

Post wool auction logistics stay open with all wool packing and dumping services operational. Buyers can still prepare export deliveries as per normal with just minor delays compared to more normal times.

Port and shipping channels continue to be in working order. However, importers expecting cargo from overseas are facing **storage issues**, causing backlogs at all international ports. Ship crews are not given permission to disembark vessels and freight forwarding capacity has decreased sharply in badly affected countries like India or Italy, two countries that are important destinations for Australian greasy wool. Some countries at different points in time have been unable to accept containers which has led to offloading at non destination ports, causing more storage issues at those open ports and delays in mills receiving their goods. Crucially for wool exporters, China is still operational but slower than normal, which means payments are also being delayed.

All in all, the **freight forwarding industry** is feeling the impact with various disruptions. It is outstanding that cargo is still moving, through the resourcefulness of industry professionals, and that essential goods (including medical supplies) are getting to where they need to be. B



THE YARN PODCAST

GET MARKET INSIGHTS FROM THOSE ON THE GROUND!

- How are retail and manufacturing markets faring during the coronavirus pandemic?
- How are markets responding as lockdowns are eased?

Listen in to learn from AWI's international managers on the front line.

AWI'S WEEKLY FREE AUDIO REPORT

- Hear the latest news, market intelligence and stories from woolgrowers and stakeholders along the global wool supply chain.
- Learn more about AWI's projects from the people at the cutting edge of R&D and marketing.
- Each episode averages about 20 minutes in length.
- It can be listened to on a smartphone, tablet or computer.
- There is an archive of more than 125 episodes that have received well over 150,000 downloads.

HOW TO ACCESS THE PODCAST

You can simply listen at www.wool.com/podcast, on Spotify or download the Podcast to your iPhone. B

NEW PODCAST FROM SHEEP CONNECT NSW



AWI's grower network in NSW, Sheep Connect NSW, has launched a free weekly podcast called **It's time for ewe**. Listen to episodes on your phone or computer via www.sheepconnectnsw.com.au and on Spotify. There are already more than 12 episodes available. B

3. Wool store



4. Testing



7. Shipping



8. The mill



AVERAGE MONTHLY EMI COMPARISON

The chart opposite provides a snapshot of how the AWEX monthly Eastern Market Indicator (EMI) and a range of microns have performed for the past three months (February 2020 – April 2020) in Australian dollar terms compared with the previous five years February 2015 to January 2020 (circles) and the decade previous to that, February 2005 – January 2015 (squares).

This past three-month period has been dominated by the potential and then very real impact of the coronavirus pandemic on the global economy.

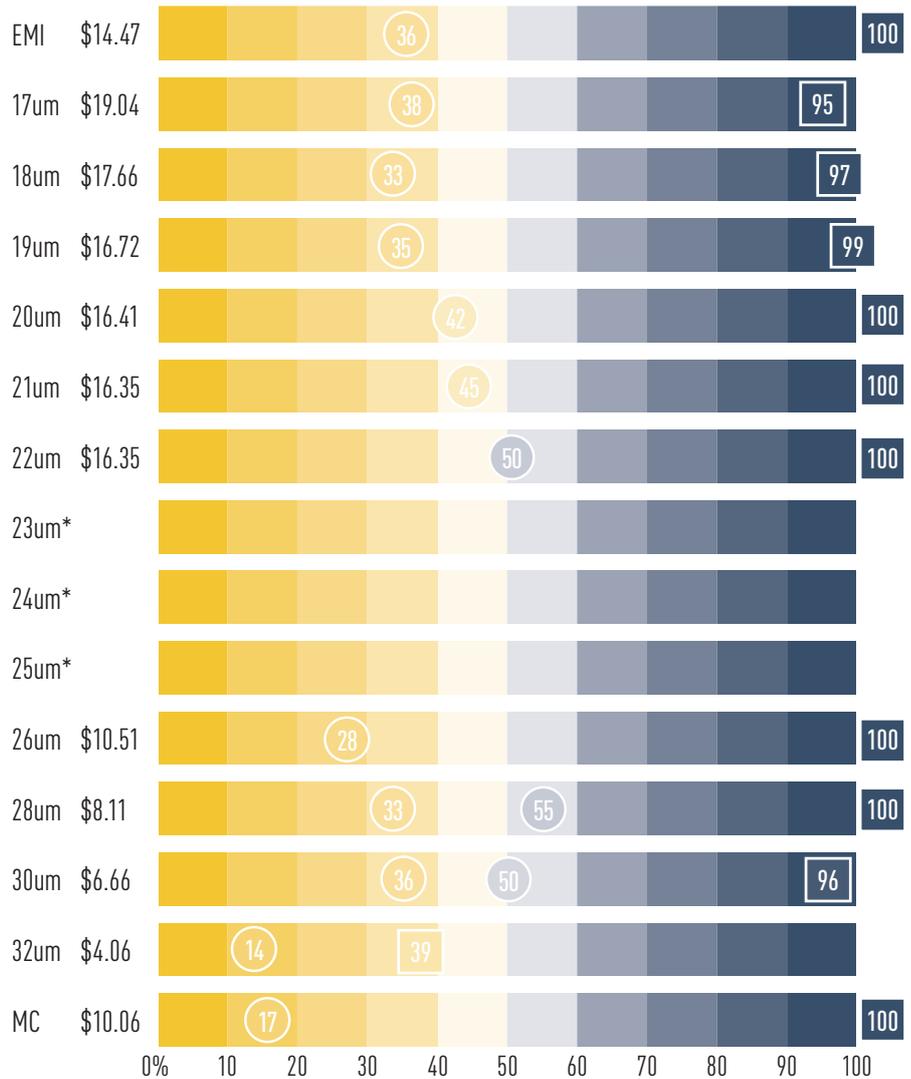
For the past three months, the monthly EMI averaged at \$14.47 which is a \$1.07 drop from the average for the previous three months, and is tracking at the 36th percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current \$14.47 (February 2020 – April 2020) for 36% of the time.

While the EMI is tracking at the 36th percentile over the previous five years, it is still at the 100th percentile when compared to the decade February 2005 – January 2015. This means the current EMI of \$14.47 (February 2020 – April 2020) is higher now than it was for all that decade.

18 micron averaged at a monthly value of \$17.66 (33rd percentile for the previous five years and 97th percentile for the decade before that), 21 micron averaged at \$16.35 (45th percentile for the previous five years but 100th percentile for the decade before that), and 28 micron averaged at \$8.11 (33rd percentile for the previous five years and 100th percentile for the decade before that).

For the past three months, Merino Cardings averaged at \$10.06, operating at the 17th percentile for the previous five years but still at the 100th percentile for the decade before that. **B**

AVERAGE MONTHLY EMI FOR FEBRUARY 2020 – APRIL 2020 COMPARED WITH
 ● PREVIOUS 5 YEARS FEBRUARY 2015 – JANUARY 2020
 ■ THE DECADE FEBRUARY 2005 – JANUARY 2015



*insufficient data

NEW MARKET INTELLIGENCE AT WOOL.COM

An important part of the recent revamp of AWI's Wool.com website was the introduction of more market intelligence information for woolgrowers.

As well as the Weekly Price Reports and Monthly Market Intelligence Reports, there is now a graphical display of

- Eastern Market Indicator – you can select to display AUD, USD, CNY or EUR.
- Offering – displays bales offered and bales sold.

- Currency movements – you can select to display AUD/USD, AUD/CNY or AUD/EUR.
- Forecast of bales sold – displays previous season, current season, current week and forecast.

For the first three categories above, you can select to display data from 3 months to 3 years ago.

AWI also continues to send wool prices

and market intelligence direct to about 5,000 woolgrowers' mobile phones. If you would like to subscribe to the free SMS service, visit www.wool.com/sms where you will be asked to input your name and the mobile phone number to receive the SMS. You can unsubscribe from the service at any time. **B**

MORE INFORMATION
www.wool.com/marketintel

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.

WIN!!!



If you submit a photo that gets published in Readers' Photos, you'll receive from us a paperback copy of the Kondinin Groups' *'The Story of Wool'*.

BALLY GLUNIN PARK BALE AUCTIONED FOR CHARITY

Michael and Cathy Blake of 'Bally Glunin Park' at **Hamilton** in Victoria with a special bale of 18.6 micron wool, decorated by their four grandchildren Edward and Lucinda Blake and Jasmine and Lachy Mahoney. The 132kg bale was auctioned by Fox and Lillie Rural in March and raised \$2112 with all proceeds going to the **Michael Manion Wool Industry Foundation** (www.mmwif.com.au) which supports rural families in need. The winning bidder was New England Wool on behalf of Italian spinner Seccessori Reda Spa.



BEAUTIFUL WORK AT MT BUTE

Three generations of Collinses are hard at work in the 'Mt Bute' shearing shed, in this photo sent in by **Fiona Collins**. **Jim** is pictured with his father **Michael** and his two sons **Harry** and **George** at the property in **Linton, Victoria**.



A WOOLLY GOOD WINE

Images of sheep and wool appear on the labels of the new range of 2019 'Sheep Series' wines from **Grampians Estate Winery** (www.grampiansestate.com.au) in western Victoria. The winery's owners **Tom and Sarah Guthrie** are also sheep and wool producers; the photos on the labels were taken by their daughter **Pollyanna**. The wines and their labels are an ode to the book *The Longest Drive* written by Tom, which details his family's record-breaking 3,500km sheep droving journey in 1882 from north-west Victoria north to the Barkly Tableland.



MAKING A SPLASH

Melanie Uys of Kiawarra Merino Stud at **Weethalle** in Central West of NSW sent in this photo of her little man **Levi** who was as happy as his parents to see a few inches of rain. She says this was a great first experience for him!





WOOL

A new way to sell wool. WoolQ Market is now available.

WoolQ is a secure online platform where woolgrowers, classers, brokers and buyers can access digital tools to support all stages of the woolgrowing and selling cycle.

- 2,400 registered users**
- 970 businesses**
- 28,500 wool bales recorded**

It's time to join the Q. **Register** at www.woolq.com

We can help you set up your WoolQ account. Call us on 1800 070 099 or email info@woolq.com.