Beyond the bale

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AWI | THE WOOLMARK COMPANY

NOVEL APPROACH TO MINIMISE CATCH AND DRAG

Beyond the bale

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FRONT COVER
Plenty of interest has been shown in the AWI **modular sheep delivery unit,** which delivers sheep directly to the shearer, eliminating time and energy that shearers spend on the catch and drag. It also minimises the chance of injury to the shearer from the dragging and twisting movements.

The **automatic module** (pictured left) contains a pneumatically powered delivery section that, at the press of a button, moves out from the race and then tilts the sheep into a position suitable for the shearer to then easily retrieve.

There is also a **manual module** (pictured right). The shearer simply opens a gate in the race and collects the sheep from there, manoeuvring the sheep a meter or so to the centre of the board.

This photo was taken at a demonstration of the technology at the Australian Sheep and Wool Show in Bendigo in July.

AWI is the R&D and marketing organisation for the Australian wool industry

GD4533

10 BE PREPARED FOR FLYSTRIKE SEASON

42 ECO MARKETING CAMPAIGN LAUNCHED

ON-FARM

OFF-FARM

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AWI STATE-BASED GROWER NETWORKS

AWI-supported networks are present in each state.

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

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

AWI WORKING FOR WOOLGROWERS

John Roberts
Chief Executive Officer
Australian Wool Innovation

AWI CEO John Roberts provides readers with an overview of how AWI is undertaking R&D and marketing to address some of the key issues faced by Australian woolgrowers.

Foot and Mouth Disease and biosecurity

Australia is free from many diseases present in other countries. However, the outbreak of foot and mouth disease (FMD) in our close neighbour Indonesia is a concern, especially because the wool industry's strong export orientation places it at significant risk if Australia has an outbreak. Australia's livestock industries are working collaboratively together with government to help ensure the threat of FMD entering Australia is minimised and does not happen.

Australian woolgrowers should ensure their own farm biosecurity measures are optimised. If you have the slightest suspicion you might have an emergency animal disease present in your livestock, call the government Emergency Animal Disease Watch Hotline on 1800 675 888 (open 24 hours a day). Head to www.wool.com/fmd for further information about FMD.

If an emergency animal disease such as FMD was to occur in this country, Australia does have a robust strategy to minimise the potential trade impacts on the sheep and wool industries. Recently I joined other livestock industry leaders in a behind the scenes tour of biosecurity measures at Sydney International Airport and I was impressed at how much monitoring is already in place. At a company level, I can also assure you that AWI holds reserves on behalf of the wool industry for use in the event of an emergency animal disease impacting wool in Australia.

Attracting and retaining wool harvesting workers

In response to the ongoing shortage of shearers and wool handlers in Australia, AWI has made a concerted effort to run extra novice and improver in-shed training during the past financial year.

However, even more training is planned for the current financial year with 2,200 days planned: 800 days of novice schools, 500 days for improver schools, and 900 in-shed training days to cover new entrant wool handlers and follow up training for improver shearers working in a team in industry.

Woolgrowers can help in attracting and retaining workers by ensuring good and proper working conditions and facilities in their own shed – information on optimum shed design and safety are available at www.wool.com/sheddesign.

Flystrike management resources for all woolgrowers

Moving into spring off the back of a generally wet winter heralds a potentially bad flystrike season. AWI's flystrike extension program has resources that are relevant to all woolgrowers, regardless of sheep type, climate, operating environment, or husbandry practices.

These resources include the *It's Fly Time!* flystrike management information for tactical flystrike prevention, monitoring and treatment; and the new one-day *SimpliFly* workshop to help woolgrowers develop a flystrike management plan and calendar specific to their own property – see pages 10-11 for information.

These resources draw on the outcomes and findings of AWI's extensive flystrike R&D program, which continues with projects such as the investigative work to develop a commercial blowfly vaccine – see pages 12-15.

AWI supports all woolgrowers in their choice of best practice animal health and welfare control options to manage flystrike.

Global economic threats and opportunities

The wool industry, like many industries, is affected by global challenges, such as the ongoing effect of COVID, international shipping and logistic issues, the conflict in Ukraine, rising energy prices, rising inflation, and downturns in economic growth. As an industry, we have our own challenges too, such as threats to biosecurity, labour shortages, and the environmental impact labelling proposals in the European Union.

However, there is an optimism in the industry at the moment, partly due to the good rains and reasonable prices experienced by woolgrowers at the moment – and the fact that after a period of COVID travel and event restrictions, woolgrowers can once again simply meet and enjoy the company of other growers.

I firmly believe that there is a growing consumer and trade awareness of wool's unique range of natural and performance benefits and its application as both a fibre of fashion and a fibre of function. This should increasingly enable Australian wool to regain a firm and rightful place in all sectors – from luxurious and high-performance Merino wool apparel through to beautiful hardwearing interior products for the home.

In the past few weeks, we have rolled out two marketing campaigns to promote the premium and sustainable benefits of Australian wool – and we continue to work along the supply chain with designers, manufacturers, brands and retailers to help ensure robust demand for the fibre, for the benefit of Australian woolgrowers who own this company.

AWI's new Strategic Plan

AWI released in June its new three-year Strategic Plan which outlines the company's key research, development and marketing priorities, which have been developed to deliver the greatest value to woolgrowers. The Plan is a result of extensive collaboration with stakeholder groups throughout the global wool industry and constructive input from the Woolgrower Industry Consultation Panel (WICP) and Woolgrower Consultation Group (WCG) to ensure it reflects woolgrower priorities. The Plan also aligns with the Australian Government's R&D priorities and the *Wool 2030 Strategy* and *Sheep Sustainability Framework*. See pages 4-5 for more information.

I cannot think of a more exciting time for our fibre and look forward to ongoing collaboration across industry as we build a healthy and bright future for wool. You can hear more about AWI activities to benefit woolgrowers and our plans for the future at the AWI AGM which is scheduled to be held on 18 November in Sydney.

AWI three-year Strategic Plan

AWI released in June its new three-year Strategic Plan after consulting widely with woolgrowers and their representatives to ensure industry views and priorities are incorporated into the plan.

AWI is the research, development and marketing organisation for the Australian wool industry. The company's new Strategic Plan, effective from 1 July 2022, outlines the company's strategic direction and targets for the three financial years 2022/23 to 2024/25.

AWI Chairman Jock Laurie says AWI will continue to focus on turning its investments into returns for Australian woolgrowers.

"Our commitment to enhance the profitability, international competitiveness and sustainability of the Australian wool industry will never change," Mr Laurie said.

"Change though has been the one constant in the last couple of years on so many levels. As a grower myself, I know only too well the multitude of challenges that we face from having enough good quality shearers and shed staff, to changing growing conditions and soaring input costs.

> "Australian wool has a bright future and over the next three years AWI will work even harder to maximise the opportunities and meet the challenges facing woolgrowers."
> **AWI Chairman, Jock Laurie**

"The Strategic Plan has been guided by feedback from our major stakeholders directly and also through the Wool Industry Consultative Panel (WICP) and the Wool Consultation Group (WCG). The Australian Government as the single largest contributor of funds to our work has also played a vital and collaborative role in framing this plan."

In preparing the Strategic Plan, AWI considered the challenges and opportunities facing the Australian wool industry – see opposite page. The company also considered the strategic plans of the broader Australian wool and agricultural industries, such as the *Wool 2030 Strategy* and the *Sheep Sustainability Framework*.

In June, AWI also published its Annual Operating Plan for the 2022/23 financial year, which outlines the company's main investment activities for the year, consistent with the new Strategic Plan. Details of the progress against the targets in the Annual Operating Plan are published twice-yearly on the AWI website as well as in the AWI Annual Report and the AWI Annual Performance Report. B

More information
The AWI Strategic Plan 2022-25 and the Annual Operating Plan 2022/23 are available at **www.wool.com/consultation**

Key priorities 2022-2025

AWI's new Strategic Plan outlines the company's key investment priorities in research, development, and marketing for the three years from 1 July 2022:

GROWING THE VALUE AND INTERNATIONAL DEMAND FOR WOOL

AWI will continue to advocate effectively at the international level to ensure robust demand for Australian wool in key markets.

Key focus areas: Sports | Casualisation | Eco-consciousness | Post-COVID commerce | Brand collaboration | Generational changes

WOOL HARVESTING

AWI will build on its strong commitment in this area targeting improvement in wool harvesting across a number of areas.

Key focus areas: Expanded and enhanced training | Support and mentorship for new shearers | New and better use of technologies | New Training and Innovation Centre

COLLABORATION, CONSULTATION AND ENGAGEMENT

AWI will do more listening, more collaborating and more sharing of information, for the benefit of woolgrowers.

Key focus areas: Communication | Collaboration | Woolgrower representative bodies | Extension programs & events

SUSTAINABILITY

AWI will work to enable all stages of the wool supply chain to achieve sustainability goals and deliver positive outcomes for people, planet and prosperity.

Key focus areas: Climate change adaption | Methane mitigation | Flystrike management | Sheep genetic progress | Vertebrate pest management | Reproduction efficiency

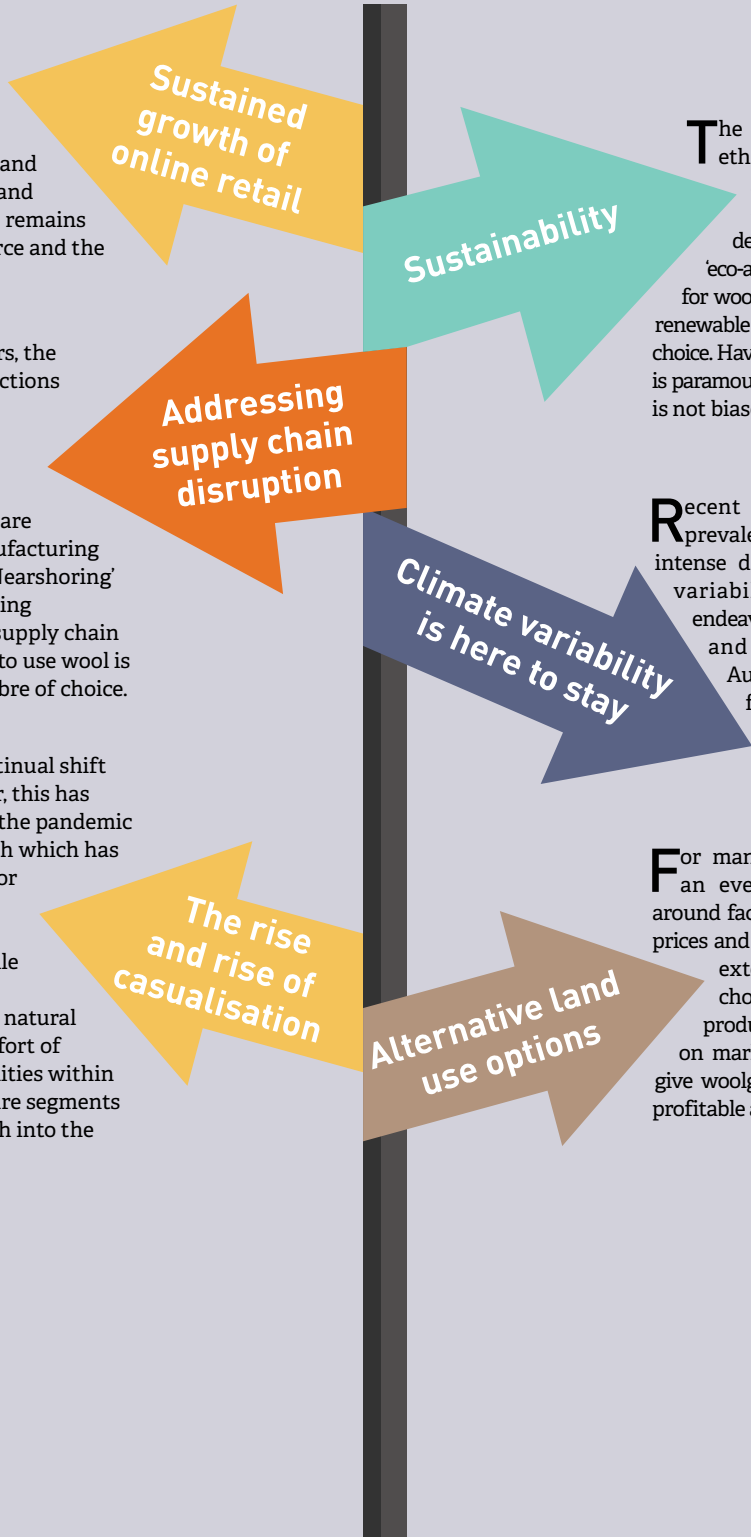
STRENGTHENING THE SUPPLY CHAIN

AWI will educate the textile industry and future generations about the benefits of the wool fibre and ensure ongoing innovation in wool processing and the production of wool products.

Key focus areas: Market Access | Traceability | Education and extension | Woolmark Licensing Program | Emerging markets

Challenges and opportunities for Australian wool

The global operating environment has been in constant flux for the past two years as the pandemic and now the Ukraine/Russia conflict not only affect global macroeconomics, but also supply chain logistics and retail store operations. While some of these factors pose a threat to wool, many others open opportunities for demand growth.



COVID lockdowns changed the way people shop, with a fundamental shift toward online retail. And while bricks and mortar stores have re-opened and customers are returning, there remains a significant shift to e-commerce and the way customers shop.

For many brands and retailers, the lockdowns and travel restrictions exposed the significant risks associated with sourcing and supply chain disruption. Increased shipping costs and shipment delays mean brands are looking to diversify their manufacturing base, with renewed focus on 'Nearshoring' options. Ensuring these emerging manufacturing markets have supply chain access and the technical skills to use wool is critical to ensure wool is the fibre of choice.

While there has been a continual shift towards casual workwear, this has been exacerbated throughout the pandemic and working from home, a push which has seen workers choose apparel for comfort and casual styling, rather than structured formal workwear such as suiting. While this shift has impacted wool's traditional suiting market, the natural stretch, breathability and comfort of wool apparel creates opportunities within this trend. Casual and athleisure segments are forecast to continue growth into the foreseeable future.

The push towards environmental and ethical sustainability has accelerated significantly since the pandemic as consumers now see their purchase decisions as an agent for change. This 'eco-awakening' has important implications for wool and how it is positioned as a natural, renewable and environmentally friendly fibre choice. Having the evidence to back up any claims is paramount, as is ensuring circularity modelling is not biased by vested interests.

Recent years have demonstrated the prevalence and impact of extreme and intense drought, flooding and temperature variability. And while some farming endeavours are more affected by adverse and extreme weather conditions, Australian woolgrowers also benefit from the information and tools to forecast and plan and take pre-emptive action.

For many farmers, enterprise mix can be an ever-changing balancing act, based around factors such as input costs, commodity prices and other associated risk factors. To this extent, woolgrowers often have the choice of whether to grow wool or other products. Providing the best information on market outlooks and profit drivers will give woolgrowers the confidence that wool is profitable and sustainable.

More AWI-funded in-shed harvesting courses

School workshop at Gulargambone, NSW, in June.

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

AWI regularly funds and supports hands-on practical in-shed training for shearers and wool handlers to attract and retain new workers, as well as increase their productivity, skills and professionalism. In Victoria and South Australia, the training is provided by the Shearing Contractors Association of Australia (SCAA) Shearer Woolhandler Training Inc.

There has been a concerted effort to run extra novice and improver training, funded by AWI and several state governments. However, even more training is planned for this financial year with 2,200 days planned: 800 days of novice schools, 500 days for improver schools, and 900 in-shed training days to cover new entrant wool handlers and follow up training for improver shearers working in a team in industry.

AWI will also include specific training for upright posture shearing and will continue to work closely with shearing contractors and state governments to deliver the best possible training all across Australia.

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

More information

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

Improver course at Oakden Hills, SA, in May/June.

Workshop for St Catherine's Catholic College, Singleton, held at the Glen Innes Agricultural Research & Advisory Station, NSW, in June.

Advanced shearer workshop for A-Team Shearing Contractors, Vic, in May.

Improver course at Inglewood, Vic, in June.

Shearer **Noah Muscat** with his AWI learner shearer toolbox at an improver school at 'Glenrock', Bookham, NSW.

Retaining learner shearers

AWI initiatives to encourage learner shearers that have completed training to build up their skills and stay in the industry include three extra in-shed coaching training days, and the presentation of the 'AWI Learner Shearer Toolbox', containing a handpiece and other shearing gear, subject to the shearer passing certain strict criteria. AWI presented 223 toolboxes to new entrant learner shearers in 2021/22 who are now on stands.

New biological wool harvesting research

AWI is funding research into a new opportunity for biological wool harvesting based on a natural protein found in corn that generates a weakened zone at the base of the wool fibre but, importantly, enables the fleece to stay on the sheep without a net until the wool can be removed.

Many woolgrowers will probably have heard of Bioclip®, a biological defleecing process developed by CSIRO and made available in the 1990s, which allowed wool to be harvested without the use of a mechanical handpiece. To harvest the wool, sheep are given a single vaccination of Epidermal Growth Factor (EGF) that causes a break to occur in the wool fibres. Over the sheep and fleece is placed a net into which the fleece is shed about one week after the sheep is injected.

It works, but there was little take-up by woolgrowers, mainly because the putting on and removal of the nets from the sheep made it a labour-intensive process.

However, there is potentially a new opportunity for biological wool harvesting based on a new protein, the zein class of protein found in corn, that could enable harvesting *without* the need for nets.

"This protein was shown by the University of Adelaide to cause a weakening of the staple of *most* of the fibres, to such an extent that a mechanical removal device will break the fibre and remove the fleece without the need for cutting equipment," said Dr Jane Littlejohn, AWI General Manager, Research.

"The important thing about this proved concept was that this treatment allows the fleece to stay on the sheep *without* a net – and that's revolutionary, and potentially could be a real labour-saving option for woolgrowers compared to Bioclip."

Compared to traditional shearing, biological wool harvesting also eliminates second-cuts and skin pieces and can reduce variability in wool fibre length.

A small trial has already been undertaken by the University of Adelaide in which the fleece did not fall off in the paddock under normal grazing conditions for up to ten weeks after the protein was administered. This trial has provided AWI with the confidence to proceed to larger scale trials.

"During these new trials, the University of Adelaide will need to determine how best to administer the treatment and the most appropriate dosage," Jane said.

"The University also must develop some sort of machine or method to break the fibre and harvest the wool in the most efficient and labour-saving way."

The project will run over several years to check whether there are any negative impacts on wool growth and quality as well as animal growth and health.

"It's important that the fleece stays on for long enough for the staple to grow a few millimetres to protect the sheep from sunburn and hypothermia – and we certainly want the next growing cycle to be unaffected by any product that is being given to the sheep," Jane said.

"Although this is a high-risk project, it has already shown a lot of promise and it is being fast-tracked."

The project continues years of collaboration with the University of Adelaide on this type of research. It is an example of the multi-pronged approach that AWI is now taking to make wool harvesting easier and more cost-effective for woolgrowers and the industry. B

SEE WHERE THE WOOL INDUSTRY WILL TAKE YOU!

Wool harvesting careers highlighted in video campaign

To encourage young people to join or further their careers in the wool harvesting industry, a series of three short videos has been released that showcase the wide range of rewarding and exciting careers available in the industry.

The videos, produced for AWI and SCAA Shearer Woolhandler Training Inc who partnered for the project, were released on Facebook in May and quickly amassed almost 65,000 views.

The videos were shot in South Australia, Victoria and Tasmania at some of Australia's most impressive woolsheds. Drone footage was taken at the Nutt family's 'Pandurra Station', 40km west of Port Augusta; with in-shed footage from the Von Bibra family's iconic 'Beaufront' property at Ross in Tasmania and the historic 'Mount Hesse' woolshed built in 1852 at Winchelsea in Victoria.

While looking at the benefits of working as a shearer or woolhandler, the videos also highlight the many other jobs that the industry has to offer plus the opportunities for career advancement and pathways in the industry.

In the main video, titled *This is where the wool industry can take you*, which runs for five minutes, viewers hear snippets from people already working in the industry about how they are enjoying the benefits of working in an exciting, challenging and rewarding industry. The opportunities to travel, stay fit, meet new people, enjoy the shed lifestyle and earn good pay are just some of the reasons highlighted.

The other two videos are a fast-paced and eye-catching half-minute in length. Each encourages young people needing a gap year job to come and try the wool industry and see where the industry can take them.

The three videos feature wool handlers, shearers, a crutcher, sheepo, shearing contractor, wool presser, wool classer, shearers' cook, shearer and wool handler trainers, farm owners, a wool store manager, wool buyer, quality control manager at a wool processing plant, and AWI's Program Manager for Wool Harvesting Training and Development, Craig French. B

More information

View the videos at **www.facebook.com/shearerwoolhandlertraining/videos**

SOME OF THE PEOPLE FEATURED IN THE VIDEOS

"I've worked in a lot of different areas of the agricultural industry and the shed is definitely my favourite place to work."
Ayla Ansell, wool handler, NSW

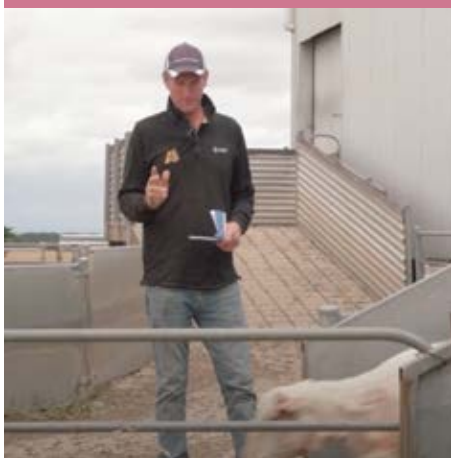
"For my gap year I was working at a sandwich bar getting underpaid and then I came into the shearing sheds and was able to buy my car and have money behind me to do whatever I like now."
Shainna McNamara, wool handler, Vic

"The wool industry has been a good industry to me. I met a lot of good people out of it. There's a certain amount of freedom with it. Once you've learnt to shear these Australian Merinos, you can shear anything you've got in the world. The camaraderie in the shed is so good. I went shearing when I was 19 and now I'm nearly 56 and I still enjoy going to work every day and that's important."
Stuart Neal, SCAA Shearer Woolhandler Training shearer trainer, Vic

"I always say to people, what other industry do you get to meet new people, travel and it's new and interesting every day. I've had the opportunity to become a wool handling trainer and I love to pass on my passion and interest in the wool industry to other people. It's a job where you never stop learning."
Petrisse Leckie, wool handler trainer, Tas

"I started off 10-15 years ago as a young rouseabout and it enabled me to travel all around Australia and meet new people, and now I'm at the point in my career where I am probably more settled in one spot but I still have that freedom to travel all around Australia to do my job. There are some wonderful people in this industry and it makes the job a lot of fun."
Kellsie Turner, wool buyer, SA

"I became a shearing contractor after my shearing career to take the opportunity to stay in the wool industry; it's something I've always loved."
Robbie Crouch, shearing contractor, Vic



"You're always learning, you're picking up new things off different blokes and girls, watching yourself get better and better. The money has been fantastic, only getting better."
Sam Johnson, experienced shearer, SA

"Being a shearer, I suppose it's been entertaining, meeting all the different types of characters and people along the way. Every shed is different, everyone is different. It's an experience that you probably wouldn't get in any other job."
Lee Pretlove, shearer, SA

"I did a shearing school about six months ago. I've been shearing full time since then for about five months. I recently got my first 200 for the day which I was absolutely thrilled about. Roughly I'm sitting on about $450-500 a day which is great. The industry is amazing. I have so much fun every single day. I couldn't recommend it enough to young people. I love it, I love coming to work every day."
Emily Spencer, shearer, Tas

"The industry needs good mentors, good trainers, good leaders and the next generation are within our shores. It's about the opportunities, the people you meet, the pathway and it's a great industry to be involved with."
Craig French, AWI Program Manager for Wool Harvesting Training and Development, NSW

Be prepared for flystrike season

Heavier than normal winter rains across many of Australia's sheep regions herald a potentially bad flystrike season. Early prevention of flystrike is key to minimising animal welfare and economic threats, so now is the time to implement your annual flystrike management plan. The resources from AWI's Flystrike Extension Program can help you.

There are currently three components under AWI's Flystrike Extension Program available to woolgrowers to support their flystrike management: (1) It's Fly Time!™ resources, (2) DemystiFly™ resources and (3) SimpliFly™ workshops, while others are under development.

Woolgrowers across the country can pick and choose how to get involved with the different components of the program that best suits their requirements, sheep type, climate, operating environment and husbandry practices.

More AWI resources under development

Three more sets of resources are currently under development as part of AWI's Flystrike Extension Program:

ClassiFly™

A one-day workshop to increase understanding and skills in breeding for flystrike resistance. To be launched later in 2022.

StrateFly™

A one-day workshop to develop a property-specific, whole-of-farm strategy for moving to a non-mulesed enterprise. To be launched in 2023.

AmpliFly™

One-on-one coaching and support from a trained and accredited advisor to assist you over time to implement your whole-of-farm strategy for moving to a non-mulesed enterprise. To be launched in 2023.

The popular It's Fly Time™ resources provide practical and tactical information for woolgrowers on integrated flystrike management in the lead up to, and during, high-risk flystrike periods. They include tips for preventing flystrike, information on prioritising sheep for monitoring and treatment, and options for treating sheep when flystrike does occur. The resources include:

- It's Fly Time! webinar (1 hour) recorded in August 2022.
- Factsheets on 'Recognising and monitoring flystrike' (4-pages) and 'Preventing and treating flystrike' (4-pages).

More information
Access the resources at **www.wool.com/itsflytime**

There are only a small number of chemical groups registered for flystrike control, so it is important to prolong the usefulness of these chemicals for as long as possible. By implementing resistance management strategies, woolgrowers can slow the development of resistance, which will help maintain the effectiveness of the currently registered chemical products. AWI has made available a range of practical information resources about blowfly chemical resistance to 'demystify' this complex, yet important, issue:

- Factsheets on 'Managing chemical resistance' (6-pages) and 'Frequently asked questions (4-pages)
- Producer case studies for both non-mulesed and mulesed sheep (4-pages each)
- Guides on 'Understanding chemical resistance', 'Flystrike prevention and treatment chemicals' and 'Flystrike chemical rotation' (1-page each).

More information
Access the resources at **www.wool.com/demystify**

SimpliFly™ is a one-day workshop, delivered by AWI-accredited advisors in partnership with AWI's state grower extension networks, to help woolgrowers reduce the incidence and impact of flystrike on their flocks and profits. During the workshop woolgrowers will learn about the range of tools available in their flystrike management toolbox and how to use them in combination. Throughout the day, attendees work through developing a strategic flystrike management plan and annual calendar that incorporates both short- and long-term tools specific to their property.

More information
Access information about the workshop at **www.wool.com/simplify**. To find out when there is going to be a SimpliFly™ workshop available near you, contact the AWI-supported grower extension network in your state and sign up to their free newsletters. You can find your network at **www.wool.com/networks** or call the **AWI Helpline** on **1800 070 099.**

More information:

- For further information on AWI's Flystrike Extension Program, head to **www.wool.com/flystrikeresources**
- For more detailed information on flystrike management, including information on chemical resistance management strategies and access to interactive decision support tools, visit FlyBoss at **www.flyboss.com.au**
- For information on AWI's flystrike research, development and extension program, visit **www.wool.com/flystrike**

Key flystrike management messages

It's important to have a broad flystrike management plan which incorporates the following three aspects, but preventing flystrike is key.

1. **PREVENTION OF FLYSTRIKE**
   An integrated preventative flystrike program includes breeding for flystrike resistance, the use of crutching or shearing, dag control, appropriate tail length, selection of less flystrike-prone paddocks, applying appropriate chemical treatments and killing maggots and removing sources of protein.

2. **MONITORING TO DETECT FLYSTRIKE**
   Monitor all mobs of sheep for signs of flystrike during high-risk periods, but especially weaners. Monitoring involves a combination of checks including looking for flystrike in sheep, checking populations of flies and checking weather conditions.

3. **TREATMENT OPTIONS WHEN FLYSTRIKE OCCURS**
   Make sure you use a combination of treatment activities and that you don't rely on one single activity alone. It's important to make sure all flystruck sheep are effectively treated, all maggots are killed and sources of protein are removed to aid the sheep's recovery and to prevent additional strikes.

Flystrike R&D and extension in the spotlight

Nearly 100 industry stakeholders attended the **AWI Flystrike RD&E Technical Forum** in August in Sydney.

The progress of a wide range of flystrike research, development and extension (RD&E) projects was presented at a recent AWI forum that was attended by nearly 100 industry stakeholders.

AWI's Flystrike RD&E Technical Forums, usually held every two years, are an opportunity for key industry representatives, animal welfare advocacy groups, government and researchers to receive updates and provide feedback on AWI's flystrike RD&E program.

The latest AWI Flystrike RD&E Technical Forum, held on 10 August in Sydney, was the seventh forum held since 2008; the 2020 forum was cancelled due to the COVID pandemic.

"This forum was an opportunity for researchers to share ideas on the future direction of their studies, while hearing from the welfare groups and woolgrowers about their needs and expectations for AWI's flystrike RD&E program," said AWI Sheep Health & Welfare Program Manager, Bridget Peachey.

Some of the RD&E initiatives reported during the day include:

Prototype flystrike vaccine progressing, with hurdles

Team leaders Tony Vuocolo (CSIRO) and Dr Trent Perry (University of Melbourne) provided updates on a collaborative AWI-managed project to investigate the development of a prototype flystrike vaccine (see the separate article on pages 14-15).

Dr Perry also explained how the University of Melbourne project to sample blowfly populations is contributing to a new project to model blowfly resistance (see the section further below).

Nanotechnology, thinking big and looking small

Nanotechnology is essentially the study of very small (nano) things, and tiny nanoparticles less than a thousandth of a millimetre in size are providing a promising new method to deliver chemical pesticides and therefore protect sheep against flystrike, according to Dr Peter James from the Queensland Alliance for Agriculture and Food Innovation (QAAFI) at the University of Queensland.

Dr James presented on a recently completed AWI-funded project to design and test unique silica nanocapsule particles with surface spikes purpose-built to give prolonged periods of protection against flystrike and lice.

Dr James reported on laboratory results of testing the nanocapsules on wool with blowfly larvae. "In all the tests that we've done, we get extended periods of protection (the larvae died) with our spiky surface nanoparticles, compared to other formulations," Dr James said.

The nanocapsule system has the potential to manage breech and body flystrike, using the current methods of chemical application. The next stage of the research will be to move the study out of the laboratory and test the technology in the field. The use of nanotechnology for other purposes, including to prolong the effectiveness of analgesics or anaesthetics, is also being explored.

Modelling of blowfly chemical resistance

Dr Brian Horton (University of Tasmania), Narelle Sales (NSW DPI) and Dr Trent Perry (University of Melbourne) jointly introduced a new two-year collaborative AWI project that will contribute to an increased understanding of chemical resistance in sheep blowflies.

Information from the project will provide evidence-based enhancements to a new blowfly resistance model, developed by the University of Tasmania to examine management strategies for reducing the effects of blowfly chemical resistance. The model will be used to update recommendations for woolgrowers on best practice management strategies specific to their circumstances to prevent or slow the development of blowfly resistance to the commonly used flystrike chemical treatments.

NSW DPI will build on an earlier blowfly resistance project to determine the toxicological profiles of field submissions of blowflies resistant to key chemicals, providing phenotypic evidence of any cross resistance to blowfly chemicals. Blowfly strains considered of importance to the study of resistance will be forwarded to the University of Melbourne for genetic mapping, which in turn will identify the gene(s) involved in the resistance to key chemicals, providing important information for the University of Tasmania blowfly resistance model.

Breech flystrike genetic trends

AWI's Program Manager Genetics, Geoff Lindon, gave a presentation on Merino breech flystrike genetic trends in which he provided a recap of breech strike risk factors, and examined the trends from 2010 to 2020 in ASBV scores for Merino breech strike traits, 2020 drop ASBVs by Merino type and 2020 drop trait percentiles. See the article on pages 22-23 for trends in Merino genetics. Geoff also presented an update on the new work in flystrike genomics.

AWI's Flystrike Extension Program

AWI's National Extension Manager, Emily King, provided an update on the progress of development and implementation of AWI's Flystrike Extension Program. See the preceding pages (pages 10-11) for more information on how the resources already available under this program can help in the upcoming flystrike season.

Industry strategic frameworks

Dr Scott Williams of Forest Hill Consulting, who is the new Chair of the Sheep Sustainability Framework (SSF) Steering Group, spoke about how the industry's SSF and the Wool 2030 strategies align together and with AWI's new three-year Strategic Plan and Annual Operating Plans.

The first SSF Annual Report, issued in July, reports data on industry progress against key sustainability priorities across the Australian sheep industry's domestic value chain. An update to the SSF Annual Report is scheduled for release later this year and will be reported in a future edition of Beyond the Bale. See www.sheepsustainabilityframework.com.au for information on the SSF and to access the Annual Report.

Other presenters at the forum included AWI Sustainability Manager Emma Gittoes who spoke about AWI's supply chain engagement; AWEX CEO Mark Grave who provided an update on the National Wool Declaration; Animal Health Australia General Manager Adam Pate who spoke about the ParaBoss best practice parasite management resources; and MLA Program Manager Animal Wellbeing Michael Laurence who spoke about MLA's flystrike RD&E projects. B

More information

The presentation slides from this event, plus further information on the projects that make up AWI's current diversified investment portfolio in flystrike prevention RD&E, are available at **www.wool.com/flystrikelatest**

Striking back at flystrike with vaccines... the battle continues

CSIRO scientist **Tony Vuocolo** vaccinating sheep with prototype flystrike vaccines.

AWI is now three years into a major four-year preliminary collaborative research project to help develop a commercial vaccine that will help protect sheep right across the country from the Australian sheep blowfly.

Here, project leaders Tony Vuocolo (CSIRO) and Trent Perry (University of Melbourne) provide woolgrowers with updates on their respective research areas.

Flystrike vaccine research progressing, with hurdles

Tony Vuocolo, CSIRO

CSIRO is about to complete the first three-year phase of research on the development of a flystrike vaccine. Much has been achieved in this time by extending our biological knowledge of the blowfly and identification of lead candidate protein antigens that have been tested in prototype vaccines. But there is still a lot more work to do before we can translate our exciting results demonstrated in the laboratory into a well performing vaccine that can be used on-farm for flystrike prevention.

The following is a summary of progress to date as we move into a phase of on-sheep efficacy testing of the lead vaccine prototypes being performed at the current moment along with our plans going forward.

During the first phase we investigated the proteins that the blowfly larvae make as they grow from just hatching out of the egg phase to mature larvae that are approaching the pupation phase to turn into flies. The availability of the blowfly genome that AWI and University of Melbourne were closely associated in developing was a very valuable tool in helping identify these genes and proteins.

From this analysis we were able to identify lead proteins that are now being targeted and produced as antigens for our vaccine. We shortlisted eight protein classes containing 35 candidate proteins and engineered and cloned these into bacteria or insect cells. We use these cells as mini-factories to make the specific protein antigens, allowing us to then use these antigens for inclusion and formulation into vaccines. We have made more than 50 prototype vaccines to date, vaccinating several hundred sheep and then tested all of these in the laboratory using serum from sheep.

We are also keeping track and being informed about the potential implications of genome variations in the blowfly populations from around Australia by the population dynamics studies of the University of Melbourne (see following section).

The **difference in larvae growth after 72 hours** between larvae exposed to the vaccine prototypes (top: native antigen vaccine; middle: recombinant antigen vaccine; and bottom: the control larvae, no vaccine) in laboratory tests.

> "In laboratory tests, the two vaccines were shown to reduce blowfly larvae growth rate by up to 75%. The challenge now will be duplicating these results in trials on sheep."
> **Tony Vuocolo, CSIRO**

From more than 50 prototype vaccines tested in the laboratory, we narrowed them down to two prototype vaccines that are being progressed to sheep-based larval challenges. In laboratory tests, these two vaccines were shown to reduce blowfly larvae growth rate by up to 75% (see the image above) and in some cases impact larval survival.

The challenge now will be duplicating these results on the sheep's back. Unlike the 'in laboratory tests' with larval feeding assays undertaken under controlled conditions in the laboratory, where serum, rich in antibodies generated from the vaccine is available in abundance to the feeding larvae, the on-sheep testing represents a different and uncontrolled environment. Early results from two vaccine prototypes in sheep trials returned a 15% reduction in larval growth compared to 75% in the laboratory.

We are now working to better understand the sheep generated immune response and to optimise vaccine protocols and formulation to ensure the larvae are exposed to adequate levels of antibodies generated from the vaccine for it to be effective.

Once we are able to demonstrate the success of the vaccine prototypes in reducing larval growth on sheep, we plan to approach animal health companies who have shown keen interest in being involved to secure their commitment in developing and commercialising an effective and affordable flystrike vaccine.

Woolgrowers have contributed to an improved understanding of blowfly populations

Trent Perry, University of Melbourne

We are thankful to the many woolgrowers across the country who contributed blowfly samples to a recently completed three-year University of Melbourne project to determine if there are genetically different blowfly populations across Australia.

As a result, a total of 2,034 fly samples from more than 86 collections across Australia have been visually identified, had their DNA extracted, and then assessed to determine their genetic similarity or differences to each other.

Comparing similarities and differences in genetic information from individual flies shows that there are three distinct blowfly populations in Australia (see Figure

University of Melbourne scientists **Trent Perry** (right) and **Vern Bowles** (top left) with PhD student **Gothami Welikadage** (bottom left) collecting blowfly larvae from an implanted sheep during their in vivo implant trial.

1). Flies collected from Victoria, New South Wales, Queensland and South Australia are genetically similar to each other and interbreed, forming one large population, while those flies found in Western Australia and Tasmania form two other distinct

"Genetic information from blowflies supplied to us by woolgrowers from across Australia demonstrates there are three distinct blowfly populations in Australia: those in WA, Tasmania and the eastern mainland states."
Trent Perry, University of Melbourne

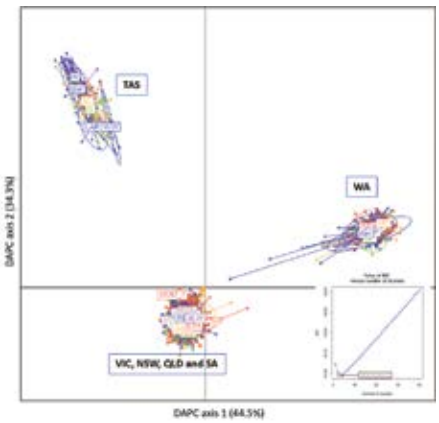


Figure 1. Genetic information from individual flies (each dot) demonstrates **three distinct blowfly populations in Australia**

populations of blowflies.

This information is key to appraising the feasibility of new blowfly control strategies and will be important for improving the design of strategies to protect and sustain the effectiveness of chemicals currently used for control and others that may be registered in future. It will also be used to improve regionally targeted woolgrower management strategies for suppressing the spread of blowfly chemical resistance.

This information has already been used by CSIRO, helping them determine whether the candidate proteins they are examining for the blowfly vaccine project are similar for the different fly populations and therefore ensure the vaccine they are developing will be effective across Australia.

Another area of our project was a study that aimed to understand how flies establish a strike, particularly what proteins are critical in the early stages, just prior to and during the initiation of a wound. We conducted an in-vivo implant trial where sheep were infested with blowfly eggs at small, controlled sites, and samples were then collected from both maggots and the sheep at the time that the maggots were starting to create a wound.

This work has identified hundreds of fly proteins that are being excreted during strike initiation which is contributing to our understanding of the way sheep respond to strike and the battle between the maggots and sheep defence mechanisms. These studies will not only assist with current blowfly vaccine development research but will provide opportunities to identify additional novel vaccine candidates against this damaging pest. B

Get up to scratch on finding a lice solution this season

When thinking about managing lice and other parasites, it's essential to consider the importance of (1) biosecurity, (2) chemical resistance, and (3) the correct use of chemicals for prevention. Here are some tips and tricks to get you started.

Maintaining vigilance is key in the quest to stay on top of any new, emerging or ongoing lice issues. Lice make their way into flocks via introductions, or uncontrolled infestations – introductions may be via stray sheep or traded stock. With many woolgrowers shearing into the Spring months, it's a good opportunity to carefully monitor your sheep for any signs of lice.

Biosecurity and identifying lice

Early detection of lice is vital – it is essential to carefully inspect all new animals on your property (purchased or agisted) and regularly monitor for lice. Animals that are rubbing should be your focus because rubbing can be related to several causes. If you see lice on your stock, use the LiceBoss Rubbing Tool[1] to determine the cause.

To **inspect for lice**, part the wool to the skin, use good light and put your glasses on!

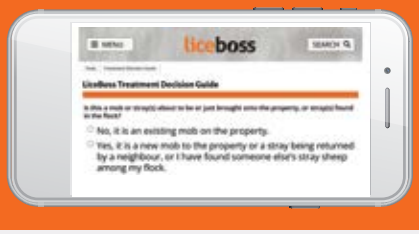
Sheep that have been **rubbing** should be inspected for lice first.

A well-designed lice biosecurity plan is critical. The two main things to consider are stock-proof fences (consider double fencing boundaries with laneways), and isolation and quarantine for all new arrivals. Check out LiceBoss, for guidelines to develop an effective biosecurity plan on your property[2].

Lice can be introduced via a few different routes. For example, strays from neighbours, your stock straying to the neighbour's property, and stock returning and missed at mustering.

NOT SURE IF YOU SHOULD TREAT YOUR SHEEP?
NOT SURE OF THE TYPE OF TREATMENT TO USE?

Consult the: LiceBoss Treatment Decision Guide **www.liceboss.com.au/tools/treatment-guide.php**



Deciding on the best treatment for your flock

For successful control, it is important to understand the correct application method for your situation, correct dose rates, and the chemical groups you plan to use (not just product branding). Chemical groups registered for lice control include:

1. synthetic pyrethroids (SPs)
2. insect growth regulators (IGRs)
3. organophosphates (OPs)
4. spinosad
5. macrocyclic lactones (MLs)
6. neonicotinoids; and
7. a combination of magnesium fluorosilicate, rotenone and sulphur.

Of these, the first two groups (SPs and IGRs) have established resistance reported from Australian sheep properties.

The choice of application method is dictated by two main factors:

1. The chemical group to be used – some can only be applied with a particular method.
2. Suitable equipment – existing equipment found on many farms does not deliver the chemical treatment effectively. For example, shower dips can be problematic because they do not get the animals wet to the skin.

Depending on the product chosen, the best time to treat sheep for lice is 'off-shears' (ie within the first 24 hours after shearing) or in 'short wool' (ie two to six weeks after shearing). It is easier to achieve eradication with one shearing date for the entire flock. Success can be compromised with multiple (split) shearings and treating ewes with lambs at foot. LiceBoss has a specific Ewe/Lamb Treatments Tool[3] to use when there are ewes with lambs at foot.

When lice infestations are found between shearings, a decision is required whether to treat in long wool, to wait until the next shearing or to shear early. Left untreated, animal welfare and wool damage may become significant. Alternatively, the cost of treatment may not be warranted if wool damage is unlikely to be severe. Long wool treatments will not eradicate lice and, regardless of whether or not a long wool treatment is applied, sheep will need to be treated again after their next shearing.

The Long Wool Lice Tool[4] on LiceBoss can help you to decide whether it makes better economic sense to muster the sheep and apply a long wool treatment, or to wait and treat the sheep after they are next shorn.

LiceBoss has more information on the methods for application[5]:

- Backlining
- Plunge and cage dipping
- Shower dipping
- Hand jetting.

Understanding your product's active ingredients

Chemical resistance is a huge threat to our industry. To preserve your chemicals, you need to understand what chemicals you are using and how you are using them. Here are a few tips to consider this season:

- Treat every animal on your farm.
- It is important to firstly weigh a representative portion (10%) of each mob and read all label instructions carefully to ensure that the correct dose rate is applied to each animal.
- Under-treating animals based on their body weight can result in lice surviving and the development of chemical resistance.

The most important thing to know is **what chemical group** you are treating with, not the brand name. It is important to read the label carefully and identify the chemical active you are using. Then **rotate** the chemical active group every time you treat.

Talk to your advisor about the lice treatment you wish to choose, to ensure that you are using a different active to what you

are using for your fly treatment this year. Remember the same actives can be found in lice and fly treatments. Using the same is the equivalent to not rotating active groups.

ROTATE THE CHEMICAL ACTIVE GROUP, NOT THE BRAND NAME!

NOTES:
Go to **www.liceboss.com.au/sheep-goats** and then select:

1. Tools >> Rubbing Tool
2. Preventing Lice >> Sheep lice Biosecurity can prevent introduction
3. Tools >> Ewe/Lamb Treatments Tool
4. Tools >> Long Wool Lice Tool
5. Treating >> Application methods

More information
www.liceboss.com.au

liceboss
Powered by ParaBoss

paraboss

Tap into best practice parasite management **www.paraboss.com.au**

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

Subscribe to the free ParaBoss e-newsletter updating you on the current state of sheep, goat and cattle parasites nationally, issues most pressing on-farm, and featured articles from veterinarians and consultants across the nation. Subscribe at **www.paraboss.com.au/subscriptions** and follow us on Facebook at **facebook.com/paraboss.com.au**

Sheep producers are also urged to seek out and use:

paraboss Certified Sheep Advisor ✓

ParaBoss-certified advisors: These advisors have completed the ParaBoss Certificate in Sheep Parasite Management and therefore have the skills and knowledge to apply, and provide advice to others about, effective integrated parasite management of sheep. The advisors are listed under the 'Training' tab on the ParaBoss website **www.paraboss.com.au**

paraboss WEC QA Certified 2021 ✓

ParaBoss-certified WEC QA service providers: These providers have demonstrated the accuracy and precision of their WEC services through the ParaBoss WEC QA program, so producers can be certain their worm control decisions are based on accurate results. A list of providers is available via the 'Find service providers and laboratories' link on the WormBoss website **www.wormboss.com.au/sheep-goats**

Effective residue management

underpins worker safety and market access

It is important that woolgrowers understand the regulatory limits of using chemical products on their sheep. Following the rules not only optimises the welfare of the sheep, it also maximises the safety of the operator, the health of the environment and the positive eco-credentials of Australian wool in the marketplace.

Woolgrowers rely on a range of animal health products to protect their sheep from internal and external parasites such as worms, lice and blowflies. One consequence of using chemical products is the potential presence of residues in body tissues and wool for a period after the product's application.

For all registered veterinary products in Australia, there are in place regulatory time periods following the chemical's application that indicate when the residue that remains in or on meat and wool products will not exceed the maximum residue limit (MRL).

The Australian Pesticides and Veterinary Medicines Authority (APVMA) sets MRLs for all registered veterinary chemicals in agricultural produce. To find out the time constraints, always read the product label or view the APVMA or ParaBoss websites (see the 'More information' section below).

The mandatory time constraints have been set to ensure lamb and sheep meat is safe to eat, wool and sheep are safe to handle, and wool scour effluent is safe for the environment.

What are the time constraints?

SHEEP REHANDLING INTERVAL (SRI)

The SRI is the time between treatment and when wool or sheep can be safely handled without the need for protective clothing. If an SRI is included on a product label, this must be observed to protect those handling the sheep or wool, and to protect the environment in the case of wool processing residues. For some products, the SRI is short, only requiring the product to become dry on the sheep.

MEAT WITHHOLDING PERIOD (WHP)

The meat WHP is the time from chemical application to when an animal may be slaughtered for domestic consumption. Although lice control and flystrike products are applied to the skin or wool of the sheep, the skin absorbs some of the product. The specified WHPs are in place to ensure no detectable levels of these chemicals are left in muscle, fat or other body tissues.

The wool withholding period is equivalent to the wool harvest interval (WHI), see below.

EXPORT SLAUGHTER INTERVAL (ESI)

In addition to the meat WHP, sheep producers need to be aware of the ESI. The ESI is the time from chemical application to when an animal may be slaughtered for export. Some products have a relatively long meat WHP or ESI. Take care when treating lambs to ensure this will not delay their planned sale.

A trade advice statement (such as an ESI) might not appear on labels of older registered veterinary products, however all new products now include a trade advice statement. If you cannot find the ESI on a product label, use the ParaBoss Products Search tool available on FlyBoss or LiceBoss (see 'More information' below).

WOOL HARVEST INTERVAL (WHI)

The WHI (equivalent to wool withholding period) is the time from application of a chemical to when the wool can be harvested (this includes crutching) to satisfy Australian environmental requirements. Most chemicals used to treat external parasites, such as sheep lice and sheep blowflies, bind to the wool grease rather than the fibre itself. The scouring process removes wool grease and most other contaminants at the same time, which can result in contaminated scour effluent and lanolin if the WHI is not adhered to.

Technology helping to ensure health and safety

Jo Bradley of Bradley Ag

Modern technology eases the burden of managing the handling, treatment and regulatory requirements regarding veterinary chemicals for the Bradley Ag team in the northern Midlands of Tasmania.

For Jo and Rob Bradley of Bradley Ag, the health and safety of their staff and their livestock underpin the success of their diverse mixed farming operation that includes a composite flock of 7,000 breeding ewes and lambs plus trading stock. With an annual turnover of more than 8,000 prime lambs and 22,000 kilograms of medium–broad wool, the Bradley Ag team is familiar with the potential hazards associated with handling a wide range of agricultural chemicals.

Ensuring their staff are aware of the risks and regulations associated with animal health products, such as vaccines, drenches, flystrike and lice treatments is a high priority and a key risk-management strategy within the business. In addition to managing the welfare of their staff and their livestock, rigorous policies and procedures surrounding the use and handling of these products combined with comprehensive record keeping supports the integrity of their sheep operation.

"We use Smartsheet software across the business to keep extensive agrichemical

You can estimate the pesticide residue levels on wool at shearing caused by lice or flystrike treatments by using the ParaBoss Wool Residue Tool on **www.flyboss.com.au/sheep-goats/tools/woolres-tool.php**

If a lice or fly treatment does not state a WHI or an SRI, then a default one-month period applies for mob treatments or for wound dressings. Flystrike treatments for individual sheep have a default withholding period of at least one month for wool.

BEST PRACTICE PRODUCT APPLICATION

To achieve the correct application of chemicals, woolgrowers should read product labels closely (and the material safety data sheet, if necessary) and take care with the preparation and dispensing of the product.

Equipment must be suitable and set up correctly. Ensure correct calibration of the delivery tools and apply the product to well-prepared and contained sheep. Operators must take time and care with every sheep.

To ensure the safety of the operator:

- Follow the safety direction on the label.
- Store chemicals correctly and securely.
- Wear protective gear.
- Carefully pour and mix chemicals.
- Have water, soap and towel ready to wash splashes off.
- Have clean-up equipment ready for spills.
- Wash hands before eating, drinking or smoking.
- Wash and store equipment straight after use.
- Change your clothes when you have finished chemical work.

More information

- Find the SRI, WHP, ESI and WHI for registered parasite treatment products using the ParaBoss Products Search tool, available at **www.flyboss.com.au/sheep-goats/treatment/products.php**
- APVMA website (Pesticides and veterinary residues) **https://apvma.gov.au/node/10806**
- APVMA PubCRIS database search (chemical registration information) **https://portal.apvma.gov.au/pubcris**

records," Jo explained.

"Along with all our staff we have the Smartsheet application on our mobile phones, so we can record the key details at the start of each sheep handling and treatment activity."

The types of data recorded include treatment date, mob details, product details (including batch numbers, expiry dates and all regulatory details, such as WHP, SRI and ESI).

According to Rob, the ease of entering information for every operator in the business is the best part of the system – particularly when it comes to recording product batch numbers.

"Long gone are the days of having to painstakingly enter product batch numbers," said Rob. "Now it is as simple as taking a photo with your smartphone and attaching the file to the treatment record in the app."

According to Jo and Rob, complying with the regulations surrounding WHP, sheep rehandling, wool harvesting and slaughter intervals is just part of running a responsible farming business. And modern technology is helping ensure their diverse range of enterprises runs smoothly.

Maintaining the reputation of Australian wool

Studies funded by AWI clearly show that the incidence of agricultural chemical residues in Australian greasy wool is very low. This is good news for the wool industry in its push to establish the fibre's positive eco-credentials amongst environmental rating agencies, governments, the textile trade and consumers.

Since 2001, AWI has sponsored an annual survey of a wide array of agricultural chemical residues in Australian greasy wool. AWI monitors residue levels to help minimise any harmful impacts of chemicals on farm workers as well as to ensure wool is suitable for sale into markets that are increasingly concerned about the provenance of their products, including chemical residues remaining on fibres.

The studies confirm favourably low and decreasing trends in residual pesticides remaining in Australian greasy wool. Tests have been carried for chemicals including Organophosphates (OPs), Organochlorines (OCs), Synthetic Pyrethroids (SPs) and specific Insect Growth Regulators (Diflubenzuron, Triflumuron and Dicyclanil).

Residues of the older chemical groups (OP and SP) have declined toward a mean (average) of near zero. In fact, the vast majority of sale lots do have actual zero or virtually zero residual pesticide.

"The studies funded by AWI demonstrate a proactive wool industry that is continually improving its environmental and safety performance," said AWI Program Manager, Fibre Advocacy & Eco Credentials, Angus Ireland.

"This body of work addresses any misconceptions that environmental apparel ratings agencies and the broader textile industry might have regarding toxicity in wool; these favourable results reflect careful management practices by farmers servicing the apparel wool industry, increasing confidence all along the supply chain."

Effective strategies can be applied by sheep and wool producers to minimise the impact of barber's pole worm and reduce the development of drench resistance.

Plan ahead for barber's pole worm control

After severe barber's pole worm outbreaks earlier in the year, many producers in eastern parts of Australia will be asking: is this the new normal, and how do we avoid these problems in the future?

Despite the spike in problems this year, the perfect storm of conditions for barber's pole worm typically occurs only every few years, and lasts for only a few months. But before barber's pole worm numbers start to rise in the spring months, it's time to plan ahead by following some basic steps:

- Recognise the signs of barber's pole worm disease
- Plan an annual preventative and monitoring program
- Manage drench resistance
- Seek informed advice.

Recognise barber's pole worm disease

It's important to recognise the signs of barber's pole worm disease, so outbreaks can be quickly confirmed and managed.

As barber's pole worms suck blood and large burdens can develop rapidly, sheep deaths often occur with little warning. Signs in live animals include anaemia (pale gums, skin and eye membranes), and weakness (collapsing when driven). When associated with factors such as the time of year, location and drenching history, experienced producers will suspect a barber's pole worm problem.

Impending or actual outbreaks can usually be confirmed by the extremely high worm egg counts, seen only with barber's pole worm. However, unless worm egg counts can be done immediately, a veterinarian can provide rapid confirmation and rule out other causes of sudden death.

Planning preventative control programs

As with all worms, long-term barber's pole control requires a planned annual program, aimed at preventing sheep losses while maintaining the effectiveness of a range of drenches.

KEEP BARBER'S POLE NUMBERS LOW AHEAD OF SEASONAL INCREASES

Barber's pole worm numbers should be kept as low as possible before the usual seasonal increases in spring and early summer, to prevent the multiplier effect of large worm

numbers early in the barber's pole season.

Minimising worm numbers in ewes is especially important, as their natural worm immunity decreases for some weeks during lactation (a temporary immunological change). As well as the risk of ewe deaths, the resulting contamination of pasture with worm eggs exposes their lambs to heavy barber's pole intake.

Experience over some years will indicate whether routine pre-lambing drenching is necessary in a particular location, but a preventative drench is often justified with relatively low counts. Lambs are especially worm-susceptible, and control programs should aim to keep burdens of all worm species low during the first year of life.

PREPARE LOW WORM PADDOCKS

Pasture movements to prevent sheep from grazing pastures with large numbers of worm larvae reduce the need for drenching, but must be practical to implement. Where options are limited, priority should be given to the most susceptible sheep classes (lactating ewes and young sheep).

The time that paddocks must be spelled before worm larvae will die off varies greatly between environment and seasons. This may be as little as two months in hot tropical zones to more than six months during temperate winter periods. In most cases, at least a three-month period is necessary for a worthwhile reduction in barber's pole larval numbers. Expert local knowledge is needed for an effective annual plan.

Options for spelling that also allow paddock utilisation include cropping, and swapping with mature cattle or sheep confirmed to have low worm egg counts. (WormBoss provides a good discussion.)

MONITOR WORM COUNTS

Monitoring worm egg counts of sheep during barber's pole worm risk periods is essential, given the potential for sudden and unpredicted outbreaks of barber's pole disease. Monitoring schedules vary with the location, season and sheep class, as well as the drenching and previous worm count history, but high-risk mobs may need checking every 3-4 weeks.

Worm control action for pre-emptive monitoring is indicated at much lower counts than for confirming barber's pole worm disease, as the aim is to minimise developing worm burdens and prevent heavy pasture contamination by worm eggs.

VACCINATION – A NEW OPTION

The barber's pole worm vaccine, Barbervax, has been especially useful in summer rainfall regions where frequent drenching is common and drench resistance a major limitation. It is given at approximately six-weekly intervals over the barber's pole worm risk period (typically five injections), and vaccination from mid-spring provides a significant reduction in worm egg counts over the major risk season. The effect of the vaccine may be reduced where sheep are exposed to heavy intake of barber's pole worms, but it has proved highly effective when supported by planned paddock management and monitoring of worm egg counts.

NUTRITION AND GENETICS FOR RESISTANCE AND RESILIENCE

However, sheep of all ages are susceptible to barber's pole worm and deaths may occur in all classes, but sheep in good nutritional condition are more resilient to its effects. The ability to minimise the adverse effects of all worm species is a further reason for maintaining sheep at Lifetime Wool-recommended body condition profiles.

However, resistance to worms is largely genetic, and worm-resistant sheep have been bred or introduced by many producers for some decades. The permanent reduction in susceptibility to worms (all species) is a sound long-term investment in barber's pole worm management.

Manage drench resistance

Drench resistance is a major impediment to barber's pole worm control and, with no new drenches revealed by drug companies to be under development, sustainable control programs should aim to reduce the reliance on drenching.

Resistance has been reported to all drenches and, although this now includes the newer products, it is especially advanced in the older types. As a general rule, combination products (two or more actives) are recommended, because they are more likely to be effective and multi-active resistance takes longer to develop.

Of particular note, drench resistance typically reduces the period of effectiveness of long-acting products. (These products have a specific resistance development risk and should be used with informed advice.)

The pattern of resistance varies greatly between properties, and without knowing the resistance situation on a particular farm, making drench choices is largely flying blind. Drench resistance tests (comparing several drenches at one time) are recommended at about two yearly intervals, but DrenchCheck provide a basic guide (see the 'Tests' section of WormBoss). Comparing average worm egg counts of a mob at the time of drenching and again 14 days later (from the paddock) will at least show any departure from full effectiveness.

Seek informed advice

The WormBoss website www.wormboss.com.au provides detailed information on planning for worm control programs, but input from local advisers and veterinarians is important to develop appropriate plans for individual properties, depending on the environment and the sheep management systems. Local advisers also provide guidance on worm monitoring schedules, and the interpretation of worm counts.

Access to informed advice has been boosted recently, as more people complete the ParaBoss Parasite Advisor's Certificate, and more worm egg counting service providers enrol in the ParaBoss Worm Egg Count Quality Assurance program (see page 17). B

Recordings of two recent one-hour webinars are available to view on the AWI website at **www.wool.com/parasites**. The recording from 30 May is an opportunity to hear from three of Australia's sheep worm experts, Dr Brown Besier, Dr Matt Playford and Ben Foster, about how to keep ahead of barber's pole worm by minimising worm risk on your property and using a combination of effective worm controls. The more recent webinar, held on 18 August and presented by Dr Brown Besier, details the strategies that can be applied to minimise the impact of barber's pole worm and reduce the development of drench resistance.

For the latest information about worms and best practice worm control at the farm level, head to WormBoss at **www.wormboss.com.au** The WormBoss website includes links to a worm control program developed for each specific region of Australia.

Genetic trends

Table 1 shows the recent Merino Breed MERINOSELECT genetic trends for a range of key traits. It shows that body weight, muscle, fleece weight, staple length, staple strength, scrotal circumference, weaning rate, wrinkle and the three indexes are all improving.

It is quite some achievement to make such gains across so many traits, while the number of animals recorded (both male and female) each drop is continuing to increase at about 5,500 animals per year, since 2000.

Individual ram breeders are making faster gains in specific traits by concentrating of fewer traits, collecting more data more often to improve the data reliability, and using elite sires in AI and ET programs.

These trends are for the whole Merino breed, but there are large differences between Merinos based on their micron. This is highlighted by grouping sires according to their fibre diameter ASBV and comparing the performance of these sires.

Sire performance according to micron ASBV ranges

Table 2 shows the performance of 1,748 MERINOSELECT sires with 2020 progeny that had Early Breech Wrinkle records, grouped into their fibre diameter ASBV ranges. For example:

- 260 sires had a fibre diameter ASBV from -2 to -3 averaging -2.4. They had an average +0.3 breech wrinkle ASBV, +0.1 breech cover, +18 adult fleece weight, -0.5 yearling fat, yearling weight of 4.4, 0.02 weaning rate, +161 Dual Purpose index and +168 for the Merino Production index.
- 185 sires had a fibre diameter ASBV from 0 to +1 averaging +0.4. They had an average -0.6 breech wrinkle ASBV -0.3 breech cover, +17 adult fleece weight, +0.9 yearling fat, yearling weight of 8.0, 0.15 weaning rate, +171 Dual Purpose index and +153 for the Merino Production index.

Low fibre diameter sires have higher wrinkle, dag and breech cover and it is why it will take longer in the lower diameter types to achieve the natural resistance to breech strike that higher diameter types have. This is due to the different breed types that have been used since the development of the Australian Merino to breed sheep targeted at a broad range of fibre diameter and wool-growing regions.

Table 1: Annual genetic trend of key MERINOSELECT ASBVs and animals recorded

Year of birth drop	Animals recorded	YWT kg	YFAT mm	YEMD mm	YGFW %	ACFW %	YFD micron	YDCV %
2000	44,331	0.1	0.0	0.1	1.1	3.1	-1.2	-0.1
2001	74,379	0.1	0.0	0.1	0.4	2.8	-1.3	-0.2
2002	78,836	0.5	0.1	0.2	0.3	2.5	-1.3	-0.3
2003	83,924	0.4	0.0	0.2	0.5	2.7	-1.3	-0.4
2004	73,912	0.8	0.1	0.3	0.6	2.7	-1.3	-0.4
2005	66,721	1.1	0.0	0.2	1.8	3.4	-1.3	-0.5
2006	63,023	1.4	0.1	0.2	2.5	4.1	-1.2	-0.6
2007	63,792	1.7	0.0	0.2	3.1	4.4	-1.2	-0.6
2008	67,946	1.9	0.1	0.3	4.0	5.2	-1.2	-0.6
2009	62,761	2.2	0.1	0.3	4.0	5.0	-1.2	-0.7
2010	70,027	2.5	0.1	0.4	5.1	6.2	-1.2	-0.6
2011	84,421	2.6	0.1	0.4	5.2	6.5	-1.1	-0.7
2012	99,428	2.8	0.1	0.3	5.7	7.2	-1.2	-0.7
2013	107,467	2.9	0.0	0.3	6.6	8.1	-1.1	-0.7
2014	116,769	3.0	0.0	0.3	7.2	8.6	-1.1	-0.7
2015	113,901	3.4	0.1	0.3	8.2	9.6	-1.1	-0.7
2016	121,105	3.6	0.1	0.4	8.6	9.9	-1.1	-0.7
2017	134,054	4.0	0.1	0.4	9.9	11.1	-1.1	-0.7
2018	136,114	4.1	0.1	0.4	10.4	11.6	-1.0	-0.7
2019	149,561	4.5	0.1	0.4	11.7	12.7	-1.0	-0.6
2020	156,611	4.8	0.1	0.5	12.6	13.4	-1.0	-0.7

Table 2: Average ASBV performance of Australian MERINOSELECT sires, with 2020 born progeny, by micron range – filtered for sires with EBWR records

ASBV micron range	YFD	No of Sires	EBWR	LDAG	EBCOV	YGFW	AGFW
<-3	-3.4	55	0.6	0	0.2	14	9
-2 to -3	-2.4	260	0.3	0	0.1	18	12
-1 to -2	-1.5	630	-0.1	0	0	18	12
0 to -1	-0.5	601	-0.4	-0.1	-0.2	18	11
1 to 0	0.4	185	-0.6	-0.2	-0.3	17	10
>1	1.3	17	-0.9	-0.1	-0.4	12	6
Tot/Ave	-1.1	1,748	-0.2	0	-0.1	18	11

The genetic trends and performance of sires by fibre diameter are averaged results. They do hide the performance of individual AI sires that can be significantly better than these averages.

MERINOSELECT percentiles

The MERINOSELECT percentile table shows that there is a broad range of Merino trait performance. **There are ram breeders trying to create and breed animals that have many of the top percentile trait attributes bundled up in an individual animal. Increasingly there are some AI sires that are getting close to having all the top 20 percentile trait attributes. There are leading AI sires that are pushing the boundaries for production and welfare traits.** B

More information

AWI Program Manager Genetics, Geoff Lindon geoff.lindon@wool.com

YCUR degrees	YSL mm	YSS N/Kt	YWEC %	YSC mm	WR lambs per ewe	EBWR score	EBCOV score	LDAG score	FP+ points	MP+ points	DP+ points
1.1	0.3	-0.7	4	0.0	0.00	-0.1	0.0	0.1	119	117	116
1.2	0.1	-0.6	2	0.0	0.01	-0.1	0.0	0.0	121	118	116
1.1	0.2	-0.6	2	0.1	0.01	-0.1	0.0	0.1	121	119	118
0.9	0.8	-0.3	-1	0.1	0.02	-0.1	-0.1	0.0	122	120	119
0.3	1.2	-0.4	-4	0.2	0.03	-0.1	-0.1	0.0	122	121	120
0.0	1.7	0.1	-3	0.2	0.03	-0.1	0.0	-0.1	124	123	123
-0.2	2.0	0.1	-5	0.3	0.03	-0.1	-0.1	0.0	125	125	124
0.0	2.3	0.1	-6	0.4	0.03	-0.1	0.0	0.0	126	126	126
-0.3	2.7	0.2	-6	0.4	0.04	-0.1	0.0	0.0	127	128	128
-0.4	2.9	0.4	-8	0.5	0.03	-0.1	-0.1	0.0	127	129	129
-1.3	3.8	0.2	-9	0.6	0.03	-0.1	-0.1	0.0	128	130	131
-1.8	4.3	0.3	-9	0.7	0.03	-0.1	-0.1	0.0	128	130	132
-1.9	4.5	0.3	-10	0.7	0.03	-0.1	-0.1	0.0	130	132	133
-2.2	4.8	0.4	-13	0.7	0.03	-0.1	-0.1	0.0	130	133	134
-2.5	5.1	0.4	-13	0.8	0.04	-0.1	-0.1	0.0	131	135	135
-2.8	5.4	0.5	-12	0.9	0.04	-0.1	-0.1	0.0	132	137	138
-3.0	5.5	0.5	-13	0.9	0.05	-0.1	-0.1	0.0	133	138	140
-3.5	6.0	0.4	-11	1.0	0.05	-0.2	-0.1	-0.1	135	141	143
-3.7	6.2	0.5	-13	1.1	0.06	-0.1	-0.1	-0.1	136	142	144
-4.1	6.6	0.5	-12	1.2	0.07	-0.2	-0.1	-0.1	137	145	148
-4.5	7.4	0.6	-12	1.3	0.09	-0.2	-0.1	-0.1	138	148	151

Source: Sheep Genetics, June 2022

YWT yearling body weight
YFAT yearling fat
YEMD yearling eye muscle depth
YGFW yearling greasy fleece weight
ACFW adult clean fleece weight
YFD yearling fibre diameter
YDCV yearling fibre diameter coefficient of variation
YCUR yearling curvature
YSL yearling staple length
YSS yearling staple strength
YWEC yearling worm egg count
YSC yearling scrotal circumference
WR weaning rate
EBWR early breech wrinkle
EBCOV early breech cover
LDAG late dag
FP+ fibre diameter plus
MP+ merino production plus
DP+ dual purpose plus

YCFW	ACFW	YDCV	YSS	YEMD	YFAT	YWT	YWEC	WR	DP+	MP+	FP+
16	13	-0.4	-1.3	-0.4	-0.5	1.5	-1	-0.02	155	167	166
20	18	-0.5	-1	-0.4	-0.5	4.4	7	0.02	161	168	159
21	18	-0.7	0	0.2	-0.1	6.1	1	0.06	164	163	150
21	17	-1	1.3	0.8	0.4	7	-9	0.11	167	158	143
21	17	-1.3	2.3	1.5	0.9	8	-13	0.15	171	153	134
17	13	-1.4	2.4	2.1	1.3	8.1	-20	0.12	159	134	117
21	17	-0.8	0.5	0.4	0.1	6.2	-3	0.08	165	161	147

Source: MERINOSELECT web search, run 7 June 2022

Table 3: Merino ASBV percentiles

Percentile Band	Yearling Fibre Diameter	Adult Clean Fleece Weight	Yearling Weight	Weaning Rate	Worm Egg Count	Early Breech Wrinkle	Late Dag	Early Breech Cover
Top 5%	-2.7	29	10	0.23	-54	-1.1	-0.4	-0.7
Top 20%	-1.8	22	8	0.15	-37	-0.7	-0.3	-0.4
Top 40%	-1.2	16	6	0.09	-22	-0.4	-0.1	-0.2
Top 60%	-0.8	11	5	0.05	-8	-0.1	-0.0	-0.0
Top 80%	-0.2	6	3	0.00	10	+0.3	+0.1	+0.2

Source: MERINOSELECT website July 2022

MLP – Cut-out at Balmoral

The first of the five Merino Lifetime Productivity sites has now cut-out with Victoria's Balmoral site completing its final shearing and data collection activities.

MLP
Merino Lifetime Productivity Project

MLP QUICK FACTS

The AWI-funded MLP project is a $13 million ($8 million from AWI plus $5 million from project partners), 10-year venture between AWI, the Australian Merino Sire Evaluation Association (AMSEA), nominating stud Merino breeders and site partners.

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

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

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

A unique and extensive dataset will result and be used to enhance existing Merino breeding and selection strategies, for both ram sellers and buyers, to deliver greater lifetime productivity and woolgrower returns.

Balmoral was the first MLP site and joined 25 different sires (to 90 ewes each) in 2015 and then again in 2016. The ewe progeny from these joinings were retained to assess their lifetime productivity. The MLP ewes were managed and assessed from their birth right through to March 2022 by Tuloona Pastoral (as the site host) in conjunction with the Balmoral Breeders Association.

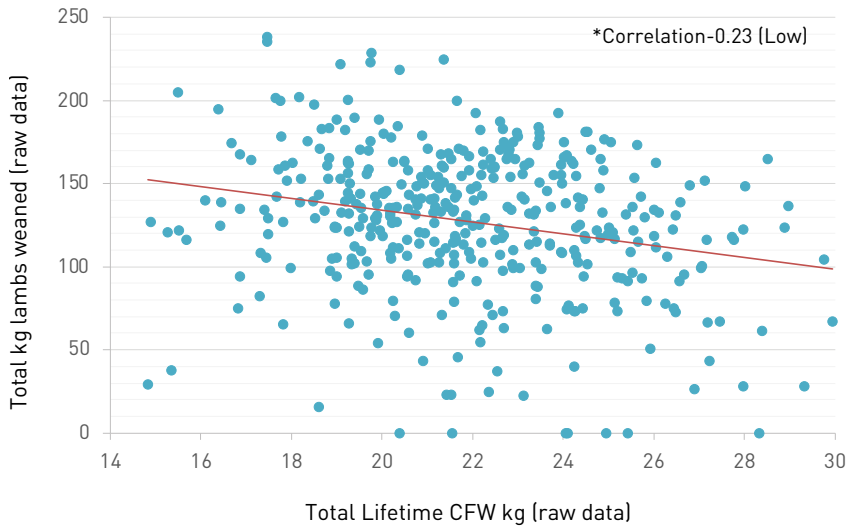
In March 2022, the 2015 drop MLP ewes were 6.5 years old and the 2016 drop were 5.5 years old. Their wool, classing, weight, carcase, disease resistance and reproduction results were collected each year. This has culminated in a lifetime dataset of seven shearings and five reproduction cycles for the 2015 drop, with just one less year for the 2016 drop.

The Balmoral 2015 drop MLP ewes just prior to their final classing, February 2022.

An insight into the extensiveness of the collected data can be seen by looking at the lifetime results of three traits: Clean Fleece Weight (CFW), Number of Lambs Weaned and lifetime average ewe joining weights.

When CFW for each of the 550 Balmoral 2015 drop ewes from a diverse range of sires is tallied for their lifetime, they range from 14.8kg to 30.0kg, a 15kg difference between the highest ewe and the lowest! That's across a late age micron range of 13.3 to 21.0 microns. Further work around the economics of fleece values and lambs weaned will be looked at during the project analysis. Figure 1 shows the ewe's lifetime CFW graphed against the total kilograms of lambs that they weaned (kg weaned).

Figure 1: Balmoral's MLP 2015 drop cumulative Clean Fleece Weight (CFW) and kilograms of lambs weaned results for each individual ewe (data type: raw data).



Each datapoint is an individual ewe, so there is an observable range in the ewes. There are just seven ewes who did not wean a lamb from any of their five lambings (resulting in zero kilograms weaned), yet there are other ewes who weaned upwards of 200kg of lambs – quite a difference. The low correlation of -0.23 within this dataset gives a preliminary observation that a higher lifetime CFW has a low association with less kilogram of lambs weaned at the individual ewe level. This preliminary data shows that there are plenty of individual ewes who can both cut wool and wean lambs, and plenty of ewes that do one better than the other and some that don't do well for both.

This range in performance is also observable when the total kilograms of lambs weaned is plotted against the average kilograms of ewe joined – see Figure 2. This raw data has a nil correlation.

Results from the 2016 Balmoral MLP ewes are very similar for CFW, Body Weight and Numbers of Lambs Weaned. There are many factors that impact CFW, Body Weight and Numbers of Lambs Weaned that will be accounted for in the full MLP analysis. This analysis work for the MLP has recently commenced, with the full analysis set to take place once the last site has collected all its data in 2024.

In the interim, some other within drop MLP data can be considered based on sire performance. In Figure 3, each bar represents a sire of the ewes in the Balmoral 2015 drop. The gradients show CFW from each shearing (P: Post weaning, A2: Adult 2, A3: Adult 3 and so on) cumulating into a lifetime CFW. A range of approximately 5kg is observed across the 25 sire groups.

Figure 2: Balmoral MLP Ewe results - 2015 drop kg lambs weaned / average kg ewe joined

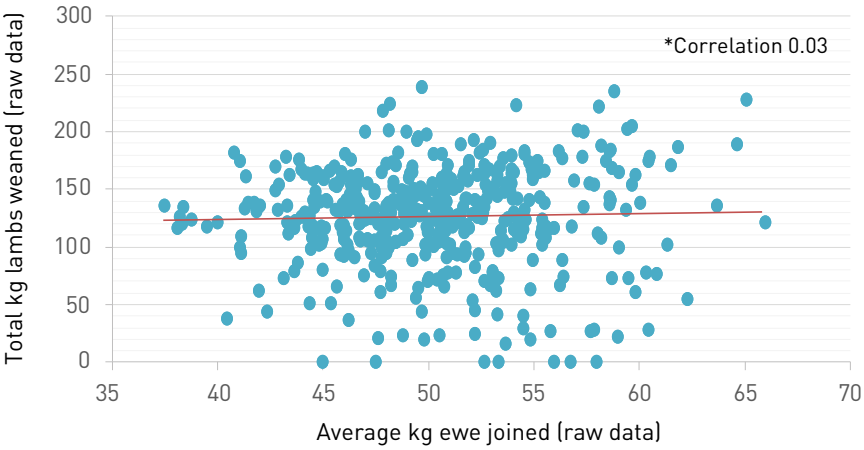


Figure 3: Balmoral's MLP 2015 drop cumulative Clean Fleece Weight (CFW) lifetime results grouped by sire (data type: raw data).

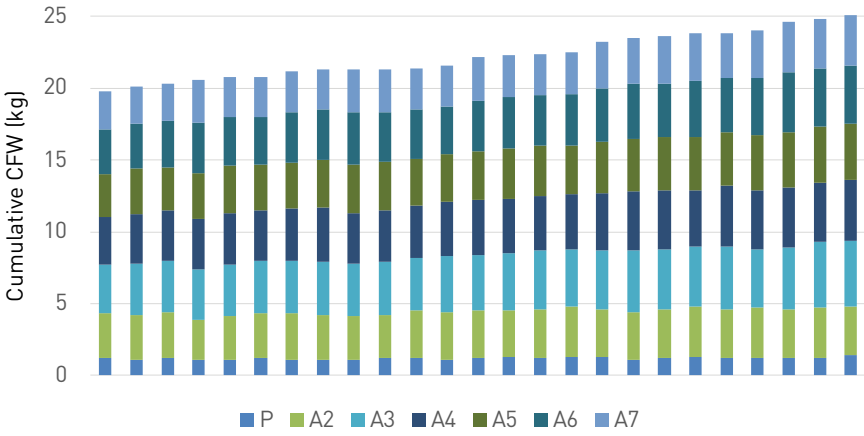
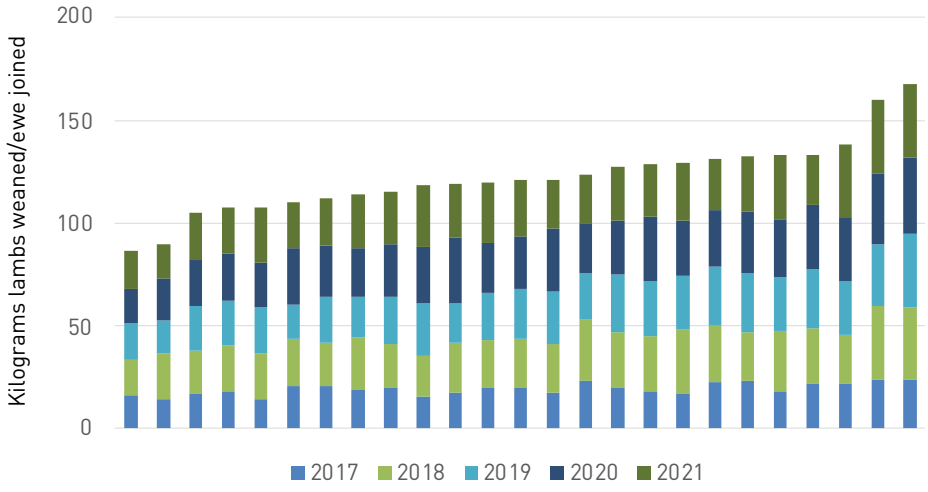


Figure 4: Balmoral's MLP 2015 drop cumulative kilograms of lambs weaned/ewe joined results grouped by sire (data type: raw data).



Then, in Figure 4, the cumulative kilograms of lambs weaned per ewe joined are presented as a total with each of the five lambings displayed as a different gradient on the bar. Figure 4 shows that over five years a range of approximately 85kgs can be observed between sires.

Again, the information shows a large range between sires and a key aim of the MLP is how can we predict lifetime performance as young as possible.

Sire results have been reported since 2015 and an update was presented at the final Balmoral Field Day which was part of the March 2022 Balmoral Field Day Bonanza when the MLP ewes were on display for the last time. This was a fabulous opportunity to inspect the ewes after a lifetime of production in their sire groups with these sire results.

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Balmoral's February 2022 **field day** and the **Balmoral Breeders committee.**

A number of other end-of-site activities were also completed for each of the Balmoral ewes including:

- collection of a late age stage DNA sample for future research use
- wool staple taken to create a wool library, these are to be stored in their sire groups
- development of a photo library including images of interesting ewes (eg highest lifetime wool cutters vs lowest).

As the Balmoral site ends, there is great excitement about these resources along with the extensive Balmoral dataset comprising of approximately 485,000 data points. This site data will be mined for localised information such as the impact of worm resistance on overall productivity. The within flock site data will then be readied to join the overall MLP dataset. Remember that there are a further four sites! The remaining four sites are scheduled to cut-out as follows:

- MerinoLink, Temora NSW - October 2022
- Pingelly WA - December 2022
- Macquarie, Trangie NSW - October 2023
- New England NSW - July 2024.

This means an eventual MLP dataset of approximately 1.9 million datapoints will be collected. To date, the MLP dataset is currently 90% complete with approx. 1.7 million datapoints in the system but with much of the crucial older age data still to come in.

In 2024, as the last site ends, an analysis of the full dataset will look to answer questions such as:

- How do we find the top 1% of rams at young ages to best drive genetic gain?
- What's the most effective way to select the top 1%?
- Do industry indexes correlate well with lifetime productivity and profitability, and how do we fine tune them?
- What are the genetic drivers of survival, given the observed large sire differences?
- What benefits are there for ram breeders to measure lifetime fleece performance and reproduction, or can they stop at, say, 2 or 4 years old?
- Can we better assess feed intake and feed efficiency to better predict return per hectare?

This analysis work can be viewed as providing the overlay which will complete the picture, filling in the knowledge gaps between the datapoints collected by the project. The analysis will look to generate outcomes that can be applied by industry.

Analysis outcomes will be published as they are developed. In addition, you can stay informed about MLP by attending one of the last field days (see right), visit **www.wool.com/MLP**, and subscribe to MLP updates via **www.merinosuperiorsires.com.au/contact-us**

MLP field days

Past field days

MACQUARIE 30 MARCH

Macquarie's site, hosted by NSW DPI, held a late March field day with the Macquarie Sire Evaluation Association welcoming 70+ attendees to the Trangie site. Both the 2017 and 2018 drops of MLP ewes were on display and a ½ day program focused on reproduction received very positive feedback from the enthusiastic crowd.

NEW ENGLAND 2 JUNE

The New England site, hosted by CSIRO, displayed both their 2017 and 2018 drops in early June with 70+ attendees answering the New England Sire Evaluation Association's invite. First up was the sheep display, then presentations on the MLP Add-Ons undertaken by CSIRO plus the first snippet of AGBU analysis work.

Upcoming FINAL field days

MERINOLINK 14 OCTOBER

FINAL display: 2016 and 2017 drop MLP ewes.
A field day focused on the MLP ewes! There will be plenty of time to inspect the ewes who will be displayed in their sire groups with corresponding results at the Moses & Son site host property. The day will have an associated industry dinner celebrating MerinoLink MLP highlights and some early MLP insights.

PINGELLY 21 OCTOBER

FINAL display: 2016 and 2017 drop MLP ewes.
The field day will reveal the results of early explanatory data analysis and compare early age assessment with lifetime performance.

Further information and registration details are available via **merinosuperiorsires.com.au/events**

Exclusion fencing to benefit northern NSW wool production

Some of the finest wool-growing country in the nation will soon benefit from an exclusion fence to protect livestock from wild dog predation on 110,000ha of grazing land in the Walcha region of northern NSW.

With $986,800 of Federal Government funding secured by Walcha Council, the project has delivered a 44km predator proof fence in the Moona-Winterbourne area to directly protect land owned by 150 landholders from wild dog attacks and aid with on-farm biodiversity.

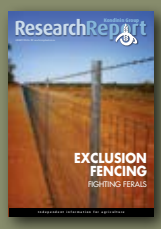
The fence was started in July 2020 using local contractors, injecting vital funds to help the region's recovery from drought and fire. Project management was provided in-kind by AWI, Local Land Services, NSW Department of Primary Industries, National Parks and Wildlife and landowners.

The **Moona-Winterbourne fence** will encourage local woolgrowers to increase their sheep numbers and other landholders to reintroduce sheep onto their properties.

Exclusion fencing booklets

Information and photos of successful exclusion fences are included in AWI's free 36-page Wild dog exclusion fencing: a practical guide for woolgrowers, which was published in 2017.

To complement the AWI guide, AWI also makes available the 14-page Kondinin Group Research Report Exclusion Fencing, Fighting Ferals, which was published in 2016.



More information
www.wool.com/exclusionfencing

AWI's North East NSW wild dog control coordinator Dave Worsley: "A well-maintained fence is a powerful tool to combat wild dogs."

Farm manager Tony Overton of 'Europambela' at Walcha: "We now have this fantastic asset for the community."

AWI's North East NSW wild dog control coordinator Dave Worsley, who led the project's scoping and stakeholder consultation activities, says the exclusion fence will give more landholders the opportunity to run sheep.

"Wild dog activity had been constant and the fence's completion will be a relief for landholders dealing with the psychological and financial stress of wild dogs," he said.

"A well-maintained fence is a powerful tool in the wild dog control tool kit, although it's important that landholders continue with their baiting and trapping as well as undertake maintenance of the fence.

"The new fence gives us the ability to target wild dogs tracking along the fence-line so we can be much more strategic in our control."

Dave says the whole regional community would benefit from the flow on effects of the new fence, with an expected $5 return for every $1 invested in the fence.

National Wild Dog Management Coordinator Greg Mifsud said the Moona-Winterbourne fence complements an existing 67km of non-continuous exclusion fencing on property boundaries affected by the 2020-21 bushfires.

"This provides a total of 111km of exclusion fencing along the escarpment, protecting sheep grazing properties from wild dogs that consistently disperse from the extensive public lands from the coast to the escarpment," he said.

"There are 11 properties on the newly erected section of fence but the combined 111km of fence will offer protection from wild dog incursions over a much larger area of the Northern Tablelands."

Tony Overton, who manages a large superfine operation at 'Europambela' which has experienced stock losses to wild dogs during the past two decades, was a driver behind the Moona-Winterbourne exclusion fence concept.

Tony says the exclusion fence is a good model for going forward in the high production country, as it gives producers options to diversify into small stock. It also reduces grazing pressure by kangaroos, increases biodiversity and generates employment for locals.

"We now have this fantastic asset for the community. Having someone checking the fence regularly and keeping that track open – it gives us eyes on the ground for pressure on the fence and an accessible fire trail," he said.

"It's not a single fix, we still need other strategies, trappers and baiting programs. It's good for agriculture, the environment and stops weeds and pests."

Walcha Council secured the $986,800 in round 2 of the Federal Government's *Communities Combating Pest and Weed Impacts During Drought Program – Biosecurity Management of Pests and Weeds.*

Walcha Shire Council Mayor Eric Noakes, who is himself a woolgrower and beef producer, paid tribute to Dave Worsley, AWI and Local Land Services for their contribution to the project.

"The in-kind support of so many organisations and farmers in this important project for Walcha will not only benefit them but also our local economy," he added.

Wild dog baiting benefits native wildlife

Aerial spring baiting campaigns are about to get under way across key locations across the country, aimed at reducing the impact of wild dogs on livestock and thereby supporting the livelihoods and emotional wellbeing of farmers and their families. However, an additional benefit is that the control programs also help conservation efforts for endangered native wildlife. 1080 remains the most target specific and environmentally safe toxin available.

Woolgrowers primarily undertake wild dog and fox baiting programs to minimise attacks on their flocks. It can be very effective when land managers use it as part of strategic, broadscale, coordinated control programs supported by other control methods such as trapping, fencing, shooting and guardian animals.

However, as well as reducing attacks on livestock, these control programs also have a positive environmental impact, reducing predation on Australia's native animal species.

When it comes to food, wild dogs are not fussy diners, they prey on 229 native animals including mammals, birds and reptiles of all sizes from insects to water buffalo. However, they prefer to eat small and medium-sized mammals when available, including native animals.

As a generalist predator, wild dogs can severely impact rare and threatened species under certain conditions. Wild dogs have been directly implicated in the rapid decline of some of Australia's most iconic species including 14 native mammals, reptiles and birds listed under the national *Environment Protection and Biodiversity Conservation Act 1999.*

In addition to direct predation, wild dogs carry hydatid worms (*Echinococcus granulosis*), a zoonotic disease (transmittable to humans) that has severe implications for native species, particularly macropods such as the rare Bridled Nail-tail wallaby thought to be extinct for most of the 20th century.

"Woolgrowers and other landholders undertaking wild dog and fox control programs can be rightly proud that they are not only protecting their flocks, their businesses and the wellbeing of their families and local communities, but that they are also helping native wildlife to survive and thrive," said AWI Program Manager Vertebrate Pests, Ian Evans.

"This is an additional way that the Australian wool industry can demonstrate its eco-credentials to the broader community and public and maintain its social licence."

1080 is an environmentally responsible control

- **1080 is a natural toxin found in many native Australian plants.**
- **1080 is highly target specific to wild dogs and foxes at regulated dose rates.**
- **1080 is biodegradable.**

Sodium fluoroacetate (1080) is the major control tool used to manage the impacts of wild dogs and foxes on Australia's livestock industry. It is an environmentally responsible option for invasive species control due to its minimal impact on native animals.

1080 is a naturally occurring toxin found in more than 30 species of native Australian plants. 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 such as wild dogs and foxes which are much more sensitive to the poison. The small amount required to target wild dogs and foxes poses a minimal risk to non-target species.

There have been many scientific studies which have considered the risks of 1080 poison on native wildlife populations, including 29 species of native birds, seven species of native reptiles and amphibians and 44 species of native mammals (including carnivorous marsupials such as the spotted-tailed quoll). All these studies have found that there is no threat from 1080 poison to populations of these wildlife species.

There is no threat from 1080 baiting to Australian native animal populations, including carnivorous marsupials such as the spotted-tailed quoll (pictured).

A 2008 study found that it is 100 times more likely to find spotted-tailed quolls in areas with long-term aerial and ground baiting for wild dogs and foxes. *PHOTO:* CraigRJD

The dosage used for wild dog and fox control is very low and therefore target specific. For example, a lace monitor (also known as a goanna) would have to ingest more than 71 wild dog meats baits in one sitting to ingest enough 1080 to kill it.

Another reason why 1080 is environmentally responsible is because it biodegrades quickly and is broken-down into harmless compounds by microorganisms and bacteria when exposed to soil and water, leaving no residual or harmful chemicals in the landscape.

1080 is approved for use in Australia through the Australian Pesticides and Veterinary Medicine Authority. All Australian states and territories endorse 1080 baiting as part of an integrated approach to pest animal management. 1080 is a restricted (S7) chemical product and can only be used and purchased by professionals; state and territory regulations manage the use and availability of 1080 baits to lower the risks to non-target species.

Answers to common questions about wild dogs and 1080 baiting are available on the PestSmart website at: www.pestsmart.org.au/toolkit-resource/wild-dogs-and-poison-baiting

More information

www.pestsmart.org.au
www.wilddogplan.org.au

Biosecurity on the front foot

Foot and mouth disease (FMD) represents the greatest disease threat to Australia's livestock industries and export markets. It has the potential for rapid and extensive spread, so it is important that the Australian livestock industry and individual producers are on the alert should an incursion happen to Australia.

Wool has the advantage over other commodities of being non-perishable and therefore able to be stockpiled. Notwithstanding this advantage, the wool industry's strong export orientation places it at significant risk should Australia face an outbreak of FMD.

Importing countries would immediately place a ban on imports of Australian wool and this ban would remain in place until each country's authorities were satisfied that the wool posed no threat to their national biosecurity.

How can farmers optimise their on-farm biosecurity?

There are various resources and support tools available to Australian livestock producers that they can add to their biosecurity tool kit. The FarmBiosecurity.com.au website offers several manuals, contacts and factsheets including a detailed EAD risk management manual (see below).

Early detection is critical if eradication is to be successful. If you see unusual signs of disease in your livestock call your vet or the Emergency Animal Disease Hotline on 1800 675 888.

Do not be complacent in relation to EADs; all have a role to play to keep our animals healthy and retain our favourable market access.

- Farm Biosecurity website: **www.farmbiosecurity.com.au**
- EAD risk management manual *Preparing your business to survive: Risk management planning for an emergency animal disease outbreak:* **www.farmbiosecurity.com.au/toolkit/plans-manuals**
- Australian Department of Agriculture, Fisheries and Forestry **www.agriculture.gov.au**

EMERGENCY ANIMAL DISEASE WATCH HOTLINE

1800 675 888

Call this government hotline (open 24 hours a day) if you have the slightest suspicion you might have an emergency animal disease present in your livestock

Industry biosecurity response plans in place

Australia's livestock industries are working collaboratively together with government to help ensure the threat of FMD entering Australia is minimised and does not happen. In addition, Australia has advanced surveillance systems, agreements and protocols in place to rapidly detect and respond to any FMD or other emergency animal disease (EAD) incursions.

AWI supports those representing the wool industry in their role as decision makers and spokespeople, in line with existing response plans such as those under the Emergency Animal Disease Response Agreement (EADRA) and the Australian Veterinary Emergency Plan (AUSVETPLAN), which are administered by Animal Health Australia.

- EADRA: **www.animalhealthaustralia.com.au/eadra**
- AUSVETPLAN: **www.animalhealthaustralia.com.au/ausvetplan**

WoolProducers Australia (WPA) is the wool industry signatory to the EADRA and has prescribed rights and responsibilities under that agreement. AWI holds reserves on behalf of the industry for use in the event of an EAD impacting wool.

AWI post-farm biosecurity R&D

AWI is a partner in the wool industry's Post-Farmgate Emergency Animal Disease Preparedness RD&E Strategy. The aim of this strategy is to further improve the level of EAD preparedness of the Australian wool industry in the event of an EAD incursion.

AWI has undertaken R&D focussed on addressing any post-farmgate gaps in Australia's ability to rapidly provide wool to the international market during and after an EAD outbreak. Activities have included, amongst others:

- AWI funding led to the development of a prototype 'bale sprayer'. A prototype device has been shown to allow the rapid disinfection of bales in stores. Fast construction of devices is possible from existing plans should the need arise.
- AWI funded research into temperature within wool bales in relation to the external temperature. This is significant as we know how long wool needs to be exposed to various temperatures to deactivate the FMD virus.
- Ensuring all plans, processes, procedures and other documentation that come into play during an EAD contain the most up-to-date information with the publication of a specific Wool Enterprise Manual as part of the AUSVETPLAN EAD response framework.
- AWI and Wool Industries Australia (WIA) have developed an online Biosecurity Risk Assessment Tool to assist post-farm wool handling facilities to identify the biosecurity strengths and weaknesses within their business.

Ag industry leaders inspect biosecurity measures at Sydney Airport

Leaders from Australia's livestock industries including AWI CEO John Roberts undertook a behind-the-scenes inspection of Sydney's International Airport on 10 August, hosted by the Australian Department of Agriculture, Fisheries and Forestry's Biosecurity and Compliance Group.

The delegation witnessed how travellers to and from countries such as Indonesia are exposed to more than 20 biosecurity touch points, enhancing the biosecurity wall protecting Australia from emergency animal diseases like FMD.

More information

www.wool.com/fmd
www.wool.com/biosecurity

PHOTO: Jason Edwards

How to better deal with **future drought and climate risks**

Are you looking for ways to make your farm business less vulnerable to drought and changing climate? DR.SAT is a new self-assessment tool for farmers to understand their own farm-scale resilience, see farm-level climate change projections and view satellite data for their farm. It is free to use and offers options tailored to your circumstances.

Farming communities have been dealing with drought, floods, fires and other changes in the climate for a long time. But with droughts and extreme weather predicted to become more frequent across much of Australia, it is clear farmers need forward thinking to keep their farms, land and communities thriving.

There are lots of things farmers can do to ensure they are prepared for drought. There are many examples of farmers who have been able to stay more productive, and recover faster, following drought because of the way they manage their land and natural resources. On the environmental front, managing groundcover, water flow, soil carbon and moisture, and switching to alternative fodder and crops, as well as various grazing and cropping strategies are some of the options.

But the first step is making sure you've got the right information so you can make the right decisions. DR.SAT (which stands for Drought Resilience Self-Assessment Tool) is a free online tool now available to support farmers in better decision-making.

Using **DR.SAT** to assess groundcover on a property on two different dates – which can help you assess how your land is changing over time.

DR.SAT is funded through the Australian Government's Future Drought Fund. It's the first of its kind, combining satellite data at a farm-level, with trustworthy farm-level climate projections, and the ability for farmers to 'sense check' their level of resilience and get tailored options that can help them better prepare for future drought and climate risks.

By logging on at www.drsat.com.au, you'll be able to explore this free tool and have:

1. the ability to input details about your farm and see satellite images of historic and current condition, including ground vegetation, surface moisture and land surface temperature specific to your farm (updated roughly every six days).
2. climate projections for your property and region for 2030 and 2050.
3. simple questions about your land condition, financial, physical and mental wellbeing to assess your resilience, including options for the future with links to resources to support in building your resilience.

DR.SAT was developed with farmers, for farmers and it taps into expert advice from industry bodies, farm business advisors and others. It uses climate data from Climate Services for Agriculture (CSA) a joint initiative of the Bureau of Meteorology and the CSIRO.

> "The bird's eye view stuff – now that's a really neat tool."
> **Livestock and grains farmer, Northern NSW**

Since the first release of DR.SAT in December 2021, the tool has evolved from a focus on cattle grazing and dry land cropping to now include commodities such as sheep, wool, dairy, citrus and temperate fruits.

DR.SAT can be used by all Australian farmers, but provides deeper insights in specific regions and commodities. For sheep producers (both meat and wool) in Condamine and the Northern Tablelands of NSW, the Victorian Mallee and the WA Sheep Wheatbelt for sheep, you can get specific insights to build your environmental resilience. This will expand to national coverage at the end of 2022.

To contribute ideas, feedback or if you have any questions about the tool, reach out to the DR.SAT Help Desk at help@drsat.com.au

More information

www.drsat.com.au

DR.SAT

ASSESS YOUR FARM'S RESILIENCE WITH DR.SAT

- Simple surveys to assess resilience
- Satellite images (roughly) every 6 days
- Climate projections for your farm
- Options and links to resources

www.drsat.com.au

Plan now for **grazing stubbles**

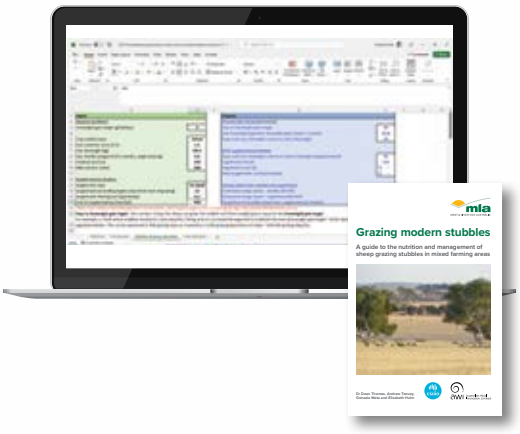
In many mixed farming areas of southern Australia, crop stubbles play an important part in feeding sheep flocks during summer. Now, prior to harvest, is the time to plan which classes of stock you will graze on stubbles and what supplement you will provide them with if they need it.

Grazing stubbles is an important component of many mixed farming systems and can be a valuable source of feed for livestock over the summer months to fill feed gaps, provided careful feed budgeting, monitoring and grazing management is in place. In a wool production system, being able to fill feed gaps to prevent breaks in the fibre and prepare ewes for joining is essential. Grazing stubbles can also allow pasture paddocks to be spelled during summer.

The main feed value of stubbles is in the spilt or unharvested grain. However, the efficiency of harvesting crops has improved in past decades and this has resulted in stubbles with less grain. Furthermore, other factors such as new crop cultivars have affected the nutritional value of modern crop stubbles.

To help sheep producers work out how to get the most out of their stubbles, the *Grazing modern stubbles* guide (updated in November 2021) provides the latest information and tips on the nutrition and management of sheep grazing modern stubbles and chaff piles. The guide is a result of a project undertaken by CSIRO, with funding from AWI and MLA.

A *Stubble Grazing Calculator* is also available to help producers estimate the number of grazing days for *adult* sheep on wheat stubbles, based on the level and timing of supplementary feeding required in each individual scenario. Example scenarios are included in the calculator. The calculator is not suitable for estimating *weaner* performance due to their high requirement of protein for growth (relative to adult sheep).



Grazing stubbles in the feedbase

Sheep grazing stubbles are highly selective and prioritise eating the high feed-quality spilled grains and any green pick when these components are available. Leaves and fine stems are low quality but generally edible, while ripe wheat stems are poorly digestible.

How the farmer prioritises the stubbles for grazing will depend on the type/class of livestock. Ewe lambs should be given access to the highest quality stubbles, followed by ewes that are pregnant or in preparation for joining. Older or dry ewes are grazed on lower quality stubbles, such as those that have already been grazed or wheat and canola stubbles.

Adequate nutrition is paramount for all animals, so supplementary feeding could be required. In particular, producers should aim for any pregnant ewes to have a condition score of at least three at lambing to minimise mortality and optimise wool and meat production of their ewes and lambs.

Supplementary feeding can extend grazing of stubbles, both by helping reduce weight loss as stubbles become depleted and increasing the utilisation of low-quality stubble forage.

The provision of high protein supplements, such as lupins and peas, will help ensure sheep meet their protein requirements when grazing cereal stubbles, which have a low protein content. This is particularly important for young, growing sheep, which have higher protein requirements.

Sheep grazing stubbles will also eat mineral mixes, which can improve their nutrition.

The *Grazing modern stubbles* guide shows the nutritive value of a range of grain, hay and chaff, compared with the requirements of sheep for maintenance.

Other considerations when grazing stubbles

Ensure a decent **water supply** because stubble is a dry feed with typically less than 10% moisture content. A single sheep will require at least 3-5 litres/day when grazing stubbles, but more if it is provided a salt supplement or the paddock contains saltbush.

Sheep, and particularly lambs, that do not have access to green feed should be supplemented (drenched or injected) with **Vitamin E** to avoid white muscle disease. Alternatively, adjacent areas of perennial grasses and shrubs can provide a useful source of Vitamin E.

If sheep are being introduced to grain, introduce it slowly to avoid **acidosis** which can kill sheep. Alternatively, start by grazing barley or lupin stubbles prior to being moved to wheat stubbles.

Take steps to ensure sheep are not exposed to **toxins** when grazing lupin stubbles or annual ryegrass.

Grazing benefits cropping enterprises, too

As well as filling the summer feed gap, grazing stubbles has advantages for the cropping side of a mixed business, including:

- Reducing summer weed numbers
- Ability to spray graze weeds meaning lower chemical spend
- Knocking down chaff piles so they can be seeded through
- Grazing chaff lines so they break down more quickly, and
- Recycling nutrients to benefit the following crop.

More information

Download the *Grazing modern stubbles* guide (PDF) and the *Stubble Grazing Calculator* (Excel) at **www.wool.com/stubbles**

Sheep grazing on wheat stubble near Clare, South Australia.
PHOTO: Australian Scenics

Two iconic Merino studs, one owner

George and Sophie Millington purchased the Collinsville Merino Stud in 2014 and have followed that with the purchase of the East Bungaree Merino Stud in late 2020. Combined they sold 2,500 rams last year to be Australia's largest ram seller.

Sophie and George Millington

The two iconic Merino studs date back to early times in the history of the South Australian Merino, from the 1840s with the original Bungaree Stud and 1895 for the foundation of the Collinsville Merino Stud. Both are steeped in the early development of pastoral South Australia and the State itself; ram buyers for many decades have liked one or the other but rarely both, such are the distinct attributes of both studs.

While fully appreciative of the past, George and family are driven to breed a modern profitable Merino that are still true to the type and country they suit.

"I love being involved in an enterprise that produces such a lovely, natural and renewable product that is wool; it is such a great fibre. The natural, thermal and water resistant properties make it a fibre for the modern world," George said.

The 14,000 Collinsville Stud ewes and 3,500 East Bungaree Stud ewes, along with 2,000 commercial ewes, are spread out on three properties, from 'Collinsville Station' in 225mm rainfall country, the Hallett aggregation in 400mm country, to 'Kadlunga' in 550mm country.

"Ram buyers like buying rams that have been raised in similar country to their own. What works for us will work for our clients," George said.

"Our breeding objective is an unwavering focus to breed a profitable 20-micron Merino: heavy cutting, white, soft handling fleeces coupled with excellent conformation and constitution with early growth and fertility and carcass attributes.

"To achieve this, we electronically tag every lamb in order to track each animal's profitability over its lifetime. We take weaning and 300-day weights, fleece records and carcase traits, and record joining, pregnancy scanning and lambing outcomes. Young rams have a five-month objective fleece assessment and the ewes a five-month and seven-month assessment. We do not use a chemical preventative fly treatment on breeding ewes in order to identify easy care genetics.

"We then match this data with all the clues that visual classing provides to build structural correctness and constitution into a modern profitable Merino. Good husbandry, tight lambings, keen visual classing with our key traits being highly heritable combined with raw data progeny tests, optimise our breeding objective progress."

Around 1,500 lambs have sire and dam pedigrees while nearly all animals have sire pedigrees that are in part assisted by pedigree DNA. Natural joining of ewes occurs twice per year, for six weeks in May/June and six weeks in August/September.

"On the back of some less than ideal AI results, we have restricted AI to 750 ewes per year but we have increased ET to twice per year with 20 to 30 separate donors flushed to lamb in May and September.

"East Bungaree is now 75% poll Merinos and Collinsville 95% poll. Both studs are plainer than they were 10 years ago and this trend will continue but we are very keen to keep our heavy wool cutting early growth attributes. Most of our clients are keen to keep their commercial ewes' average adult weight max at 80 kgs or slightly less.

"It sounds like a high ram culling rate, selling 2,500 rams from 17,500 ewes but cull ram lambs are sold at a small discount to wethers over the hooks just before they cut their teeth; we get good progeny test data and our ram buyers buy from a highly selected group of stud and flock rams.

"Like any sizable operation, we believe team work is the key to success, from General Manager Tim Dalla and his crew, East Bungaree Classer Tony Brooks and Collinsville Stud Consultant Michael Elms. Thanks go to the previous owners of these two iconic studs who were keen to keep them intact and have trusted us with them. Sophie's and my role is to keep them going for as long as possible, acting as the custodian of the studs and the land they run on, for future generations."

Woolgrower **Alistair Lade** used technology and genetics to reduce the average micron of his flock from 19.5 down to 15.5 in just eight years.

A focus on wool-growing set in stone: past, present and future

Reflecting his family's long history of farming at Highland in central Victoria, fourth generation sheep producer Alistair Lade takes a long-term approach to wool-growing. As well as undertaking exceptional land management and animal welfare practices, Alistair's focus on technology and genetics has enabled him to select sheep that grow high quality ultrafine Merino wool in a free-range environment.

On the side of road on the southern end of the Strathbogie Ranges in central Victoria appears a strange but somehow familiar monument. Six granite, human-sized obelisks stand to attention in a circle, a symbol of understated meaning. It is a sight that we associate with the windswept plains of ancient Celtic lands, but the characters in this scene are distinctly local in both geology and genealogy.

The monument stands as a tribute to the six original farming families of the district who came here from those far away wind-swept lands in the 1880s. Four of the six are still farming in the area, one of which is the Lade family who have mastered the difficult job of ultrafine wool-growing. But it has taken four generations, various industry collapses, droughts, disasters, and endless hard work to get there.

The simple but striking monument was an idea sparked by Alistair Lade and is typical of his appreciation of local history, connection to the past as well as a practical-yet-innovative approach to life.

Growing high quality ultrafine Merino wool in a free-range environment is extremely difficult and something very few do well. It requires a focussed long-term dedication to a combination of genetics, nutrition and working in unison with a highly variable climate.

'Glenrannoch' is a 1000-hectare property of relatively high rainfall of 800mm. The family has been officially measuring rain since 1915 so the love of measurement comes with the surname. The farm sits 650m above sea level with deep sandy loam soils, cold winters and hot summers with a temperature range between -3 and 40 degrees Celsius: a temperature range where Merino wool has evolved to protect and insulate its wearer; either four legs or two.

The property is home to 10,000 Merino sheep, the genetics and production of which have been honed through many generations of painstaking measurement and care. While micron testing individual sheep is popular now, Alistair began doing so back in the 2000s. He secured the services of the latest CSIRO Laserscan technology to help him reduce the average micron of his flock from 19.5 down to 15.5 in just eight years, which was a staggering effort when combined with the consistent staple strength of between 36 and 45 N/Kt. While individually tagging each animal, he could see how some were producing a $30 fleece and others were producing a $150 fleece and both costing the same amount to run. It was a simple but innovative way to increase the productivity of his flock.

> "We're shearing 10,000 sheep a year and all our bales, bar one, are under 16 microns, all grown on highly nutritious improved pastures."
>
> **Alistair Lade**

Changing the time of lambing from autumn to spring to better match the animal's need for energy with the natural production of pasture, and changing the time of shearing from spring to autumn to best support staple strength, are examples of Alistair moving the timing of major farming events. From 2003 to 2006, he placed coats on sheep to best protect the fibre from the elements, but alas the market did not reward this huge effort.

Dedicating so much time to improving the genetics and production of the flock took commitment and faith because, through these years, reward was not always offered to high quality wool production or even wool production for that matter. However, Alistair's long-term view is to stick to a task and do it well and, with consumer and producer now closer together than ever, the time has come to recognise and reward this going the extra mile.

Commitment to a long-term goal is also clear to see on the property itself with the fencing off of 140 hectares of native bush and waterways, protecting riparian zones, fencing to soil type and therefore land use capability, a high-quality timber plantation and clever use of laneways to make movement of stock as efficient as possible. Deep rooting perennial pasture species such as phalaris and cocksfoot combined with rotational grazing makes the best use of rain when it falls and allows for the resting and regeneration of pastures and keeping vegetative cover through dry times. This management also allows for best practice animal health and welfare when it comes to issues such as worm control.

Alistair's mother, Peg, fostered a love of nature in him and with this has come a lot of native revegetation over the years, often associated with local Landcare programs. More than 130 species of birds are now seen on 'Glenrannoch' and, as custodians of the land, each generation of the family hopes to leave the property in a better state than they found it: a very practical measure of sustainability that most farmers use.

His management of animal welfare and treatments is timely, effective and well documented. All this has been taken into account with the latest management software keeping close records of stock treatments and movements. This is an

"I think that there's some really interesting and exciting new wool products on the market – such as next to skin apparel, activewear and casual garments – so I think there's a really good future for wool despite the fact that we've only got a very small proportion of the textile industry."
Alistair Lade

Alistair's Merino sheep grow high quality ultrafine wool in a free-range environment on his **'Glenrannoch'** property at Highlands.

example of the modern way farming is using traceability, and potentially blockchain into the future, to keep not only keep in touch with but ahead of consumer expectations.

"I am very optimistic about the future of Merino wool given what we have built because wool fits perfectly with what the world wants these days: a natural, renewable, biodegradable fibre simply grown with a combination of these great animals and the sun, earth and water they live with on this farm," Alistair said.

Having hosted many processors, retailers and brands from Italy, Japan, Korea, Canada and the US over the years, the Lades are well aware of what modern farming requires of them. Alistair has been involved with many farming and research groups that have been connected to supply chains and quality assurance schemes in the past. However, with the digital age now making data flow and transfer so effortless, the dawn has finally arrived on an age where traceability and transparency in production is rewarded by those who benefit from it further along the supply chain.

Alistair and Paula intend to live at 'Glenrannoch' for many years to come but are pleased that both son Elliot and daughter Isabel share a deep love of the land and of wool and hope the fifth generation of Lades will take the reins. Either way, the current generation has left a lasting and positive legacy on this very beautiful part of southern Australia, a legacy befitting the simple stone monument that marks their territory here.

"With the strain of sheep and consistency of product we've developed, we can as good as say we're going to produce 32,000 tons of certain specifications five years ahead no matter what the climatic conditions, which is surely worth a lot to a processor or a brand that is seeking out quality."
Alistair Lade

More information

Hear more about how Alistair Lade created his ultrafine flock and his approach to marketing his clip in Episode 219 of AWI's The Yarn podcast available at **www.wool.com/podcast**

Alistair Lade features in a new marketing campaign titled 'Merino Wool - Made by Nature' launched by Italian spinner Zegna Baruffa Lane Borgosesia and The Woolmark Company – see page 47.

Alistair has a keen interest in the end market for wool. He is pictured here with his daughter **Isabel** (left) in 2019 hosting a delegation from North American brands **GAP** and **Lululemon**.

Alistair at the stone circle comprising **six granite obelisks** that were erected in 1982 as a tribute to the **six original farming families of the Highlands District** in central Victoria, one being the Lade family.

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Hands-on stockmanship training

The 15 young participants and volunteer trainers at T.A. Field Estates' 'Wyvern Station' at Carrathool which hosted three days of training.

With the support of AWI, the Hay Inc Rural Education Program in the Hay district of NSW continues to help young people gain hands-on agricultural skills, wool harvesting training and experience.

The 15 young participants in the 2022 Hay Inc Rural Education Program came together in June for their third and final training week, which was followed by their graduation at the Hay Merino Sheep Show at which they were presented with their certificates by AWI Director, Michelle Humphries.

The Hay Inc Rural Education Program was launched in 2014 with support from AWI in response to concerns about the decline in the traditional jackaroo/jillaroo system in the western Riverina district of NSW and the associated lack of stockmanship and other essential rural skills being handed down to the younger generation.

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

"The 2022 cohort of the program were a great group, very keen to learn as much as they could from the wealth of knowledge that all the trainers delivered over the 15-day program."
Richard Cannon, Hay Inc Chairperson

"The program is delivered by trainers who have many years of experience on extensive rural properties, covering topics based around the production calendar for sheep, wool production and cattle."

Applications for the 2023 training program are now open. Employers can send their employees on the program or other interested young people can apply directly. Applicants can be from anywhere and do not have to be from the Hay district. Scholarships for graduates of the program are also available.

Practical hands-on training

The Hay Inc program is a three-week course, in three blocks of five days' training, this year in February, March and June.

Topics covered include sheep handling and yard work, shearing and wool shed management, sheep health and nutrition, lamb marking, Merino sheep classing, sheep pregnancy scanning and lamb postmortems. Other topics included working dog training, livestock water maintenance, fence construction and maintenance, farm health and safety, quad bike and motorbike operation and maintenance, natural resource management and plant identification.

AWI has supported the Hay Inc program each year since its inception and will be supporting the 2023 program. The application form for those aged 18 to 25 years is available on the Hay Inc website.

"Our funding in programs like this aims to help improve the engagement of young people interested in the wool industry, thereby developing and retaining the skills the wool industry needs to be innovative in response to new challenges," said AWI CEO John Roberts.

More information

HAYINC. RURAL EDUCATION

2023 RURAL EDUCATION PROGRAM APPLICATIONS NOW OPEN

WWW.HAYINC.COM.AU

Shearing and wool shed management training was run by AWI shearer trainers **Brian Sullivan** and **Mike Pora** at Paraway Pastoral's 'Steam Plains' property near Conargo.

Peter McCrabb at his property 'North Bundy' assisting with the live lamb assessment training – which was presented by **Geoff Duddy** of Sheep Solutions along with assistance also from **Chris Bowman** and AWI's **Stuart Hodgson.**

2022 program graduates **Lachie Nolan** and **Jaime Balzke** at the Hay Merino Sheep Show. Jaime was the winner of the Don McNeil Memorial Youth Merino Sheep Judging. When Jaime started the Hay Inc program in February she was working as a vet nurse in Lithgow, but from her Hay Inc training she has now secured a job as a livestock jillaroo at Egelabra Merino Stud at Warren. *PHOTO:* Mads Porter Photography

The participants at the 2022 Breeding Leadership course at Clare in South Australia, pictured at the historic shearing shed at Anlaby near Kapunda in South Australia.

Future leaders' optimism for wool

AWI held a five-day professional development course in June for 19 enthusiastic young people working in the wool industry – the industry's next generation of leaders.

The future of the wool industry is in good hands judging by the latest group of Breeding Leadership participants.

19 wool industry representatives from across the country participated in AWI's Breeding Leadership 2022 course. Held every two years, Breeding Leadership arms the young participants, selected from throughout the wool industry, with the skills and tools to become better leaders.

The program develops skills and knowledge in personal leadership as well as strategic planning and team leadership. It also provides an excellent opportunity for participants to network with other like-minded people from across Australia, as well as the skilled program deliverers and others from the wool industry.

Now in its ninth year, the five-day course has helped progress the careers of 197 young people within the wool industry, many of which hold leading wool roles today.

The course this year was held at Clare in South Australia. AWI CEO, John Roberts, addressed the group and was impressed by the keen interest in all levels of the industry displayed by those present.

"These young people are the future of our industry and are so important. I really enjoyed meeting the Breeding Leadership 2022 cohort and can't wait to see what they do next," he said.

The group toured several wool-focused businesses: Michell Wool in Adelaide, Anlaby Station near Kapunda, Mulloorie Merino & Poll Merino Stud at Brinkworth and Leahcim Poll Merino Stud at Snowtown, gaining valuable insights into their vision and business strategies.

The course was well received by participants, who gave it an overall average value of 4.94 out of 5.

Funded by AWI and delivered by Pinion Advisory, Breeding Leadership forms a key part of AWI's commitment to education in the wool industry. Other initiatives include support for the Hay Inc Rural Education Program (see previous page), Science and Innovation Awards for Young People in Agriculture, Nuffield Scholarship and Horizon Scholarship, to name a few.

2022 BREEDING LEADERSHIP PARTICIPANTS

NEW SOUTH WALES	
Katie Austin	Armidale
James Best	Gulargambone
Jackie Chapman	Cowra
Dione Howard	Wagga Wagga
George Lehmann	Junee
Matthew Martin	Mullengandra
Alec Merriman	Boorowa
SOUTH AUSTRALIA	
Shannon Donoghue	Naracoorte
Declan Harvey	Narrung
Genevieve Kelly	Minlaton
Monica Ley	Coonalpyn
Kara Murphy	Pinnaroo
Tom Taheny	Coonawarra
VICTORIA	
Katherine Bain	Stockyard Hill
Nicole Davies	Bendigo
Jack Kennedy	Dunkeld
Alexander Lewis	Redesdale
WESTERN AUSTRALIA	
Bridgitte Brooks	Yuna
Bridget Pullella	Northampton

"It was great meeting a great group of people who are excited about the wool industry. It put a spark in me to get stuck in!"
Jack Kennedy, Dunkeld, Victoria

"It was a fantastic week, learning about strategy and policy to make it clear to everyone in the business. The wool industry is in safe hands with this group coming through."
Bridgitte Brooks, Yuna, WA

"I enjoyed the farm visits and seeing how they value-add their businesses. It is really promoting the wool industry but starting from within."
Alec Merriman, Boorowa, NSW

Australian Wool Innovation Limited

AWI WORKING TO INCREASE THE DEMAND FOR AUSTRALIAN WOOL

LOCAL BY DECJUBA.
Local wool. Locally made.

Australian women's clothing brand DECJUBA has partnered with ABMT, a fabric and garment manufacturer based in Melbourne, to create a 100% Australian Merino wool collection of Woolmark-certified garments. See page 50 for details.

Aussie wool promoted in new Aussie campaign

AWI's marketing arm The Woolmark Company last month launched a campaign reminding Aussies that the world's best Merino wool is produced in Australia – and urged them to support their wool industry and shop for Australian wool products.

The new campaign aims to instil a strong sense of pride amongst all Australians living in both regional and metropolitan areas, and highlights Australian wool as one of our cleanest, greenest exports.

The campaign also reminds the tens of thousands of Australian woolgrowers that their passion and livelihood is an integral part of Australia's economy. Despite droughts, fires, floods and a global health pandemic, woolgrowers' ingenuity and resilience ensure they continue to produce an export that is in demand by brands looking for a premium natural fibre.

"Wool used to dominate the performance sector in the 1950s, but was replaced by cheaper, synthetic alternatives in the 60s," said AWI CEO John Roberts. "Yet no other fibre – natural or man-made – can mimic all of Merino wool's innate performance abilities including breathability, thermoregulation and moisture wicking properties.

"We want to remind Australians to go out and support their industry by choosing Australian Merino wool products. The Australian woolgrower is the unsung hero of the sustainable fashion and sports movement, and we are seeing an increase in demand for Australian Merino wool as brands transition towards more sustainable and circular products."

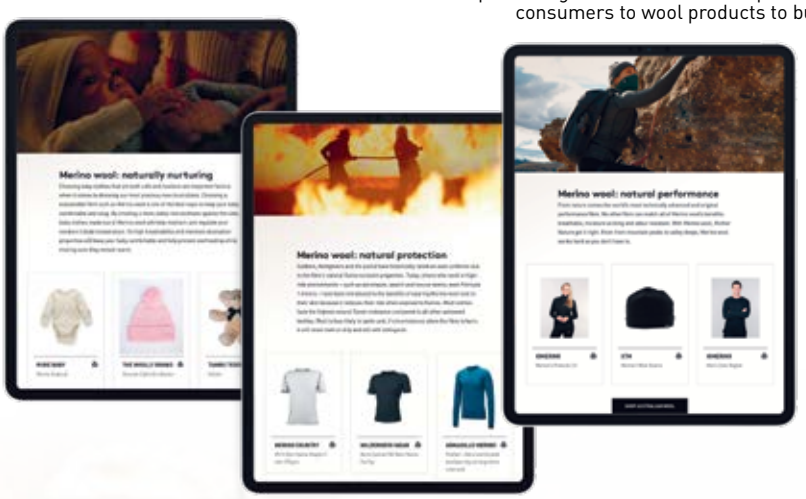
Campaign components

The marketing campaign, titled *What does it take?*, was launched on 22 August and will run through to the end of September.
The campaign includes:

- **30-second hero video** (see opposite page) that is being rolled out to rural and metropolitan audiences via a digital and free to air **TV campaign** on the Channel 10 and 9 rural networks, as well as social media.
- **Social media campaign** on Instagram and Facebook, comprising a series of shorter video clips with fast facts about wool.
- **Radio campaign** promoting wool to sports fans on the Sports Entertainment Network.
- **Electronic direct mail** campaign to consumer and woolgrower audiences.
- **Campaign webpage** on the popular Woolmark.com website.

A key part of the campaign is to drive audiences to the Shop on Woolmark.com, thereby directly increasing sales of wool product. Head to www.woolmark.com/the-wool-edit for details.

Some of the home-grown brands featured in the campaign include IO Merino, Merino Country, Sportscraft and Pure Baby. Products from these and more Australian-owned Merino wool brands are available to buy via Woolmark.com.

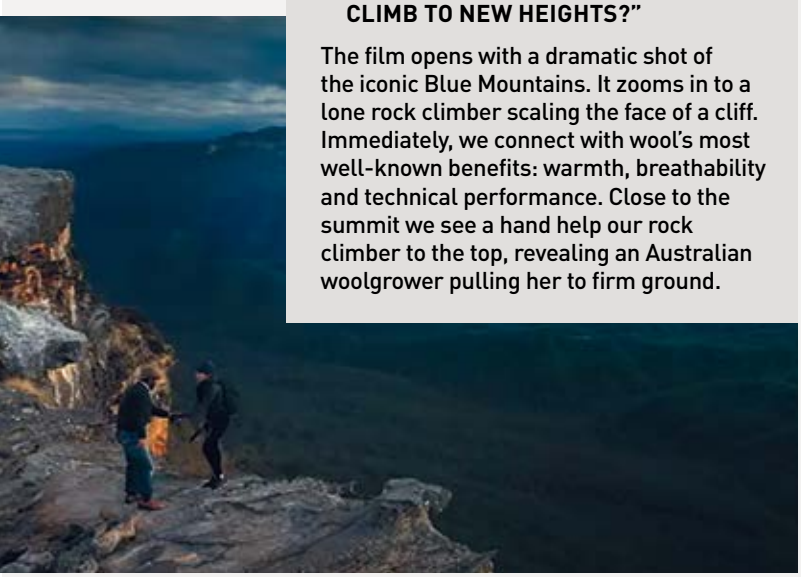


Screenshots from the campaign webpage promoting benefits of wool and pointing consumers to wool products to buy.

A screenshot featuring Australian woolgrowers in the new campaign video that promotes Australian wool as the best wool in the world.

Campaign film: **'What does it take?'**

The 30-second hero video of the campaign focusses on the (1) natural performance, (2) protection, and (3) nurturing benefits of Australian wool, with woolgrowers being the important thread throughout the story.

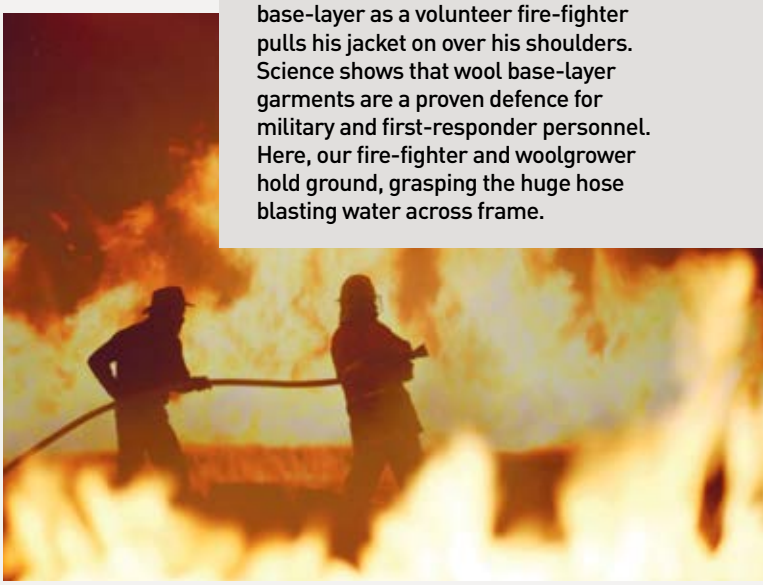


1. "WHAT DOES IT TAKE TO CLIMB TO NEW HEIGHTS?"

The film opens with a dramatic shot of the iconic Blue Mountains. It zooms in to a lone rock climber scaling the face of a cliff. Immediately, we connect with wool's most well-known benefits: warmth, breathability and technical performance. Close to the summit we see a hand help our rock climber to the top, revealing an Australian woolgrower pulling her to firm ground.

2. "WHAT DOES IT TAKE TO FACE INTO DANGER?"

The films cuts to a scene filled with flames. A close-up reveals a Merino wool base-layer as a volunteer fire-fighter pulls his jacket on over his shoulders. Science shows that wool base-layer garments are a proven defence for military and first-responder personnel. Here, our fire-fighter and woolgrower hold ground, grasping the huge hose blasting water across frame.



3. "WHAT DOES IT TAKE TO COMFORT WHAT'S MOST PRECIOUS?"

Next, the film shines the spotlight on the cosy, soft, nurturing feeling of wool. A mother wearing a warm Merino wool cardigan picks up her baby from a cot and wraps her in a soft, breathable blanket handed to her by the woolgrower.

4. "IT TAKES AN AUSSIE WOOLGROWER TO MAKE THE BEST WOOL IN THE WORLD."

The final scene journeys back to where it all begins: the farm. A close-up shot of some Australian woolgrowers, the producers of the world's best wool – nature's original eco fibre.

Focus on woolgrowers

John Roberts says it is important for the campaign to highlight Australian woolgrowers as well as the wool fibre and the products that are made from it.

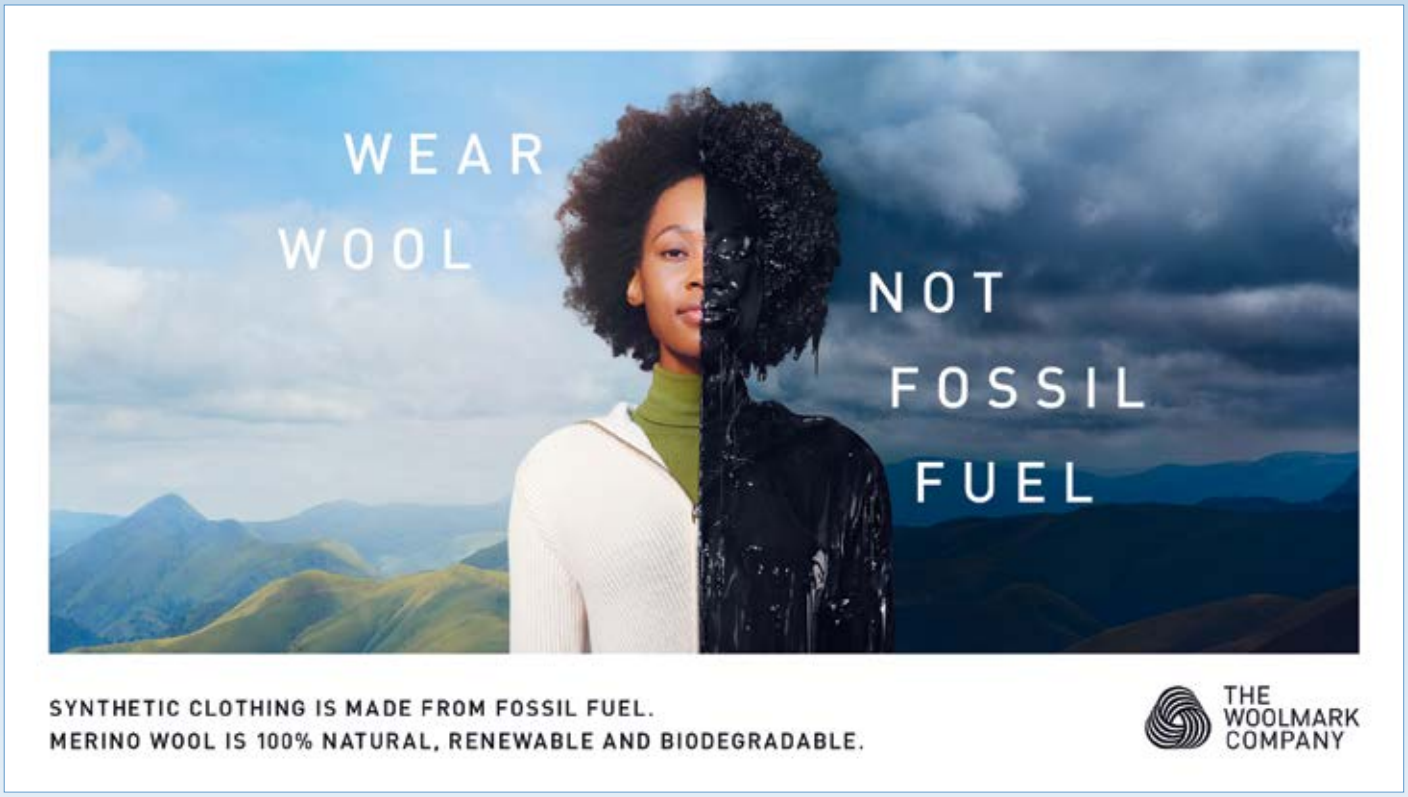
"We want to shine the light not only on the world's best fibre, but the tens of thousands of men and women who grow it. Many remote, rural and regional communities continue to be supported by Australian wool-growing, with more than 60,000 Australian woolgrowers and many tens of thousands more working in the industry. These are the people who grow your clothes, who grow the best wool in the world," John said.

The film was shot at 'Cooradigbee' in Wee Jasper, NSW, a Merino wool-growing property owned by Helen and Ian Cathles.

Another component of the social media campaign is to drive audiences to The Woolmark Company's 'Grower Spotlight Series' that includes profiles of numerous woolgrowers from across Australia. Head to www.woolmark.com/fibre/woolgrowers for details. B

More information

View the campaign film at
www.woolmark.com/australian-wool



Advertising from The Woolmark Company's new campaign.

'Wear Wool, Not Fossil Fuel' New eco marketing campaign launched

AWI's marketing arm The Woolmark Company this month launched a powerful marketing campaign highlighting to consumers that synthetic fibres are made from oil, whereas wool is a 100% natural, renewable and biodegradable fibre. The global campaign urges consumers to consider the fibre composition of a clothing product – and choose wool – when they are thinking of making a purchase.

The Woolmark Company's environmentally focused new global campaign 'Wear Wool, Not Fossil Fuel' aims to educate the public about the harmful impact of synthetic fibres on the environment, and that choosing a natural fibre such as wool can help reduce the fashion industry's impact on the planet.

Featuring a series of powerful visual messages that highlight the link between fabrics made from synthetic fibres and the crude oil used in its manufacture, the campaign includes a 60-second hero film as well as outdoor advertising scheduled for the US, UK, France and Australia during September and October.

The campaign is a response to findings from research conducted by The Woolmark Company which shows that while more than one third of global consumers say they are willing to pay more for sustainable apparel, they currently do not consider a product's fibre composition when considering what garment to purchase. Furthermore, the research highlighted that consumers are not making the connection that synthetic fibres are made from fossil fuels. It is these problems that the new campaign aims to address.

Part of the problem is the large amount of greenwashing from brands that are heavily reliant on synthetic fibres. They are not transparent about the link with fossil fuel, using misleading claims such as 'sustainable', 'preferred', 'sustainably sourced' or 'sustainably made' materials, to describe clothing made with fossil fuel-based synthetic fibres, including recycled synthetic fibres. To further exacerbate consumers' confusion, many brands are using a flawed definition of sustainability, unscientific methods and selective implementation.

The Woolmark Company has been investing in research right across the supply chain to produce robust scientific evidence to counter this greenwashing and misinformation, and support the company's marketing initiatives to increase the demand for wool.

Campaign highlights link between synthetics and fossil fuels

The new campaign centres around a minute-long film showing people struggling to escape an oil-filled swimming pool, which is a dramatic visual based on the insight that every 25 minutes an Olympic pool's worth of crude oil is used to produce synthetic

clothing (which amounts to almost 350 million barrels a year).

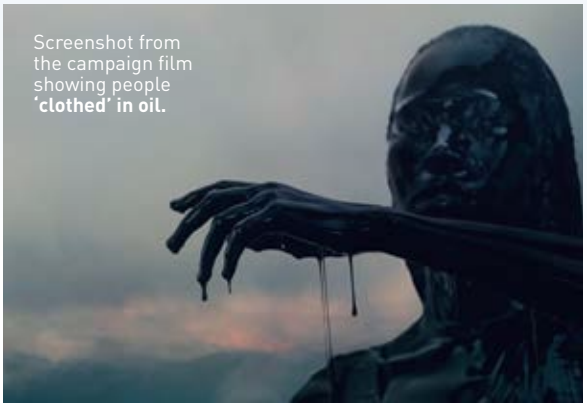
Next in the video, the people – smothered and dripping in oil – climb out of the pool and realise "it's time to change". They strip off their 'oil clothes' revealing them each now dressed in beautiful pure wool garments. The people then wander with freedom through forests, streams and meadows – a natural paradise – which emphasises the natural attributes of the wool they are now wearing. On-screen descriptions of wool being '100% natural', '100% biodegradable' and '100% renewable' reinforce the campaign message.

The campaign, which is being promoted via digital and social media, is accompanied by visually striking 3D digital advertising in iconic sites in London's Piccadilly Circus and New York's Times Square, along with other global outdoor advertising (such as on bus shelters and newsstands), plus a partnership with like-minded companies such as popular computer file transfer company WeTransfer.

Increasing the demand for wool

AWI CEO John Roberts says the campaign aims to help reverse the rise of fast fashion, which is dominated by synthetic fibres such as polyester, and increase demand for long-lasting clothing made from Merino wool which is a premium natural fibre.

"It is predicted that in just ten years' time, unless there is a shift in apparel manufacturing and consumption, 73% of the entire clothing market will be made from synthetic fibres, which are derived directly from fossil fuels," John said.



Screenshot from the campaign film showing people **'clothed' in oil.**

"The impact these clothes have during the use and end-of-life stages of their lifetime cannot be underestimated. In fact, it's been said that the equivalent of 50 billion plastic bottles' worth of microfibres enter wastewater every year just from washing synthetic clothing. In contrast, science shows that wool fibres biodegrade in both land and marine environments, so we know that Merino wool does not contribute to microplastic pollution.

"Studies also show that wool clothes are amongst those retained the longest in wardrobes, with high levels of reuse and donation, along with high levels of recycling and commercially viable end-of-life pathways. These factors alone indicate why choosing clothes made from natural fibres, such as Merino wool, are so important in transitioning to a circular, slow fashion model that minimises waste and pollution."

Screenshot from the campaign film showing people wearing wool garments in nature, which starkly contrasts with them earlier in the film 'clothed' in oil, which is what garments are made from (see below image).

Award winners direct the campaign

The campaign has been written and produced in creative collaboration between production company Park Village, creative company 20something and directors Studio Birthplace whose award-winning portfolio includes their recent Cannes Lions and D&AD winning work *Wasteminster: A Downing Street Disaster* for Greenpeace UK.

"Back in 1980, our wardrobes were filled with natural materials like cotton, wool and cashmere. These natural fibres made up 60% of the market, far outstripping the relatively new polyester and polyamide alternatives," said strategist Fran Docx of 20something.

"The rise of fast fashion, Instagram outfit culture and turbocharged consumerism has seen a wholesale shift in what lurks in our wardrobes. We rarely make a wider ecological connection between clothes, the fibres they're made of, and the impact on the planet. Our ambition for our work with The Woolmark Company is to address that and raise awareness of the alternatives to synthetic fabrics." B

More information

www.woolmark.com/wear-wool

Why wool has less impact than synthetics

1. **Renewable** – Every year, sheep produce a new fleece, making wool a completely renewable fibre source. In contrast, synthetic fibres are derived from non-renewable petrochemicals and fossil fuels, which when extracted de-sequester carbon stored millions of years ago.

2. **Kept in use longer** – How often clothes are worn is the most influential factor in determining environmental impacts from clothing. Wool garments are on average kept in use for longer periods of time than garments made from other fibre types.

3. **Less washing** – Research shows that consumers wash wool clothing less frequently than other fibre types, saving water, energy and detergent associated with laundering.

4. **Reusable and recyclable** – Wool's attributes are so highly valued that, even after a garment has finished its long service life with one person, the fibre is still suitable to be kept in use by another. Wool is the most reused and recycled fibre on the planet of the major apparel fibres.

5. **Biodegradable** – Wool is made of a 100% natural biodegradable protein. When a wool product reaches its end-of-life and is disposed of, the wool fibre readily decomposes in soil, slowly releasing valuable nutrients and carbon back into the earth, acting like a fertiliser. In contrast, synthetic fibres do not biodegrade but instead accumulate in landfill and release microplastics in our oceans or on our land.

EU eco-labelling concerns for woolgrowers

With the European Union bringing in a raft of new legislation to make apparel products more sustainable, the system it is planing to use to measure environmental impacts could rate wool products poorly. Woolgrowers are being urged to pursue and document best practice environmental management on their properties to protect and strengthen demand for wool apparel in this important market for the fibre.

FAST FACTS

- By 2024, products for sale in the European Union (EU) could be required to include a label that provides consumers with the European Commission's assessment of a product's environmental credentials.
- Under current proposals, which utilise immature methodology, wool would counterintuitively be rated poorly which would negatively affect demand for wool apparel products in EU markets.
- AWI is central to a campaign that is raising awareness of the limitations of the current rating methodology and is providing solutions to the European Commission.
- To help ensure an optimum rating for wool and shore up demand for wool in EU markets, woolgrowers (individually and collectively) are being encouraged to document best practice environmental management on their properties.

The European Union (EU) is putting policies in place that may result in EU environmental labelling on apparel products, possibly as soon as 2024.

The wool industry supports the intent behind the EU initiative. However the methodology the EU has indicated it may use, known as Product Environmental Footprinting (PEF), counterintuitively scores wool and other natural fibre products poorly compared to synthetic fibre products.

This is because the current PEF methodology being proposed is narrowly drawn and fails to adequately take account of key sustainability considerations including the benefits of using renewable and biodegradable fibres, the adverse impacts of microplastic pollution and the full environmental footprint of fossil fuel fibres. As such, the PEF risks misleading consumers about the impacts of their products, and ultimately undermining the EU's sustainability objectives.

What is the wool industry doing about it?

AWI last year joined with international natural fibre organisations and NGOs, including the International Wool Textile Organisation, to launch a campaign called Make the Label Count – to try to ensure the European Commission's proposal for sustainability claims on clothing is accurate and does not perpetuate greenwashing in favour of synthetics.

Ultimately, the campaign aims to ensure consumers receive credible information and prevent the introduction of inaccurate and poor environmental scores for natural fibres such as wool on clothing labels across the EU.

The Make the Label Count campaign continues to work hard to try to ensure the EU's clothing sustainability claims are credible. In July, the campaign issued a white paper that addresses the concerns with the current PEF methodology, identifies the main challenges posed, and provides solutions that would not only offer more meaningful guidance to EU consumers but also assist in delivering the EU's environmental policy and sustainability objectives. Titled *Delivering EU environmental policy through fair comparisons of natural and synthetic fibre textiles in PEF*, the white paper is available on the Make the Label Count website at www.makethelabelcount.org.

AWI has undertaken and continues to undertake a range of R&D to support the wool industry's environmental claims, which not only assists the Make the Label Count campaign but also helps AWI's marketing arm The Woolmark Company to promote in general the eco-credentials of Australian wool. For a snapshot of these on-farm and off-farm R&D and marketing initiatives by AWI, see page 46.

How does PEF affect woolgrowers?

The EU's legislative proposals aren't final yet, so there is still uncertainty about how wool will ultimately be rated in comparison to other fibres. There is also uncertainty at a more practical level, such as exactly how the system will be implemented and how the rating label image on apparel will look.

However, woolgrowers should be concerned that the EU's PEF initiative *as it currently stands* will score wool and other natural fibre apparel products poorly and therefore there could be labels that reflect this poor rating on wool apparel for sale in the EU within a couple of years.

If PEF proceeds without correction, it is likely to result in general downward pressure on demand for wool apparel in the EU because brands and consumers will look for alternative fibre options that have more positive ratings. The scale of the effect on demand for wool apparel is uncertain; to a large extent it will depend on the final methodology and resultant ratings.

This is a significant issue that would clearly affect woolgrowers due to the direct influence that demand has on the price that is paid to woolgrowers for their wool. The EU member states account for about a quarter of the global demand for Australian wool apparel products, which is a sizable share of the market.

Furthermore, the EU's PEF project is likely to be influential beyond the EU, with other similar initiatives potentially being developed and implemented in future in other counties or regions across the world.

What can woolgrowers do about it?

All products have an environmental footprint. The environmental footprint of a wool garment is heaviest in the wool production stage of the supply chain. For example, the on-farm production of greenhouse gases (GHGs), primarily methane belched by sheep, has been identified as an environmental hotspot. (This is despite it being 'biogenic methane' which is part of the natural carbon cycle.)

It is therefore important that the wool-growing industry as a whole, and individual woolgrowers within it, be seen to undertake best practice on-farm environmental management, to enable 'wool' to get an optimum rating under the PEF methodology through the industry-wide data used in the methodology.

On-farm areas of environmental management that woolgrowers could consider, now and in the future, include:

- Reduction of on-farm GHG emissions by, for instance, including the use of low methane pasture species, feed supplements, and increasing flock productivity (producing more lambs and wool from each sheep) – see www.wool.com/shrubs and www.wool.com/LTEM.
- Offsetting on-farm GHG emissions by, for example, planting more trees and shrubs to store carbon, and improving the management of soil organic matter – see www.wool.com/biodiversity
- Reducing eutrophication (algal development) of land and freshwater (and potentially oceans) by, for instance, taking measures to prevent run-off of unused nutrients from fertilisers – see www.wool.com/land
- Reducing water use by, for example, increasing flock productivity, and increasing the water holding capacity of the soil through high levels of ground cover.
- Protecting the land by, for instance, improving soil quality through increased soil organic matter, and erosion control through fencing off waterways and prevention of overgrazing – see www.wool.com/regenag-techniques

The experience of woolgrowers shows that investing in on-farm natural resource management initiatives is a long-term commitment and it can take years for results to become apparent. However, this should not dissuade woolgrowers in their commitment to environmental stewardship, because even after the implementation of PEF, in whatever form that will be, **the data used in the methodology is likely to be reviewed periodically (eg every five years) by the EU, so there would be opportunities to strengthen wool's rating in the future.**

AWI invests in case studies to showcase woolgrowers' environmental stewardship (see www.woolmark.com/environment); however, the supply chain is increasingly wanting evidence of industry-wide eco-credentials. While most farmers already do or have done natural resource management initiatives on their farm, **it is important that they collate their information and record it in detail going forward, so the industry has evidence it can use in PEF reviews.** There are many ways that woolgrowers could do this, such as through third party accreditation schemes, or Natural Capital Accounting (see www.wool.com/nca) or by creating a business profile on WoolQ that details the eco-credentials of their property (see page 64).

Will all wool get the same PEF rating?

A question that woolgrowers might ask is, "Will all wool get the same PEF rating?" or to put it another way, "Is there a way for 'my own wool' to get a better PEF rating?".

In most cases, apparel companies along the supply chain will be compelled to use industry-wide generic data (housed in EU/PEF databases) to estimate the on-farm impacts (as well as other supply chain impacts) of their products.

However, in theory it's possible for 'aggregators' of large supply chains to measure their own impacts (although at significant cost) and generate their own PEF-compliant data which would then be applied to products made from their particular wool. Examples of organisations with the scale to be aggregators might include large wool buyers, quality assurance certifiers, and large processors and brands.

Individual woolgrowers with green credentials (and a level of third-party auditing to validate them) would need to sign-up with an aggregator (such as mentioned above) that is prepared to invest in this space, in order to get a more favourable outcome in PEF.

Many reasons for environmental management

There are many laudable reasons why woolgrowers undertake best practice environmental management – from a personal respect for the land, to wanting to hand over their wool-growing property in a good condition to the next generation.

There are also financial benefits, not only from a productivity perspective, but from being able promote the business's positive eco-credentials (eg through a traceability scheme) and gain a premium for their wool.

Separate to and irrespective of whatever the general PEF rating is, individual woolgrowers will still get value from being able to document and promote the positive eco-credentials of their wool-growing property. But now it will become more important than ever.

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AWI is promoting wool's eco-credentials

AWI funds scientific research into wool's environmental footprint, to help the wool industry market Australian wool as the 'planet-friendly' fibre of choice. Read on for a snapshot of these R&D and marketing initiatives.

AWI on-farm research

AWI's commitment to on-farm scientific research to help woolgrowers optimise their environmental management is wide-ranging, for example:

- AWI completed a **cradle-to-grave lifecycle assessment** of the wool industry in 2020 to identify and fully understand the environmental hotspots along wool's supply chain in order to most effectively target future research.
- **Greenhouse gas emissions** from the Australian flock have been assessed from a 2005 baseline to 2020 and then projected to 2050 to identify the most plausible emission reduction pathways. This analysis revealed a 15% increase in protein production per dry sheep equivalent from 2005 to 2020 in response to increased lamb marking rates, heavier lamb weights at turnoff, and higher wool yields.
- Acknowledging the significant challenge to **achieve low emission wool**, it's clear that producers will need the ability to pull all levers, including changes in flock management, feeding strategies, soil management and tree planting or regeneration.
- AWI research has identified **methane-mitigating feed supplements** for grazing sheep as having significant potential to reduce the carbon footprint of wool within the next 10 years. It is a priority area for investment. AWI is leveraging $3 million of woolgrower funding to access up to $6 million of funding from Federal Government grants and research partners to identify the most effective methane-mitigating feed supplements for grazing sheep.
- Collaborative research is under way with MLA and other partners to identify the most effective and regionally relevant suite of farming practices to **sequester carbon into the landscape**.
- **Improving flock reproductive performance** continues to be a focus area for AWI through Lifetime Ewe Management, Winning With Weaners and RAMping Up Repro training for woolgrowers.
- A recent AWI-funded project used **Natural Capital Accounting** to objectively measure the environmental credentials of a selection of Australian wool-growing properties. The first of its kind study demonstrated that natural capital metrics can be easily calculated, which could potentially help many woolgrowers to market the eco-credentials of their wool to prospective buyers and stewardship payment schemes.
- AWI is collaborating on a project investigating whether the impact of methane emissions from livestock on global warming is being assessed accurately, and whether a **new method of accounting for methane**, GWP*, rectifies problems identified in the currently global standard GWP100 method.

These initiatives by AWI are a continuation of the company's long record of undertaking scientific research in this area. A significant historical example is the landmark, five-year Land, Water & Wool R&D program in which AWI invested $20 million. The project ran from 2002 to 2007 and provided woolgrowers with valuable information resources for profitable and sustainable land management.

AWI off-farm research

As well as on-farm research, AWI also funds off-farm research to help the wool industry market the eco-credentials of wool, for example:

- AWI has been actively participating in the **EU Product Environmental Footprinting Technical Secretariat** for three years, proposing methodology improvements to address its shortcomings and biases against natural fibres (see page 44).
- Recent AWI research has shown that wool fully **biodegrades** in marine and terrestrial environments. The results of the studies complement other 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.
- AWI has undertaken research to fill knowledge gaps and provide an evidence base on the topic of **garment use**, demonstrating that how often clothes are worn is the most influential factor in determining the environmental impacts from clothing; wool garments are on average kept in use for longer periods of time than garments made from other fibre types. In addition, research shows that consumers wash wool clothing less frequently than other fibre types, saving water, energy and detergent associated with laundering.
- In preparation for EU Extended Producer Responsibility legislation (which makes brands and retailers financially responsible for their products' end-of-life costs including take-back, repair, reuse, recycling and ultimately disposal), AWI has been investigating **recycling** in the wool system to enable AWI to champion wool's role above almost all other fibres in reducing environmental impacts.

AWI marketing

AWI and its marketing arm, The Woolmark Company, has a strong focus on producing marketing collateral that promotes Australian wool as eco-friendly, positioning it as a future-proofed fibre that reflects consumer priorities, for example:

- The Woolmark Company's online **consumer marketing channels** include 'always on' programming and the eco-benefits of wool are a key focus of this content. Eco content has been the best performing and most engaged content across its consumer platforms, demonstrating that sustainability messaging and wool's eco benefits are resonating strongly with a global audience.
- The Woolmark Company has introduced information and resources for the textile and fashion industries about how well wool fits into a **circular economy** – see www.woolmark.com/circular-design. The Woolmark Company not only presents the scientific evidence, but also provides a pathway for designers and brands to incorporate wool into their products to lighten their eco-footprint and demonstrate an alignment to circularity.
- The Woolmark Company provides a range of **sustainability fact sheets, toolkits and other resources** for the supply chain and trade, such as the 30-page *Wool: a sustainable solution booklet* – see www.woolmark.com/sustainability. Other related AWI-supported initiatives include the production of the popular Fashionscapes series of documentaries.
- The Woolmark Company this month launched a major and impactful consumer eco-campaign that educates consumers on the eco benefits of choosing wool and encourages them to question greenwashing from fossil fuel-based fibre brands – see page 42.
- **The Campaign for Wool**, initiated in 2010 by its patron His Royal Highness The Prince of Wales, continues to raise awareness amongst consumers about the natural, renewable and biodegradable benefits offered by the fibre.
- AWI is working on a **global traceability strategy** which will set the foundations for global brands and the supply chain to map their impact and strategies for improvement.

A Merino yarn about nature

MERINO WOOL
MADE BY NATURE

Zegna Baruffa Lane Borgosesia, a world leader in the production of fine yarns for knitwear, is highlighting the sustainability and quality of Merino wool in a new marketing campaign supported by The Woolmark Company that targets consumers as well as the textile trade.

A global leader in knitwear yarns for more than 160 years, Italian company Zegna Baruffa Lane Borgosesia is one of the most prestigious manufacturers in the world. Each year it buys approximately 10 million kilograms of raw Australian Merino wool for its yarns.

To support its efforts to promote Merino wool as a sustainable and quality fibre and thereby drive sales, AWI's marketing arm The Woolmark Company has joined forces with the Biella-based company to create and launch a marketing campaign titled: Merino Wool - Made by Nature.

At the heart of the campaign is a 3½ minute video that highlights the journey of Merino wool, from farm to fashion. It begins by showcasing the natural origin of Merino wool fibre on an Australian wool-growing property, 'Glenrannoch' in Victoria under the care of woolgrower Alistair Lade. The video then travels to the historic Zegna Baruffa Lane Borgosesia factory that spins the wool into yarn, and features plant manager Nicola Mattassoglio. Lastly, renowned US-born and Milan-based designer Edward Buchanan tells why he chooses Merino wool yarns to make his beautifully knitted garments.

Launched at the Pitti Immagine Filati trade show in Florence in June, the video is also being promoted on a special landing page on the Zegna Baruffa Lane Borgosesia website as well as through the company's social media channels.

The video in the Merino Wool – Made by Nature campaign begins by showcasing Merino sheep grazing in the beautiful landscape of central Victoria.

"Merino wool – Made by Nature is based on an extraordinarily eco-sustainable fibre: 100% natural, renewable and biodegradable, guaranteeing garments maximum breathability, softness, and elasticity."

Zegna Baruffa Lane Borgosesia website

As well as targeting the textile trade, the campaign will ultimately educate the final consumer about the benefits of wool thanks to the creation of bespoke interactive garment labels for brands that use the yarns. The labels include a QR code that links to the campaign webpage and video, revealing insights into the eco-benefits of the fibre and wool's supply chain journey, for the brands' consumers to view.

An additional educational video has also been produced for staff of Zegna Baruffa Lane Borgosesia who speak to clients, to ensure that the staff are appropriately informed about the qualities and eco-benefits of Merino wool.

More information

merinowoolmadebynature.baruffa.com

Read more about woolgrower Alistair Lade on pages 34-35.

The people who feature in the campaign video – in their own words

ALISTAIR LADE, WOOLGROWER

"I run 10,000 ultrafine Merinos on a thousand hectares. In this environment up here that we really enjoy living in, we have beautiful clean water, good soils and with the right amount of sun we can grow high quality nutritious grass that is ideal for these ultrafine Merinos to produce some of the best natural fibre in the world.

"It's a pleasure going out and seeing these happy, healthy sheep and they really respond to being looked after."

NICOLA MATTASSOGLIO, SPINNER

"Our production is still hands-on as it was 150 years ago. Every incoming batch, as wool is a natural product, has its own special characteristics. It isn't a standardised product. So, experience counts for a lot – the skilful touch and eye of the people who work for us.

"I've fallen in love with wool because it has an ease and comfort no other fibre can offer. And because it forms part of our tradition, our DNA, and we're the best at making it."

EDWARD BUCHANAN, DESIGNER

"I love wool. Wool is a fibre that I've used since the beginning of time. I love the flexibility, it's really a yarn for me that's the basis of whatever I do, no matter what season it is.

"I design in a way like Bauhaus furniture, I like to build things up strong and hard so they last for a long time and wool is one of those fibres that you can count on for that. It's a yarn for me that I can use now and I'm sure then I'm going to have it in 20 years or longer."

A Vivienne Westwood 100% Merino wool jacket made using NATIVA™ wool from a farm in Western Australia that practices regenerative agriculture.

Vivienne Westwood's NATIVA™ certified Merino wool tailoring

For its Spring-Summer 2022 collection, the Vivienne Westwood brand created classic 100% Merino wool unisex tailoring pieces that are fully traceable through the supply chain back to the specific farms in Western Australia that produced the wool.

The avant-garde boutiques of Vivienne Westwood in London, Milan, New York and LA might seem a world away from the sheep paddocks of 'Hill Padua' in the North Midlands of Western Australia, but that is where wool from some of their sheep has ended up – in a selection of the brand's 100% wool jackets, skirts and trousers.

World-renowned British fashion designer Vivienne Westwood and her namesake brand have always been avid supporters of wool in fashion and continue to raise awareness of the environmental impact of fast fashion, urging people to buy better quality clothes, while creating collections that meet this standard. For these special pieces, the brand was keen on sourcing wool from a farm that practices regenerative agriculture.

AWI's subsidiary The Woolmark Company has an ongoing working relationship with Vivienne Westwood and put the brand in contact with the NATIVA™ traceability program operated by Chargeurs Luxury Materials and worked with the brand's sourcing and product teams. Through its traceability program, NATIVA™ details and certifies every step of the supply chain, from farm to the end garment, while also certifying the environmental sustainability, animal welfare and corporate social responsibility of the farms from which the wool is sourced.

The result is that the Vivienne Westwood brand can showcase to its customers precisely where in the world the fibre in the classic tailoring for Spring-Summer 2022 was sourced. In this case, the brand were able to highlight to consumers that all of the wool is sourced from NATIVA™ certified farms, with 90% sourced from an Australian farm that undertakes regenerative agriculture. Regenerative agriculture is a holistic farming approach that focuses on enhancing the ecosystem, and strengthening the health, vitality and fertility of farm soil.

Furthermore, the swing tag label on the garments features a unique QR code that consumers can scan with their mobile phones to view the NATIVA™ blockchain website that details the journey of the wool to the final garment.

For the Vivienne Westwood Merino wool tailoring in the Spring-Summer 2022 collection, customers can learn about the NATIVA™ certified properties that grew the wool (including regenerative farm 'Hill Padua'), the specific combing mill in China that produced the wool top, the mill in Italy that spun the wool yarn, the fabric manufacturer in Italy (in this case, Tessilbiella at Biella that produced the Woolmark-certified fabric) and that the garment maker is located in Italy.

Merino sheep at **Hill Padua Polls,** the property that supplied the wool that was used in the Vivienne Westwood Spring-Summer 2022 collection.

The source of the wool: Hill Padua Polls

'Hill Padua' is located at Three Springs in the Wheatbelt of WA, 330km north of Perth. About 8,000ha of the property is currently farmed, with 4,000 ha cropped. It runs approximately 3,000 Merino ewes, each cutting 6kg of wool, and has a consistent lambing percentage of more than 120% per year.

Hill Padua Polls is a Multi Purpose Merino stud. Stud principal Anthony Thomas aspires to breed a large plain bodied Merino that has the meat characteristics of a cross breed, while growing high quality, high yielding, stylish wool.

It is this stylish wool, which is certified through the NATIVA™ traceability program, that is now gracing the boutiques of Vivienne Westwood on the other side of the world – and the staff at Hill Padua are delighted to hear the news.

"It is exciting and great for us to know that high-end designers like Vivienne Westwood are using our wool. In the past, we have had designer Stella McCartney also select our wool through NATIVA™. It is very rewarding for us to know that our wool has been used at the highest level of fashion," said Hill Padua stud manager Fred Echaniz.

Fred says that being certified through NATIVA™ has led to better prices for Hill Padua's wool.

"We are doing the best we can to create a top product, but at the end of the day it is up to the clients to select the wool they prefer," Fred commented.

"Hill Padua Polls has been using ASBVs to breed animals with high quality wool. The wool is very white, with very good length and very high strength. We have been selling our wool clips for 10 to 20% more than market price."

> "We believe that traceability is very important. When you do things different you should have a product with more value, and the only way to reach that extra value is with strict traceability."
>
> **Fred Echaniz, Hill Padua stud manager**

Fred says Hills Padua has been implementing regenerative agriculture on the property for many years.

"In the 'pasture paddocks', where the animals live, we do not use any chemicals or synthetic fertilisers. We are introducing different plant species to compete for nutrients with the weeds we don't want," he said.

"We are using organic ways to fertilise our soil, like compost and we are also using NutriSoil (a biological stimulant produced from worms) to feed microbes that are continuously working to build a healthy soil.

"We have also invested in more than 30km of fencing to protect bushlands and natural habitat reserves on the property."

Fred says looking after the welfare of the property's sheep is as important as looking

after the land on which they graze. Hill Padua ceased mulesing 18 years ago in 2004.

"At Hill Padua Polls, we do not consider our animals as just numbers; every single animal on this farm is important. We need them as much as they need us," he said.

"We work with our animals in a peaceful environment, where we interact with them frequently. The rewarding part of this is knowing that our animals are at full production potential just because we provide a very quiet and natural environment for them. We believe that our animals are lucky to have Hill Padua as home.

"We have built recovery paddocks and shelters, where animals if are struggling are brought to, and we spend the necessary time to help them get back on track. It is our responsibility to look after our animals.

"At lambing we look over every mob every day, to assist our ewes and newborn lambs. We look for mismothered and weak lambs, then rescue and raise them ourselves as orphan pet lambs. We have two permanent people for these jobs, during and post lambing, knowing that while economically it may not be ideal, we understand and are choosing the ethical way of looking after our animals." B

Reformation's traceable wool jumpers

Other brands that have worked with NATIVA™ to source wool from farms that practice regenerative agriculture include US womenswear brand Reformation, which has produced a range of 'Regenerative Wool Sweaters' (pictured above on the brand's online store). Some of the wool is sourced from Ian and Di Haggerty's 'Prospect' property in the central Wheatbelt of Western Australia.

Using traceability to showcase Australian wool

With consumers increasingly interested in the eco-credentials and source of their products, clothing brands are increasingly showcasing the on-farm origin of the wool they use and the traceability of their clothing through the supply chain. There are several on-farm QA programs and traceability initiatives available from commercial providers in which woolgrowers can participate.

Recently, AWI and digital transparency company Everledger successfully completed a proof of concept that uses blockchain technology to track and validate the exchange of ownership of selected wools as they move along the supply chain from farm through overseas processing and manufacturing to finished products.

Treading lightly **on the planet**

Family-owned Lindner Quality Socks of Crookwell in the Southern Tablelands of NSW has teamed up with Merino wool producers, Millpost Merino of Bungendore, to produce a Millpost X Lindner Collection, with all products made from 100% Millpost wool.

Lindner produces a range of sock styles, from outdoors and casual/everyday styles to more formal fine-knit socks for dress shoes. Most of their socks include Merino wool.

However, the latest sock product from Lindner is knitted with 100% Merino wool and doesn't have any elastic, nylon or other synthetic fibre in it at all – with the toe seams finished with a statement blue silk thread. The sock is 100% biodegradable because, like wool, silk is 100% biodegradable.

Andrew Lindner of Lindner Quality Socks says his vision is to create products that will not only feel great, but have as light a footprint on the planet as possible.

"At Lindner Socks we are committed to producing local, sustainable, ethical products, with as minimal impact as possible on our environment. This is a passion shared by family-run Merino wool producers, Millpost Merino, whose Merino sheep are grazed on their farm near Bungendore," Andrew said.

"Even though we pride ourselves on knitting long lasting socks, we have also considered the afterlife of our products. These can be composted without leaving a trace of microplastics."

Also available in the Millpost X Lindner Collection is the 'Danthonia' cable knit scarf made from 100% fine Millpost Merino wool and knitted in South Australia.

Although the collection was a relatively small batch run, Lindner Quality Socks is looking forward to hopefully collaborating with Millpost Merino again next year.

Lindner Quality Socks was named in June as the winner of the 'Australian Made Small Business Award' in the inaugural Spend With Us Australia Australian Rural Business Awards. B

More information
www.lindnersocks.com.au
www.woolmark.com/millpost

DECJUBA's locally made **Aussie wool knitwear**

Australian women's clothing brand DECJUBA has partnered with ABMT, a fabric and garment manufacturer based in Melbourne, to create a 100% Merino wool collection of Woolmark-certified garments.

DECJUBA is a leading Australian womenswear brand and retailer offering fashion forward clothing at more than 120 stores across Australia as well as its popular online store.

The company in May launched a new LOCAL BY DECJUBA collection of garments made from 100% Merino wool sourced from farms across Australia. As well as using locally sourced wool, the yarn for the collection is knitted and dyed in Melbourne by ABMT, a locally owned and operated fabric and garment manufacturer, which cuts and sews the fabric into garments.

The apparel range comprises a set of premium essentials that will be worn again and again: a long sleeve V neck top, crew top and long line open cardigan.

"DECJUBA is known for its knitwear. Each winter season we design essential knit styles for the everyday. The fine gauge Merino wool is easy to pair back with everything in your wardrobe," said DECJUBA's Head of Knitwear, Nicola Bunting.

DECJUBA has a strong commitment to sustainability and is on a mission to become Australia's most responsible fashion label.

The company says its Woolmark-certified LOCAL BY DECJUBA collection – made in Australia from sustainably sourced 100% Merino wool – is a demonstration of its commitment to increasing its range of responsible and circular products.

"Through this partnership with ABMT, we were able to reduce our carbon footprint, ensure quality, and support our local industries. We are working towards increasing our locally made product offering for our customers," said DECJUBA Chief Operations Officer, Audrey Nania.

100% Aussie wool made in Australia

As one of the original pioneers of Merino wool circular knits, ABMT has more than 15 years of experience in working with natural fibres and what it strongly believes is the best fibre on earth: Merino wool.

"Our Merino wool is grown on farms with sustainable farming practices from around Australia including Victoria's South West, Tasmania, Western Australia and the NSW Tablelands," said ABMT's Global Sales Manager, Julian Collins.

"We manage the whole process from selecting wool from the farms, making the fabric and sewing the garments. Our passionate specialised team guide the whole process from start to finish, and do it in the most environmentally and socially responsible manner possible."

A **circular knitting machine** at ABMT's production facility in Melbourne.

The ABMT facility in Melbourne is purpose built to work with natural fibres and has knitting capabilities ranging from 14gg to 30gg in single jersey, double knit and jacquard, as well as speciality finishing equipment.

Julian says business is going well with growing demand from companies increasingly keen to have their fabric and garments manufactured domestically in Australia.

"The demand is stronger than it has been for decades with large and small brands and retailers embracing the old, now new, model of sovereign manufacturing," Julian added. B

More information
www.decjuba.com.au/local-by-decjuba

The Woolmark-certified LOCAL BY DECJUBA collection is promoted on the **home page of the DECJUBA website** as well as at the brand's stores across Australia.

An **item from the LOCAL BY DECJUBA collection,** a long sleeve V neck top, made in Australia by ABMT using 100% Merino wool.

Timeless kids' knits from The Woolly Brand

Below: The Woolly Brand's debut range of kids' knitwear is gentle, durable and machine washable – ideal as an heirloom for future generations.

Left: **Anna Brand** and her two daughters with The Woolly Brand's Australian Merino wool knitwear. *PHOTOS:* Georgie Mann Photography

Inspired by her upbringing on a wool-growing property and her career in neonatal intensive care, Anna Brand has launched a range of Woolmark-certified kids' knitwear made from 100% Australian Merino wool. The range is designed to be smart, sustainable and durable enough to be handed down through the generations.

Anna Brand, the founder of The Woolly Brand, lives on a farm near Caramut, north of Warrnambool in the Western District of Victoria, with her husband Will and their two girls, Elizabeth and Harriet.

Wool has always been a significant part of Anna's life. It was growing up on her family's mixed grazing and cropping farm between West Wyalong and Griffith in the Riverina of NSW that first established her love for wool.

"I was always surrounded by woolgrowers, knitters and an appreciation for the natural fibre," Anna said of her childhood.

"As kids, being involved in the farm was a way of life – from helping out in the paddocks on our ponies moving ewes and lambs, to lamb marking which was an annual get together with family friends in school holidays. There were scorching and dusty summer days crutching to beat the flies and freezing winters shearing that always involved a bit of mutton busting.

"It was during such special times that me and my siblings were snug in our 100% Merino hand-me-down woollies knitted by Mum, our Grandmas and other rellies. It was a common picture for the average Aussie farm kid, one that in hindsight was quite the luxury."

These hand-knitted woollen heirlooms were passed down from generation to generation, a simple yet special gesture which has become one of the fundamental values that The Woolly Brand is built upon.

Setting up and launching The Woolly Brand

The idea for The Woolly Brand came about on a Brand family holiday on the coast at Port Fairy in February 2020. One day as a southerly cold change whipped through, out came her daughter's woollies – those same family heirlooms and some newly knitted pieces from Will's mother.

"Everywhere we went on the day, people were complimenting us on our daughter's beautiful Merino knitwear and asking where they could get something like it," Anna said.

"We were discussing this, and how hard it is to find great Australian kids' knitwear if there's no knitting Nana in the family. And so, as we rounded the Port Fairy lighthouse, the concept for The Woolly Brand was born."

Anna subsequently set about creating the brand and its range of kids' essential woollies. Having spent her entire career in neonatal intensive care and paediatrics, and not in fashion and textile design, this was a challenge and a new experience for Anna involving a lot of learning.

However, Anna was up to the task and, with some helpful advice from industry contacts and AWI subsidiary The Woolmark Company (and the all-important support from Will throughout the process), she has succeeded in creating a wonderful debut range comprising cable knit jumpers, beanies and blankets for babies, toddlers and children.

The collection was launched at the end of May and is available to purchase online from the brand's website. All the pieces are made from 100% Australian extra fine Merino wool. They are Woolmark certified for quality and are machine washable.

"I received great support from the wonderful team at The Woolmark Company, including valuable advice and access to educational resources. Furthermore, by being certified through the Woolmark Licensing Program, our customers can be assured that the quality of our products is up to standard," Anna said.

Sustainable and durable knits

Anna highlights three key reasons why Merino wool was the obvious choice for The Woolly Brand: the fibre's eco-credentials, its super softness, and its safety benefits such as fire retardancy and thermoregulation properties.

Importantly for Anna, she has created a range of Australian Merino knitwear that is durable enough to handle a kid's daily rough and tumble, with the convenience of being machine washable – and, when the time comes, still be in a good condition for handing on to family and friends.

"Rather than adding more stuff to overflowing wardrobes, The Woolly Brand set out to pave the way for a sustainable future, where smaller quantities of products made from natural and good quality fibres that stand the test of time are passed down to future generations," Anna added.

More information
www.thewoollybrand.com.au

The trail running race won by Nick Bamford followed the Larapinta Trail along the West Macdonnell Ranges in the Northern Territory. *PHOTO:* Posnov

Merino wool a winner on the 231km Larapinta Trail run

Ultrarunner Nick Bamford credits his "awesome Australian Merino thermals" from Merino Country Australia for helping him win a recent 231km trail running race along the rugged Larapinta Trail in the Northern Territory.

The West Macs Monster is one of the most iconic ultra-running events in Australia. It comprises a series of races on the Larapinta Trail, with the longest and ultimate challenge being the 231km Sonder Monster race all the way along the West Macdonnell Ranges to the finish line at the historic Alice Springs Telegraph Station.

Not only does the race cover an astounding 231km, but there is an elevation gain of 6,830m (that's more than ¾ the height of Mt Everest) plus an elevation loss of 6,940m.

Those runners that manage to complete the race usually take more than two long days and nights to do so, with runners enduring stifling heat during the daytime but desperately cold temperatures at night. The type of gear worn by the runners can have a massive impact on their comfort and performance.

The winner of this year's race, completed in under 47 hours, was Nick Bamford from Brisbane who wore 100% Australian Merino wool thermals from Australian brand Merino Country Australia, which he says kept him warm at night.

"On the second night I was running through the desert where the temperature got down to 5˚C and the exhaustion was making it difficult for me to regulate my temperature to the point my whole body was shaking. But when I put on the Merino thermals, it was like a hug from mum," Nick said.

"I'm not exaggerating when I say I wouldn't have been able to finish without the Merino thermals."

But complete the race he did, at a winning pace, with one observer commenting that "Nick finished with 100% battery life on the tracker, it barely even dropped voltage he was that fast".

Merino Country's thermals differ from those of most other brands as Merino Country is one of the few companies that make their thermals in a heavy weight, 275gsm, double knit jersey fabric.

Ultra-runner **Nick Bamford** wearing his Merino Country wool thermals.

"As supplied to the Australian Defence Force and Victoria Police and tested for thermoregulation, our thermals are made for warmth, comfort, performance and durability, exactly what Nick needs for running and why we're fitting him out with a full Merino wardrobe," said owner of Merino Country, Kerrie Richards.

Originally from Scotland in the UK, where he represented the University of Oxford at ice hockey (and... tiddlywinks), Nick has now made Brisbane his home. It is here that he trains with a local running group, often wearing a pair of the Merino Country's wool leggings and long sleeve top.

As well as being a fan of Merino wool, Nick wants to wear apparel that is good quality and made locally, so he is keen to support Merino Country, an Australian family-owned business that has been manufacturing quality Australian Merino fabrics, clothing and underwear in Australia since 1993.

As well as the Merino top being a high-performance garment, Nick also appreciates its style and cut.

"I've since been wearing that same top out to dinner and the pub and getting complimented on it, so it is now a regular part of my smart casual wardrobe."

Nick started training properly for ultra-running trail races about three years ago and has won other races including a 100km race across the Blackall Range on the Sunshine Coast hinterland.

As this edition of *Beyond the Bale* goes to press, Nick is taking part in the Ultra-Trail du Mont-Blanc, a single-stage mountain ultramarathon that follows the route of the Tour du Mont Blanc through the Alps of France, Italy and Switzerland – again dressed in 100% Australian Merino wool apparel from Merino Country Australia. Good luck Nick!

Merino wool: nature's performance fibre

- Temperature regulating
- Breathable and moisture wicking
- Naturally elastic
- Odour resistant
- Next to skin softness

More information
www.merinocountry.com

Award winning WoolNet Light **delivers warmth without weight**

Aclima's WoolNet base-layer range has a new award-winning addition: WoolNet Light, made from 100% Merino wool and weighing in at well under 100g.

Aclima's **WoolNet Light** is designed for high intensity activities when weight, moisture transport and ventilation are most important. Pictured is the men's short sleeve shirt.

Norwegian company Aclima is a 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 regarded; the Norwegian military has used Aclima garments for years.

Aclima's WoolNet range was launched more than a decade ago, with the fast-drying mesh construction of the base-layers providing small air pockets that provide good insulation without feeling clammy and overheated. The range includes a variety of tops and longs for men and women.

However, Aclima was challenged by its ambassadors, all high-profile outdoor enthusiasts, to make an even lighter and softer version of WoolNet. The result is WoolNet Light, made from 100% Merino wool and weighing just 94 g (men, medium) and 80 g (women, small). The WoolNet Light shirt has been designed to provide optimum fit and comfort for men and women respectively, with the exposed areas of the women's version covered with Aclima's soft LightWool fabric in 100% Merino wool.

The product was thoroughly tested during the course of a whole year by Aclima's test members, and the feedback was phenomenal according to Aclima. The company says the product is suitable for high performance activities – such as running in the mountains, hiking and trekking – and provides a high degree of insulation along with high moisture transportation, breathability, comfort and elasticity.

In June, the product won the apparel category at the spring/summer 2023 **Scandinavian Outdoor Awards**, with the jury stating: "The Aclima WoolNet Light Shirt keeps you warm but prevents overheating when working out hard. The wool-mesh also dries quicker than classical wool fabrics, is super soft, stretchy and does not smell like synthetic underwear does. The new lightweight version of the Aclima Woolnet can be used all year round for any kind of activity."

> "Over the last 20 years I have not tested any other shirt that offers such unique functionality."
> **Scandinavian Outdoor Awards jury member**

In July, the women's version of the WoolNet Light shirt won another award, the Gold Winner prize in the Outdoor Professionals category of the **#sheisoutdoors Women's Gear Award.** "The shirt impressed the jury with a woman-specific and functional cut and female body mapping with optimal placement of the net," stated #sheisoutdoors.

Aclima's Marketing Manager, Ole Magnus Halvorsen, says the company is very happy to have won the awards.

"At Aclima, we have always believed high-quality raw materials are essential for a quality end product. These awards are an achievement not just for Aclima but also for our whole value chain, all the way from our growers who are providing us the absolute best wool fibres to the consumers who get to cherish their garments for years to come," he said.

WoolNet Light will be available in stores from April 2023. B

More information

www.aclima.com

> "There is currently no lighter (80g) and more functional (100% Merino) comparable women's baselayer on the market."
> **#sheisoutdoors Women's Gear Awards**

The women's long sleeve **WoolNet Light** shirt.
PHOTO: Miriam Mayer

International Woolmark Prize 2022 in the limelight

New analysis has revealed the phenomenal exposure that this year's International Woolmark Prize had amongst consumers and the broader fashion community, which is helping to increase awareness of Merino wool and build demand for the fibre.

What is the International Woolmark Prize?

The International Woolmark Prize is an illustrious fashion award and talent development program that aims to generate long-term demand for Australian Merino wool by building and strengthening the reputation of the fibre as the ultimate ingredient of sustainable luxury fashion.

Every year, seven of the world's leading international designers are selected to develop and present their most innovative designs to a panel of judges comprising distinguished industry heavyweights. The designers' collections must be made from at least 70% Australian Merino wool.

The program provides the designers with education, mentorship, networking opportunities, early-stage funding, global wool supply chain access and commercialisation. It builds demand for Australian Merino wool by increasing the knowledge of and lifetime loyalty to the fibre amongst the award's designers and more than 400 alumni across the globe.

Why is it important to generate exposure for the awards?

Since its relaunch in 2012 by AWI's marketing arm, The Woolmark Company, the interest in the awards from fashion communities and media globally has helped put wool back on the agendas of a broader range of fashion designers, manufacturers, brands and retailers, and consequently into retail stores for consumers to purchase. This year, the prize's consumer audience was extended to target Gen Z through a culturally relevant talent and content strategy. While this audience is younger than the average luxury consumer, it will be fuelling the growth of the luxury industry for the future.

The home page of the International Woolmark Prize **website** woolmarkprize.com which received 469,000 page views this year, which is an increase of 54% from the last year.

Connecting the world's leading fashion designers with Australian Merino wool is extremely important due to the enormous influence these designers have in setting global textile trends for mainstream retail brands.

Did this year's awards generate a lot of exposure?

The answer is a resounding "yes".

As reported in the June edition of *Beyond the Bale*, the 2022 International Woolmark Prize final was a hybrid format: the finalists' collections were revealed *digitally* in April in the format of a celebrity-endorsed short film to a mass consumer audience, followed two weeks later by the announcement of the winners at a *physical* event held in London attended by media, buyers, celebrities and industry.

AWI CEO John Roberts says the International Woolmark Prize continues to be the pinnacle of AWI's fashion promotion initiatives.

Two of the 2022 judges at the finals event: **Edward Enninful OBE**, Editor-in-Chief, British *Vogue* and European Editorial Director, *Vogue*; and **Riccardo Tisci**, Chief Creative Officer, Burberry.

"The International Woolmark Prize has gone from strength to strength, driving long-term demand for Australian Merino wool by positioning the fibre as at the key ingredient for premium, sustainable apparel," he said.

"These figures demonstrate the huge exposure that this year's program has achieved, helping to increase awareness of Merino wool amongst consumers and the fashion industry. The results also show that AWI has been able to successfully adapt and refresh the program to the changing digital and post-COVID landscape in which both the industry and consumers now operate." B

More information
www.woolmarkprize.com

The Woolmark Company has crunched the numbers, which has revealed some impressive statistics:

9.8 billion
MEDIA REACH
3% INCREASE YOY

10.9 million
FILM VIEWS
36% INCREASE YOY

295,000
ENGAGEMENTS
251% INCREASE YOY

226,000
WOOLMARKPRIZE.COM USERS
67% INCREASE YOY

1,603
MEDIA CLIPPINGS OF FINAL EVENT
67% INCREASE YOY

Latest wool fashions showcased locally

AWI presents commercially available wool garments at the fashion shows of regional events across Australia, to help showcase the fibre and build demand for the wool products.

Garments from the AWI fashion show collection being showcased to the crowds at the **Campbell Town show** in June. Pictured left is the Off Shoulder Crop Sweater and Knit Fitted Midi Skirt from **Seed Heritage** and below is **Country Road's** Merino Nep Crew Knit. *PHOTOS:* picture.haus

Showcasing the latest wool apparel of some of Australia's greatest brands and retailers, the AWI Runway Kit was launched ten years ago and has been on tour across Australia ever since.

The curated collection of garments assists the organisers of regional shows to showcase great examples of wearable wool fashion at their events. The collection includes commercially available wool outfits from Australian brands, and is sent to the show organisers with information and accessories to help them run their fashion parade.

The current AWI Runway Kit contains looks from the Autumn/Winter 2022 collections of leading Australian designer labels including womenswear from Seed Heritage, sass & bide, SABA, Kookaï, Jac + Jack, Iris & Wool, Witchery, Country Road and Assembly Label; and menswear from M.J. Bale, Iris & Wool, Country Road and Sportscraft.

Recent shows at which the collection has been exhibited include Sydney Royal Easter Show in NSW (April), Queensland State Sheep Show at Cunnamulla (May), Campbell Town Show in Tasmania (June), the Victorian Sheep Show in Ballarat (June) and the Australian Sheep & Wool Show in Bendigo, Victoria (July).

"With the resumption of regional shows after so many were cancelled during the pandemic, we are delighted that the AWI Runway Kit can continue to bring the latest wool fashion trends to our regional communities," said AWI's National Events Manager, Wendie Ridgley.

"The collection professionally showcases wearable and commercially available wool products from the current collections of some of AWI's retail and design partners, with the garments available to be purchased online from the brands' websites wherever you live in Australia.

"Each year, the AWI Runway Kit visits events from the east coast to the west coast, and from the largest shows to the some smaller, more local events."

Fashion director of the Campbell Town Show, Taylor Clyne Smith, says she is grateful to AWI for supplying the garments that are paraded in front of the audience at the show.

"The AWI Runway Kit is carefully curated each year to showcase the best of the wool industry, quite literally from paddock to parade because without our farmers we cannot dabble in these luxury looks like we do," she said.

"The Campbell Town Catwalk is iconic for many reasons, but mostly because it puts an emphasis on bringing the space to life with the best of the season's woolly fashions surrounded by the smell of sheep being judged and wool being thrown with farming families in the crowds.

"I know that these collections make people feel connected to our woolgrowers. After all, our woolly fashion is a celebration of our sheep and they are our constant inspiration.

"I am humbled to present this show every year on behalf of AWI and truly believe there is a place for regional catwalks to exhibit fashion to their communities."

The AWI Runway Kit is available for loan to suitable wool-focused events across regional Australia – it is contained in a robust wardrobe case for ease of storage and transport. B

More information

Enquiries from event organisers interested in borrowing the AWI Runway Kit should be directed to AWI Events Project Manager Vanessa Peyton at vanessa.peyton@wool.com.

The Wool Lab helps build demand for wool

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

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

The Wool Lab is a sourcing guide for designers and brands that contains swatches of a selection of the most innovative and quality wool fabrics, yarns and processes commercially available on the market from the best spinners and weavers in the world.

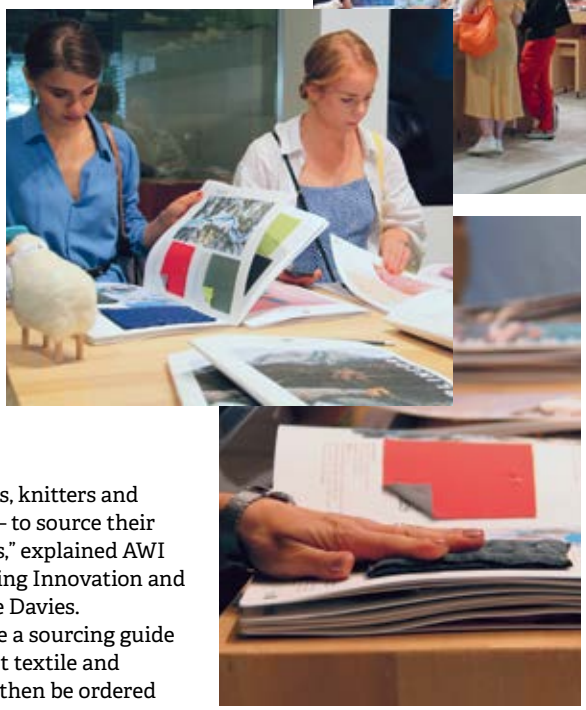
"Each season, we reach out to The Woolmark Company's global supply chain network – quality-oriented spinners, knitters and weavers across the world – to source their latest fabric developments," explained AWI General Manager, Processing Innovation and Education Extension, Julie Davies.

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

"By providing this service, we are helping to inspire brands' material strategies and forge strong relationships within the supply chain, thereby increasing the demand for wool."

Anyone (including woolgrowers) can view the digital version of The Wool Lab on the Woolmark website. Brands and retail buying teams can arrange one-on-one viewings of the physical editions and swatches.

With the resumption of international trade shows following the easing of the COVID pandemic, The Woolmark Company has once again also been showing The Wool Lab at trade shows including Pitti Immagine Filati in Florence, Première Vision Paris and Milano Unica in Milan. B



Brands and retail buying teams viewing wool swatches in The Wool Lab at The Woolmark Company's booth at the Pitti Immagine Filati trade show in June.

More information
www.woolmark.com/thewoollab

Edward Crutchley guest curation for The Wool Lab

The Woolmark Company has partnered with Edward Crutchley for its first guest curation of The Wool Lab – see bottom-right of opposite page. Raised on a sheep farm in the Yorkshire Dales of England, Edward was the winner of the 2019 International Woolmark Prize and is the current Director of Fabric and Soft Accessories at Dior. The curated collection features an exploration of global cultural references grounded in a deep appreciation of artisanal textiles.

"My intention from the start was to show how much can be done with wool."

Fashion designer Edward Crutchley

Liberty Fabrics designs for The Wool Lab

Liberty is an iconic name that will be familiar in country Australia. Many Australian woolgrowers' wives and daughters will have owned a Liberty fabric dress or shirt in their time!

Famous for its bold and floral print fabrics, primarily on cotton or silk fabrics, Liberty Fabrics has ventured into wool in a collaboration with The Woolmark Company.

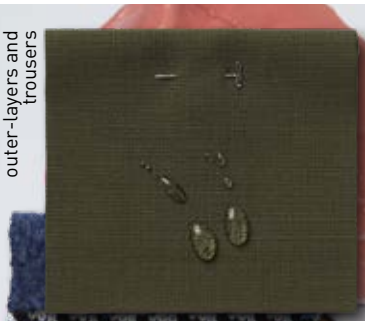
The London based company has created three richly vibrant designs that are printed on 100% wool fabric for The Wool Lab's Metaverse theme - see middle-left of opposite page.

Example swatches from the latest edition of The Wool Lab

The latest edition of The Wool Lab compriases **414 swatches**, categorised into a collection of **six themes** that reflect the diverse applications that wool can be used in the current textile and fashion landscape to generate business opportunities for the industry.

Extreme Weather

Moss green ripstop – suitable for outer-layers and trousers



Jacquard double knit – suitable for mid-layers and outer-layers

High-performance winter sport garments provide inspiration for an informal style of everyday wear.

(99 swatches)

Goblincore

An aesthetic movement centred on the harmony of nature and its healing benefits showcases wool.

(70 swatches)

Spray printed yarn – suitable for mid-layers

Thick & thin pied de coque – suitable for mid-layers and outer-layers

Metaverse

The shift towards a technologically inspired taste, characterised by innovative expressions of wool.

(47 swatches)

3D effect geometrical jacquard – suitable for outer-layers

Bright houndstooth – suitable for mid-layers

Interiors

The versatility of wool allows products ranging from blankets to sound-absorbing panels.

(74 swatches)

3D braided effect – suitable for upholstery

100% faux fur – suitable for a yoga mats and carpet

Accessories

Jacquard flat knit – suitable for shoes and bags

Natural print – suitable for shawls and scarves

Wool accessories have boundless potential, from shoes and socks to bags, hats and scarves.

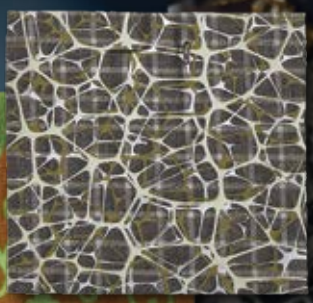
(66 swatches)

Edward Crutchley

A guest curation by the winner of the 2019 International Woolmark Prize.

(58 swatches)

Reflective motif – suitable for dresses



Wool printed voile – suitable for shirting and dresses

Aussie mill secured with plans for development

A new company headed by woolgrower Floyd Legge of Cudal in the Central West of NSW has purchased Geelong Textile Group with the aim to identify opportunities for business growth for the Victoria-based wool textile manufacturing company.

Woolgrower **Floyd Legge** who is Chairman of new company Australian Textile Investments that in June bought and now manages Geelong Textile Group. Mr Legge is pictured here in 2019 wearing his wedding suit made from his own wool that was woven and dyed at Geelong Textile Group (above).

Geelong Textile Group, which comprises Geelong Textiles Australia and Geelong Dyeing, has operated and specialised in Australian wool since 1920, creating quality upholstery and apparel fabrics for commercial and domestic use.

After it went on the market last year for the first time in 50 years, the iconic Geelong-based textile business in June was purchased – and is now being managed by – by a new company Australian Textile Investments (ATI), chaired by Floyd Legge of Ridgehaven Poll Dorsets, based in Cudal, NSW. He is a sixth-generation pastoralist whose family has been involved with fine Merino wool-growing for more than 150 years.

"While I will continue to maintain an active interest in the family wool-growing enterprise, along with my fellow ATI investors we view the purchase of the Geelong Textile Group as a positive and strategic move into an associated industry. All of us have a passion for developing a uniquely Australian product and we believe that the Geelong Textile Group has capability to do so," Mr Legge said.

Prior experience with wool processing

"My first introduction to the Geelong Textile Group occurred in 2019 when I needed some of our family-grown fine Merino wool woven and dyed to make fabric for the suits that my groomsmen and I wore for my wedding," Mr Legge said.

"It was a wonderful experience – taking a raw Australian product and turning it into a luxury fabric, right here in Australia."

This experience in 2019 with the practical side of wool textile production followed on from Mr Legge's participation the previous year in the young woolgrower study tour to China, organised by AWI, during which he visited several of China's largest wool processing and manufacturing plants.

While at the time Mr Legge was simply keen to learn about the journey wool takes after it leaves the farm gate, the trip has ultimately and unexpectedly resulted in the new business venture for him and ATI securing the Australian ownership of Geelong Textile Group.

Opportunities for business growth

Mr Legge says ATI is committed to identifying opportunities for business expansion, building on the already excellent manufacturing values inherent in Geelong Textile Group.

"We knew at the time of purchase that we would need to relocate the weaving mill. Since then, we have secured the lease of the neighbouring property to the dye house. This will allow for greater efficiencies and integration of the services we offer through Geelong Textiles Australia. Geelong Dyeing will remain in its current location for the foreseeable future," he said.

"All staff and management have been offered continuing employment with ATI. We have also identified areas for growth in both businesses. This has the potential for additional employment, particularly for those with previous experience in the textile industry."

Securing wool manufacturing in Australia

Mr Legge says ATI purchased the textile businesses to secure wool manufacturing within Australia.

"Now is a great time to focus on the manufacturing of textiles in Australia. Major disruption has been inflicted on the global supply chain following COVID-19 and the war in Ukraine, with freight costs increasing by 1000% and delays of up to six months becoming the new normal.

"We want to offer customers a better experience, quality products, shorter manufacturing timeframes, delivery on time and less volatility. We are committed and well

positioned to expand on the future of wool textile manufacturing within Australia."

High quality fabrics

Mr Legge says the team at Geelong Textile Group combines 150+ years of local manufacturing experience.

"For our customers we value quality, sustainability and are committed to creating the highest quality commercial upholstery and apparel fabrics. We produce fabrics using 100% Australian wool, wool blends and alternative fibres," he said.

"We specialise in design, commission Dobby or Jacquard weaving of durable, certified, and tested domestic or commercial fabrics for school or corporate apparel, furnishing for public spaces, auditoriums, transport, and screens. Batch sizes start at 240m for the weaving mill and 50m at the dye house, whereas a minimum order from overseas suppliers would be 1000m."

The Dobby loom can weave a plain or geometric pattern including stripes and checks with four to five different colours. The Jacquard loom presents greater opportunities for unlimited design given each thread in the warp can be controlled individually. Every metre of fabric made is inspected by a technician before dispatch.

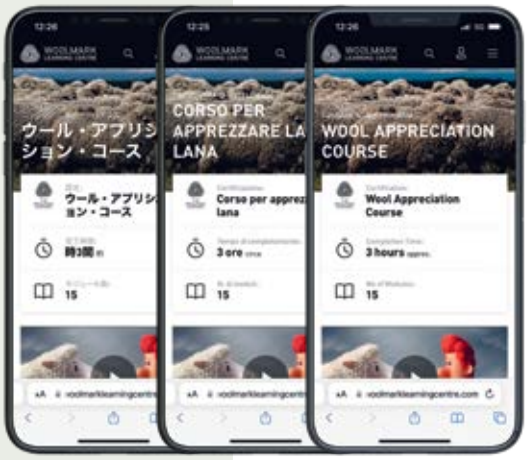
Innovation and market development

Mr Legge says by expanding on its core services of commission weaving, dyeing, and finishing, Geelong Textiles Australia has diversified into a wide range of domestic products.

"We have woollen upholstery fabrics and a home textiles range, including blankets, tea towels under the brand of Geelong Weaving Mill. This represents a growth market for the company," he said.

"In addition, Geelong Dyeing has also developed a stock service, producing machine knitting yarn and wool tops, which are available in stock and custom colours.

"We intend to continue this tradition of innovation and market development under our plans for the company." B



The **Wool Appreciation Course** is now available in eight more of the languages that are used in the key markets for Australian wool.

Wool Appreciation Course goes multilingual

The Woolmark Company's popular online Wool Appreciation Course is now even more accessible to people across the world having recently been made available in eight additional languages. The course aims to increase the knowledge about Australian wool amongst people in the textile supply chain, thereby helping increase global demand for the fibre.

The most frequently accessed and completed course on the online Woolmark Learning Centre is the Wool Appreciation Course. It provides an in-depth introduction to the wool fibre from its production on farm right through to the manufacture of wool products.

In addition to English, the course is now available in eight other languages: Simplified Chinese, Korean, Vietnamese, Japanese, French, German, Italian and Spanish (plus Mexican Spanish). This makes the free course accessible to more people across the world, whether they be students, designers or supply chain specialists.

Woolgrowers can also access and undertake the course to learn what happens to wool after it leaves the farm and travels along the supply chain to be transformed into beautiful wool products. There are 15 modules in the course and in total and they take about three hours to complete.

The Wool Appreciation Course is available on the Woolmark Learning Centre, a web-based hub that houses free world-class educational resources about wool for learners at all levels, including those entering the global textile industry as well as those already in it. Since its launch in mid-December 2019, the Woolmark Learning Centre has received more than 1.2 million page views and more than 4,000 course completions which exceeds AWI's target.

Developed by experts in the textile industry, 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.

On completion of the courses, as well as having an increased knowledge about wool, 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. B

More information

Access the Wool Appreciation Course at **www.woolmarklearningcentre.com**

Learning modules in the Wool Appreciation Course

1. What is wool?
2. Introduction to wool
3. Why wool?
4. Wool production
5. Manufacturing wool yarn
6. Wool yarns
7. Manufacturing wool knits
8. Manufacturing woven fabric
9. Dyeing
10. Finishing
11. Merino innovations
12. Product quality during manufacture
13. Maintaining product quality during use
14. Quality assurance
15. The Woolmark brand

Market Intellige

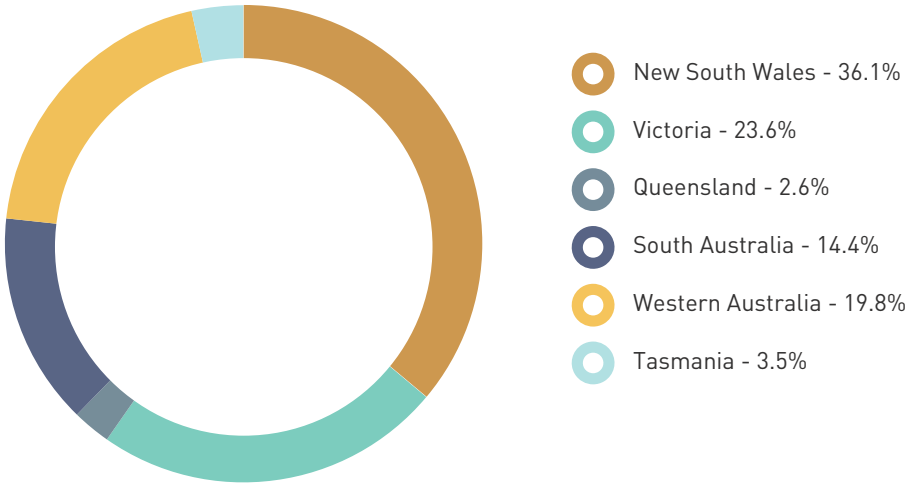
Australian wool production summary for 2021/22

The 2021/22 season ended with a national total of 335.08 million kgs of greasy wool tested by AWTA Ltd, which is 5.31% (16.9 million kgs) higher than the previous year's wool tested.

All Australian states recorded year on year increases in production by key test data, with much of these increases being the result of improved cut per head, due to the better seasonal conditions, rather than the increase in sheep numbers. The type of sheep influencing the rise in sheep numbers are of the low kg/head broader wool breeds and shedding/composite breeds.

New South Wales continues to be the most prolific wool producing state with 36.1% of the national clip tested being grown in that state. Queensland and Western Australia showed the greatest percentage of increased volumes with 15.5% and 10.7% respectively more throughput at the AWTA test sites. However, Queensland is coming off a very small 2020/21 base and the increase represents just more than 1.1 million kg.

FIGURE 1: 2021/22 ANNUAL PRODUCTION % BY STATE



Production by micron group in 2021/22

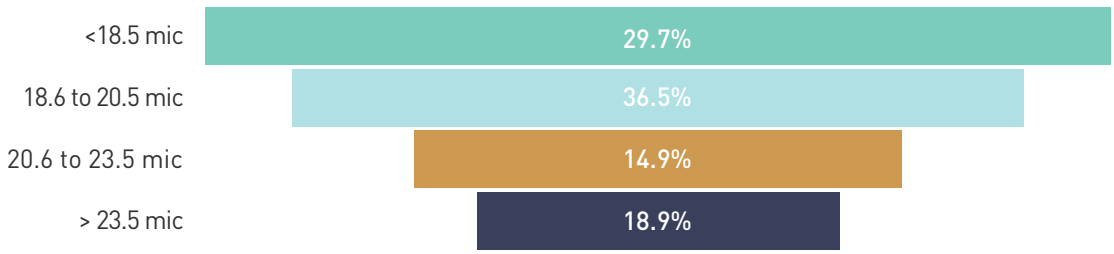
Australia remains a dominant producer of the global supply of fine and superfine Merino apparel wools. 66.2% of all wool produced in Australia during the past season has been finer than 20.6 micron in fibre diameter. A further 14.9% is made up of medium wool Merino types contributing to the 271.9 million kg of wools finer than 23.6 micron, which is 81.1% of all wool that Australian growers produced in 2021/22.

Put in perspective, the nearest apparel producing competitor to Australia, is RSA (South Africa) which has a clip of 45 million kg per annum (combined with Lesotho) and accounts for 12% of global apparel wool. Most of the RSA production is generally finer than 22 micron.

China produces slightly less wool than Australia (325 million kg) but it is of dubious quality and parentage of breed. China has more sheep than Australia, but goats and other cloven-hoofed animals are included in the data.

New Zealand produces about 130 million kg of wool, but well over 90% is broad wool and just a small percentage of its clip is Merino.

FIGURE 2: PERCENTAGE OF CLIP BY MICRON GROUP IN 2021/22



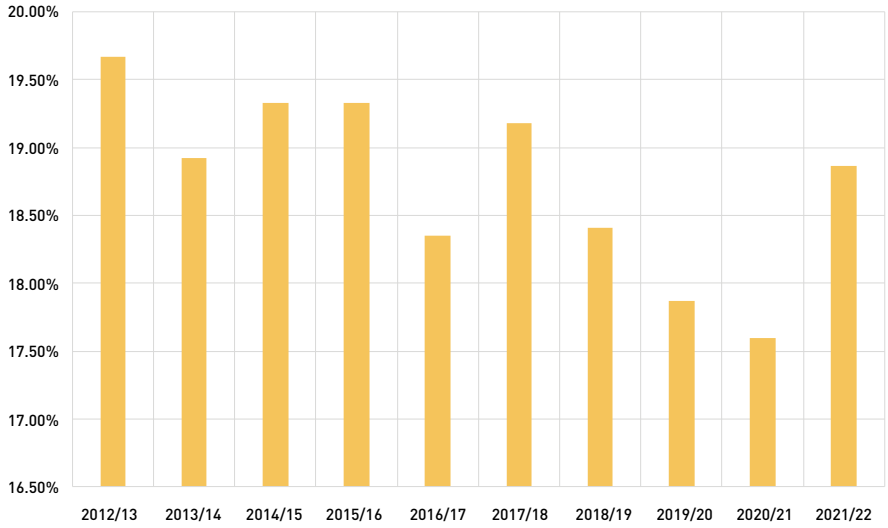
ence report

Broader wool production

Following three consecutive seasons in which there was a decrease in the percentage of Australian wool tested broader than 23.5 micron, the past season saw an increase to 18.86%, up from the previous season's volume of 17.6%.

The 2021/22 volume is the highest percentage of wools broader than 23.5 micron since the 2017/18 season. While this might be seen as an indicator of a transfer of grazing enterprises from wool towards more of the meat breed sheep, significantly the average of the past 10 years shows 18.75% of the clip is 'normally' broader than 23.5 micron in quality, so the most recent full season could be seen as a return to the norm as far as the fibre diameter of the clip is concerned.

FIGURE 3: WOOL TESTED >23.5 MICRON AS % OF CLIP



Production values in 2021/22

The table below is the value of production derived from using volume tested as supplied by AWTA in the Key Test Data (KTD) multiplied by the Micron Price Guides (MPG) (90%) and an arbitrarily assigned half MPG value (10%) to equate to outside of MPG basket of wool types. This gives an annual value of production at **A$3.167 billion** if all wool tested had been sold at the 2021/22 annualised values.

Some key points arising from the production value analysis show that:

- While the broader wools of 23.6 micron and broader make up 18.86% of weight produced, that sector brought in just an estimated 5.3% of annual raw value.
- The superfine/ultrafine Merino wool sales bring in the most revenue at $1.42 billion which is 44.74% of the annual production value of the Australian wool clip relative to the 29.7% of volume by weight produced.
- Superfine/ultrafine production in NSW is the single most valuable wool-growing sector.
- WA produces 21% of the dollar value of the clip from a 19.8% volume production.

PRODUCTION VALUE BY STATE AND MICRON CATEGORY

	<18.5	18.6 to 20.5	20.6 to 23.5	> 23.5	NATIONAL	
NSW	$589m	$403m	$133m	$63m	$1.188b	**37.5%**
VIC	$365m	$204m	$63m	$69m	$701m	**22.1%**
WA	$224m	$331m	$104m	$5m	$664m	**21.0%**
SA	$134m	$177m	$84m	$19m	$414m	**13.1%**
TAS	$82m	$19m	$4m	$11m	$116m	**3.7%**
QLD	$23m	$46m	$15m	$1m	$85m	**2.7%**
Total	**$1.42b**	**$1.18b**	**$403m**	**$168m**	**$3.168b**	

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 (May 2022 – July 2022) in Australian dollar terms compared with the previous five years May 2017 to April 2022 (circles) and the decade previous to that, May 2007 – April 2017 (squares).

At the end of the last sale in July 2022, the EMI was more than 61% higher than it was compared to the low point in September 2020 during the depths of the COVID pandemic. However, during the past 12 months, the market has been characterised by having a year of relative stability compared to what has been seen in many previous years.

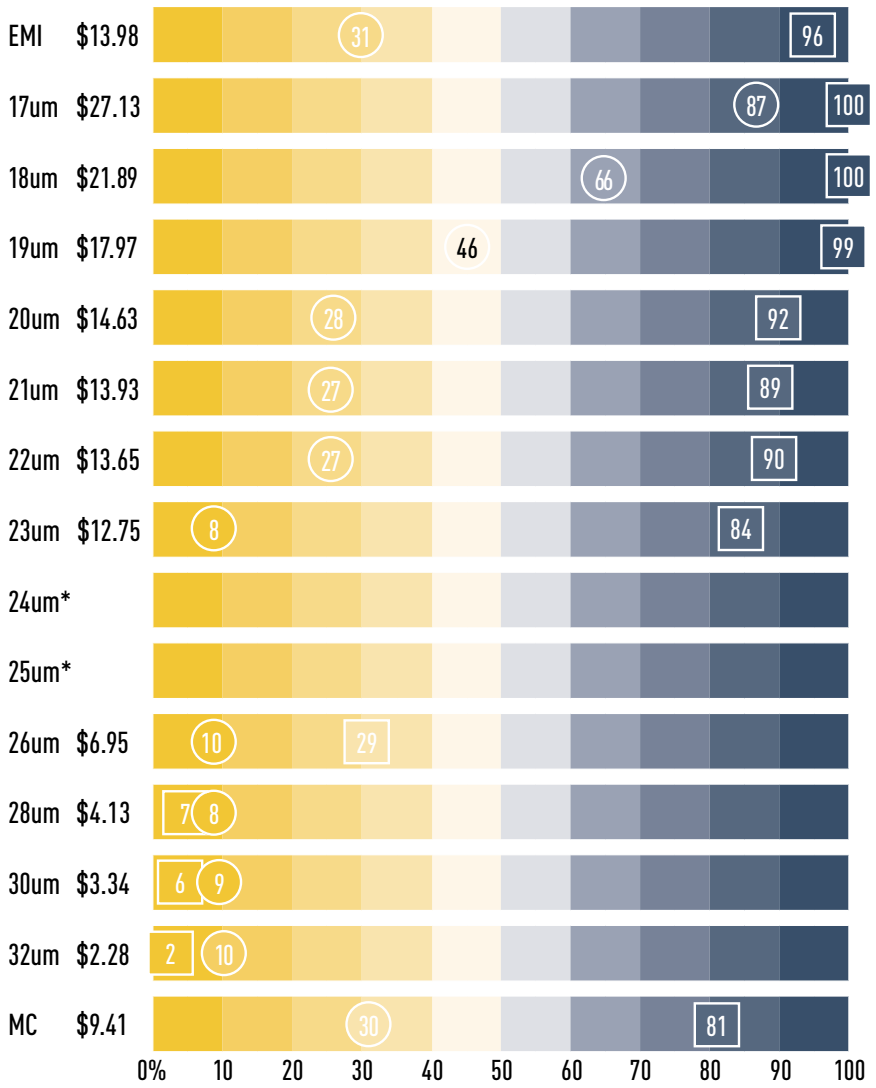
For the past three months, the monthly EMI averaged at $13.98 which is just a 1c difference from the average monthly EMI for the previous three months, and is tracking at the 31st percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current $13.98 (May 2022 – July 2022) for 31% of the time.

While the EMI is tracking at the 31st percentile over the previous five years, it is tracking at the 96th percentile when compared to the decade May 2007 – April 2017. This means the current EMI of $13.98 (May 2022 – July 2022) is higher now than it was for 96% of that decade.

18 micron averaged at a monthly value of $21.89 (66th percentile for the previous five years and 100th percentile for the decade before that), 21 micron averaged at $13.93 (27th percentile for the previous five years but 89th percentile for the decade before that), and 28 micron averaged at $4.13 (8th percentile for the previous five years and 7th percentile for the decade before that).

For the past three months, Merino Cardings averaged at $9.41, operating at the 30th percentile for the previous five years and at the 81st percentile for the decade before that.

AVERAGE MONTHLY EMI FOR MAY 2022 – JULY 2022 COMPARED WITH
PREVIOUS 5 YEARS MAY 2017 – APRIL 2022
THE DECADE MAY 2007 – APRIL 2017



*insufficient data

Market intelligence at wool.com

An important part of AWI's Wool.com website is market intelligence information for woolgrowers.

As well as the Weekly Price Reports and Monthly Market Intelligence Reports, there is a graphical display of:

- Eastern Market Indicator – you can select to display AUD, USD, CNY or EUR.
- Offering – displays bales offered and bales sold.
- Currency movements – you can select to display AUD/USD, AUD/CNY or AUD/EUR.
- Forecast of bales sold – displays previous season, current season, current week and forecast.

For the first three categories above, you can select to display data from 3 months to 3 years ago.

AWI also continues to send wool prices and market intelligence direct to about 6,700 woolgrowers' mobile phones. If you would like to subscribe to the free SMS service, visit www.wool.com/subscribe 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.

More information
www.wool.com/marketintel

Is the fast fashion lobby running out of fuel?

AWI Global Strategic Advisor, **Peter Ackroyd.**

AWI Global Strategic Advisor Peter Ackroyd reports of some good news coming out of Scandinavia in the fight against greenwashing, which could have global implications on the future of fast fashion. Mr Ackroyd is a former President of the International Wool Textile Organisation and is Chief Operating Officer of the Campaign for Wool.

In significant news, the influential Sustainable Apparel Coalition (SAC) in June announced that it is pausing the use of its consumer-facing Higg labels globally after Norwegian authorities concluded they can mislead consumers about a product's green credentials and are consequently illegal.

This is good news for wool because the flawed SAC life cycle assessment tool currently only accounts for environmental impacts in the front-end of the supply chain, up to the retail outlet. By not including key impact stages such as a product's use phase and end-of-life, it has been ignoring stages in which wool is environmentally strong.

The Norwegian Consumer Authority had informed Norwegian outdoor brand Norrøna (which is a member of SAC) that its use of Higg sustainability profiles on product labelling could contravene the Norwegian Marketing Control Act and see their products banned in their home market.

From that point, it became clear the case for the Product Environmental Footprint (PEF) project in the EU to be governed by Higg began to look increasingly untenable and the rumpus in Norway caused Amazon, H&M, Zalando, Tommy Hillfiger and Norway's very own Helly Hansen to reconsider using Higg sustainability profiles.

The Sustainable Apparel Coalition has been a thorn in the side of the wool industry for several years, so it is more than pleasing to hear of headlines that have appeared in the authoritative weekly online publication *Textile Insider* announcing: 'EU prepares to spoil fast fashion's party' and 'Sustainable Apparel Coalition on a collision course with the EU'.

There is growing evidence this once in a decade opportunity to position wool as a fibre of environmental preference in the minds of the those in power has not been ignored, and that the work of AWI in tandem with IWTO on the PEF, and in particular the Make the Label Count campaign, might not have fallen on deaf ears.

"Never has there been a more propitious moment to promote the environmental excellence of wool, coupled with a particularly robust message about its long life qualities, with wool in the wardrobe having a guaranteed return on capital invested," noted Sir Nicholas Coleridge, Chairman of the Campaign for Wool, when asked recently about a *Sunday Times* investigative exposure of Chinese fast fashion brand Shein.

Wool has several other powerful allies whose voices are increasingly being heard across the globe. One leading long-standing advocate for wool is, as we all know, The Prince of Wales via the Campaign for Wool and the solid support it has garnered globally from farm through to fashion over the past 12 years.

It seems, albeit gradually, the lies and cover-ups of the fast fashion industry, hiding behind a screen of clever greenwashing, are being systematically exposed for what they are, by an ever-growing number of important decision makers in government corridors of power in Brussels, London, New York and Tokyo.

Published quite recently, the European Commission's five-point vision for 2030 is, under the EU Strategy for Sustainable and Circular Textiles, comprised of the following key points, that hopefully will soon become Directives, with all the inherent authority such edicts from the EU contain. They are (in Brussels English) as follows:

1. All textile products placed on the EU market are durable, repairable and recyclable. To a great extent made of recycled fibres. Free of hazardous substances. Produced respecting social rights.
2. Fast fashion is out of fashion – consumers should benefit longer from high quality textiles.
3. Profitable re-use of repair services are widely available.
4. In a competitive, resilient and innovative textile sector, producers take responsibility for their products along the value chain.
5. Circular rather than throw away clothes have become the norm, with sufficient capacities for recycling and minimal incineration and landfill use.

Could there ever be five more potentially wool friendly initiatives?

In other good news for wool as an antidote to fast fashion, it appears that the death of the suit might have been greatly exaggerated. It was rather pleasing to hear in May from Sir Paul Smith on his first visit to New York in more than two years, that sales of Paul Smith suits in the USA had risen by +150%.

"During Covid they said nobody will ever wear a suit again, which I never believed. People are looking for refinement. They are going back to work, getting married, going to events," said Paul visiting his new Wooster Street store in New York's SoHo for the first time.

Promote the eco-credentials of your business on WoolQ

On WoolQ, you can create a rich profile of your business that showcases the compelling provenance and attributes of your unique product to an active global audience.

Consumers are increasingly interested in the source and eco-credentials of the products they are buying.

Brands and retailers are looking in particular for growers that have rich and powerful provenance stories that they can use when marketing their brands. The WoolQ industry directory allows instant access to sophisticated search functionality to find exactly the woolgrowers that suit the type of wool, region and quality scheme they are looking for.

In your business profile, you can provide a rich description, logo, images and video to bring your wool-growing brand to life and deliver a really compelling story.

The WoolQ industry directory currently houses more than 700 business profiles of woolgrowers, classers, brokers and buyers.

How to create a business profile on WoolQ

To create a profile, you must register as a user of WoolQ at www.woolq.com. Registering takes just 30 seconds to complete.

Woolgrowers can then set up a profile for their business by clicking the avatar in the top-right of the screen and then selecting 'Business Profile'. Classers, brokers and buyers are also able to set up a business profile here. Although you can use WoolQ on computer, tablet or smartphone device, it is best to create a business profile using a desktop computer or laptop, and you will need an internet connection for the process.

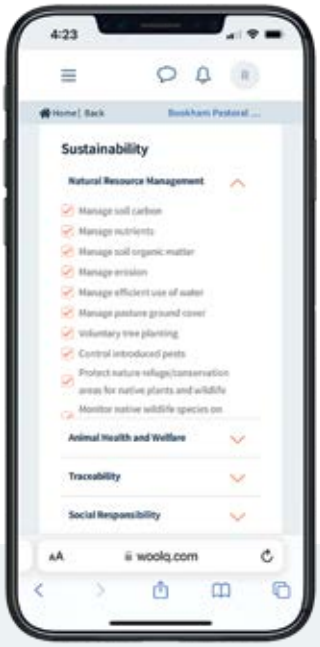
Then simply follow the prompts on your dashboard to complete each part of the profile. Some parts of the profile are optional to complete, so you can tailor it to what suits your business circumstances.

However, a rich profile should include as much information as possible; this is your chance to stand out and show the industry who you are. A rich business profile should include:

- **A complete description section** to ensure other WoolQ members can read about your business and want to connect with you if need be. Remember, buyers are increasingly interested in the eco-credentials and animal welfare aspects of your business, as well as the specifications and quality of the fibre itself.
- **High quality images** that speak to your prime business function and can tell your story.
- **As many contact details as you have** – if other WoolQ users can connect with you easily, it may open up new business ventures for you.

The profile of your business on WoolQ can also include **images** and **video** to deliver a really compelling story.

Within your Brand Profile on WoolQ, you can select the **sustainability attributes** that apply to your business (see image). There are attributes that you can select grouped under the following headings: Natural Resource Management, Animal Health and Welfare, Traceability, and Social Responsibility.



To really boost your profile, you can also include:

- **A brand logo** – it makes you distinct and professional.
- **A brand video** – this will really bring your brand to life.

You can add other members of your team – such as your business partner, farm manager and classer – as users, so they can view/edit your business profile. B

More information

For information about how to build a business profile, head to www.woolq.com/Industry-Directory where there is a simple-to-follow 'Create a woolgrower business profile' video.

Once you have registered with WoolQ, you can access other useful resources including PDF 'cheat sheets' that will help you to set up a business profile. Simply click on 'WoolQ Support' in the menu bar and then click on 'Education'.

Use the NWD so your wool attracts the highest price

All woolgrowers are being urged to complete the National Wool Declaration (NWD), as wool sold as Not Declared usually receives a discount. The NWD provides transparency to buyers and the whole supply chain and helps woolgrowers earn Premiums and/or avoid Discounts for their wool.

The National Wool Declaration (NWD) enables woolgrowers to communicate directly with prospective buyers, processors and retailers, and them send key messages back to woolgrowers. Whenever AWI discusses the Australian wool industry's animal welfare with brands and retailers along the supply chain, they invariably say that they would very much like all Australian woolgrowers to declare their wool through the NWD; it creates two-way transparency and choice in the marketplace.

Once a woolgrower has completed the NWD, which is voluntary, the contents are converted for inclusion in sale catalogues and test certificates.

The message is clear. To ensure your wool attracts the highest price possible, you need to ensure that your wool for auction is accompanied by an NWD.

All woolgrowers are encouraged to complete the NWD, regardless of their sheep's breed and wool type, and husbandry practices.

From a financial perspective, woolgrowers usually receive premiums for wool declared as Non Mulesed (NM) or Mulesed with Analgesic/Anaesthetic (AA).

Wool sold as Not Declared (ND) usually receives a Discount compared to wool that is declared as Mulesed (M). See the table below. These are the averages over the selling year and if you do mules, it would likely be financially advantageous for you to complete the NWD and declare your wool as Mulesed (M), rather than not complete the NWD.

AWEX developed the NWD for Mulesing Status in 2008 in consultation with the Australian wool industry and has been collating Mulesing Status data declared in the NWD ever since. B

More information

www.awex.com.au/market-information/mulesing-status

PREMIUMS AND DISCOUNTS FOR MULESING STATUS (C/KG CLEAN) (COMPARISON WITH DECLARED AS MULESED).

		MERINO							NON-MERINO			
		16	17	18	19	20	21	22	27	28	29	30
Non Mulesed (NM)												
Season	**2015/16**	10	15	7	8	8	1	-15	0	-1	1	4
	2017/18	36	44	57	44	36	18	-13	20	6	1	2
	2019/20	55	43	43	37	34	28	34		5	12	
	2021/22	**78**	**77**	**68**	**53**	**51**	**12**		**7**	**5**	**8**	
Ceased Mulesing (CM)												
Season	**2015/16**	51	15	3	8	5	4	-1	2	5	-8	-3
	2017/18		68	8	19	4	0	-10	-8	4	-5	5
	2019/20		29	37	-1	4	12			3	4	
	2021/22		**61**	**40**	**31**							
Mulesed with Anaesthetic &/or Analgesic (AA)												
Season	**2015/16**	2	2	-4	0	1	0	2	8		9	14
	2017/18	24	4	5	8	1	3	1	27	6	-2	-1
	2019/20	18	15	12	0	1	-1	6	18	0	-3	
	2021/22		**16**	**12**	**13**	**14**	**1**	**6**	**3**	**5**	**3**	
Not Declared (ND)												
Season	**2015/16**	8	5	-2	-4	-4	0	0	-6	-4	-2	-2
	2017/18		6	11	-9	-4	-2	-9	-8	-2	-9	0
	2019/20	-12	-3	-1	-6	-4	-3	-10	-12	-11	-6	
	2021/22		**-6**	**-5**	**-7**	**-10**	**-4**		**-7**	**-7**	**-10**	**-6**

Source: AWEX

Criteria for calculation of Premiums and Discounts (c/kg clean) for Mulesing Status:

- Australian stored; Merino adult/weaners and crossbred fleece
- >30 N/ktex, >60% Schlum Dry, <2.2 VMB, Styles 4/5, Good/light colour (incl. H1), P Certificate
- Lengths according to diameter range: 70–95 mm (<18 µm), 75–99 mm (19–21 µm), 83–104 mm (22–24 µm), 90–110 mm (26–29 µm), 100–130 mm (30–34 µm)
- Records per group (micron/NWD status) >2, empty cells when not enough data to generate a P or D.
- Comparison with prices for wool declared as Mulesed.

WIN!!!

If you email or tag a photo that gets published in Readers' Photos, you'll receive from us a paperback copy of the Kondinin Group's *The Story of Wool.*

Readers' Photos!

Have you got any interesting photos that you'd like to share with other readers of *Beyond the Bale?*

If so, please email the image and a brief description to the editor of *Beyond the Bale* Richard Smith at **richard.smith@wool.com**, or you can tag us #beyondthebale on Instagram.

If you email or tag a photo that gets published in Readers' Photos, you'll receive from us a paperback copy of the Kondinin Group's *The Story of Wool.*

A MOMENT'S REFLECTION

The granddaughter of **Lach River Merino Stud's** Richard Chalker, during the drop of ET and AI lambs on the property at **Darbys Falls**, east of Cowra in **NSW.** Thanks to her mother Elena Chalker (@misspip_rural) for tagging this photo #beyondthebale on Instagram.

SHAUNO THE SHEEP

Named Shauno, this is the pet lamb of **Jack Obst** from **Mindarie** in **South Australia** demonstrating its head for heights as well as its appreciation of a good feed.

DROVING AND DRIVING?

"We've just put the ewes from Upper Benyeo in the yards. Do you want the next paddock brought in now?" ask Shaddow and Niecy, the **multi-talented** sheepdogs of **Duncan Ramsden** at 'Benyeo' near **Naracoorte** in **South Australia.**

THANKS FOR THE MILK!

A new pet lamb freshly fed with milk says "thanks" at **Glenn and Edwina Moutray's** property at **Codrington** in south-west **Victoria.** Thanks for tagging this photo #beyondthebale on Instagram, Edwina (@e.m.images_); it's great to see the pet lambs thriving and happily sheltered with lots of straw to keep warm.

FUNKY CHUNKY KNITTED CUSHIONS

It's easy and fun to make an awesome looking cushion for your home with the help of a DIY kit from **It's Pretty Knotted** (www.itsprettyknotted.com.au). Using superfine Australian Merino wool, all you need to make a chunky knitted cushion comes with the DIY kit. Thanks **Wendy McClelland** (@itspretty knotted) in **Perth** for tagging #beyondthebale on Instagram and letting us know about your range of kits and ready-made products.

SHEEP THEN SLEEP

"Our son loves sheep and especially shearing time. He refuses to leave the shed even when tired!" says **Amy Lawrie** of 'Karanna Brae' at **Karkoo** on the Eyre Peninsula in **South Australia.**

FARM FASHION

Alishia Garlick of **Beulah** in the Mallee of **Victoria** uploaded this photo of her fashionable youngest daughter checking on her pet sheep – in style. Thanks for tagging this photo #beyondthebale on Instagram, Alisha (@5_on_the_farm).

A PLACE IN THE SUN

Daniel Simpson of **Hexham** in **Victoria** took this photo of happy Merino lambs resting in the sun, while he was checking on the results of the property's ET program.

LUNCH IS UP!

Merino weaners enjoying a feed of hay out of the new sheep feeder at 'Pegarah' on **King Island** in **Tasmania** – thanks for tagging this photo #beyondthebale on Instagram, **Jan van Ruiswyk** (@janvanruiswyk). This Australian-made sheep feeder from Bale Up Hayfeeders has a floor that suspends the bale off the ground and a cradle that is centred to keep the hay away from the sides and ends.

DRESSED TO IMPRESS AT LOUTH RACES

Unfortunately, this year's **Louth Races** in August was cancelled due to flooding on the course. However, the organisers are determined that it will return bigger and better in 2023. Here is a photo (shot by racinghhotography.com.au) from the 2019 event that Louth Races (@louthraces) tagged #beyondthebale on Instagram. The image shows the winner of the Best Dressed Gentleman in the Fashions on the Field awards, sponsored by AWI and MYER. "We love WOOL at Louth, and it is a condition of entry that the fabric of your outfit or your accessories must incorporate an element of wool," said Louth Races in its Instagram post. We're looking forward to next year!

EXTRA STRONG EXTRA PROTECTION

INDICATED FOR USE ON SHEEP OFF-SHEARS OR WITH ANY LENGTH WOOL

CLiK™ Extra protects against blowfly strike for up to 29 weeks, and protects mulesing and marking wounds.

EXTRA 30% active ingredient[1^]

EXTRA protection against flystrike (up to five weeks)[1^]

EXTRA protection against breech strike[2^]

EXTRA protection against development of resistance[2,3^]

For **EXTRA** peace of mind

^Compared to CLiK. Meat WHP 21 days. Wool WHP 3 months. Always read and follow the label directions. Good agricultural practice is essential for optimal blowfly strike prevention.

References: 1. CLiK Extra Spray-On contains 65 g/L dicyclanil and provides up to 29 weeks protection from blowfly strike. CLiK Spray-On contains 50 g/L dicyclanil and provides 18–24 weeks protection from blowfly strike. 2. When used for protection against breech strike, or body and breech strike. 3. Insecticide resistance in sheep blowfly larvae: http://www.flyboss.com.au/sheep-goats/files/pages/treatment/insecticide-resistance/Resistance_download_130410.pdf

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