

Beyond the bale

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PROFIT FROM WOOL INNOVATION
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Beyond thebale

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FRONT COVER

A key priority for AWI is to attract and retain harvesting workers in the industry.

Pictured are the enthusiast participants at a recent AWI novice wool harvesting course at Young in NSW, one of many AWI-funded courses being run across the country.

Thanks to local woolgrower Mark Bryant for providing the sheep and facilities, who said: "They were a great group of young people, enthusiastic and keen even on day five. We had three great trainers to show them the ropes. Well done AWI on putting the \$ and time in to make it happen. It was great to be a part of."



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



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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.

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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.

In March of this year, I had the privilege of being appointed as Chief Executive Office of AWI; I have been acting in the role since October 2021. I consider the appointment to be an enormous honour and brings with it great responsibility to deliver programs here in Australia and across the world that help make Australian wool-growing more profitable and sustainable.

During the past few months, the company has been developing its new Strategic Plan for the next three financial years, 2022/23 to 2024/25. The Plan will be launched at the end of this month and be available on the AWI website. We have consulted widely with woolgrowers and their representatives to ensure that industry views are incorporated into the plan – and we will continue to ensure that your wool levies are directed to R&D and marketing projects that deliver the greatest value to woolgrowers.

Wool harvesting a priority for AWI

Attracting and retaining enough workers to harvest and handle Australia's wool clip is essential to the viability of our wool industry. These workers are not only important for producing a high-quality clip that maximises returns for woolgrowers, but their on going availability is also vital to ensure producers do not switch to other enterprises.

AWI recognises that the industry has struggled in recent years with a shortage of shearers and wool handlers (especially during COVID travel restrictions) and rectifying this situation is a key priority for the company.

We have been running extra novice and improver shearer training courses to attract new entrants into the industry and, importantly, provide them with a career pathway to help keep these newly trained individuals from dropping out of the industry during the tough first few months of employment.

To attract and retain shearers, AWI is also looking at technology-based opportunities, some of which were on show to woolgrowers at the AWI Wool Harvesting Innovation Demonstration Day held last month – see pages 4-6 for more information. We are open to and are looking at any option that will help the industry, from new handpieces to safer workplaces, from upright posture shearing platforms to chemical de-fleecing. All options are on the table.

However, attracting and retaining enough shed staff is an issue that needs to be addressed more broadly than solely through AWI investments. It is an industry wide issue, and other organisations and individual woolgrowers can also play their part. A survey last year of (mainly) shearing contractors across Australia revealed that *working conditions in sheds* was seen as the primary barrier to attracting and keeping new workers in the wool harvesting industry.

Resources to help combat flystrike

AWI's expanded flystrike extension program continues to develop new resources that are relevant to all woolgrowers, regardless of sheep type, climate, operating environment, or husbandry practices – see pages 12-13.

Our new one-day SimpliFly workshop has now been successfully piloted and will soon be available to woolgrowers via AWI's grower networks. The SimpliFly workshop will help woolgrowers develop a property-specific flystrike management plan and calendar. SimpliFly builds on AWI's existing It's Fly Time! resources that are already providing woolgrowers across Australia with information for tactical flystrike prevention, monitoring and treatment.

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.

Opportunities and threats in the market

The relatively stable and healthy EMI that we have seen during the past 12 months continues. On the whole, the Australian wool industry is in good shape and has come through the COVID pandemic better than was perhaps expected back in mid-2020.

However, while COVID no longer dominates Australian media headlines as it once did, it has not gone away and there is still uncertainty regarding its ongoing effect on our key international markets, especially given the recent lockdowns in parts of China which have caused some significant international shipping and logistic issues. These international uncertainties have been made worse by the conflict in Ukraine, rising energy prices and an unsettled global economic environment. Another challenge we face is the environmental impact labelling proposals in the European Union.

Against this backdrop, AWI continues to work on behalf of woolgrowers to increase demand and market access for Australian wool, by promoting the fibre's premium natural qualities, especially for luxury apparel and sportswear, but also for other applications including interiors. In our marketing, we are focussing on promoting the eco-credentials of the fibre and taking advantage of the growth in e-commerce, particularly amongst the new generation of premium consumers. We also have a wide network of supply chain partners with which we work to explore new and diverse product and processing opportunities for wool.

Fundamentally, I believe that the long-term trends towards products that are environmentally friendly, and health and wellness, play in wool's favour – and this is something that AWI will capitalise on to expand the commercial opportunities for Australian wool across the world.

Woolgrowers had the opportunity to attend an **AWI Wool Harvesting Innovation Demonstration Day** last month.

Wool harvesting innovations on show

Woolgrowers viewed a wide range of wool harvesting initiatives and technologies at an AWI Wool Harvesting Innovation Demonstration Day held last month. The innovations aim to make the job of harvesting easier and more efficient, which will help attract and retain harvesting workers in the industry.

Harvesting wool has always been a crucial component of all wool-growing operations – and AWI has a history of investment in new harvesting technologies, as well as shearer and wool handler training.

However, the recent COVID-related travel restrictions have created and highlighted a shortage of and demand for wool harvesting staff in Australia and the need for technological options to help with

harvesting. This situation has been made more critical given that the size of the national flock is rising again.

Finding solutions for woolgrowers, now and for the long term, is a leading priority for AWI.

To enable woolgrowers to see the current results of AWI R&D work in this area, as well as commercial products from third-party manufacturers, AWI held a Wool Harvesting Innovation Demonstration Day last month at its Falkiner Memorial Field Station at Conargo in southern NSW.

AWI Chairman Jock Laurie said it was a great opportunity for woolgrowers to see where their wool levies have been invested by AWI and explore potential new harvesting options for their own enterprise.

“Shearing is the number one issue that woolgrowers talk to me about, and something I am familiar with as a grower myself. It is critically important to get this sorted as quickly as we can,” he said.

“The AWI harvesting innovation

demonstration day at Falkiner enabled woolgrowers to see different shearing systems and it also offered them a chance to talk to leading machinery and shed manufacturers about design and construction.

“AWI staff were also on hand to provide the latest information to woolgrowers on shearing shed safety, shed design, and shearer and wool handler training initiatives.

“Every woolgrower’s operation and setup are different, but what we managed to do at the demonstration day was showcase in one venue a range of options for growers to see what could fit into their own business.

“There was a real buzz at the event. People’s feedback was that they had been encouraged by what they’d seen, and I think people there were very positive about the industry.”



Hear more from Jock Laurie in Episode 216 of AWI’s *The Yarn* podcast, available at www.wool.com/podcast

Highlights of the demonstration day

Modular sheep delivery units

The AWI modular sheep delivery unit delivers sheep directly to the shearer. It not only eliminates the time and energy that shearers spend having to walk to the pen, catch a sheep and drag it back to the shearing stand, but it also minimises the chance of injury to the shearer from the dragging and twisting movements.

The design focuses on a ‘modular’ concept in which portable singular shearing stands can be joined together to make a multi-stand shearing platform, which can be stored away after use. Each modular unit holds three sheep in a continuous race at the back of the unit. A dummy pen is fitted onto the end of the race to assist with the flow of the sheep.

The **automatic module** 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 the animal.

There is also a **manual module**; the



The **modular sheep delivery unit** (automatic version), manufactured by **Haynes Engineering**.

delivery race is very similar to the automatic module’s race, except that in the race there is a simple gate, in place of the automatic delivery section. The shearer simply opens the gate and collects the sheep from the race and manoeuvres the sheep the metre or so to the centre of the board before starting shearing.

For both modules, an angled shoot allows for simple release of the shorn sheep underneath the race – again without significant dragging or twisting.

The potential benefits of the modular sheep delivery unit for woolgrowers and the industry include:

- improved efficiency for workers and the flow of livestock because the shearer no longer has to walk to a catching pen
- decrease in shearer injuries
- increased attraction and retention of shearers to the industry
- cost effective option when upgrading infrastructure
- provides an avenue for multipurpose sheds.

The engineering plans for the module are available from AWI for interested growers.

More information

www.wool.com/sheep-delivery
www.haynesengineering.com.au



The **Peak Hill ShearEzy** unit being demonstrated by **Shearing World**.

Peak Hill's ShearEzy upright shearing machine

Peak Hill's ShearEzy upright shearing machine is designed to enable either experienced or novice shearers to shear sheep effectively and easily whilst the shearer is in an upright standing position. The ShearEzy is a result of AWI's past investment in shearing technologies.

The ShearEzy was demonstrated at last month's event by Shearing World, a company that specialises in the shearing of cross-bred rams. Their shearing trailers suit different farm areas, be it out in the yards or inside a big shed. The ShearEzy unit clamps the ram and rolls it over into a cradle where the back legs are locked in leg restraints. The ram is restrained enabling a pattern of shearing with big flat areas, which helps ensure a quality job. Furthermore, no sedative is required saving time and money and the rams are not off feed for too long, limiting any stress for all involved.

More information
www.peakhillindustries.com.au
www.ramshearing.com.au



The blueprints of **AWI's Shearing Shed Design** are available free on the AWI website.

Shearing shed design and safety

Woolgrowers heard from AWI staff about AWI's Shearing Shed Design. This is a result of AWI and a working group of woolgrowers and shed staff in 2019 designing a shearing shed which addresses worker safety and animal welfare considerations, while also achieving improved shed efficiency and good wool quality outcomes. Dozens of sheds have now been built across the country using this design. The blueprints of the design and further information are available free on the AWI website. Woolgrowers also heard from AWI staff about the shearing shed safety program, *SafeSheds* – see page 29 for further details about *SafeSheds*.

More information
www.wool.com/sheddeshign



Grant Burbidge talking to woolgrowers about his **Shear Anywhere** wool harvesting system.

Shear Anywhere wool harvesting system

The Shear Anywhere was developed by woolgrower Grant Burbidge of Burbidge Farms located at Tarcutta in NSW and at Simpson in Victoria. The Shear Anywhere provides a novel approach to wool harvesting with the upright standing position for shearing, which removes a lot of strain from the shearer's back. The sheep are delivered onto a shearing cradle to the shearer – the shearer does not have to catch and drag the sheep from a pen, which significantly reduces the physical strength required, while increasing shearer

safety. A wider range of people are able to shear sheep on this system, compared to traditional shearing, because it required less strength. Skirting can be done on the platform as the fleece is shorn. A specific shearing shed is not needed for this system, with the modular units being portable.

More information
www.burbidgefarms.com/wool-harvesting

CONTINUES OVER THE PAGE →



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CONTINUED FROM PREVIOUS PAGE



The 3D Shearing mobile race delivery and shearing trailer.

3D Shearing's mobile trailer

3D Shearing is a contractor, based near Dubbo in NSW, with a custom-made three-stand mobile trailer with a single race delivery system to the shearer. The trailer has been specially designed with a short drag system that minimises the chance of injury to the shearer and the sheep whilst also maximising productivity with reduced catch times. There is a portable blow-up shed that goes over the trailer with plenty of extra room to contain the wool table, wool press and bales. The trailer can also be set up in a machinery shed or hay shed, rather than outside. The 3D Shearing option provides peace of mind that you have supplied a safe workplace for your team, and eliminates the cost and complexity of building a new shed.

More information
www.3dshearing.com.au

Other potential technology solutions on show



PORTABLE, SMART SHEARING HANDPIECE

AWI has been working with a design company, 4c Design, to develop a prototype of a battery-operated handpiece with power equivalent to current shearing plant. This has the potential for incorporation of sensors to make shearing available to less experienced operators while increasing animal welfare.



WEARABLE TECH TO PREVENT SHEARING INJURIES

AWI-funded research continues into wearable technology that will potentially provide shearers with an early warning alert (via a display on a smartphone) when they are becoming vulnerable to potential fatigue-triggered injuries, and propose optimal resting cycles.



SEMI-AUTONOMOUS WOOL HANDLING SYSTEM

A three-year AWI-funded project to design, build and test components of a semi-autonomous wool handling system is being undertaken by the UTS Faculty of Engineering and IT. The project aims to cover the steps from the wool table through to baling.

B



Students from Farrer Memorial Agricultural High School in Tamworth, NSW, during a workshop delivered by AWI trainers Andrew Newstead and Ross Thompson.

'Welcome to Wool Harvesting' program

AWI's pilot 'Welcome to Wool Harvesting' program, which was rolled out in April and runs until the end of June, aims to encourage high school students to take up a career in the wool harvesting industry.

The program delivers shearing and wool handling workshops to students in years 9 and 10 at high school, which are the critical years when students are choosing trades and skill-based apprenticeships.

Along with the support of the school and their agriculture teachers, these workshops are delivered by AWI trainers and can cater up to 20 students per day. The workshops provide an introduction to the wool harvesting industry to those students

who might never have been exposed to it before, as well solidifying the knowledge of other students who might already have an interest in wool harvesting.

The AWI trainers take the students through practical work exercises, offer insights into the career options as a shearer or wool handler, and deliver their knowledge of the industry from start to finish. This not only gives the students a chance to consider the wool harvesting industry as a career,

but it educates our next generation about the wool supply chain from farm to fibre processing and beyond.

The program has also helped foster key relationships between AWI and the education sector which, beyond this pilot program, will prove extremely beneficial in the continued promotion of the industry to new entrants.

B



Students at **Hawkesdale College** in the Western District of Victoria, on the Wool Overview Program.



Left and above: **Lachlan Phillips** and **Sophie Taylor** of **Monivae College** in Hamilton, Victoria, on the Wool Overview Program.

School students inspired by wool

Funded by AWI, RIST's Wool Overview Program provides hands-on training to secondary school students across Victoria, with the aim to inspire and grow them into the next generation of Australia's wool industry workforce.

Through its Wool Overview Program, Rural Industries Skill Training (RIST) targets students in years 9 and 10 (as well as students up to year 12) at about the time when the students are choosing what career to pursue.

The program is led by wool industry experts and incorporates hands-on, engaging and practical on-farm training and insights, as well as providing a holistic overview of the wool processing pipeline and the many career pathways available in the Australian wool industry.

Since 2016, RIST has delivered the three- to five-day program to about 200 students from schools across Victoria including Hamilton, Camperdown, Mortlake, Derrinallum, Hopetoun, Edenhope, Casterton, Hawkesdale, Portland and Stawell.

RIST has witnessed a high percentage of program attendees continuing their

agricultural studies and undertaking traineeships in the farming sector.

Woolgrower support is vital and the program has been enthusiastically embraced by a generous cohort of growers, shearers, service providers and wool professionals volunteering their farms and time to encourage young people's interest in the wool industry and agriculture.

Among the participants, some are selected as having previously become disengaged from learning. RIST Shearing and Wool Handling Program Coordinator, Raelene Laidlaw says it's particularly pleasing to see these students inspired by the sector.

"During the past six years since RIST and AWI have partnered to deliver the program, we've seen a number of students re-engage in their learning and find inspiration in the many careers on

offer in the wool industry. Many have gone on to continue studying with RIST and are now working in the sheep and wool industry," she said.

What skills do the students learn?

Led by industry expert trainers in conjunction with support from the wool sector workforce, students take part in activities including shearing, handpiece maintenance, penning sheep, learning about the parts of a fleece, wool handling, wool classing, sheep breeds, workplace health and safety in the shearing shed, working with stock and sheep dogs, pastures, and value adding to meat and wool production.

Tours to wool stores, saleyards, the National Wool Museum at Geelong; and wool testing, wool brokering and wool fabric processing facilities; as well as on-farm visits during sheep pregnancy scanning; have received extremely positive feedback from students and the industry alike.

RIST has also been able to incorporate Virtual Reality experiences into the delivery, providing the students with an insight into advancements in processing technology in the wool industry and garment manufacture.

B



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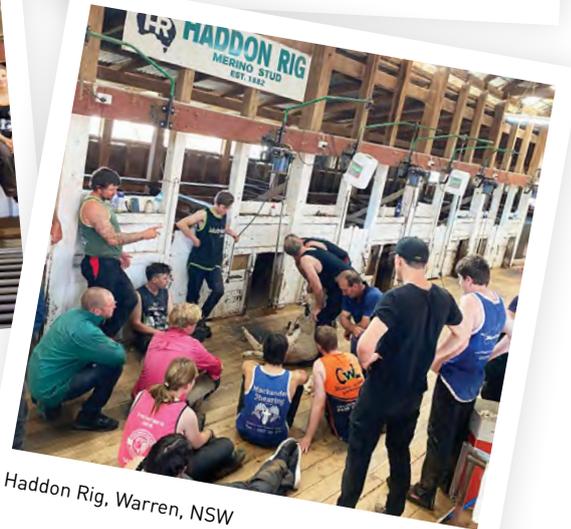
Parndana, Kangaroo Island, SA



Oxton Park, Harden, NSW



Rylington Park, WA



Haddon Rig, Warren, NSW

AWI-funded in-shed harvesting courses

Pictured above 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.

Adequate numbers of highly skilled professional staff to harvest and handle a high-quality Australian wool clip in a timely manner are key to the profitability of the Australian wool industry.

AWI 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.

Due to the current shortage of and demand for shearers, which has been made worse by COVID-related restrictions, there is a concerted effort to run extra novice and improver training, funded by AWI and several state governments.

AWI also has initiatives to encourage budding shearers that have completed training to build up their skills and stay in the industry. These initiatives include three extra in-shed coaching training days for learner shearers, and the presentation to learner shearers of the 'AWI Learner Shearer Toolbox', containing a handpiece and

other shearing gear, subject to the shearer passing certain strict criteria. **AWI has presented 200 toolboxes to learner shearers since 1 July 2021.**

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. **B**

More information

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

FMD international outbreaks a warning for Australia

Australia has a robust strategy to minimise the potential trade impacts on the sheep and wool industries if an emergency animal disease (EAD) was to occur in this country. However, the outbreaks of foot and mouth disease (FMD) in sheep in South Africa, and the outbreak of FMD in cattle last month in Indonesia, are a timely warning for Australian livestock producers to ensure their own farm biosecurity measures are optimised.

Australia has a favourable animal health status, with freedom from many diseases present in other countries, giving us an advantage in terms of lower production/management costs, enhanced animal health and productivity, and preferential export market access.

However, CSIRO has estimated that if a multi-state foot and mouth disease (FMD) outbreak was to occur in Australia, it would cost up to \$50 billion over 10 years, primarily due to the cost of trade restrictions. With 90-95% of Australian wool exported in a greasy state, a single detection of FMD could result in the loss of our ability to export greasy wool for at least six months.

As an island nation, we have a substantial advantage that allows us to control movement of goods across our borders. Australia has a world class multi-layered biosecurity system that manages the risks of pests and emergency animal diseases (EAD) entering Australia to a level that is acceptably low, but not zero. The level of risk associated with pests and diseases is ever changing and our biosecurity system is constantly positioning itself to address these changing risks, as recently observed with FMD, Lumpy Skin Disease and African Swine Fever spreading to our near neighbours.

The South African experience with FMD

As many readers will be aware, our wool-growing colleagues in South Africa have suffered a recent outbreak of FMD following an earlier outbreak in 2019. Following the 2019 outbreak, South Africa immediately lost its FMD zone free status with the World Organisation of Animal Health (OIE). This resulted in a series of bans of exports of cloven-hoofed animals, and their products (including greasy wool), by various trading partners.

"As this happened precipitously, there was no time for any role player to adjust and it had a profound impact on the entire wool value chain," said Consulting Veterinarian to Cape Wools SA, Dr Stuart Varrie.

"The ban on the export of greasy wool was in place from February 2019 until



Ruptured oral blister in a foot and mouth diseased goat in Nepal. PHOTO: Animal Health Australia

August 2019, even though the South African National Department of Agricultural Land Reform and Rural Development (DALRRD) confirmed the outbreak to be localised. Therefore, the ban was in fact maintained due to the loss of FMD zone free status.

"During the six months of the ban, the DALRRD worked extensively with China to develop new export protocols with the necessary assurances that risks of FMD

virus in greasy wool were mitigated. The new protocols required time/temperature inactivation of FMD virus as per the OIE Terrestrial Animal Health Code and approval of all wool export facilities by South African and Chinese government authorities."

Even with these agreed protocols, the current (2022) outbreak has again resulted in the suspension of exports, highlighting the sensitivities associated with EADs.

"We really believed that the mitigation measures in place should have ensured that SA greasy wool could continue to be exported to China. This however proved not to be the case," Dr Varrie stated.

Dr Varrie urges the Australian wool industry to take note of the South African experience.

"The lesson from this is that mitigation planning is essential. Scenario modeling for the worst possible case is indicated to allow checks and balances to be in place, where possible, prior to the crisis. Only in this way do you have the best possible chance to avoid what we went through. Even then, as we have found, it may not be enough but at least you will be some way there."

Biosecurity measures in Australia

Australia has advanced surveillance systems, agreements and protocols in place to rapidly detect and respond to EAD incursions.

The Emergency Animal Disease Response Agreement (EADRA) and AUSVETPLAN, which are administered by Animal Health Australia, set out government and industry obligations (including cost sharing) in the event of an EAD outbreak, and provide guidance on the management and control measures that may take place.

WoolProducers Australia is the EADRA signatory for the wool industry, with AWI holding \$5 million in reserves on behalf of the industry for use in the event of an EAD impacting wool. **B**

What can you do to help prevent and be prepared for an EAD outbreak in Australia?

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

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.

As our South African colleagues have learnt, we must not be complacent in relation to EADs; we all have a role to play to keep our animals healthy and retain our favourable market access.

More information

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

Protect your flock from bruce-o

Ovine brucellosis, commonly referred to as 'bruce-o', is a bacterial disease that permanently infects the testes and epididymis of rams, rendering some infertile. There is no cure for brucellosis so prevention is critical – and there are steps you can take to dramatically reduce your risk.

Veterinarian **Dr Matt Playford** demonstrating ram testicular palpation at a RAMPing Up Repro workshop.

Key recommendations

- Only purchase rams from vendors that are accredited free of brucellosis. Ask for a copy of your ram breeder's certificate and a National Sheep Health Declaration.
- Maintain sound fences to prevent entry of stray rams or ewes that could spread the disease to your flock.
- Perform pre-joining ram checks three months prior to joining and have an accredited veterinarian inspect your flock if you find anything suspicious.
- Run your rams in small mobs with young rams and old rams separated, and avoid running rams with ewes during lambing periods.
- Cull all infected rams.

Ovine brucellosis, a reproductive disease caused by the *Brucella ovis* bacteria, affects all breeds of sheep and is found in all states of Australia. The disease causes considerable economic loss in many flocks by reducing lambing percentages (through a combination of reduced ram fertility and abortion), extending lambing seasons and increasing ram culling.

The bacteria localise and multiply in the reproductive organs. Affected rams develop hard, abscess-like swellings in the epididymis (the tube from the testes that holds sperm whilst it's maturing). These lesions are most noticeable because they are so much harder than the rest of the epididymis and also because the swellings are irregular in size, often making one epididymis feel quite different in shape from the other. (Normally, there is no significant difference in shape between a pair of epididymii.)

In some rams, the blockage is permanent and the tail of the epididymis continues to swell. In other rams the blockage may break down, the swelling reduces, and the testes feel normal, while the ram may still be infected.

The disease is transmitted at joining when a clean ram serves a ewe that has recently been served by an infected ram

in the same cycle, or between rams in the ram paddock.

Clinical signs are not common in ewes as they are fairly resistant to the disease, but they can be carriers of the infection and discharge the organism in the placenta, vaginal discharge and the milk. Ewes usually only carry the infection for one or two oestrus cycles. Infection causes inflammation of placenta, early embryonic death (usually without outward signs) or uncommonly the foetus may be aborted. Infection in ewes is self-limiting, so ewes usually breed normally in subsequent years.

Effect on flock fertility

- Reduced lamb marking percentages – when clinically affected rams are used, the lambing percentages may be reduced. If brucellosis continues in the flock, lambing percentages will progressively decline.
- Extended lambing period – when infected rams service ewes, the chance of conception is low and many ewes will return to service 17 days later. If rams are left with ewes, the number of pregnant ewes will increase, but this will result in an unusually long lambing period.
- High ram culling rate – if rams are culled when abnormalities are detected on palpation, then infected rams are culled one or two years after infection. If brucellosis is not eliminated, this high culling rate will continue.

Prevention

There is no preventative treatment available for brucellosis, and infected animals cannot be treated. Eradication of the disease is the only cure and requires identification of infected animals and culling of these animals accordingly.

Annual palpation as part of the Four Ts check (teeth, toes, tackle, testes) will assist with identification of suspect rams, and subsequent testing will determine if rams have brucellosis for future joinings.

One tell-tale sign of brucellosis is lower conception rates and this should be treated as a signpost for ruling out brucellosis for future joinings. These rates may not be exhibited as a complete failure, as not all rams may be infected. When the number of affected rams in a flock is greater than about 10%, the fertility of the flock is appreciably decreased.



Diagnosis and eradication

There are three methods of diagnosing ovine brucellosis:

1. Palpation of the scrotum – examine ram in a standing or sitting (shearing) position. Use both hands and start above the testes, moving down to the base of the testes and the epididymal tails. Check for symmetry, free movement in the scrotum and the absence of lumps within the testes and epididymides. Testes should feel firm and springy.
2. Blood tests – blood is tested to detect the presence of *B. ovis* antibodies, which indicates previous exposure to infection.
3. Semen examination – examination of semen may reveal a reduced volume of semen, poor sperm motility and/or a high proportion of abnormal sperm. *B. ovis* may also be cultured from semen.

When ovine brucellosis is suspected or detected in a flock, the grower should discuss the management options with their veterinarian. Eradication can be achieved by a combination of manual examination, blood testing, and removal of infected rams as soon

as they are detected. There is no effective vaccine so culling infected rams is the only option for eradication of brucellosis from a flock.

During an eradication program, it is important to prevent contact between infected and uninfected rams. Separate infected rams immediately from other tested-negative and young rams and sell infected rams direct to slaughter.

Once eradication is achieved, precautions must be taken to prevent infected rams re-entering the flock, whether as strays or introductions, and monitoring through pre-joining ram checks is vital to maintaining a brucellosis-free flock.

Purchasing replacement rams from brucellosis-free accredited producers reduces the risk of brucellosis entering your property. Other biosecurity measures, such as good boundary fences, quarantining new introductions and requesting a National Sheep Health Declaration from the vendor, help to maintain a clean, healthy flock. **B**

More information
www.wool.com/rams

Visit Animal Health Australia's 'OB Database' to search for flocks of any breed that are accredited brucellosis free – click on the 'Ovine brucellosis' tab at www.animalhealthaustralia.com.au/sheep-health-and-biosecurity

Visit Farm Biosecurity for more information on the National Sheep Health Declaration and links to your state government's Brucellosis scheme – see www.farmbiosecurity.com.au/industry/sheep

RAMping Up Repro workshop

Pre-joining inspection and preparation of your ram team is a critical part of the farm calendar to improve the health, performance and longevity of your ram team and prevent avoidable loss of production due to poor reproductive performance.

RAMping Up Repro is a hands-on workshop, held on-farm, to help ensure that growers get the most from their rams. Developed by AWI in partnership with Zoetis Australia, the RAMping Up Repro workshop aims to build producers' confidence in managing their rams before and during joining, with full pre-joining ram checks undertaken by participants during the workshop.

More information

RAMping Up Repro is rolled out by AWI's grower extension networks. Visit www.wool.com/networks to get in contact and find out when your closest workshop is being held or to register your interest.



The University of Adelaide's **Bobbie Lewis Baida** will examine the effects of heat stress on rams' reproductive performance.

Great balls of fire!

How hot weather impacts ram fertility

A new AWI-funded project will investigate the impact of hot weather on ram fertility, as part of a first of its kind study undertaken on-farm rather than in climate-controlled rooms.

The University of Adelaide's Bobbie Lewis Baida will undertake the 12-month project through an AWI-funded Science and Innovation Award for Young People in Agriculture.

High testicular temperature is known to reduce the amount of morphologically normal, motile and fertile sperm. And with temperatures rising under climate change, the new project will see Bobbie investigate how scrotal and body temperature regulation affects semen quality and fertility in Merino rams.

Bobbie, from the University of Adelaide's School of Animal and Veterinary Sciences, says the project complements her existing PhD research on the impact of heat stress on ewes. She is using vaginal temperature sensors to monitor the core temperature of ewes in the paddock, linking this to behaviour, ovulation rate, conception rate, foetal growth and lamb birthweight.

Adding rams will allow Bobbie to collate a complete picture of how climate change will affect sheep reproduction.

"I'll hopefully be able to tie it all together and address a lot of unanswered questions," she explained.

The temperature of ram testicles is regulated independently, typically sitting a few degrees centigrade below the animal's core body temperature. Bobbie will study how hot weather affects this over the 2022/23 summer, using technology designed to continuously monitor scrotal and body temperature with minimal impact on the rams.

With a changing climate and a recent review reporting that heat stress around joining already costs the Australian sheep

industry approximately \$97 million each year, Bobbie says there is an urgent need to address the issue.

"I think it's important that we realise the ramifications of climate change, and I'm really excited that my research is a part of solving the problem in a small way."

AWI CEO John Roberts says ram fertility and sheep reproduction is of fundamental importance to the profitability of Australian woolgrowers.

"Rams are high performance animals that are the primary drivers of genetic improvement in a flock, so they need to be given every opportunity to pass on their genes. To cover multiple ewes over the joining period, rams need to be in peak physical condition," he said.

"This new research into ram fertility will create new knowledge to help ensure the industry can be highly productive, especially in a warming climate. The results will feed into the industry's extension activities such as AWI's RAMping Up Repro workshops that provide woolgrowers with knowledge of what drives ram performance, thereby helping improve the profitability of their enterprises."

The Science and Innovation Awards for Young People in Agriculture are coordinated by ABARES and are open to young people aged 18-35 years working or studying in rural industries. The annual awards aim to support and inform best farming practices and develop strategic planning within the sector. **B**

More information

www.wool.com/scienceawards



New workshop SimpliFly-ing flystrike management

A new workshop to help woolgrowers combat flystrike has been successfully piloted and will be available from next month through AWI's state grower extension networks. The one-day workshop, titled SimpliFly™, steps woolgrowers through an informative and interactive process for developing a property-specific, strategic flystrike management plan and calendar.

While many woolgrowers know about flystrike and deal with it regularly, the new SimpliFly™ workshop from AWI provides woolgrowers with best practice, property-specific solutions, through business and husbandry planning and management.

Attendees will be taken through the short and long-term 'tools' in their flystrike management toolbox that, when used in combination, are effective at addressing the complex flystrike challenge. In particular, the workshop demonstrates that no single tool provides a solution to preventing flystrike and that an integrated pest management approach is the best long-term approach.

"SimpliFly™ provides woolgrowers with information on all the different options or tools available to them to manage flystrike. The tools need to be considered in combination," said AWI General Manager, Research, Dr Jane Littlejohn.

"The workshop helps woolgrowers work through the implications on their production system of not only using, but also removing or changing the timing of any of the flystrike management tools, ensuring they can continue to effectively manage flystrike and protect and advance the health and welfare of their sheep."

Proven, easy-to-understand format

Pilot workshops were held in Warren (NSW), Walcha (NSW), Campbell Town (Tas) and Hamilton (Vic). All attendees agreed that the workshop increased their understanding of flystrike management and 97% indicated the workshop had given them the confidence to make changes to the way they manage flystrike.

Angela Schuster, whose team developed SimpliFly™ with AWI, and is a woolgrower herself, explained: "There was already a significant body of information available to woolgrowers about flystrike management, but until now it was in a disparate form and often highly technical rather than being readily implementable.



Katelyn Millard and Will Kinghorn during the Hamilton (Vic) SimpliFly™ pilot workshop held earlier this year, customising their flystrike management plan and annual calendar to their operations.

"The workshop will be valuable for all woolgrowers, I particularly found the calendar and plan to be really useful, really practical. I can easily work with them and they'll be extremely helpful in the operation."

**Cam Munro (right),
General Manager of
Egelabra Merino Stud**

Cam attended the Warren (NSW) pilot SimpliFly™ workshop in 2021



"SimpliFly™ brings this information together in an easy-to-understand, accessible format and provides resources that woolgrowers can immediately use on-farm to help in their battle to control flystrike."

Throughout April and May, more than 35 advisors completed the training and accreditation process to equip them with the information to deliver the workshop to

woolgrowers. A further train-the-trainer workshop is planned for July in WA.

Nathan Scott, one of the accredited deliverers had this to say from his experience learning about delivering the workshop to woolgrowers: "Everyone knows about flystrike, but the workshop provides really practical tips that can help us reduce the risks and more effectively use the range of



Colin and Suzie Jones using the chemical selection wheel during the Campbell Town (Tas) SimpliFly™ pilot workshop in March to consider the types of preventative chemical they can use as well as the timing of application.

management options available. I now know more about flystrike management than I ever have before.”

Property-specific and practical resources

Participants leave the workshop with resources customised to their specific property and management approach.

The whole-of-farm management calendar has been designed to integrate flystrike management activities with other farm management activities such as animal husbandry and pasture management, as well as much-needed holidays!

Attendees also learn about the useful interactive features available online from FlyBoss to help manage flystrike, including the FlyBoss tools. The FlyBoss tools allow woolgrowers to work out the high-risk periods for flystrike in their area and test the effectiveness and timing of various management activities in combating flystrike such as crutching and shearing, chemical treatments, breeding for flystrike resistance and mulesing.

SimpliFly™ attendees also receive a series of factsheets and case studies on flystrike management, managing blowfly resistance to chemicals and best practice procedures at mulesing, including the use of analgesia and anaesthesia. **B**

More information

www.wool.com/simplifly

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

AWI's Flystrike Extension Program

AWI's Flystrike Extension Program supports woolgrowers to improve the lifetime welfare of their sheep, reduce their reliance on mulesing and crutching, optimise chemical use and increase whole farm profitability through the provision of practical information and tools and access to accredited advisor support on flystrike management.

Woolgrowers 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.

SimpliFly™ is the third of six extension initiatives to be released under AWI's Flystrike Extension Program since January 2021.

It's Fly Time!™

Practical, just-in-time **information** in the lead up to, and during, high-risk flystrike periods.

Available now. See www.wool.com/itsflytime

DemystiFly™

Practical **information** about managing chemical resistance in blowflies.

Available now. See www.wool.com/demystify and page 14.

SimpliFly™

A one-day **workshop** to develop a property-specific, strategic flystrike management plan.

Available from July. See www.wool.com/simplifly and the opposite page.

ClassiFly™

A one-day **workshop** to increase understanding and skills in breeding for flystrike resistance. (This initiative is under development and will 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. (This initiative is under development and will 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. (This initiative is under development and will be launched in 2023.)

More information:

- AWI's Flystrike Extension Program: www.wool.com/flystrikeresources
- Flystrike management, including access to interactive decision support tools: www.flyboss.com.au
- AWI's Flystrike Research, Development and Extension Program: www.wool.com/flystrike

Are you interested in becoming an accredited advisor under the AWI Flystrike Extension Program?

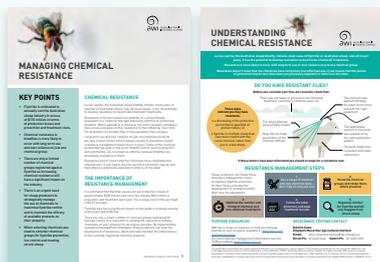
AWI has openings for industry advisors to get involved in the program. For information on the program and how you can get involved, view the Call for Expressions of Interest at [wool.com/flystrike-eoi](http://www.wool.com/flystrike-eoi) or contact the AWI National Extension Manager, **Emily King**, on emily.king@wool.com or 0437 523 036.

Blowfly chemical resistance – publications

www.wool.com/demystify

Are you concerned that your blowfly chemicals are losing effectiveness? There are only a small number of chemical groups registered for flystrike control, so it is important to prolong the usefulness of these chemicals on your property 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 information for woolgrowers about blowfly chemical resistance to ‘demystify’ this complex, yet important, issue. Here is a selection of the available publications, available at www.wool.com/demystify.



MANAGING CHEMICAL RESISTANCE

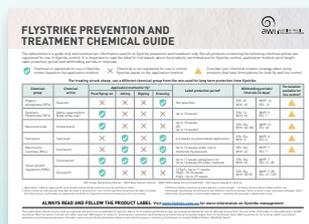
(November 2021)

This six-page factsheet contains information of how chemical resistance occurs, how to determine if chemical resistance is an issue and how to minimise the impact.

UNDERSTANDING CHEMICAL RESISTANCE

(December 2021)

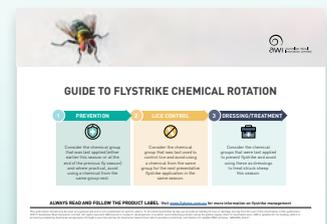
One-page summary guide.



FLYSTRIKE PREVENTION AND TREATMENT CHEMICAL GUIDE

(November 2021)

This one-page guide will help woolgrowers identify which flystrike chemicals are available to use for their specific circumstances, including the chemical groups, actives, application methods, label protection periods, withholding periods and intervals and other uses.



GUIDE TO FLYSTRIKE CHEMICAL ROTATION

(December 2021)

This one-page guide provides the three key considerations in the responsible selection and rotation of flystrike chemicals.



CHEMICAL RESISTANCE – FREQUENTLY ASKED QUESTIONS

(November 2021)

This three-page factsheet provides practical answers to the common questions that woolgrowers ask about blowfly chemical resistance.



PRODUCER CASE STUDIES

(November 2021)

These two four-page case studies detail flystrike prevention by two woolgrowers in Central West NSW: (1) Peter and Angela Schuster (non-mulesed sheep) and (2) Graham, Helen, Col and Kaz Quade (mulesed sheep).



COMBATTING CHEMICAL RESISTANCE

(December 2021)

This two-page article from *Beyond the Bale* provides an overview of chemical resistance and the role that an integrated pest management approach plays in flystrike management.

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*Visit ZolvixPlusRewards.com.au for terms and conditions. References: 1. Refer to registered label. 2. Hosking, B.C. *et al.* (2010). A pooled analysis of the efficacy of monepantel, an amino-acetonitrile derivative against gastrointestinal nematodes of sheep. *Parasitol Res* 106:529-532. Zolvix Plus contains 25 g/L monepantel and 2 g/L abamectin. Always read and follow the label directions. For full product details, contact Elanco Customer Service on 1800 226 324 between 8 am and 5 pm EST Monday to Friday. ZolvixTM, Elanco and the diagonal bar logo are trademarks of Elanco or its affiliates. ©2021 Elanco or its affiliates. EAH21607. PM-AU-21-0862.

Grazing management as a tool for parasite control

Continuous grazing of a paddock increases pasture contamination and subsequent reinfection of sheep by worm larvae. However, grazing management is an effective tool to help reduce the number of eggs being deposited onto pasture and the number of larvae being ingested by sheep. This ultimately can reduce the reliance on chemical drenches and thus slow down the development of anthelmintic resistance.

When considering changes in grazing management practices there can be two different objectives.

1. Prepare low-risk paddocks for vulnerable stock

Prepare low-risk paddocks for vulnerable stock, which will be weaner lambs and pregnant and lactating ewes. It is important to look after these two classes as their ability to mount an effective immune response and defend themselves against worms is compromised. Weaners have yet to fully develop their own immune system. Pregnant and lactating ewes have a compromised immune response due to the metabolic demands of pregnancy and lactation.

Preparing a low-risk lambing/weaner paddock needs to be done in advance as it can take up to six months depending on the environment you live in. You are aiming to spell your paddocks from infected animals to allow existing worm larvae and eggs to die off, while at the same time preventing further contamination. This doesn't mean these paddocks can't remain productive, you just have to think a little outside the box. For example, you could graze with cattle, or sheep for a short period following an effective drench (wethers are particularly useful here as they are naturally more resistant) or you may like to consider a crop, silage, or hay making.

Other alternative methods of control that lower worm burdens in sheep will help as well, such as a Barbervax program, Bioworma, and selecting resistant rams.

For more information, see *Preparing low worm-risk paddocks*¹ on WormBoss.

2. Use rotational grazing as a year-round tool

Use rotational grazing as a year-round tool for all classes of sheep. Regardless of the objective, understanding the graze and rest periods will be fundamental. When considering grazing management

strategies, these two critical periods are of equal importance. As with preparing low-risk lambing/weaner paddocks, year-round rotational grazing will require sections of a system to be free of sheep but again this doesn't mean they have to remain unproductive.

GRAZE PERIOD

The length of time an animal spends grazing a paddock should not only consider the amount of feed available, but the life cycle of the parasite species you are aiming to control (see *Paddock contamination with worms*²



Larvae on pasture. PHOTO: Techion, NZ

on WormBoss). To achieve the latter, one should consider the autoinfection period, the time it takes for eggs (deposited onto pasture in faeces) to hatch into larvae and be ingested by stock. This can take anywhere between 4-10 days dependent on species and environmental conditions.

The aim is to graze stock for a shorter period of time than the autoinfection period. A short graze period will then prevent reinfection and lower parasite exposure, especially important for vulnerable young stock and pregnant and lactating animals.

To choose an ideal graze period, you need to consider the lifecycle of the parasite (see *Roundworm life cycle*³ on WormBoss) that you are targeting and the environmental conditions.

REST PERIOD

The rest period is the time a paddock is rested from a single species of grazing livestock. This is because most parasites are host-specific, such that most sheep parasites can only complete their life cycle inside sheep. The rest period also aids in breaking the parasite's lifecycle by allowing eggs that have been deposited on pasture to hatch and the larvae to then die off without being ingested by livestock (see *Rotational grazing*² on WormBoss).

Choosing the period of grazing and rest is a balance between worm control and pasture utilisation. It is important to consider the species of pasture present and the time of year. Faster growing pasture species and summer conditions will require a shorter rest period between grazing events. This is because pasture recovery is quicker and larval die-off is accelerated in warmer months (see the effect of temperature at *Larval survival of barber's pole worm*² on WormBoss). Slower growing pastures and cooler conditions require a longer rest period (see *Scour worm larvae on pasture*² on WormBoss). **B**

NOTES: Go to www.wormboss.com.au/sheep-goats and select Main Menu, then:

1. Tests & Tools >> Management tools
2. Tests & Tools >> Management tools >> Grazing management
3. Worms >> Roundworms

More information

www.wormboss.com.au

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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



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-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

Innovation program to foster idea for new rabbit bait

Lisette Mill from Victoria is working on her idea for the development of a more attractive bait for rabbit biocontrol, with the assistance of the Farmers2Founders program supported by AWI.

A world-first innovation program, Farmers2Founders (F2F) is designed to help individuals in the Australian agricultural sector develop their entrepreneurship capabilities – and successfully bring new value-added products to market.

Out of more than 50 applicants from across Australia, Lisette Mill was selected as one of the 18 participants to join this year's F2F Hatch program, which she has now completed. The intensive six-week program provided Lisette with access to experienced business coaches, tailored support, resources and tools.

Lisette has now been accepted on the 8-week F2F Hone program which is the next step in her entrepreneurial journey to turn her idea into a real business.

With more than ten year's working at the farmer-based Basalt to Bay Landcare Network in South West Victoria, and as a graduate of the 2021 Livestock Leaders

Program, Lisette is passionate about securing the sustainability of the environment for Australian rural communities.

Lisette is working on the development of a more attractive rabbit biocontrol bait product than current baits (grain/carrots) that could be infused with modern rabbit viruses, following registration. Ultimately, she hopes to produce a commercially viable product that will enable rabbit biological control to be delivered to wild rabbits faster and in seasons when their uptake of current baits is low and slow. **B**

More information
www.farmers2founders.com

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Land managers planning to release the rabbit haemorrhagic disease virus (RHDV) are being urged to follow proven advice and time their release of the biocontrol only when rabbits are not breeding and young rabbits are not present. This is because young rabbits are resistant to RHDV and when infected develop immunity. This likely makes the rabbit population harder to control in future.

Infesting two-thirds of Australia, and almost all wool-growing regions, rabbits are Australia's most widespread and destructive agricultural and environmental vertebrate pest.

Since 1997, RHDV has been available to eligible land managers for intentional local release to help them control rabbits. The recommended guidelines state that RHDV should not be released when young rabbits are present in the population; this means that the virus should not be released when rabbits are breeding or for up to 10 weeks post the end of rabbit breeding.

However, new research published in the journal *Conservation Science and Practice* shows that half to three quarters of land managers have likely released RHDV at the wrong time of year, when young rabbits are present.

NSW Department of Primary Industries (DPI) research scientist, Patrick Taggart, who led the new research, says land managers irrespective of their position (private, government, other) must get

the timing of release right or risk losing a valuable tool to protect agricultural land, endangered native species and the environment from rabbits.

“Unless a landholder can be certain that young rabbits are not present in the population, they should strongly avoid releasing the virus between July and December. The virus should be released at the end of summer/start of autumn when there is no/little green grass around and rabbit are unlikely to be breeding.”

Dr Patrick Taggart, NSW DPI

“Releasing RHDV when young rabbits are present is not advised as the practice could exacerbate Australia's rabbit problem,” Dr Taggart said.

“RHDV should be released only when young rabbits are not present, as rabbits under ten weeks old are resistant to RHDV and once infected they are likely to recover and become immune for life. When these immune rabbits breed, their immunity is temporarily passed to their offspring, which we expect will make it harder to control rabbit populations in the future.

“Using RHDV at the wrong time potentially increases, rather than decreases, rabbit numbers and risks the effectiveness of future efforts to control this invasive pest.”

RHDV is manufactured and sold by NSW DPI's Elizabeth Macarthur Agricultural Institute, which has long-advised that RHDV should be released only when young rabbits are not present. In most years, rabbits breed continuously between May and October and young rabbits are likely to be ever-present between July and December.

Therefore, as a general rule of thumb, across southern agricultural Australia, RHDV should not be released between July and December. Optimal time of release is generally considered to be end of summer or start of autumn (February, March, April), before any major autumn rainfall that may kickstart rabbit breeding.

RHDV should not be released between July and December unless land managers are confident rabbits are not breeding and young rabbits are not present. Generally, this is only the case during especially dry seasons.

Legislation governing who is permitted to use RHDV varies between Australian states and territories.

While biological control of rabbits can be very effective at reducing rabbit numbers, biological control alone is not enough to manage rabbits. It is important to apply and integrate several control methods in addition to biocontrol, such as the removal of warrens or above-ground harbor, poison baiting, warren fumigation, or other similar rabbit management techniques. In most situations, no single method will provide adequate control of rabbits in the long term. **B**

More information

- For more information on the supply and correct application of RHDV, head to the PestSmart website at www.pestsmart.org.au (then type RAB011 in the search bar). The PestSmart website also contains a 24-page *Glovebox Guide for Managing Rabbits* developed with AWI support, and other useful rabbit control information.
- To read the new study published in *Conservation Science and Practice*, a journal of the Society for Conservation Biology, head to [www.doi.org/10.1111/csp2.12639](https://doi.org/10.1111/csp2.12639)



Get the timing of RHDV release right to manage rabbits

AWI smart tags deployed on the ears of sheep at 'Dunraven', near Barcaldine in Queensland.

AWI smart tags for remote detection of predation and disease

A three-year project co-funded by AWI has highlighted the enormous potential of on-animal sensors, including the AWI smart tag, to (1) indicate the presence of wild dogs around sheep and (2) detect the early incidence of health issues in sheep. The ultimate potential and benefit will be when real-time alerts are able to be generated to enable woolgrowers to intervene.

There is a growing interest amongst woolgrowers in the potential of on-animal sensors to remotely provide them with key real-time information on the behaviour and location of their sheep.

The provision of such information has several key applications for woolgrowers. These include detecting a potential or real predation event by wild dogs, and identifying more subtle sheep behaviour changes associated with the development of disease (eg high worm burden) – both of which can have significant production, profitability and animal welfare implications.

The AWI smart tag is one of the first potential options of on-animal sensors for woolgrowers, but research is required before commercialisation to make it practical for the behaviour of extensively managed sheep and real world on-farm situations, as well as provide reliable real-time alerts to woolgrowers.

A three-year project undertaken by CQUniversity with funding from AWI and an Advance Queensland Industry Research Fellowship to test the AWI smart ear tags has recently been completed. Specifically:

- the AWI smart tag was evaluated with several attachment methods (ear, collar and halter)
- connectivity and terrain considerations for commercial deployments were highlighted
- basic behavioural models and algorithms were improved; and
- the ability to use this information to deliver key alerts to producers, for early intervention measures associated with the detection of predation and disease (specifically Barber's pole worm infections), were highlighted.

The AWI smart tags were tested at 'Dunraven', a large commercial wool-growing property run by Paul Doneley near

Barcaldine in western Queensland. Testing involved behavioural observations of sheep to determine, for instance, the accuracy and sensitivity of the tag to detect standing, grazing and walking behaviours.



Paul Doneley and family of 'Dunraven', who appreciate the potential of on-animal sensors.

Remote predation detection

The research results indicated that the presence of a wild dog influenced the daily behaviours of sheep by increasing their daily distance travelled and changing their activity profile. Additionally, accelerometer-based detection of wild dog interactions was found to be feasible and current data processing undertaken on the AWI smart tag could be adapted to provide future alerts.

These results highlight the potential for on-animal sensors to be used as a monitoring tool for sheep flocks directly impacted by wild dogs, although further work is needed to determine the applicability of these results to other sheep production regions of Australia.

Remote disease detection

The research results highlight that there are differences in the daily breakdown

of behaviour between groups of sheep at varying intensities of Barber's pole worm infections. Overall, infected animals were shown to graze less and stand more than control animals, particularly at worm burdens between 250 and 1000 epg. These results suggest that accelerometer sensors may be able to detect behavioural changes associated with Barber's pole worm infections and highlights the potential use of these sensors to alert producers to an outbreak.

However, individual variability had a significant impact on the ability to detect overall patterns in flock behaviours. To address this, the researchers say on-animal sensors should be applied to individual sheep as early as possible. This will allow for individual baseline data to be collected prior to clinical disease. This baseline data could then be used to examine changes in an individual's behaviour over time, rather than in comparison to the flock.

Benefits for woolgrowers and wool industry

"There are numerous tangible benefits for woolgrowers that have been delivered through this project or will be realised when the AWI smart tag is commercially available," said AWI Program Manager Agri-Technology, Carolina Diaz.

"From an economic perspective, reduction in sheep loss from predation and disease can improve farm profitability and sustainability. Additionally, the potential reduction in associated stress for woolgrowers is another considerable benefit of this research," Carolina said.

"Animal welfare will also be improved through increased monitoring, management and intervention. Furthermore, social benefits can be achieved by improving social license and consumer perceptions of how animals are treated on-farm, including an increase in the frequency of monitoring.

"Future environmental benefits include targeted pest control activities, targeted or reduced use of chemicals for disease control, and improved paddock management."

Several other AWI-funded projects are investigating other applications of the AWI smart tag, including improving reproductive and grazing management. B

Exclusion fencing brings profitability **back to Picarilli**

Wild dogs used to cost fourth generation woolgrower Anthony Glasson \$20,000-\$30,000 in stock losses each year. However, an exclusion fence built in 2017 on Anthony's south-west Queensland property has resulted in far fewer stock losses and increased productivity.

Wild dogs and drought had driven outback Queensland woolgrower Anthony Glasson to despair in 2009, forcing him to destock his 109,000ha holding near Thargomindah in the south-west of the state.

The station was bounded on one side by 25km of the wild dog barrier fence but the logistics of completing an exclusion cell fence around the entire holding was enormous.

However, Anthony and his wife Gerda took out a low-interest loan through Queensland Rural and Industry Development Authority and spent around \$1 million building a 105km exclusion fence in 2017. This was the single biggest piece of capital infrastructure the family had completed in their 50 years of ownership.

Bad situation needed addressing

Anthony says 25 years ago the Bulloo Shire had run more than 200,000 sheep but today the family's Picarilli Downs is the only Merino sheep flock in the shire thanks to the cell fence.

"In recent years, wild dogs have pushed the last remaining woolgrowers out," he said.

"Growers north of us towards Quilpie were having real trouble with wild dogs and every year it seemed to get closer to us.

"We bought an extra 24,000ha but our



stocking rates didn't increase due to the wild dogs and grazing pressure from kangaroos.

"Wild dogs had cost us \$20,000-\$30,000 in stock losses each year before the fence went up.

"There is a lot of cattle country in areas to the north not controlling wild dogs and the numbers were breeding up. They would hit us every year in February, March and April when mature dogs would kick the young dogs out coming into mating season."

Picarilli was losing mature sheep and weaners to attacks despite ongoing baiting and trapping.

Exclusion fence has immediate benefits

Anthony says that the exclusion fencing has been well worth the expense and effort.

"If we hadn't built the fence, the costs from wild dog predation would have been astronomical – the fence has paid for itself well and truly in four years as we can run high value stock with good lambing percentages and having very few sheep attacked," he said.

"If we didn't have the fence up, I'm not sure we would have sheep anymore with what I know the wild dogs have done outside our exclusion fence."

The local professional wild dog controller went from eight wild dogs a year to 45 in 2018.

Anthony emphasises the importance of maintaining exclusion fences once they are built, and continuing with other wild dog control measures.

"Fence maintenance takes about one day a month; and after rain where there are washes under the fence or feral pigs pushing under flood gates, we have had wild dogs get in," he said.

"We are never going to stop that but the odd one here and there is easy to put up with compared to the issues we would have if the fence wasn't there. We have maintained our strategic baiting and trapping.

"We had sheep recently grazing outside of the fence and lost 20 ewes and a \$3000 ram – mobs inside the fence pregnancy scanned at 92 and 97 per cent, and that mob was 60 per cent due to the stress of wild dog predation during joining.

"Getting the fence up was a relief and it will pay dividends in not only sheep but the total grazing pressure is exciting – we have been rehydrating the land with spreader banks and water ponds as erosion mitigation.

"The birdlife in some of these wetlands we have created is really exciting.

"Putting down an artesian bore and pipeline system in the early 1980s and the fence have been two of the single biggest expenses the property has ever done, and both of them are the two best things we have ever done.

"I would absolutely encourage anyone wanting to get back into sheep to look at exclusion fencing – find a way of doing it as quickly as you can as you won't get any benefit until it's done.

"The sooner its up, the sooner you can start enjoying the fruits from it." **B**

The building of an exclusion fence on his Thargomindah station has enabled Anthony Glasson to increase productivity.



Exclusion fencing across waterways

Gullies, waterways and floodways can be difficult to protect with exclusion fencing due to varying water levels and the risk of flood. Access some tips in video clips from three Queensland woolgrowers, and in two exclusion fencing booklets from AWI and Kondinin.

Waterways are high-risk areas for wild dog incursions because effective exclusion fencing can be tricky to build in such volatile areas. Many woolgrowers fence waterways independently of the rest of their fences using separate end assemblies and materials that are designed to lay-down, fold-over or even break away in the event of a flood.

In a 4½ minute video produced in 2017 by AWI's state network in Queensland, Leading Sheep, woolgrowers Ben Banks of 'Rivington' at Blackall and David Owens of 'Somerset' at Longreach provide some tips for successful planning and erection of an exclusion fence. In particular they talk about the importance of preparation and fencing across creeks and watercourses.

"When erecting a fence, if we get to a creek or waterway, we'll stop the fence and put in a double-end assembly and then restart the fence again until we get to the other side of the water – therefore we keep



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.



Information and photos of successful exclusion fences across waterways (including electric fencing, suspended or hanging fences, and collapsible fences) are included in AWI's free 36-page *Wild dog exclusion fencing: a practical guide for woolgrowers*, which was published in 2017.

that section of the fence on the waterway separate, so if and when it washes away it doesn't affect the rest of our fence," Ben explained. "We'll swing netting under the main line of fence over the waterway and on the upstream side we'll put a light poly-belt to act as a float."

At Somerset, David said: "We put 1800mm chicken wire netting on the bottom of the flood fencing and made sure it overlapped 450mm on the ground – it swings up when you get a normal flood and lets all the debris through. We have also put up an 8-line wire at the top of the fence that will

swing on the odd occasion when there is a really big flood."

In a separate 3½ minute video from Leading Sheep, woolgrower Will Roberts of 'Victoria Downs' at Morven also provides some exclusion fencing tips and tricks – and emphasises having structural integrity in the fence over floodways. B

More information

Access the two Leading Sheep videos and two exclusion fencing guides at www.wool.com/exclusionfencing

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The past decade of wild dog control in Victoria: then and now



Above: AWI-funded Victorian wild dog control coordinators **Brian Dowley, Lucy-Anne Cobby** and **Mick Freeman**, with AWI Program Manager for Vertebrate Pests **Ian Evans** (second from right).



The **Victorian wild dog control coordinators** hard at work in the community.

Since the setting up ten years ago of the Community Wild Dog Control Coordinator Program in Victoria, community-driven wild dog management has changed the face of wild dog control in the state for the better.

It has been 10 years since AWI, the Department of Environment, Land, Water and Planning (Vic) and local communities entered into a partnership to set up the Community Wild Dog Control Coordinator Program (CWDCCP). Through the program, the wild dog coordinators, located in Gippsland and the north-east of the state, help landholders and communities work together to combat wild dog attacks. They also help coordinate on-ground wild dog control activities.

Before 2012, wild dog control in Victoria was ad hoc and was carried out on or near privately owned farmland, often in response to attacks on livestock. Many producers felt they were dealing with the problem on their own, and that other managers who did not own livestock were not taking responsibility for the wild dogs sheltering on their land.

The CWDCCP sought to change this through a multifaceted program that raised community awareness about the impacts of wild dogs and established a framework that encouraged and enabled all landholders to take responsibility for wild dog control.

Key aspects of the program included ongoing community consultation, use of local knowledge to plan control works, proactive and strategic control programs across private and public land and the use of all available control methods.

A recent survey of sheep producers involved in coordinated community wild dog control activities in Victoria showed a **significant reduction in stock losses** by wild dogs and also indicated substantial improvements in producers' confidence and wellbeing.

- 91% reduction in stock losses
- 28% plan to reintroduce sheep
- 46% plan to increase sheep numbers and their wool clip
- 88% are experiencing improved mental health and wellbeing.

What does truly integrated wild dog control look like in Victoria? It means that:

1. Communities play an active role in deciding when, where and how control works are carried out in their district.
2. Control works are carried out on public and private land.
3. Spring and autumn baiting programs are routine in many districts.
4. All available control methods (baiting, trapping, shooting, exclusion fencing, guardian animals etc) are considered when planning control activities.
5. Aerial baiting is carried out where possible.
6. Producers have regular opportunities to build their skills and learn about existing and new methods of wild dog control.
7. All members of the public are encouraged to report incidents of wild dog activity.
8. Producers can expect timely response to reports about wild dog activity.
9. Good working relationships between Wild Dog Controllers, producers and land managers.

Repairs to SA Dog Fence after flood damage

Following severe flooding in northern South Australia earlier this year, local pastoralists have worked with the Department of Primary Industries and Regions (PIRSA) and the Dog Fence Board to fix damage to the Dog Fence and help prevent the migration south of wild dogs into sheep country.



Assisted by PIRSA Dog Fence Inspector, Ash Rees, the group repaired or replaced about 3.5 km of fence in four days, ensuring the Dog Fence in the Marree LDFB was dog-proof again. Some of this is temporary fencing and will be replaced as part of the rebuild in due course.

“As the flood waters receded and access was possible on motorcycles, several pastoralists from

the Marree Local Dog Fence Board inspected the fence and confirmed our worst fears. If immediate action was not taken, we faced the real threat of dog incursions and predation similar to what was experienced over the previous decade or more,” said secretary of the Marree LDFB, Leonard Nutt of Quorn.

“As there were no contractors immediately available, we took it upon ourselves to make the repairs ASAP. We were fortunate that the Litchfields, of Mount Lyndhurst Station, made available the machinery necessary to make the repairs. It was a great team effort by those involved.” **B**

Hheavy rainfall and flood waters inundated approximately 900 km of the Dog Fence across northern South Australia in January, causing damage to about 40 sections.

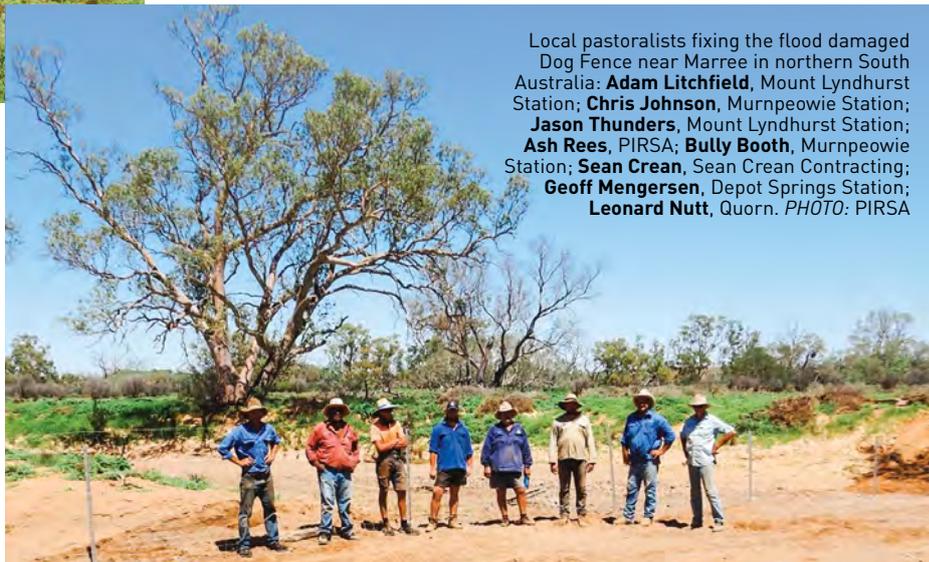
However, while floods washed away parts of the old Dog Fence and eroded tracks along it, the new sections of Dog Fence (erected as part of the ongoing rebuild project) responded as they should and withstood the flood waters, suffering only minimal damage. This validates the rebuild design and construction.

PIRSA worked with the Dog Fence Board to deploy thousands of aerial baits to help stop wild dogs slipping south through the storm damaged breaches of the Dog Fence into sheep country, while repair work was undertaken.

Dog trappers worked in the areas where the fence had come down, focusing on properties adjacent to the fence and targeting wild dogs that had managed to breach damaged sections of the fence, removing the dogs before they headed even further south.

Local pastoralists help with flood repairs

It was critical for the damaged sections of fence be repaired or replaced as soon as possible. The Dog Fence Board was able to borrow some of the fencing materials that were purchased for the rebuild project so they could start repairs immediately. However, to help speed up the repair of the fence, a group of pastoralists, largely made up of the Marree Local Dog Fence Board (LDFB), got together for a working bee.



Local pastoralists fixing the flood damaged Dog Fence near Marree in northern South Australia: **Adam Litchfield**, Mount Lyndhurst Station; **Chris Johnson**, Murnpeowie Station; **Jason Thunders**, Mount Lyndhurst Station; **Ash Rees**, PIRSA; **Bully Booth**, Murnpeowie Station; **Sean Crean**, Sean Crean Contracting; **Geoff Mengersen**, Depot Springs Station; **Leonard Nutt**, Quorn. PHOTO: PIRSA

SA Dog Fence rebuild provides confidence to sheep producers

The SA Dog Fence stretches from the Great Australian Bight to the NSW border. But with more than two-thirds of it more than 100 years old and many parts of it degraded and brittle, a process of rebuilding sections of the fence began in May 2020. The rebuild is being funded by the Commonwealth Government (\$10 million), the State Government (\$10 million) and the SA livestock industry (\$5 million) involving a collaboration between the pastoral and resources industries.

The AWI-funded exclusion fencing construction unit (EFCU) continues to be used as part of the ongoing rebuild project. As of 1 April, about 387 km of the Dog Fence had been rebuilt.

Chair of the SA Dog Fence Board, Geoff Power, who is also a woolgrower from Orroroo, says the rebuild is providing pastoralists with the confidence to move sheep back into paddocks that have been sheep-free for some years.

“Since the commencement of the rebuild, along with South Australia’s baiting and trapping programs, a number of properties are now restocking areas adjacent and near to the Dog Fence,” he said.

More information

www.pir.sa.gov.au/dogfence

Next generation genetic evaluation

What are the current trends in genetic evaluation and what might the industry be doing a generation from now? In this article, read about the prediction of AWI's Geoff Lindon that genetic evaluation will provide many opportunities to keep the Merino a viable and profitable enterprise for farmers in the decades to come.

The Balmoral Breeders Association requested that Geoff Lindon, AWI Program Manager Genetics and Animal Welfare Advocacy, give a presentation on 'Where to with Genetic Evaluation' at the recent dinner associated with its February Field Days. Geoff has worked at AWI for nearly 15 years, managing AWI's investments in genetics research.

In the presentation, Geoff firstly described what genetic evaluation looks like now and what breeders are aspiring to do. He then tantalisingly provided the audience with his thoughts of what the industry might be doing new in a generation's time, 30 years into the future, and what additional traits might be important.

Genetic evaluation today in 2022

Geoff began the presentation by summarising the present situation, in which on-farm assessments are currently dominated by young post weaner and yearling age traits.

"A quarter of woolgrowers breed their own rams. 31% of growers use a sheep classer, while 44% class their own sheep and 25% don't class at all. The national average joining rate is 2.1 rams per 100 ewes," Geoff said.

"Each year in Australia, about a quarter of a million ewes, mostly Merino, are inseminated using laparoscopic artificial insemination (Lap AI)."

Geoff pointed out that there is a broad range and difference in size of ram sellers.

"One third of ram sellers are members of MERINOSELECT and they sell approximately 50% of all Merino rams and 70% of Merino semen," he said.

"Sire Evaluation is the lead progeny testing regime but mostly up until hogget or early adult age for wool, carcass, visual and welfare traits.

"However, half of Stud Merino ram breeders sell a relatively small number of rams. For them, ASBV technology can add considerable cost to their business and their

management, and contemporary groups are small for evaluation. They buy rams and semen with classer support and genetic evaluation information. They tend to provide their ram buyers with raw data or within mob variance information on the rams they sell."

Today's trends in genetic evaluation

Geoff said that there had been a long-term trend to class and sell animals at younger and younger ages but one of the current trends is that many ram sellers are increasingly interested to see how they can evaluate and class at older ages.

"Although rams are often classed from 6 to 12 months of age with most sales occurring at 12 to 14 months of age, many ram breeders class their sires and ewes carefully on an annual basis," he said.

"Most studs are aware that the long-term genetics advice is a two-stage objective selection process, evaluating ewes at one year old and two years old, but they tend to be cautious or resistant to the cost and they need evidence of the benefits.

"Phenotyping for welfare traits, condition score, worm and fly parasites are increasing significantly along with 50K DNA genotyping. The Merino breed trends for these traits are gathering momentum."

Geoff noted there are some very impressive genetic trends occurring at the individual ram breeder level.

"Some of these gains are more difficult to see at the macro level where differing type trends cancel each other out at the whole of Merino breed level, but nonetheless even at the macro level there are some clear solid gains being made," he said.

Reproduction is an increasing focus with the rise in lamb and surplus sheep prices. There are three new component traits of conception, litter size and ewe rearing ability, along with greater focus on lambing ease, scrotal circumference and udder soundness.

"The ever-increasing body weight is creating concerns on shearing and efficiency fronts. How we can have productive yet more moderate adult ewe weight is one of a range of topics to be fine-tuned in pending index reviews," Geoff advised.

"Sire Evaluation continues to grow and there is interest in more reproduction assessments and future feed efficiency and methane assessments.

"The use of MateSel to optimise genetic gain with controlled line breeding to minimise culls is increasing. Big outcrosses can provide quick gains, but they can increase off types and culling rates until stabilised. Having a well thought out breeding objective and sticking to it works," he said.

"Sheep Genetics has just updated its old databases; all data is in one database opening a range of new analysis opportunities. MERINOSELECT phenotypes amount to four terabytes of data, the genomics database another four terabytes, totaling an incredible eight terabytes, which is analysed every fortnight. The recent computer upgrades are able to conduct the analysis with much greater speed.

"In addition, Sheep Genetics is about to release a Data Quality Score that will highlight to ram buyers which ram sellers are collecting a broad range of data and following best practice protocols. This is a major step forward and will give more confidence to semen and ram buyers."

What the industry might be doing new in 30 years

It was at this point in the presentation that Geoff warned he was moving from evidence to conjecture. "So here is my crystal ball for 2052," he boldly stated!

"Well informed and experienced visual classing will remain a cheap and effective way of evaluating sheep across their lifetime, especially when visual traits are the key traits in a breeding objective. How to get the balance in combining visual and the ever expanding and more expensive objective assessments will remain an ongoing challenge.

"Finding the truly elite individual and breeding from them will remain the mix of science, observation and gut know-how. The use of progeny testing will continue to support and reward those who can find the individuals among the masses and population genetics approach."

Geoff predicted that combining production data with feed intake and whole-body energy will have big financial returns but warned it is a complex area.

"Other extensive and intensive livestock species have made enormous gains in the area. Sire Evaluation sites and some larger ram breeders will be assessing individuals and sires for feed intake and whole-body energy. And the CO₂ and methane data gained is likely to be viewed as essential to meet global obligations."

Geoff revealed that the Merino Lifetime Productivity (MLP) project today



AWI Program Manager
Genetics and Animal
Welfare Advocacy,
Geoff Lindon.



How will these changes be affordable?

"How will these changes be affordable, you might ask," Geoff said.

"I have already mentioned improvements in survival that will increase sheep sales and culling rates, and could lead to the halving of the number of rams required to around 1 ram per 100 ewes. Breeding for feed efficiency could lift stocking rates by 10 to 20% and more, if we follow the success of other breeds."

Geoff noted that MateSel will most likely be expanded to all important objective and visual traits.

"So culls will be minimalised and rams sold to rams left entire at marking, could return to 65 to 70% which has major profitability consequences."

Geoff also predicted that there will be streamlined processes to collect, send, validate and return analysed data and there will be improved analysis for indexes and a wider range of traits.

"I predict that the most profitable arrangement will be for five to 10 studs with similar breeding objectives, in a similar production environment with 1,000 to 1,500 fully pedigreed and measured ewes, forming more collective business arrangements having combined semen and elite ram auctions.

"The supply chain will have significant transparent access to these groups and their practices, encouraging price advantages along the supply chain and sale of surplus sheep."

Some perspective and optimism

In reflecting what might be achievable in the next 30 years, by 2052, Geoff noted that it is worth reflecting on what has happened in the past 30 years, since 1992.

"The Reserve Price Scheme was teetering, faxes were new, so was scanning for fat and muscle. There were no laptops and no mobile phones, no commercial internet, no EID and no software packages. Merino Sire Evaluation had just started as had the first across flock analysis, Merino Benchmark, doing just two runs per year, compared today's one per fortnight.

"My father used to say to me as a teenager, sometimes you sit and think but sometimes you just sit," Geoff continued. "Perhaps today, I have over thought, but humankind's drive for progress and advantage always pushes boundaries.

"Given the changes in genetic evaluation over the past 30 years and the escalating pace of change in general, the next 30 years will provide many more opportunities to keep the Merino a viable and profitable enterprise."

is pointing to a large variation in lifetime survival of 35% between the extremes, and around 20% between the top 20% and bottom 20% of sires.

"Survival is an important trait with significant financial consequence, but needs to be included in indexes," he said.

Geoff noted that the industry has been artificially breeding now for 40 years with less natural selection on semen quality and libido.

"A byproduct of the MLP project is some information on natural ram mating success; some sires are getting 150 progeny in a five-week natural joining, others are getting 10. This is supporting findings in other sheep breeds where the heritability of the trait is as high as 0.3. Through the use of pedigree DNA in natural matings, selecting for ram mating success could lead to the ram joining percentages moving to around 1%, with the benefits shared between ram buyer and seller.

"Genomics will assist with the hard to measure traits of lifetime production, reproduction, survival, feed intake, minimising the impacts of parasites and resilience. The MLP project is showing there are rams that can do it all and this will continue despite the additional traits.

"Full pedigree and electronic identification (EID) will be required along with lifetime roll calls and full data collection at the top tier of ram breeders."

Geoff said every genetic evaluation

site depends on the use of a web of link sires, via frozen semen and Lap AI, but warned that the technology has "head winds".

"It is an invasive practice and involves use of fluid from another species, pregnant mare serum, which is banned in many European countries.

"So we need to find a way to use frozen thawed semen by cervical AI in unsynchronized programs. From many hundreds of proteins, the University of Sydney has isolated the four proteins damaged on freezing that lead to 20% conception via cheaper cervical AI, but more work is needed to find the solution.

"The EU inseminates 10 times the number of ewes per year that we do here in Australia, all with fresh semen and there has been extensive collaboration with R&D efforts in France. With a breakthrough, there will be much greater use of AI using elite frozen/thawed semen and use of sexed semen."

Geoff philosophically noted that everyone likes progress, but no one likes change.

"So there needs to be a motive and a profit for ram sellers to have the head time to investigate these options, invest in their adoption and find ways to do so profitably. Equally, ram buyers need to create the time to absorb the advantages for them, find sellers with the same breeding objectives and invest prudently in the new genetics," he concluded.

MLP using visual, measured and analysed assessments

The Merino Lifetime Productivity (MLP) project is using a range of trait assessments; the project is combining visual scoring and classing, measured assessments plus analysed results. Once the MLP dataset is complete in June 2024, it will provide a good place to explore the effectiveness of these tools in delivering lifetime productivity and profitability across different genotypes and environments.

Why use a combined approach?

Up until the 1970s, sheep were generally selected based on visual appraisal by sheep classers along with raw fleece weight and micron measurements. There were considerable debates about the relative importance of them all.

Key points

- There is a range of selection tools available to support breeding and selection decisions.
- When making selection decisions, following best practice protocols for both visual and objective assessments and combining them will produce the best result.
- The MLP project will provide greater insight into the strengths and weaknesses of current selection methods and will look to provide insights to strengthen selection decisions.
- The MLP project and its Add-On projects are progressing the understanding of the important traits not currently accounted for in visual assessments or breeding value technology, such as survival, feed efficiency, resilience, and ram mating success, that impact on lifetime productivity and profitability.

Since then, there has been a significant evolution of measurement and analytical technology with additional and/or more accurate selection tools now available. New measures include staple strength testing, fat and muscle scanning, pregnancy scanning, electronic identification and DNA based assessment technology. These measures have further evolved into analytical methodology to develop breeding values (within flock breeding values (FBVs) and Australian Sheep Breeding Values (ASBVs)) and indexes.

With an ever-increasing number of traits and selection tools available for woolgrowers, each having their own strengths and weaknesses, the critical question of their relative importance and how best to combine them is becoming increasingly complex.

What is the MLP showing thus far?

Early results from the project are showing that in general there is good alignment between the various assessment methods. Figure 1 below shows the association between the visual classing of tops (top 25%), flocks (50%) and culls (bottom 25%) and the MP⁺ index when assessed at two years of age, and again at seven years of age.

While there is general good alignment, there are also obvious outliers to this relationship. There are always examples of top indexing animals having poor conformation, or top visually assessed animals having low indexes.

Scenario 1: Top visually assessed animals can have low index results

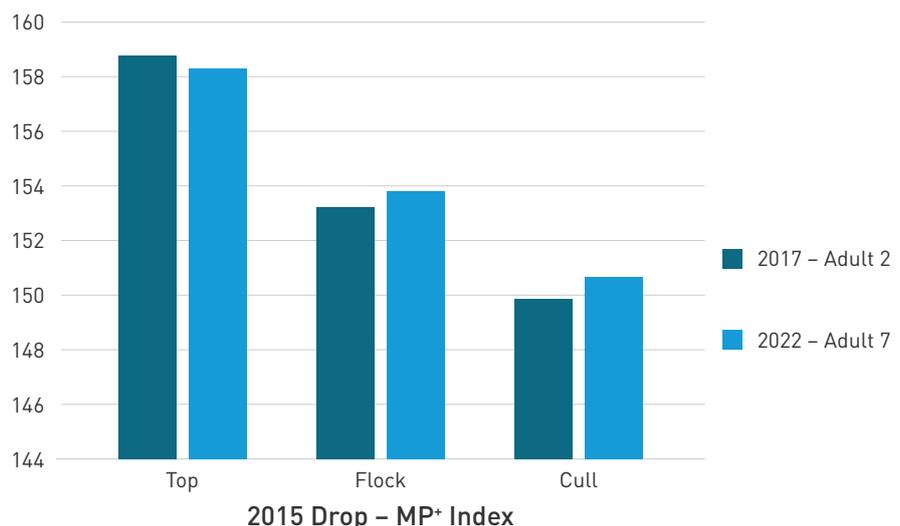
Visual classing can be highly effective when breeding objectives focus on traits that can be assessed well visually (see image to the right), however it has limitations when the breeding objective includes non-visual traits. Important traits that are hard to assess visually include fibre diameter, worm resistance, eye muscle depth, staple strength, eating quality and weaning rate (conception, litter size and ewe rearing ability).

Scenario 2: Top indexing animals can have poor conformation

Equally, using indexes for selection has been shown to be highly effective when there are a large number of traits and when important traits are difficult to visually assess, yet the current index technology does not account for many of the visually assessed traits that are important for a robust, productive and profitable flock.

Important visual traits that are not currently incorporated into indexes include jaw, feet and leg conformation, back and topline conformation, face cover, wool colour, wool character, fleece rot, horn set, dark fibres, resilience, wrinkle, skin, dag, stain and trueness to type (for wool and surplus sheep sales).

Figure 1: Average MP⁺ index values at A2 (2 years) and A7 (7 years of age) for ewes classed as a top, flock or cull at the MLP Balmoral site.



This 2017 drop MLP ewe (displayed by AWI's **Geoff Lindon** and classer **Chris Bowman**) at the Macquarie site is a high indexing ewe. Her wool isn't a problem, but she was recently classed as a cull because of her significant feet issues. (Note: the MLP project assesses ewes for their full lifetime so this ewe will remain in the trial unless there are welfare issues.)



MLP

Merino Lifetime Productivity Project

MLP FAST 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.

To stay up to date with the latest MLP findings, visit www.wool.com/MLP. Subscribe to MLP updates via www.merinosuperiorsires.com.au/contact-us

More information

Further information about each of these tools can be found in the AWI publications:

- [Introduction to stockmanship](http://www.wool.com/stockmanship-intro) (www.wool.com/stockmanship-intro)
- [Introduction to Merino visual classing](http://www.wool.com/visualclassing-intro) (www.wool.com/visualclassing-intro)
- [Sheep selection tools](http://www.wool.com/selection-tools) (www.wool.com/selection-tools)

But wait, there's more

There remain some additional important economic traits that neither approach is yet to incorporate. These include survival, feed efficiency, resilience and ram mating success which all impact on lifetime productivity and profitability. The MLP project and associated MLP Add-On projects are specifically aimed at progressing these important, difficult to measure traits.

It is also important to note that when a classer assesses an animal, they are considering its performance or measurements as presented on the day (phenotype) and are unable to incorporate the unseen traits and genetics that may be bred into future progeny.

In contrast, breeding values predict how the animal's progeny will perform rather than its own performance at classing. The raw data (how the animal has performed in that wool growth period) is adjusted for the known non genetic effects (management group, birth rear and dam type), then adjusted for trait heritability and correlations with other traits along with how that animal's close relatives have performed. Very recently, inputs from genomic assessments have also been added. All these adjustments have been shown to improve the estimates of how an individual animal's future progeny will perform.

Indexes for a specific production system then apply relative economic values to the included traits calculating the predicted economic value of their progeny.

The size of these trait 'adjustments'

vary greatly. Factors that reduce variation in performance and relate to all selection approaches include:

- Tight lambing periods, ideally 5 weeks or less
- Classing animals as old as possible within their 'management groups'
- Having as few management groups as possible,
- Identify singles and multiples for the classer, particularly when classing at young ages
- Minimise or control large outcrosses
- Utilise good reproduction management and culling strategies.

The greatest alignment occurs when both visual and objective assessments are conducted according to best practice standards.

Combining selection approaches

Combining both approaches economically has been, and will continue to be, the best way forward. This is where the rubber hits the road and the maximum rates of genetic gain and prosperity for both ram seller and buyer can be achieved. One of the outcomes of the MLP project will be to make recommendations about how the different selection methods can be better combined.

The Merino is a complex production animal and, with so many factors to consider, a combination of tools is needed to produce animals that are both productive, profitable and well suited to their specific production environment. B



Quad bikes have been a major cause of injury and fatalities on Australian farms. However, appropriate safety precautions such as rollover protection and helmets, plus careful and responsible use, can reduce the risk. PHOTO: WorkSafe Victoria

Farm safety for all ages

Since 2001, more than 1,600 people in Australia have lost their lives due to (non-intentional) farm-related incidents. Statistics demonstrate that it is not just the young and inexperienced that need to be vigilant, because more than half of the fatalities were people aged over 50.

19- to 30-year-olds: the generation most well-known for ambitious confidence, risk-taking behaviour and lack of experience, or so the perception goes.

However, this stereotype fails to stand up when the facts are examined. Since 2001, it is actually farmers aged over 50 years that have accounted for more than half (50.5%) of all Australian farming fatalities, according to AgHealth Australia.

Looking at the statistics for the 2021 calendar year, in which there were 46 on-farm deaths, 27 (59%) were in the 45+ year category, while in contrast seven were in the 15-29 year category, six in the 30-44 year category, and six were under 15 years.

In 2021, farm vehicles (23) and mobile farm machinery (14) were involved in a large majority of the total fatalities. The most frequent causes in 2021 were **tractors** (10), **quad bikes** (9) and **side-by-sides** (7).

Other causes of death in the past couple of years have included other farm vehicles (eg **aircraft**, **ute**, **motorbike**, **truck**, **car**), other farm machinery (eg **forklift**, **telehandler**, **harvesting machine**, **hay baler**), animals (eg **cattle**, **horse** and **snake**), farm structure (eg **dam**, **powerline**, **silos**), materials (eg **hay bale**, **rope**) and other reasons (eg **firearm**, **power saw** and **tree felling**).

There will have also been many 'near misses' and many non-fatal injuries, small and large, that could have had an impact on farm labour, productivity and profitability, as well as personal and family stress.

Causes of injury on the farm can also include anything from manual tasks and repetitive motion, through to incorrect and unsafe use of hazardous chemicals. Farming also often involves physically demanding tasks, frequently undertaken outdoors in

all types of weather, and often working in isolated areas – these aspects of the work exacerbate the safety risks.

Taking all this into account, it is therefore important to minimise the risk of injury and improve on-farm safety. There are many national and state organisations that have a role in helping farmers and everyone on the farm (workers, family and children, visitors) improve their safety, including their health and mental wellbeing.

One such organisation is the Rural Safety & Health Alliance (RSHA), which is a collaboration of rural Research and Development Corporations (RDCs) including AWI. The RSHA's vision is for everyone on farm to see health and safety as a priority, and adopt safe practices – see www.rsha.com.au. One way that the RDCs work to achieve this is by showcasing farmer-facing health and safety resources from national and state organisations – see below. **B**

Safety resources for farmers

AWI and the RSHA encourage property owners, managers, workers, contractors and family members to take a look at farm safety resources provided by organisations such as:

Farmsafe Australia: A national entity that promotes awareness and adoption of health and safety practices on farms. www.farmsafe.org.au

AgHealth Australia: Within the University of Sydney's School of Rural Health at Dubbo (NSW), it conducts research on injury and fatality in agriculture and has a range of resources for farmers. <http://aghealth.sydney.edu.au>

National Centre for Farmer Health: A partnership at Hamilton (Vic) between Deakin University and Western District Health Service, it conducts research into risks and injury prevention for farmers, and has a range of resources. www.farmerhealth.org.au

State organisations – each provides farm safety resources:

SafeWork NSW

www.safework.nsw.gov.au/your-industry/agriculture,-forestry-and-fishing

AgVic: Smarter, Safer Farms

www.agriculture.vic.gov.au/about/agriculture-in-victoria/smarter-safer-farms

Worksafe Victoria

www.worksafe.vic.gov.au/agriculture

SafeWork SA

www.safework.sa.gov.au/industry/agriculture

Safe Farms WA

www.safefarms.net.au

Workplace Health and Safety Queensland

www.worksafe.qld.gov.au/your-industry/agriculture,-forestry-and-fishing

Safe Farming Tasmania

www.worksafe.tas.gov.au/topics/services-and-events/safe-farming-tasmania

Shearing shed safety



Aside from general farm safety, wool-growing businesses have the added consideration of safety in the shearing shed to consider. To optimise safety in woolgrowers' sheds, AWI launched in November 2020 a shearing shed safety program, *SafeSheds*, which includes a best practice guide and checklists.

SafeSheds is now being used across the country by many woolgrowers and shearing contractors to help them assess the safety of their shearing sheds, thereby enabling the woolgrower to create a program to rectify any safety hazards, improve working conditions and comply with modern workplace standards.

While safe shearing sheds help attract people into the industry, retain current staff and extend the longevity of their careers, they also improve industry productivity and profitability. By planning and documenting the improvements and steps to control

risk, woolgrowers are able to provide direct evidence of efforts in managing safety as required by relevant State Workplace Health and Safety Legislation. *SafeSheds* is a self-assessment guide and not a formal audit.

Developed by AWI and WA Shearing Industry Association, *SafeSheds* harnesses the support of industry including WoolProducers Australia, Pastoralists & Graziers WA, WAFarmers and Shearing Contractors' Association of Australia.

SafeSheds is available as an 80-page booklet (downloadable in PDF format from the AWI website or you can order a hard copy). The *SafeSheds* checklists are also available in a handy digital, interactive format. **B**

More information

The 80-page *SafeSheds* booklet and the *SafeSheds* app are both available at www.wool.com/safe-sheds.

Find skin cancer early through self-skin checks

With rates of skin cancer on the rise in rural and regional Australia, people in these areas – especially those aged 60+ – are being urged to do regular self-skin checks to find unusual spots, moles, or lesions – and if anything looks suspicious, to see a healthcare professional like a GP.

Skin cancer can occur at any age, however, many older people living in rural

areas have an increased risk of melanoma due to longer unprotected UV radiation exposure and a history of burning during childhood.

According to Melanoma Patients Australia and Melanoma and Skin Cancer Trials which launched the Self-Skin Checks, No Regrets campaign last month, an estimated 8,000 Australians in regional areas were diagnosed with melanoma in 2021, and this is expected to rise dramatically to more than 11,000 annually by 2030.

Research reveals more than two out of three (69%) rural Australians detected their own skin cancer. When found early at stage 1, survival outcomes improve significantly, (99% at stage 1 vs 26% at stage 4). **B**

More information

www.melanomapatients.org.au

Self-skin checklist recommended by Melanoma Patient's Australia:

1. Examine your body for any unusual spots, moles, or lesions.
2. Use a full-length mirror to check and scan your entire body.
3. Do not forget to check areas you cannot see easily including under your arms, in between your toes and your ears.
4. Ask a loved one to check for areas you cannot see or reach including on top of your head and your back.
5. If you see any unusual spots, moles or lesions, immediately seek guidance from your healthcare professional.

PHOTO: Cross That Box



Back Up Charlie – Flexible Sheep Movement System



Adjustable race width

BUC hock bars

Flexible BUC panels, that lengthen and shorten



New strap panels

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

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



Peter Westblade Scholarship encourages younger generation

Now in its tenth year, the Peter Westblade Scholarship delivers practical, hands-on training and mentoring to young people pursuing a career in the sheep and wool industry.

As one of the sponsors of the Peter Westblade Scholarship, AWI is supporting the next generation of leaders in the Australian sheep and wool industry. The Scholarship aims to identify, train and develop young people aged 18 to 30 who are enthusiastic about the industry and want to make a difference.

Established in 2010, the annual scholarship honours the late Peter Westblade, the Lockhart sheep producer who was passionate about breeding profitable sheep and was a strong supporter of young people interested in agriculture.

The winners of the 2022 scholarship, announced at the inaugural Peter Westblade Scholarship Ball held at Wagga Wagga on 28 May are William Lyon (26) of Boomey in NSW, Mitch Rubie (21) of Forbes in NSW and Baylee Stapleton (24) of Jerilderie in NSW.

The scholarship provides practical training and mentoring from industry innovators and leaders, and the ability to develop a wider network of key contacts in the industry. The scholarship also provides opportunities to be involved in projects to

promote new technologies within the sheep and wool industry.

Chairman of the Peter Westblade Scholarship Committee, Ben Patrick, was the scholarship winner back in 2014, which he says allowed him to expand his knowledge of Merino breeding operations.

“The 12-month scholarship opened many doors and I developed a strong network within the sheep and wool industry, which I still call upon today. The opportunity to learn from the best in the industry is invaluable to a young person starting out,” he said.

Wyvern training weekend

A key element of the Peter Westblade Scholarship program is the running of an annual training weekend, established to encourage, educate and mentor young enthusiasts with practical training for the sheep and wool industry.

The training is held at the state-of-the-art facilities of Wyvern Station, which is a 50,000-hectare property owned

by T.A. Field Estates at Carrathool in the Riverina of NSW. T.A. Field Estates has been a long-term supporter of the Peter Westblade Scholarship and generously hosted the event again in 2022 which was attended by 35 keen youngsters aged 18 to 30.

The weekend in February consisted of hands-on workshops and mentoring sessions to improve the participants' skill sets and build their industry networks. While the individual attendees gained a lot from the weekend, the benefits will also flow through to their employers and the wider industry.

There were 12 leading industry professionals, in addition to previous Peter Westblade Scholarship winners and committee members, in attendance to pass on their invaluable knowledge to the next generation. Topics covered included sheep selection, stockmanship, business skills, new agriculture technologies, professional development and wool marketing. **B**

More information

www.pwscholarship.com.au

Young participants learning from industry leaders at the **Peter Westblade Wyvern Training Weekend** in February.



Next generation on the horizon

Jessica Curran from Queensland is the 2022 recipient of a Horizon Scholarship sponsored by AWI, in recognition of her leadership potential and commitment to Australian agriculture.

The Horizon Scholarship is an initiative of AgriFutures Australia and provides the next generation of agricultural leaders with opportunities to kickstart their leadership skills and expand their networks.

Under the scholarship, AWI is supporting Jessica throughout her Bachelor of Veterinary Science course at James Cook University by providing her with a financial bursary over two years and professional support in the form of mentoring, professional development workshops and two weeks of industry placement.

"I grew up in Central Western Queensland on a cattle and sheep station north-west of Longreach. Since I can remember I have been involved with every aspect of the family business, which certainly sparked my interest in livestock," Jessica said.

"Since beginning my course at James Cook University, I have been fortunate to experience many other facets of agriculture including wool production, containment feeding, cropping, and the performance horse industry.



Jessica Curran is studying for a Bachelor of Veterinary Science at James Cook University.

"I am extremely passionate about improving production systems to increase profitability and continue developing a sustainable future for primary producers."

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

"I am excited to enhance my knowledge of innovative practices within the sheep and wool industry and to learn from industry leaders about emerging opportunities and challenges," she said.

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

More information

www.agrifutures.com.au/horizon-scholarship

Young judges championships foster talent

The underway National Merino Sheep Young Judges Championship.
LEFT: The top 3 in the 2022 National Merino Fleece Young Judges Championship.



AWI supports the National Merino Fleece and Merino Sheep Young Judges Championships to help bring through the next generation of young judges and Merino breeders.

Continuing its backing of previous years, AWI was once again the national supporter of both the National Merino Fleece Young Judges Championship and the National Merino Sheep Young Judges Championship, held at the Sydney Royal Easter Show in April. Due to the cancellation of last year's competition due to COVID restrictions, this year's event hosted both the 2021 and the 2022 national finals.

"AWI sponsors the events to support young people within the industry to further their skills through visual selection and appraisal of wool and sheep," AWI CEO John Roberts said.

"By providing the opportunity to broaden their experiences and knowledge base through competition, the finalists become ambassadors for the wool industry. AWI is proud to support this program and many others like it encouraging the youth of our industry."

The Young Judges Championships are for people aged between 15 and 25 and are helping to train the next generation of young judges and livestock breeders. To participate in these National Championships, the competitors must first have won their own state finals.

Participants demonstrate their skills in communication, public speaking and breed and industry specific knowledge. They also get a chance to strengthen career opportunities through networking with colleagues and key industry stakeholders.

The National Merino Sheep Young Judges Championship for 2022 was won by Patrick Davis (18) of Harden in NSW, ahead of runner-up Ashley Meaburn (20) from Runnymede in Tasmania, with Phillipa Hacker (24) of Muckadilla in Queensland in third.

The 2021 competition was won by Ben Hartwich (22) from near Ararat in Victoria, ahead of runner-up Campbell Rubie (18) of Forbes in NSW, with Sym Hood (19) of Longford in Tasmania in third.

Competitors were required to judge four rams and four ewes. They then had to explain their placing of either the rams or ewes.

The National Merino Fleece Young Judges Championship for 2022 was won by Jessica Kastelein (17) of Inverell in NSW, ahead of runner-up Oaklee Treasure (20) from Cunderdin in WA, with Phillipa Hacker (24) of Muckadilla in Queensland in third.

The 2021 competition was won by Matilda Scott (22) from Cleveland in Tasmania, ahead of runner-up Clarissa Peasley (19) of Condobolin in NSW, with Hayden Baker (23) of Katanning WA in third.

Competitors were required to judge two classes of four fleeces each (eight in total) and then explain their placing of one of the classes.

More information

www.agshowsaustralia.org.au



East Loddon is a family business run by **Marcus and Tom Hooke**, based midway between Deniliquin and Hay, NSW.

New generation of woolgrowers plan for the future

The Hooke family of East Loddon Merinos at Wanganella in the western Riverina of NSW run their Merinos on 25,900 hectares of predominantly low-rainfall pastoral country. *Beyond the Bale* spoke with Tom Hooke to hear how he and his brother Marcus, the sixth generation of sheep and wool producers, are running a profitable and resilient business for future generations.

It's a long way from the often-dusty Hay Plains to the well-manicured pitch of the Melbourne Cricket Ground, but it was to the hallowed turf of the MCG that Hooke family travelled in March to attend The Weekly Times Coles Farmer of the Year awards, at which they won the Sheep Farmer of the Year Award.

"The awards night was a fantastic event shared with many other great farming businesses," said Tom Hooke.

"In fact, the whole experience has been a lot of fun and motivation for us to keep trying our best. There are a lot of very sharp operators out there and to be recognised amongst them is very humbling."

Sixth generation of sheep and wool producers

The Hooke family run a family owned and operated business, comprising an SRS Merino stud and a commercial SRS Merino sheep enterprise, on 25,900 hectares across three adjoining properties on predominantly low-rainfall pastoral country (360mm annual average). They also have an Angus herd of 180 cows.

Although the reins of the business have recently been handed over to their sons, Tom and Marcus, Bill and Diane Hooke are still heavily involved in the business, supporting the drive and enthusiasm of the next generation. Bill and Diane bring a lifetime of experience from running stud and commercial sheep in different environments across Australia.

Tom (35) and Marcus (33), the family's sixth generation of sheep and wool producers, completed agricultural science and business degrees at La Trobe University and undertook several other jobs before returning to the family farm.

"Marcus and I both have a huge keenness for the breeding side of things, but we could also see the very real opportunity that we were fortunate to have in front of us from a business point of view," Tom said.

"In the eight years we have both been involved, we've nearly doubled the size of our business. The stud enterprise has been very exciting too. We invested a lot into extending the depth of the stud flock; once happy with that we pushed the marketing and have now seen demand take off."

Tom and Marcus have an overarching aim to run a profitable and resilient business for future generations. Both have young children: Tom and his wife Sarah have three young daughters: Philippa, Bridie and Edwina; whilst Marcus and his wife Cass have a young son Jack and daughter Sibyl.

The Hooke family currently have two full time employees and rely on contract teams for shearing and lamb marking.

Focus on dual purpose Merinos

The Hooke family currently run approximately 9,000 adult ewes in their commercial Merino flock, all joined to Merino, plus about 1,000 adult ewes in their Merino stud.

"Economically, the Merino as a dual-purpose animal is very important to us. We've been able to capitalise on high sheep and lamb prices as well as sell good volumes of quality, non-mulesed wool at a premium," Tom said.

"We're very committed to running Merino sheep well into the future, not just because we love it but because we are making, and see that we can continue to make, a good income from it."

The Hookes' sheep produce 600 bales of wool each year.

"Since we have acquired RWS (Responsible Wool Standard) accreditation, we have sold most of our wool outside of the auction system with a portion forward contracted via ZQ. Having the RWS accreditation has been fantastic, especially through a turbulent market," Tom said.

"We shear every eight months. This allows us to meet tight specifications for length set by some of the buyers looking to pay a premium for RWS wool. It's a juggle, but well worth the effort when selling."

As well as the wool aspect, the Hookes' commercial enterprise involves getting their sheep to put on weight quickly and then turning them off quickly and in good condition.

"Our wethers, just under 5,000 of them each year, are sold soon after weaning. Our environment isn't suited to carrying wethers past September-October time, so our genetics and management are geared to turn wethers off early, either straight over the hooks or to others to value add," Tom said.

"Forty per cent of our young ewes are classed out and sold at 16-17 months. Ewes that are scanned dry or

are dry at marking are sold. Our oldest ewes lamb at 5 years old and are then sold into a strong market as 5½-year-olds. So, each year we sell approximately 2,000 1½-year-old ewes and 2,000 5½-year-olds through direct sales to repeat clients and AuctionsPlus."

Applying SRS principles

For many years, the Hookes have been implementing the SRS breeding system developed by Dr Jim Watts. Indeed, before coming back to the farm, Marcus spent a considerable amount of time learning from Dr Watts while classing stud and commercial sheep in NSW and Queensland.

Tom says the family's aim is to produce quality wool on a robust animal.

"We've pushed all the reproduction and carcass traits a long way, but the real key has been the guidance of Jim Watts and the breeding of SRS Merinos. Getting the skins right has meant we have pushed forward with wool quality and quantity rather than letting anything slip in the pursuit of better carcass etc," he said.

"The SRS wool is incredibly soft with long staples and a bold crimp. We've had some great feedback from processors and the comments are always about the softness with good length and strength.

Our commercial flock ewes cut an average of 7.3kg of 19-micron wool calculated on an annual basis."

Tom says the wrinkle free sheep are not only easier to shear than traditional Merinos but are also less susceptible to flystrike.

"SRS has been instrumental in hugely reducing flystrike and fleece rot, even without mulesing. Our stud sheep have been non-mulesed for 15 years and our commercial flock has been non-mulesed for five years.

"All these benefits result in a flock of sheep that requires less intervention, lowering the cost of production and increasing sheep enterprise income."



The Hooke family farm in the western Riverina of NSW midway between Deniliquin and Hay.

Breeding and productivity

A strong focus for the Hookes has been on selecting for high growth rates and fast maturing animals, which gives them the ability to wean at an earlier stage. Tom says this provides their ewes a greater chance to conceive in the following joining, as well as maximise returns on surplus ewes. Also, wether lambs reach saleable weights quicker with less inputs required.

The Hookes also select heavily for genetic fat and eye muscle depth traits which enable their sheep to better maintain condition score with fewer inputs, resulting in greater lamb survival and higher weaning outcomes.

The family says it selects traits with a combination of extremely strict visual assessment and the use of Australian Sheep Breeding Values (ASBVs).

"ASBVs are an essential tool to select on some of the carcass and reproduction traits. They have also been great in helping us and our clients track and prove that we can have heavy cutting sheep without wrinkle and the need to mules and we

are keen to push the boundaries further," Tom said.

"We have entered 180062 in the Balmoral Sire Evaluation 2020 drop and are waiting for final results. Benchmarking progress is important to us and our clients."

Tom says the business also focuses on ewe fertility and boosting lamb survival, which has been helped by the brothers completing the AWI-supported Lifetime Ewe Management course.

"We've definitely adopted a lot of the principles from the course – such as our twin bearing ewes being fed to match demand and lambed down in smaller mobs – which has all resulted in the weaning percentages of our commercial flock's ewes being well above the district average.

"We average 110% lambs weaned to ewes joined with a six-week January joining and seek to keep improving this through management and genetics."

Improving soil health

The land on which the Hookes farm is of sandier red to grey cracking soils, and the family is keen to explore how it might use regenerative agriculture across their properties.

"The business has a focus on improving soil health

and ground cover. The entire property is unimproved native grass and bush. Grazing management is the greatest, in fact the only, tool we have to impact soil health, and in turn productivity. We do not fertilise or renovate pasture," Tom said.

"We aim for longer rest periods, increased biodiversity, improved soil health and we'll hopefully be rewarded with the ability to grow more grass per mm of rainfall.

"In 2002 we had paddocks up to 6,000 acres (2,428 ha) and we are now getting closer to our aim of 1,000-acre (404 ha) paddocks across the whole place. We're still honing our management techniques in this area but we recently learnt a lot from the RCS Grazing for Profit™ course.

Tom has been awarded a Nuffield Scholarship supported by AWI through which he will research regenerative agriculture principles that apply to Australian pastoral sheep enterprises.

"My research seeks to unearth leading examples from across the world of improved grazing management practices in rangeland environments, from which Australian sheep producers in the pastoral zones can learn. Unfortunately, COVID has meant delays in my research but I aim to start travelling in 2023," Tom said.

Research into a seaweed to reduce methane from grazing sheep

Research supported by AWI is under way into the feeding of a supplement, the red algae *Asparagopsis*, to grazing sheep to reduce their methane emissions. The research is part of a broader strategy to accurately identify and assess ways to reduce and offset greenhouse gas emissions from sheep.

Wool is a natural, renewable and biodegradable fibre that is well placed to take advantage of the growing shift towards planet-friendly products. However, to optimise the eco-credentials of Australian wool and ensure that it is acknowledged as a sustainable fibre by all, AWI is devoting resources to remedy any environmental hotspots in the wool supply chain.

The sheep farm production of greenhouse gases (GHGs), primarily methane belched by sheep, is an important area in which the Australian sheep and wool industry is seeking to reduce its environmental impact.

AWI research has identified methane-mitigating feed supplements for grazing sheep as having the greatest potential to significantly reduce the carbon footprint of wool within the next 15 years. It is a priority area for investment.

New research under way

A new AWI-supported project being run by the University of New England (UNE) will undertake two grazing studies in northern NSW with the aim to deliver key information for sheep and wool producers that will enable *Asparagopsis* feed supplements to be used with efficacy and safety.

In particular, the research will quantify the relationship between the intake of *Asparagopsis* and the daily methane produced by grazing sheep, plus any associated wool and live weight changes in the sheep. Influencing factors that will be assessed include pasture quantity and quality (eg native and improved pasture), the form of the supplement (eg pellet), and the frequency and method of its delivery.

“Previous industry research has shown that an 80% reduction in enteric methane production can be achieved when *Asparagopsis* is used as an additive to a forage-based diet for housed sheep,” said AWI Program Manager, Fibre Advocacy & Eco Credentials, Angus Ireland.

“However, research needs to be conducted into the supplement’s effectiveness with sheep that live on and graze pasture. It’s important to examine factors such as whether and how grazing sheep will consume the supplement, what the effective dose and cost would be, and whether there are any animal welfare and human safety issues.”

The UNE research is being funded by AWI in combination with a \$500,000 grant secured through the Federal Government’s

Methane Emissions Reduction in Livestock (MERiL) program. Environmental technology company Sea Forest, based in Tasmania, is supplying the *Asparagopsis*. The research is scheduled for completion by June 2024.

Broader strategy

AWI is also liaising with other industry bodies to help coordinate and co-fund collaborative research to assess other methane-mitigating feed supplements suitable for grazing sheep. This would reduce the risk to the wool industry should *Asparagopsis* be found to be not viable for grazing sheep and to avoid a supplement monopoly.

Aside from the use of feed supplements, the sheep and livestock industries are investigating other potential ways to **reduce** on-farm GHG emissions, including the use of low methane pasture species, and increasing flock productivity (producing more lambs and wool from each sheep). Potential ways to **offset** on-farm GHG emissions include storing carbon in vegetation and trees, and improved management of soil organic matter.

While a focus on carbon neutrality and reducing GHG emissions is primarily aimed at reducing the environmental footprint of the Australian wool industry, it also seeks to open up avenues for woolgrowers, who are taking steps to reduce their farm’s carbon footprint, to receive a premium by selling their ‘carbon neutral’ wool to brands or earning income from carbon mitigation as an ‘ecosystem service’.

Wool is not to blame – but we still need to future-proof the industry

The burning of coal, oil and gas (and not agriculture) is the dominant source of GHGs. Globally, agricultural emissions account for just 14% of GHG emissions, with sheep just a small proportion of that.

Furthermore, the prevalent GHG from livestock is ‘biogenic methane’, which is part of the natural carbon cycle – it breaks down into CO₂ after about 12 years and is then taken up by plant photosynthesis. In contrast, fossil methane and CO₂ from the burning of coal, oil and gas is an extra burden on the atmosphere as it is derived from carbon which had been safely secured underground for millions of years but is now being released.

The rise in global warming has occurred predominantly since the beginning of the 1980s. In contrast, during the same period, the volume of global (and Australian) wool production has decreased. There is no positive correlation between global warming and wool production, in fact there is a negative correlation!

Despite all this, GHG emissions from livestock are something that critics of the industry often highlight, which threatens the industry’s financial standing and social licence. Brands and retailers are increasingly committing to carbon neutral supply chains, and there is a high weighting applied to GHG

emissions in apparel rating schemes such as the European Union’s Product Environment Footprint.

Therefore, reducing the industry’s GHG emissions will help future-proof the industry.

The wool industry recognises the importance of this and is acting upon it. A focus of both the Australian wool industry’s 10-year plan, *Wool 2030* (launched in December 2020), and the Australian sheep and wool industry’s *Sheep Sustainability Framework* (launched in April 2021), is for the industry to reduce and mitigate its GHG emissions and for Australian wool production to strive for carbon neutrality. 





AWI WORKING TO INCREASE THE DEMAND FOR AUSTRALIAN WOOL

AWI works with brands to promote commercially available products made from Australian wool. This image is one of many being used by Australian brand Sportscraft in a collaborative marketing campaign this autumn/winter season - see the following page for details.

Sportscraft's new traceable wool collection

Australian fashion and lifestyle brand Sportscraft partnered with AWI's marketing arm, The Woolmark Company, to create and launch a 70-piece collection of traceable Australian Merino wool garments that champion the eco-credentials of the fibre and its journey from land to garment.

As a long-standing Woolmark licensee, Sportscraft's deep association with Australian wool is reflected in its latest traceable collection which was launched last month.

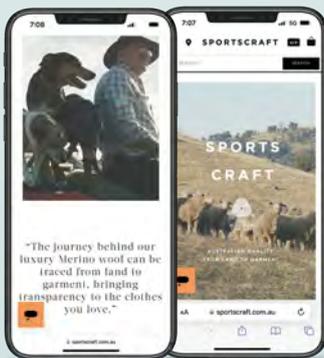
"We're proud to have been the first Australian brand to sign on with The Woolmark Company in 1964 to provide quality knitwear. In celebration of this long-standing partnership, our new collection tells the story of local farmers and the expert craftsmanship behind each product," said Elisha Hopkinson, CEO of APG & Co which owns Sportscraft.

"We care about the provenance of our wool and the people who create it. As part of our broader commitment to improving the transparency of our supply chain, the journey behind Sportscraft's premium Merino wool is fully traceable, from land to garment."

With Sportscraft's strong focus on providing a transparent view of the supply chain, consumers can learn the story behind the garments in the collection, from the land where the wool was grown through to the final garment.

"Passion for producing quality wool and sustainable use of the land drive our business."

Michael Reynolds, woolgrower



The wool-growing property of **Michael Reynolds** from the Adelong district of NSW was featured in the Sportscraft marketing campaign.

Window display at **David Jones** promoting the new Sportscraft collection.

"We're proud to partner with Australian woolgrowers committed to protecting the landscape we call home."

Sportscraft

Traceable Australian wool collection

The collection features fibre sourced through a sustainable supply chain, direct from Australian woolgrowers. Sixth-generation farmer Michael Reynolds of 'Westside', a property located in the Adelong district of NSW, takes centre stage in Sportscraft's marketing as one of the many woolgrowers that provide quality Merino wool for the collection.

Run with minimal environmental impact by Michael and his wife Margaret for more than 40 years, Westside is a family farm that includes a beautiful mix of permanent creeks and native bushland.

The Reynolds use sustainable practices – including tree planting, pasture renovations, and waterway regeneration – to ensure their land will be cherished for years to come.

"We support Australian brands promoting the amazing qualities of home-grown Australian wool and congratulate Sportscraft on such an initiative," Michael said.

"It's great to be able to trace our product to where it may finish up and what sort of garment it becomes."



With the tag line 'Australian quality, from land to garment', Sportscraft and The Woolmark Company have promoted a **70-piece collection** of traceable Australian Merino garments.

Marketing the timeless garments

Featuring Woolmark certified pieces that are reminiscently Australian, the collection is comprised of timeless classics that will be handed down for generations to come.

The garments – which include jumpers, trousers, coats, blazers and cardigans – are available to purchase online on the Sportscraft website, in its brick-and-mortar stores across Australia, and in David Jones.

The marketing of the collection included a take-over of the Sportscraft website's homepage, along with a special page showcasing a lookbook of the collection and a page showcasing the Reynolds' farm as a source of the fibre. Importantly, each page provides customers with a direct link to the online store where the garments can be purchased. The digital component of the promotion also included a social media campaign and an e-newsletter mailout.

Hard copy promotional material was also placed in-store and in the windows of Sportscraft and David Jones shops, and 'out of home' advertising was placed in key city locations in NSW and Victoria.

More information
www.sportscraft.com.au



New Aussie brand's everyday wardrobe essentials



INTACT is a new Australian brand that has launched a range of everyday wardrobe essentials that can be worn all year round, for work and play. The staples in the capsule collection are knitted with Woolmark certified yarn of 100% Australian Merino wool.

Born into a wool-growing family that farms in Central West NSW, founder and creative director of Australian lifestyle brand INTACT, Gabby Neal, has had an appreciation for Merino wool her entire life.

Gabby's parents Rob and Belinda, along with middle sister Louise and her husband Alex, run Merinos with 19-20 micron wool at 'Lockerbie' near Condobolin. Starting a clothing label was inspired by her upbringing and INTACT is still very much a family affair with oldest sister Samantha working on the start-up alongside Gabby.

With formal training from the FBI Fashion College, Gabby gained her industry experience in fashion and marketing while living in Sydney. Now living on the NSW South Coast, Gabby's diverse knowledge of the processes involved from farm to fashion led to the creation of INTACT, which launched in April.

Through INTACT, Gabby is on a mission to make Australian Merino wool an everyday apparel staple, which not only supports Australian woolgrowers but also offers a conversation starter with younger consumers to promote a forgotten fibre of the fast fashion generation.

"INTACT offers a new way of wearing wool and is purposefully pared back to focus on the capsule concept - essential wardrobe staples that will stand the test of time," Gabby explained.

"We're a thoughtful brand that gives a firm nod to the slow fashion movement and demonstrates how fashion brands can contribute to the circular economy through fibre choice."

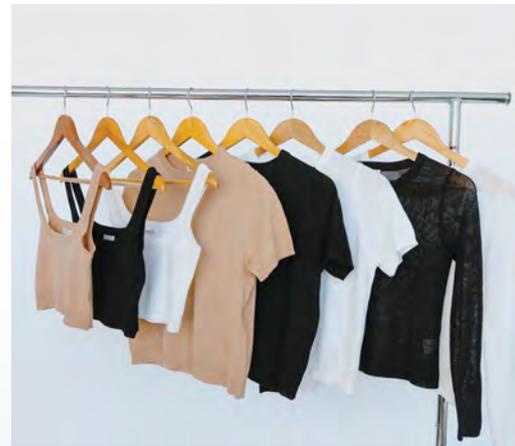
The first INTACT capsule collection comprises three favourite wardrobe essentials: a fully fashioned crop knit singlet, a knitted short sleeve tee, and a next-to-skin loose-knit long sleeve top.

With longevity and quality craftsmanship at the core of the brand, Gabby says Merino wool ticks all the boxes for creating a wardrobe that will be loved and last for years.

"Wool is so versatile and the fibre today has well and truly shrugged off the outdated perceptions of being winter only, bulky and hard to care for. 100% Australian Merino wool takes centre stage in the capsule collection, which allows us to highlight to consumers the premium fibre's natural softness, breathability, temperature regulation and odour resistance," she said.

"The capsule collection is big on style, function and is based on lifestyle needs, with effortless staples that can take you from the morning run, through the workday, to social outings and adventures further afield.

"INTACT is a premium brand with purpose. We want to make wool a feature of the everyday and show how effortlessly wool blends into wardrobes, at any time of the year."
Gabby Neal, founder of INTACT



The collection of **everyday essentials from INTACT** is made entirely from 100% Australian Merino wool.

"We purposely chose neutral colours - black, white and latte - because they are timeless and versatile, mirroring the capsule concept on which the INTACT brand is built."

Gabby emphasises that choosing Merino wool is a commitment to sustainability; it has cemented circular fashion principles into the brand from its outset.

"Merino wool is a 100% natural, renewable and biodegradable wonder that offers plenty of benefits for the conscious consumer. There is a strong educational component to the brand, we want to promote wool's premium credentials and why wool is a natural choice for every wardrobe," Gabby added.

What else can we expect from INTACT?

"Wardrobe staples reimagined, pops of colour and a fresh conversation about the benefits of wool. It's an exciting time to be wearing wool, especially as the world is crying out for better clothing choices. INTACT aims to show how the fancy fibre can help keep your wardrobe, and footprint, intact."

More information
www.intactco.com



“It really is of the greatest importance that we educate and inform the next generation of makers and consumers of the global benefits of using natural and sustainable resources, including wool.”

HRH The Prince of Wales



The Campaign for Wool's 20-minute documentary 'Why Wool Matters' explains how wool is healthy for the planet.

Campaign for Wool film explains WHY WOOL MATTERS

With sustainability high on the agenda of consumers, brands and governments, the Campaign for Wool in April released a short documentary, titled *Why Wool Matters*, which explains why wool is the most responsible fibre to choose for the well-being of the planet.

Against a background of misleading anti-wool lobbying currently orchestrated by global giants of fast fashion, the Campaign for Wool has engaged with leading academic experts in the field of land management and carbon sequestration to demonstrate the positive contribution that wool and the grazing of sheep make to the continued well-being of the planet.

The result is a 20-minute documentary, supported by AWI, that targets consumers as well as environmental experts, farmers, the textile trade and retail buyers, educational networks and influencers.

“The role of wool and sheep in helping defend the environment, and fighting back against plastics and pollution, has never been clearer. This film, made in four continents, makes the compelling case that wool can play a crucial part in the recovery,” said the Chairman of the Campaign for Wool, Nicholas Coleridge.



“Only wool provides the ultimate reassurance of sustainability.”

HRH The Prince of Wales

Produced with the Campaign's patron, His Royal Highness The Prince of Wales, the film emphasises the renewable and biodegradable end of life attributes of wool and the contribution the fibre can make to the circular economy, in contrast to plastic, synthetic fibres.

“It is abundantly clear to me that we need to make changes to the way we think about the production, use and the disposal of clothing and textiles if we are going to get anywhere near to meeting the United Nations climate change goals set for the industry,” said HRH The Prince of Wales.

“A major part of that change has to be moving from a linear system to a circular one, where textiles and clothing are produced sustainably, enjoy long use, and are made using natural materials, specifically wool, which will biodegrade naturally and quickly at the end of their useful life.”

Australian woolgrower Georgina Wallace of 'Trefusis' at Ross in Tasmania is featured in the film alongside other woolgrowers, academics and personalities from across the globe.

“I see that we are custodians of this property, we want to see our native flora and fauna thrive and I think for the whole biodiversity of this property it is important to look after that native land, so we want to leave this property in even better order for the next generation,” Georgina says in the film.

Launched in April, the film is being distributed and shared across digital and social channels and at events by the Campaign for Wool and partner organisations including AWI, and through trade and consumer media outlets.

Now entering its twelfth year, the global Campaign for Wool was initiated in 2010 by HRH The Prince of Wales to raise awareness amongst consumers



“I think wool is such a wonderful, versatile, sustainable and clean green fibre.”

Georgina Wallace, woolgrower

about the unique, natural, renewable and biodegradable benefits offered by the fibre. Through a range of projects, events and activities, the Campaign encourages collaboration between an international community of woolgrowers, major fashion designers, retailers, manufacturers and interior designers.

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

More information

View the 20-minute film at www.campaignforwool.org/why-wool-matters

New sustainability course on the Woolmark Learning Centre

AWI has launched a new sustainability course on its popular online Woolmark Learning Centre that aims to help the textile and fashion industry reduce the environmental impact of its products by using wool.

Developed by industry experts, the self-paced 'Sustainability and Wool' course is designed for designers, brands, manufacturers and tertiary students, to support the industry's move towards less impactful products and business models.

With a focus on the wool fibre and wool industry, the freely available course provides theory and practical examples of circular design, responsible business models and commercial innovations that accelerate sustainable development.



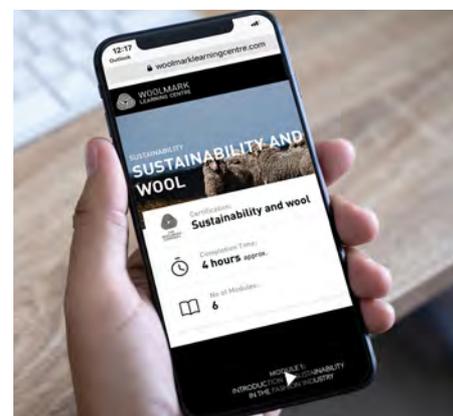
AWI CEO John Roberts says the course is all about helping the textile and fashion industries understand the sustainability benefits of using wool in preference to synthetics and thereby increase demand for the natural fibre.

"At a time when many customers across the world are asking for more sustainable fashion, the answer is clear: wear Australian wool. The more people who understand that wool is natural, biodegradable and sustainable, the more wool will be sold and that helps Australian woolgrowers," John said.

Throughout the course, users hear insights from industry trailblazers, explore opportunities and solutions for creating products with a more positive legacy, and support consumers to reduce their environmental and social impacts – all while learning how wool can act as an ideal solution to support these ambitions.

"With 80% of the overall impact of a garment defined by the design stage, this course will equip designers and brands with access to information about how they can use wool to meet sustainable development targets and align to sustainability commitments," added AWI's General Manager for Processing Innovation & Education Extension, Julie Davies.

More information
www.woolmarklearningcentre.com



The new free-to-access online course from AWI provides extensive information on wool and sustainability for the textile and fashion industry.

What is the Woolmark Learning Centre?

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

Developed by experts in the textile industry, the digital platform and coursework are structured to facilitate both fundamental and masters-level education. It is also a useful resource for woolgrowers wanting to gain a greater knowledge of what happens to wool post-farmgate.

With there never being a better time to learn online, the Woolmark Learning Centre is proving to be very popular for the many professionals and students all along the textile supply chain who have used the platform since its launch in mid-December 2019:

- 1.2 million page views
- 13,300 registrations
- 4,100 course completions.

Educating the textile supply chain about wool is a key strategic pillar within AWI's business.

Free to access, 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 a course, 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.

The Woolmark Learning Centre is an online platform that educates the global textile supply chain about how to use Australian wool, thereby increasing demand for the fibre.



International Woolmark Prize



The winners of this year's International Woolmark Prize were announced in April at a special event at which the world's best emerging design talents showcased their Merino wool collections.

This illustrious fashion award and talent development program generates long-term demand for Australian Merino wool by building and strengthening the reputation of the fibre as the ultimate ingredient of sustainable luxury fashion.



Since its inception in the 1950s, the International Woolmark Prize has been awarded to young fashion designers that have gone on to become some of the most era-defining creatives of their generation: from Karl Lagerfeld and Yves Saint Laurent to Giorgio Armani and Ralph Lauren.

Relaunched in 2012 by AWI's marketing arm, The Woolmark Company, the International Woolmark Prize is an award for the world's most promising design talent. Every year, the designers 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.

But the International Woolmark Prize program is a lot more than a fashion design award.

The program runs across an 18-month cycle and provides the international designers with education, mentorship, networking opportunities, early-stage funding, global wool supply chain access and commercialisation. **Importantly, it generates long-term 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.

Furthermore, the phenomenal interest in these 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.

"The International Woolmark Prize is the jewel in the crown of all AWI's fashion activities," explained AWI CEO John Roberts.

"It connects our Australian woolgrowers with the global fashion and textiles industry and in turn highlights the beauty, versatility and modernity of Australian wool.

"We are proud of the relationships fostered between our finalists, prestigious judging panel and supply chain network who mentor these designers on their International Woolmark Prize journey and we hope these connections continue in the future.

"The program's alumni are building resilient businesses and taking leading roles within the industry, increasing wool's position as a dominant fibre in major fashion companies. For example, in 2020, 2016/17 womenswear winner Gabriela Hearst, was appointed as Creative Director at luxury fashion house Chloé."

2022 International Woolmark Prize

The 2022 International Woolmark Prize was in a hybrid format: the finalists' collections were revealed *digitally* in the format of a film to increase reach and awareness, a few days prior to the *physical* winners' announcement which itself supported increased media and business development.

Selected by an illustrious panel of judges at the event held in London in April, the UK's **Saul Nash** was announced as the winner of the 2022 International Woolmark Prize, with **MMUSOMAXWELL** from South Africa named the winner of the Karl Lagerfeld Award for Innovation. The event was attended by celebrities including Jourdan Dunn and Erin O'Connor which enabled the event to attract even more attention.

The other five finalists for this year's award were Ahluwalia (UK), EGONLAB (France), Jordan Dalah (Australia), Peter Do (USA) and RUI, (China). Each of the finalists presented Merino wool collections comprising six looks that showcased a commitment to upholding the prize's pillars of product excellence, innovation, supply chain transparency, sustainability and inclusivity.

"It's great to see the continuing shifts in fashion as young dynamic creatives are supported and nurtured across the globe, from Africa to China to the UK," said supermodel Naomi Campbell who was on the judging panel.

"Everything about the wool industry is self-supportive. It's all about partnering the natural resources of the farms with the well-being of their sheep. I am very happy to be involved with Woolmark."

All the finalists will now continue their International Woolmark Prize journey, joining a prestigious alumni of more than 400, and will have the opportunity to be stocked in some of the world's leading stores, via the International Woolmark Prize Retailer Network.

Aims of the International Woolmark Prize

1. Drive Australian wool sales on a global scale.
2. Increase awareness of Merino wool and the Woolmark brand.
3. Educate and mentor emerging designers about wool.
4. Build a global network of wool advocates.
5. Generate new business leads for AWI and the wool supply chain.



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.



Winner of the 2022 International Woolmark Prize **Saul Nash** (in green) with model (in red), both wearing items from his winning collection. Winners of 2022 Karl Lagerfeld Award for Innovation **Mmuso Potsane** and **Maxwell Boko** of **MMUSOMAXWELL** with model (centre of trio in black).



Items from the **MMUSOMAXWELL** collection.



Founder & Creative Director at Byredo, **Ben Gorham**, judging at the final event.



Detail of a garment from the **Saul Nash** collection.

Saul Nash wins International Woolmark Prize

London-based designer Saul Nash was praised for his modern use of Merino wool in activewear and technical garments, using the natural fibre in place of traditional synthetics.

"Everyone did a great job and could have been a winner," said judge Riccardo Tisci, who is Chief Creative Officer at Burberry. "But what Saul did, coming from a ballet background to replace Lycra with wool was really incredible."

Carefully selecting his yarn, such as K wool from Zegna Baruffa which has a high twist for increased natural elasticity, allowed Saul to explore knitwear across compression, mid-layer above and below the waist, as well as a hybrid production of knit and woven pieces. The collection offers a bridge between active and formal, which is good anticipation for how the market might move.

"Words cannot describe what this [win] means to me," said Saul after the announcement. "I am so grateful for what I have gained in the past eight months. This really is the cherry on top for everything Woolmark has done for me."

MMUSOMAXWELL wins Karl Lagerfeld Award for Innovation

From South Africa, MMUSOMAXWELL's winning collection reflected the brand's commitment to reducing its environmental impact and upskilling traditional craftsmanship.

"I love what MMUSOMAXWELL is doing and how they explain their work," explained judge Carine Roitfeld who is one of the most influential figures in fashion. "They have a dream and what they are doing is not just for South Africa, but for a modern, western woman."

Sourcing local raw materials and end-to-end production in South Africa, MMUSOMAXWELL took an artisanal approach to its collection. Each item promotes slow and small batch production through use of local artisans to counteract the over-consumption pandemic and allows for greater product traceability.

"Winning means everything to us," said MMUSOMAXWELL designers Maxwell Boko and Mmuso Potsane. "It allows us to continue working with artisans and to further explore with Merino wool, which is fantastic for us."

Woolmark Supply Chain Award

This year's Woolmark Supply Chain Award was presented to Netherlands-based research and knowledge hub **Knitwear Lab**, for its outstanding contribution as a trade partner of the International Woolmark Prize and for giving access to technology and R&D in flat-bed knitting to emerging brands in a way that is specific to their needs.

Standout developments included innovative 100% Merino wool fabrics developed with winner Saul Nash – such as a compression wool hybrid jersey/airtex mesh knit and a double-faced jersey with integrated mesh holes – offering high stretch, strength and breathability. These breakthrough fabrics allowed Saul to bring his vision to life.



Celebrity model **Jourdan Dunn** on stage at the final.

Innovation Academy

All seven finalists were supported by The Woolmark Company's Innovation Academy, a fast-track mentoring and education program that offers unparalleled access to International Woolmark Prize partners, manufacturers and mentors across the supply chain. The Innovation Academy supports finalists with early-stage investment, product R&D, mentoring, networking and commerce. The program fosters more meaningful and sustainable product outcomes for both the designer and the manufacturer. Each finalist has completed a Common Objective Sustainability Policies and Roadmap as part of a commitment to better industry practices and supply chain transparency. **B**

More information

www.woolmarkprize.com

The social and earned media results of the 2022 program will be included in the next edition of *Beyond the Bale*.

Project updates: results in numbers



The eponymous British luxury fashion brand of world-famous Victoria Beckham launched in October 2021 its first traceable collection, comprising 20 womenswear and 14 childrenswear knitwear pieces (all Woolmark-certified) made from 100% Australian Merino wool, in collaboration with AWI subsidiary The Woolmark Company.

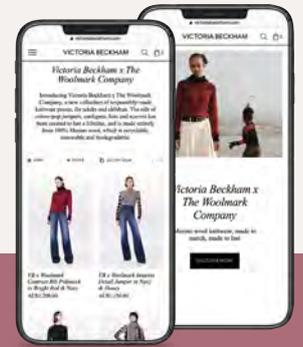
Project activities included the product development and certification, two staff training sessions for the Victoria Beckham team, retail and marketing content creation, and a multi-retailer strategy which ensured the collection was stocked by 42 global retailers, such as Harrods and Saks Fifth Avenue, as well as victoriabeckham.com.

The collection was promoted via the websites and social media channels of Victoria Beckham, The Woolmark Company and the stockists of the collection, as well as marketing

emails to the brands' databases. A landing page was created on victoriabeckham.com to introduce consumers to the story behind the collection, key product features and the pieces. Traffic was driven to this landing page through homepage banners and social media.

The collection was featured across key fashion, lifestyle and trade media, such as *Vogue* and *Harper's BAZAAR*, in more than 12 countries. The Victoria Beckham team also worked with a selection of influencers to create content for their channels to drive increased awareness of the collection.

More information
www.victoriabeckham.com/pages/woolmark
www.woolmark.com/victoriabeckham
 Pages 4-5 of the December 2021 edition of *Beyond the Bale*



AWI's Feel Merino campaign

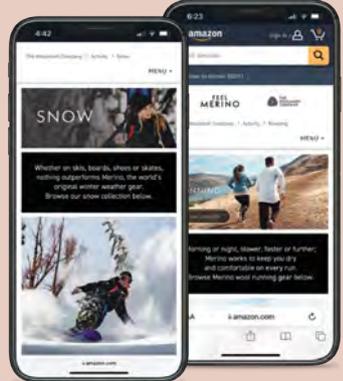
AWI's second annual Feel Merino marketing campaign that was launched in November last year in North America succeeded in increasing consumers' awareness of Merino wool as a performance fibre that is soft on the skin and ideal for sports and outdoor pursuits. Importantly, it also drove sales of Merino wool products.

The Feel Merino campaign, which ran for four months, was developed by AWI's marketing arm The Woolmark Company to help put an end to the mistaken perception amongst the average North American consumer that wool is "warm and itchy" and only suitable for very traditional (ie non-sport) sectors.

Instead, the campaign, which targeted millennials, created a new narrative for Merino wool as a hard-working, but always soft, performance fibre. The campaign again included the 60-second Feel Merino Anthem film, capturing people's attention and providing them with a new understanding about Merino wool's natural versatility and suitability for performance wear.

The campaign also increased consumers' consideration to purchase commercially available Merino wool performance wear via e-commerce giant Amazon.com, which partnered with AWI for the campaign.

More information
www.woolmark.com/feel-merino
 Pages 6-7 of the December 2021 edition of *Beyond the Bale*



Merino swim shorts make a splash across the world

For the first time, iconic French swimwear brand Vilebrequin has incorporated Merino wool into its range, launching a set of three Merino wool swim shorts ready for the northern hemisphere summer, in partnership with The Woolmark Company.

Of all the places you'd expect to find Merino wool, the beach is probably the last. But in its pursuit of finding new markets for Australian wool, AWI subsidiary The Woolmark Company has teamed up with Vilebrequin to launch a set of Woolmark-certified swim shorts.

Vilebrequin is a French luxury brand specialising in swimwear and ready-to-wear for men and women. The brand is a product of the joy, freedom and seductive charm of Saint-Tropez on the French Riviera in the 1970s, where it opened its first store in 1971. Today, the brand has a global presence in more than 62 countries.

Fusing its 50+ years of tailoring know-how with an endless flair for experimenting, Vilebrequin has created the innovative Merino wool swim shorts for men, drawing on traditional suiting methods for everything from weaving to pattern cutting and pocket placement.

Vilebrequin played with the idea of a 'suit made for swimming', letting the quality and technical attributes of Woolmark-certified Super 120's Merino wool from REDA's Active collection really shine through.

Eco and performance qualities

While driven by innovation and drawn to Merino wool's performance qualities, Vilebrequin also prioritises sustainability and was attracted to the natural, renewable and biodegradable properties of the wool. Being a swimwear company, Vilebrequin was particularly impressed that wool does not contribute to microplastic pollution of the oceans.

"Merino wool is a real source of eco-innovation, and perfectly in line with Vilebrequin's target to create 80% of collections using exclusively sustainable fabrics and processes by 2023," said Vilebrequin CEO, Roland Herlory.

"Partnering with The Woolmark Company has introduced us to cutting-edge techniques that reduce our impact on the planet while delivering a uniquely elegant product. We feel confident our clients will appreciate its remarkable quality and the naturally chic way it hangs on the body."
Roland Herlory, Vilebrequin CEO

The shorts are not only perfect for being in the water. After swimming, the shorts can dry quickly in 5 to 7 minutes, which according to Vilebrequin is much quicker than the target level. And while simply relaxing at the beach, the ultra-breathable, thermo-regulating and UV resistant properties of Merino wool keep the wear comfortable under the sun.

Marketing with a global reach

The new shorts were launched online and in store during April, with 52 Vilebrequin international store windows showcasing the product for a two-week period. The product was also promoted at leading French department stores. Marketing also included digital and social campaigns across Vilebrequin and The Woolmark Company channels, with special events held by Vilebrequin in Paris, London and Santa Monica.

Since 2012, Vilebrequin has been owned by the US clothing company G-III Apparel Group, which owns and licenses a diverse portfolio of more than 30 globally recognised heritage and emerging fashion brands including DKNY, Karl Lagerfeld Paris, Calvin Klein, Tommy Hilfiger and Levi's. 

More information

www.vilebrequin.com

www.woolmark.com/vilebrequin



"By partnering with Vilebrequin, we are helping bring the sophistication of worsted tailoring to a new market for Australian wool."

John Roberts, AWI CEO

Woolmark Performance Challenge

Innovative wool applications for sports and outdoor

Now in its fifth year, the Woolmark Performance Challenge is an annual competition for tertiary students from across the world to develop innovative new product applications for Merino wool within the sports and performance market. The winners of the 2021 competition were recently announced, with environmental impact and fabric innovation at the forefront.



2021 Woolmark Performance Challenge finalists: Beatrice Beffa (Italy), Francesco Saverio Matera (Italy, Woolmark Research Bursary winner), Ivy Whiteman (Australia), Holly Reid (Australia), Olivia Simpson (New Zealand), Caroline Schinle (Germany, On winner), Nicola Hasslacher (Italy/Germany), Elsa Longret (France), Harleen Kaur (India, On winner), Kimi Jensen (USA/Japan), Daniel Calabrese (USA), Dan Winegar (USA, SALEWA winner).



Presentation to the 2021 Woolmark Performance Challenge Research Bursary winner Francesco Saverio Matera (centre), in front of the crowd of 100 media and industry guests in Paris.

Woolmark Performance Challenge since program launch

6,200+
TERTIARY STUDENTS
INVOLVED

300+
UNIVERSITIES IN
25 COUNTRIES

1,245
INNOVATION IDEAS
SUBMITTED

615,000+
WEBSITE HITS

Unlike other competitions which are based solely on design aesthetics, the Woolmark Performance Challenge asks students to delve into fibre science and garment technology, while harnessing the unique natural properties of Australian Merino wool.

AWI's objective for the Woolmark Performance Challenge is to increase the demand for Australian Merino wool in the activewear sector. All entries to the competition must use a minimum of 50% Merino wool within their product composition.

AWI partners with sports and outdoor industry brands to amplify the messages about the competition and the performance benefits of Merino wool – and also to further embed appreciation for the fibre within the partner companies themselves. Past partners include leading sportswear company **adidas** and Norwegian-based outdoor apparel company **Helly Hansen**. In 2021, the partners were Swiss running shoe and apparel brand **On** and Italian mountain equipment brand **SALEWA**. In 2022, the partner is French outdoor and sporting goods company **Salomon**.

First launched in 2018, the annual initiative continues to grow and has so far involved more than 6,200 students from more than 300 universities in 30 countries across the world. The Woolmark Performance Challenge thereby gives AWI and its partners access to a global pool of world class inventive minds.

The competition awards the winners with prizes including industry internships and ongoing training support, plus the opportunity to sell their idea to AWI or that year's competition partner.

Education about wool

As well as the Woolmark Performance Challenge being a competition to create innovative solutions for sports and outdoor, a key component of the initiative is to educate students about Merino wool.

Through a series of webinars by industry experts and sportspeople, AWI educates all the participating students about the attributes and benefits of the fibre – to not only arm them with information to assist in their competition entry, but to also encourage and inspire them to think about wool in their future careers.

Each of the 12 finalists also receive mentoring from industry heavyweights as part of an Innovation Accelerator Program, designed to accelerate their concepts and elevate their design thinking.

"Educating students about the amazing natural properties and benefits of wool is a priority. Natural fibres are critical for the health of our planet. The Woolmark Performance Challenge is designed to evoke innovation in products and processes by next generations," said AWI General Manager, Processing Innovation & Education Extension, Julie Davies.

"The 2021 competition entries showed a growing strength of critical thinkers and innovators. The quality of the finalists really pushed this competition to a new level. This is extremely encouraging and exciting, accompanied by the fact that there was an absolute understanding of wool and a drive to confirm wool as a true performance fibre."

Innovative products from the 2021 Challenge

For the 2021 competition, students had the option of choosing between two different briefs:

- **On** challenged participating students to explore apparel innovations that respond to the highest demands of performance for modern outdoor runners, whilst maximising fashion-forward wearability.
- **SALEWA** asked entrants to innovate low environmental-impact fabric technologies to create thermo-regulating apparel for mountain activities.

There were more than 410 entries from 137 universities across 24 countries. From these entries, 12 tertiary students (six in each category) were selected as finalists, with the winners and all the finalists' innovative concepts announced in March at a showcase event held at La Caserne, which also houses the Woolmark Development Centre in Paris.

More than 100 guests attended the presentations, including the 12 finalists;

44 TV and fashion journalists from titles such as *Marie Claire*, *Vogue* and *Elle*; brand partners such as On, SALEWA, Salomon and Shima Seiki; and education partners.



On award winners **Caroline Schinle** and **Harleen Kaur** (in front), pictured with the other finalists in the On category and On's **Jean-Philippe Romain** and **Louis de Vos** (at the rear).

On winners

Caroline Schinle from Albstadt-Sigmaringen University in Germany was awarded an internship with On. Caroline's innovation creates a new filling technology for padded jackets to create a 100% biodegradable product, using a novel structure as support for a Merino wool and milkweed fibre filling. In addition, On created a new Research Opportunity award for Harleen Kaur of Pearl Academy in India. Harleen's submission identified a gap in the market to address the needs of pregnant and post-partum runners, creating activewear that works with the changing body.

"We were amazed by the amount, diversity, and quality of the entries coming from around the world. Knowing there are bright minds in institutions around the globe gave us confidence that the pursuit of developing more innovative but even more importantly sustainable solutions is what the future generation is looking for."

Louis de Vos, Global Head of Talent Acquisition
at On



SALEWA award winner **Dan Winegar**, pictured with SALEWA's **Thomas Moe**.

SALEWA winner

Dan Winegar from the University of Oregon was selected by skiwear experts SALEWA for his idea for apparel that automatically adjusts insulation thickness to maintain comfort during and after exercise. The resultant 3D flexible fabrics can change from insulating to cooling modes depending on the levels of skier activity.

"The Woolmark Performance Challenge has provided a great variety of design proposals and have enriched our minds and souls when it comes to creative thinking, understanding better what is possible to make with this wonderful natural fibre Merino wool."

Thomas Moe, Senior Product Director
at SALEWA

Woolmark Research Bursary winner

Francesco Saverio Matera (see image on opposite page) of IED Milano in Italy was the Woolmark Research Bursary recipient, envisioning a garment that acts like a second skin, adapting to the body in motion. His design uses strategically placed zones of high compression using elastane in seamless knitted garments to support and manipulate the wearer's muscles and limbs during exercise.

Institution Award winner

In addition, the Woolmark Performance Challenge Institution Award is presented to one university each year, judged to have submitted the highest number of quality entries overall. The 2021 winner, announced in December, is the University of Oregon, which has been a participant of the WPC since its inception in 2018. Incredibly, seven of its students have been selected as finalists across the years.

More information

Explore the innovation concepts of all the 12 finalists at www.woolmarkchallenge.com

TURN OVER TO READ MORE ABOUT THE WOOLMARK PERFORMANCE CHALLENGE →

Internship winner immersed in wool

Winner of the 2020 Woolmark Performance Challenge, Bettina Blomstedt of Finland, was awarded a three-month internship involving four of The Woolmark Company's supply chain partners. The experience provided Bettina with a deeper understanding of wool and enabled her to create unique fabric samples.

Launched by AWI in 2018, the Woolmark Performance Challenge is an annual competition for tertiary students from across the world to develop innovative new product applications for Merino wool within the sports and performance market – see pages 44-45 for information about the 2021 competition winners.

The previous year's competition (2020), which asked participants to consider how Merino wool can replace synthetic fibres in modern sailing clothing, received 352 entries. Bettina Blomstedt of Aalto University in Finland was one of three winners.

"As a textile designer, I was thrilled to participate in a competition that focusses on the scientific and technical knowledge of textiles and textile fibres," Bettina said.

Bettina undertook her research for the competition with sustainability in mind, asking: how can the inherent properties of Merino wool be utilised in sportswear, without adding any synthetic materials to the mix?

"Wool is often mixed with polyamide to make the yarn more resistant, but to avoid the blending of natural and synthetic fibres that leads to challenges in recycling at the end of a garment's life, I decided to improve wool's abrasion resistance by using an additional natural fibre," she explained.

Bettina's internship journey

As a winner of the Woolmark Performance Challenge, Bettina was awarded a three-month internship with AWI subsidiary The Woolmark Company that included placements with several supply-chain companies with which it has longstanding relationships.

The purpose of the internship was to enable Bettina to learn more about the wool supply chain and establish good contacts within the wool textile industry. The internship also enabled her to further develop her winning Woolmark Performance Challenge project by exploring how knitted wool fabric can be strengthened by the incorporation of linen yarns, while retaining the positive benefits of wool.

Bettina started her internship in November last year under the guidance of AWI's Research and Development Manager for Europe, Birgit Gahlen. Bettina's first stop was yarn and fabric manufacturer **Tollegno 1900** in Biella, Italy.

"During my two weeks at Tollegno, while I worked on the yarn choices and colour palette for my project, I learnt a lot about the spinning, dyeing and finishing of Merino wool yarns," Bettina said.

"I heard how a yarn collection is created and how colours are chosen. I was also introduced to methods of wool fibre testing, and I had the opportunity to see how microns and fibre length are measured. I also visited spinning mills Filatura Luisa and Filatura Bertoglio where I enjoyed seeing the manufacturing process for both woollen and worsted yarns."

The next two weeks were spent at knitting machine manufacturer **Shima Seiki** where Bettina got involved in programming machines to create knit samples using the yarns she had acquired from Tollegno. She also completed a 'flat knit design' course using software to create knitted patterns and structures.

Bettina spent the final six weeks of her internship at the **BYBORRE** research facility in Amsterdam in The Netherlands during which she continued exploring the possibilities of combining wool and linen in knitwear.

"A selection of structure samples I created was sent for abrasion resistance and burst strength tests to determine the best knitwear structures. An important part of the experimentation was to do some washing tests; this was to be able to predict the felting of wool and how it affects the various knitted structures," Bettina added.

The results of her internship project have been presented to The Woolmark Company and the supply chain partners that she visited.

Bettina says she found the internship experience very rewarding and thanked AWI for the opportunities provided to her. Bettina is now working as a footwear knit designer for Nike in Portland, Oregon in the USA. **B**



Bettina Blomstedt with Merino wool yarns at Tollegno 1900 in Italy.



Some of the wool blend samples created by Bettina during her internship at BYBORRE in The Netherlands.



Embroidery sample on wool single jersey knit.

Embroidery creates 3-D effect

Bettina also spent two weeks of her internship at **D-house Urban Lab** in Milan during which she undertook a side project exploring how embroidery can create a robust three-dimensional shape to fabric.

"I created the 3-D effect by stretching fabric onto the frame of the embroidery machine and then embroidering the fabric. When the stretch of the fabric is released, the embroidery pattern creates a 3-D shape to the fabric," Bettina said.

"There are so many variables that affect the 3-D effect and stability, such as the direction of the fabric, direction and amount of the stretch, and the direction and width of the embroidery."

The samples will be incorporated in The Woolmark Company's The Wool Lab sourcing guide.

Runners testing out the Merino wool apparel of **Tracksmith's new Thaw collection**, while training in the soft and slushy conditions of Rockefeller State Park in New York.

Merino keeps you running through the spring thaw

Leading US-based running brand Tracksmith earlier this year launched Merino wool apparel that is perfect for the muddy and messy conditions of the spring thaw.

The spring thaw – it's that time just after the end of winter when the sun begins to shine, the ice begins to melt... and the trails turn to slush.

For many runners in northerly parts of the world, it can be a wet and messy time of the year, when their running gear invariably gets badly splashed with water and mud when they are out training. But the spring thaw is also a crucial time of the year for many runners who are preparing for marathons commonly held later in the spring.

Running apparel brand Tracksmith, which is based in Boston – home of the world's most prestigious marathon – partnered with AWI subsidiary The Woolmark Company in March to unveil Merino wool pieces in its Spring '22 collection and a new collection titled Thaw.

"For marathoners training through a tough winter and an unpredictable early spring, Merino wool is like a secret weapon," said Tracksmith founder, Matt Taylor.

"There's no better feeling when faced with a brisk morning run than pulling on a soft and cozy Merino wool layer. It's an investment that makes the challenges of training day in and day out a little easier."

Matt Taylor, Tracksmith founder

"The aim of the marketing collaboration was to drive sales of Merino wool apparel at a key time of year for purchases by this highly motivated group of runners."

AWI CEO, John Roberts

"It's thermoregulating: keeping us warm on the coldest days and cool as things heat up. It wicks away sweat and moisture in a flash and doesn't retain any post-run odours. That means we can wear our favourite Merino layers multiple times throughout our training week without having to do a load of laundry. Merino wool is a staple of our training collections and a best-seller year-round."

Furthermore, the Merino wool pieces in the new Thaw collection are specifically designed with an innovative eco finish to enhance Merino wool's natural easy care properties and resist muddy splashes. The water and stain repellent HeiQ eco-dry finish repels water and stains, preventing dirt from bonding to the fabric. It is also PFC-free, which helps keep harmful chemicals out of the snow, ice and water.

The Thaw collection comprises a long sleeve top based on the classic style and versatile performance of Tracksmith's best-selling Harrier long sleeve tops; a single-layer beanie; and lightweight gloves. All pieces are made from machine washable fabric comprising 89% Merino wool of 17.5 micron.

B

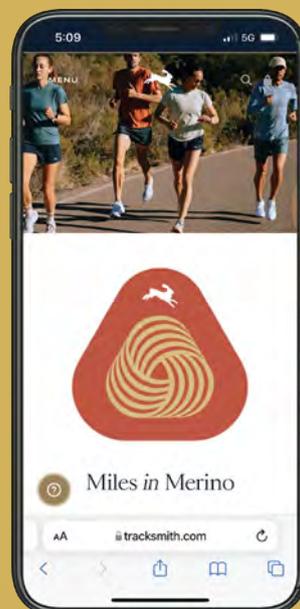
'Miles in Merino' challenge on Strava

An innovative part of the spring campaign was the hosting of a unique Strava challenge titled 'Miles in Merino'. Especially popular with runners and cyclists, Strava is an online platform that enables users to upload and share a record of their fitness activity.

Tracksmith offered the **110,287 participants** that took part in the Strava challenge an exclusive 10% off any Merino wool product on Tracksmith's online store. The offer was open to athletes across the world. All participants had to do was sign up to the Miles in Merino challenge and log 10 hours of running in the four weeks up until 11 April. The challenge received more than **nine million impressions** on the Strava challenge page etc, with participants travelling a total of **5,785,714 miles** (9,311,204 km).

Nearly 40% of participants completed the challenge and were sent a follow-up email (through which they could receive their 10% discount) that again promoted the performance benefits of Merino wool products and drove sales.

B



110,000+
participants

5.8 million
miles travelled

9.1 million
website impressions

More information
www.woolmark.com/thaw

Modern Merino sportswear in China

AWI has collaborated with four sportswear brands in China to help educate young consumers about the natural performance properties of Merino wool and increase demand for the brands' latest Merino wool collections.

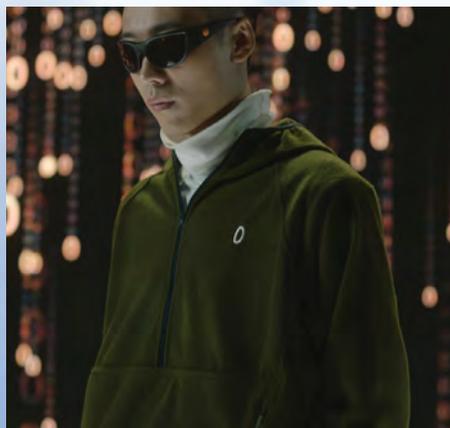
The popularity of winter sports brought about by the Beijing Winter Olympics made autumn/winter athleisure wear a fashion must-have amongst millennials in China.

Capitalising on this trend, The Woolmark Company collaborated with four brands – An Ko Rau, NEIWAI ACTIVE, super.natural[sn] and ZEALWOOD – to help launch their autumn/winter wool collections under the theme of 'Merino wool for modern sportswear', highlighting the versatility of the fibre for different types of athleisure and sportswear.

Aside from helping the brands increase their Merino wool apparel sales, the collaboration also helped to promote wool as a natural fibre with excellent performance properties such as moisture management, breathability, anti-odour, elasticity, and next to skin comfort and softness.

The Woolmark Company teamed up with Hypebeast, the leading online destination for contemporary fashion and youth culture, and two fashion influencers to create imagery and video for the four brands' autumn/winter collections, and some of their new spring/summer collections. The marketing collateral demonstrated the collections' modern styles and variety.

As well as the video and imagery being released across Hypebeast's media platforms, they were also released on Keep, a leading fashion fitness App, to inform young fashionistas who love sports about the stylish and sporty Merino wool garments. The collections were also promoted across The Woolmark Company's and the four brands' own digital and social media channels. **B**



"This perfectly timed promotion helped educate young and fashionable consumers in the region about the performance benefits of Australian Merino wool and, importantly, increased the availability and purchasing of apparel made from the fibre."

Jeff Ma,
AWI Country Manager, China

Screenshots from the promotional video and image featuring Merino wool apparel by **super.natural[sn]** (top left), **An Ko Rau** (top right), **ZEALWOOD** (middle) and **NEIWAI ACTIVE** (main image).



Woolmark Gold program showcasing quality Merino in China



Three leading Chinese wool textile manufacturers have recently joined 15 long-established British and Italian manufacturers as recipients of the prestigious Woolmark Gold certification. AWI's Woolmark Gold program positions Australian Merino wool as the prestigious fibre of choice in the Chinese domestic market for luxury apparel.

The China we know today is not the China of 50 years ago, or 25 years ago, or even 10 years ago when the Woolmark Gold program was first established by AWI. More than 1.4 billion people in the country are now driving a new consumer culture in one of the fastest growing economies in the world.

The Woolmark Gold program was set up by AWI to meet the increasing demand for premium menswear products and fibres in China, a crucial market for Australian woolgrowers, and which a decade later continues to grow.

The program amplifies to Chinese consumers the unique qualities of Australian Merino wool in luxury brands and personal tailoring in Greater China. To qualify for Woolmark Gold status, the wool must have a fibre diameter of 19.5 micron or less and meet strict criteria.

Woolmark Gold represents the highest-quality Australian Merino wool cloths and yarn made by a select group of world-class spinners and weavers.

For the first time, three Chinese wool textile manufactories – Jiangsu Sunshine Group, Shandong Nanshan Fashion Sci-Tech Co., Ltd., and Shandong Ruyi Technology Group Co., Ltd. – have been awarded Woolmark Gold certification by The Woolmark Company in recognition of the outstanding contributions of the Chinese manufacturers in worsted wool fabric production.

AWI Country Manager for China, Jeff Ma, says the awarding of Woolmark Gold certification to these three large Chinese manufacturers recognises their global status and contributions to the development of high-end fabrics.

“It is a great honour for us to be awarded the Woolmark Gold certification, which is a recognition and support of our brand, quality, and craftsmanship. Meanwhile, it is also an incentive for us to continue leveraging our technology and resources to bring the best products and services to our consumers.”

Lu Xiaoming, CEO of Jiangsu Sunshine Group

“It is of great significance to authorise the Woolmark Gold to Chinese manufacturers for the first time. The three leading domestic wool textile corporations have made great achievements in the field of technology development and product innovation. Their outstanding manufacturing process, craftsmanship and exceptional quality entirely meet the Woolmark Gold standard,” he said.

The three Chinese manufacturers now join 15 other manufacturers, from Britain and Italy, that offer the Woolmark Gold certified fabrics and yarn for high-end menswear.

The Woolmark Gold certified manufacturers from Britain and Italy are Alfred Brown, Bower Roebuck, Charles Clayton, Ermenegildo Zegna, Fox Brothers, Fratelli Tallia di Delfino, Holland & Sherry, John Foster, Johnstons of Elgin, Joseph H Clissold, Lanificio F.Lli Cerruti, Reda, Taylor & Lodge, Vitale Barberis Canonico and William Halstead.



“Through years of in-depth cooperation with The Woolmark Company, we have gained more opportunities in China and even in the global market. In the future, Nanshan Fashion will consider winning the Woolmark Gold as a new starting point, and partners with The Woolmark Company to provide more high-quality wool products for downstream enterprises in the industry chain.”

Zhao Liang, CEO and General Manager of Shandong Nanshan Fashion Sci-Tech Co., Ltd.

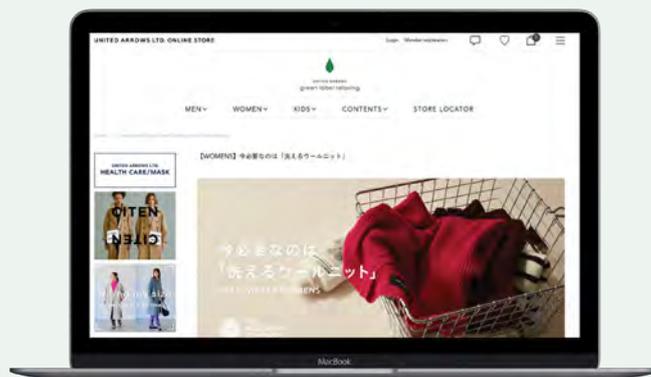
“It is a great honour to participate in the online awarding ceremony of the Woolmark Gold, and I appreciate The Woolmark Company for its support to Ruyi. The Woolmark Gold authorisation in China is an extremely important measure for the Chinese wool textile industry and starts a new journey for the international development of the Chinese wool textile industry.”

Meng Xia, General Manager of Shandong Ruyi Technology Group Co., Ltd.



United Arrows campaign in Japan hits the bullseye

The sales of wool rich products from a key brand owned by Japan's largest multi-brand apparel retailer, United Arrows, shot up after the brand received marketing support from The Woolmark Company.



The easy-care properties of the wool-rich apparel were highlighted via the **campaign's landing page** on the brand's online store.

United Arrows is a premium retailer in Japan, with an annual turnover of A\$1.4 billion in 2021. AWI's subsidiary The Woolmark Company provided marketing support to one of the group's brands, Green Label Relaxing, during a two-month campaign that concluded at the end of January.

Green Label Relaxing is one of United Arrows' largest brands, with a turnover of A\$350 million in 2021 generated via its 83 brick-and-mortar shops and its increasingly important e-commerce store (which receives 10.5 million monthly page views).

Campaign highlights easy care wool

While still communicating the premium and natural qualities of Merino wool, the autumn/winter season campaign focussed on highlighting the easy-care nature of the garments being promoted: wool-rich knitwear and trousers, targeted at men and women aged 30 to 40.

The easy-care direction for the campaign was a result of United Arrows' market research that indicates Japanese consumers are hesitant to purchase wool products because they are not sure how to care for them, a finding consistent with AWI's own research.

To address the issue, a video was created by well-known laundry professionals in Japan to demonstrate how to wash wool products – both by hand and in the washing machine. The video was uploaded onto YouTube and promoted on the brand's digital and social channels; it received a notable 124% more views than the project's target.

While consumer education was a key aspect of the campaign, the foremost objective was to increase sell-through of the products.

Sales exceeds expectations

The promotion of the brand's washable wool-rich knitwear and trousers led to higher-than-expected sales. The sell-through

of the products was 12% higher than the average of the brand's other products, well above the target of 3% higher than their average sell-through.

"We very much appreciate the support we received from The Woolmark Company for this sales activation," said United Arrows PR Manager, Mr Tomohiro Fukada.

"Our consumers did not have a good understanding of how to care for wool, and this had been a psychological barrier for them when considering wool products. The Woolmark Company's support helped us solve this issue, which led to an increase in our sales performance.

AWI Country Manager for Japan, Samuel Cockedey, noted that the sell-through and overall response to the campaign were particularly good.

"This clearly highlights the appetite of the market for easy-care products. Furthermore, the campaign has established that wool care information is a strong lever to increase wool sell-through, which will be a useful business case to pitch similar campaigns to other retailers," he said.

Effective digital marketing

Similar to many companies, United Arrows is strongly pursuing a strategy of increasing its digital sales (e-commerce was 32% of the group's turnover in 2021), so a key component of the marketing was to drive consumers to two landing pages (menswear and womenswear) on Green Label Relaxing's e-commerce platform. The campaign generated an impressive amount of traffic that was 228% above the project's target.

"We were able to achieve strong sales results thanks to the increased traffic generated by this collaboration with The Woolmark Company," said United Arrows Digital Marketing Coordinator, Ms Ayako Tahara.

"The overall contribution of The Woolmark Company's digital campaign was higher than we had anticipated, and the key metrics were stronger than those of other digital campaigns we ran in the past." **B**



Wool-rich knitwear from Japanese brand **Green Label Relaxing**, targeted at men and women aged 30 to 40.

Japan campaign boosts Onward sales upward

The Woolmark Company has provided marketing support to six womenswear brands owned by the second largest apparel group in Japan, Onward Kashiya. The campaign boosted sales of the brands' Merino wool clothing during the recent autumn/winter season.

Onward Kashiya is the second largest Japanese apparel group with annual sales of A\$2.92 billion in 2020. AWI has been building a good relationship with Onward since 2018 when AWI arranged for two of the Japanese group's general managers to visit wool-growing properties in Australia.

The visit has led directly to an increased use of Australian Merino wool by Onward's brands, and Onward undertaking marketing campaigns in Japan, initially in 2019, with AWI subsidiary The Woolmark Company.

Marketing boosts sales

The latest marketing collaboration ran for two months during the recent autumn/winter season, to promote the Merino wool knitwear collections of Onward's six largest womenswear brands: 23KU, J. Press, BEIGE, ICB, Kumikyoku and Jiyuku.

The campaign focused on positioning Merino wool as the natural fibre of choice for Japanese women's premium knitwear, while also promoting the quality aspects of Onward's Woolmark-certified Merino wool products.

The promotion of Woolmark-certified knitwear pieces (95% Merino/5% cashmere) led to impressive sales that were 10% higher than the project's target. The sell-through of the products was 8% higher than the average of all Onward's other products, well above the target of 3% higher than their average sell-through.

As well as a growing interest in sustainability, Onward has a strong focus on increasing its digital sales. The collaboration therefore focused on increasing online sales by driving traffic to a dedicated landing page on Onward's e-commerce platform, which generated traffic that was 53% above the project's target.

The campaign also gained additional visibility through the use of displays in 415 of the brands' brick-and-mortar stores across Japan.

An enduring relationship

"We are very grateful for the opportunity to work with The Woolmark Company again, and to have achieved the same strong results as we did in 2019," said Onward Kashiya Executive Officer, Mr Daisuke Ochi.

"Working with The Woolmark Company is very important to us, as our brands have been accelerating their shift towards e-commerce, and differentiating themselves from their competitors by profiling the high-quality materials they use is essential. We look forward to working with The Woolmark Company on an ongoing basis."

AWI Country Manager for Japan, Samuel Cockedey, says it has been a tough year for big apparel groups in Japan but this campaign made a real difference to achieving sales of Merino wool knitwear.

"The campaign proved once again that wool's sustainability message is universally effective, with consistent results across the six brands that each have different positioning and target demographics. These results will help make a strong case when approaching other brands," he said.

"Onward is pleased with the results and they have suggested another joint campaign this coming autumn/winter, adding new categories such as coats. They are also looking at increasing Merino wool womenswear knitwear volumes by more than a third, which we see as a major outcome of this investment."

In-store display advertising, for each of the six Onward brands, was used across 451 stores to raise awareness of the Merino wool knitwear and drive sales.



The marketing campaign's landing page on the Onward online store that promoted Woolmark certified Merino wool knitwear pieces.

"It is very rewarding to see the effort that AWI puts into educating and inspiring brands about Australian Merino wool is resulting in the brands increasing their use of the fibre in their apparel ranges."

Samuel Cockedey, AWI Country Manager, Japan

Wool sourcing guide for the Indian subcontinent

The enduring relationship between woolgrowers in Australia and manufacturers of wool textiles and yarns on the Indian subcontinent is set to expand following the release by AWI of a new wool sourcing guide that highlights the expertise and diversity of the wool supply chain in the region.

AWI subsidiary The Woolmark Company has launched its latest wool sourcing guide, which highlights and provides contact details of 40 of the best wool spinners, weavers, knitters and specialist suppliers on the Indian subcontinent: specifically, in India, Bangladesh and Sri Lanka.

This new wool sourcing guide follows on from similar guides for Japan and Vietnam, already launched by The Woolmark Company.

This unique new resource will help brands and designers from across the world to connect with the region's leading suppliers of premium yarns and fabrics made from Australian wool, thereby increasing demand for the fibre.

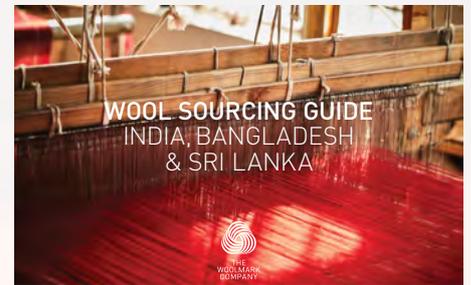
The launch of the sourcing guide is perfectly timed, given the elimination of the 2.5% tariff on Australian wool imports into India, announced in April as part of the new Australia-India Economic Cooperation and Trade Agreement.

"From small-scale boutique weavers and knitters to large production facilities, this guide is for anyone interested in sourcing premium wool textiles and yarns in India, Bangladesh and Sri Lanka," said AWI General Manager, Processing Innovation & Education Extension, Julie Davies.

"The Woolmark Company's staff has direct and ongoing contact with every one of the companies in the guide and attests their quality of wool manufacturing. By opening up this diverse supply chain, we hope that more designers – and indeed consumers – will be able to enjoy the pleasures of Australian wool fabrics and yarns from these countries."



India is well-known for its premium textile manufacturing, which harnesses **modern technology** as much as ancient techniques.



The Woolmark Company's new 32-page wool sourcing guide for the Indian subcontinent.

India ALREADY A LARGE USER OF AUSTRALIAN WOOL

After China, India is one of the largest and most important importers of Australian wool. The country is well-known for its premium textile manufacturing, with the textile sector contributing almost 7% of India's manufacturing output, 2% of GDP and 12% of exports.

India not only has a supply chain of quality spinners, weavers, knitters and garment makers, but also has a strong base of handloom and handknitting, craft and artisans, and natural dyeing techniques.

The Woolmark Company has operated in India for more than 50 years, working with multiple partners in many stages of the wool supply chain, from early-stage processors, spinners, weavers and knitters through to brands and retailers. The company's work in this country extends to education, research and development, and the marketing of Australian wool to ensure its ongoing place in the textile industry and growing consumer market.

India holds the second highest number of Woolmark licensees and this is a testament to the ongoing quality and capacity of wool products being manufactured there.

Bangladesh A GROWING HOT SPOT FOR SOURCING

Bangladesh has emerged as a powerful garment manufacturing country in the past decade, with its textile and apparel sector contributing about 20% of Bangladesh's GDP.

The 2021 McKinsey global survey of apparel chief purchasing officers ranked Bangladesh as the No.1 hotspot for sourcing potential over the next several years, followed by Vietnam at No.2 and Turkey at No.3.

Already recognising the steady growth of the Bangladesh textile sector and its potential for more wool manufacturing (especially knitwear), The Woolmark Company in 2020 began to look more closely and proactively at Bangladesh as an emerging market for wool.

Since then, the company has increased its reach there by, for instance, holding several webinars during the past year for current and potential supply chain partners in Bangladesh to help them see the benefits of working with Australian wool.

Bangladesh is now a growing source for traditional wool knitwear for many big-name brands across the world that have established sourcing offices there.

Sri Lanka POTENTIAL FOR KNITTED WOOL SPORTSWEAR

Sri Lanka's apparel export industry is one of the largest contributors to its economy. The industry has recorded significant growth during past decades and is currently the country's leading export.

Sri Lanka has built its competitive edge on value-addition rather than cheap production costs, with a greater emphasis on product quality and its ability to manufacture niche products.

Known as an important destination for knitted sportswear manufacturing and innovations within the textile industry, some of the world's biggest sportswear brands have been sourcing from here for their US and EU markets.

Sri Lanka is the country in the region into which The Woolmark Company has most recently entered. Wool is new to the textile industry in Sri Lanka, but wool for casual and sportswear is now making an entry. **B**

More information

www.woolmark.com/industry/source-wool

Exploring new markets for wool processing, including Australia

Work has commenced on a Government-funded project to assess opportunities for processing more wool in Australia as well as new overseas markets. The aim is to reduce the industry's reliance on the current limited number of processing markets for Australian wool.

AWI is working with WoolProducers Australia which was awarded a \$662,000 grant as part of the Australian Government's Agricultural Trade and Market Access Cooperation program, to explore new markets and processing options for Australian wool.

The purpose of this project is to identify opportunities to mitigate and reduce the current risks faced by the Australian wool industry through its reliance on a limited number of export markets.

When announcing the grant in November last year, the then Minister for Agriculture David Littleproud said the funding aims help identify new opportunities for the Australian wool industry.

"Currently, the bulk of Australia's wool clip is exported to and processed in a small number of markets," Minister Littleproud said.

"If there's one thing the global pandemic has taught us, it's that market diversification is important for healthy industries. By looking for alternative markets for our wool, we can make sure we aren't falling into the trap of putting all our eggs in the one basket.

"This grant will examine the feasibility of bringing back early-stage processing of greasy wool in Australia. It will also examine the feasibility of early-stage processing in offshore locations, providing our wool producers with new markets.

"It could also mean investment into manufacturing, greater job opportunities in our regions, and a chance to value-add to our wool before export."

Industry collaboration

The work of the WoolProducers-led project is being guided by a steering committee comprising Australian Wool Innovation (AWI), National Council of Wool Selling Brokers of Australia, Australian Council of Wool Exporters & Processors Inc, Australian Wool Testing Authority (AWTA), Australian Wool Exchange (AWEX) and Austrade.

WoolProducers CEO, Jo Hall, announced in April that Deloitte Access Economics has been engaged to assist with the wide-ranging feasibility study.

"Key considerations that will guide the work of the feasibility study include changing trade patterns, the risk of emergency animal diseases, Australia's desire to increase its domestic manufacturing capacity, and supply chain expectations on sustainability and transparency," she said.

"The steering committee, and its diverse composition, are a core element of the project, providing direct industry linkages and expertise for the Deloitte team, which will also ensure that the final report will be of value to our entire industry."

Industry consultations will take place over the course of the project, with a final report due to be delivered to the Department of Agriculture, Water and the Environment in September 2022.

The project will be national in scope and not assess specific locations for domestic processing, although the outcomes of this project may inform subsequent location-specific analysis.

Alignment with AWI strategy

AWI CEO John Roberts represents AWI on the project's steering committee, along with AWI General Manager, Processing Innovation & Education Extension, Julie Davies.

"This is an important project that aligns with AWI's Emerging Markets strategy," John said.

"AWI will always look to expand market access for our fibre both overseas and onshore and we are very happy to be involved in this process."

More information

www.woolproducers.com.au

FAST FACTS

AUSTRALIAN WOOL EXPORTS AND PROCESSING

- Australian wool is heavily exposed to international export market forces with approximately 93% of the national clip exported in a greasy (unprocessed) state, most of which is exported to a single market, China.
- The current 'choke point' in the long wool supply chain is at the early-stage. This is apparent considering that globally there are approximately 100 early-stage processors, 5,000 spinners and dyers, and approximately 50,000 knitters and weavers.
- Early-stage wool processing includes scouring, carbonising and top making – which are processes specific to animal fibres. In contrast, subsequent processing activities, such as dyeing, spinning, weaving and garment making are common to all textile supply chains.
- Unlike other Australian agricultural commodities which are able to adjust to market disruptions, there is not sufficient diversification in the location of early-stage processing capacity should a major trade disruption or exotic animal disease outbreak event involve wool.
- Enhancing diversification of early-stage processing capacity (including domestic) is an ongoing sensible risk management measure to provide increased trade stability to Australian woolgrowers and those involved in the trade and export of Australian wool.

A woolly encounter with the Little Prince at the Louvre

The Woolmark Company is educating visitors to a historic exhibition at Musée des Arts Décoratifs, in the world-famous Louvre in Paris, about the benefits of wool.

From February to June this year, the Musée des Arts Décoratifs at the Louvre in Paris is presenting the first major museum exhibition in France devoted to the classic children's book *Le Petit Prince* by French author and illustrator Antoine de Saint-Exupéry. Titled 'An Encounter with the Little Prince', the exhibition presents more than 600 pieces, including the original manuscript which hitherto has never been shown in France.

Written in 1942 and beloved by the French public, *Le Petit Prince* is one of the world's best-selling books of all time and has been translated into more languages than any other book, aside from the Bible.

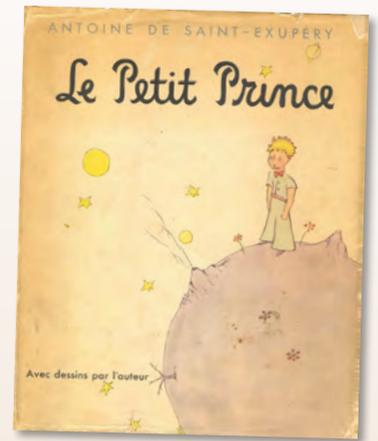
Sheep are famously discussed in the book, including when the Prince memorably asks the narrator several times to draw a sheep. It is the book's famous connection to sheep that provided the inspiration for the collaboration between The Woolmark Company and the Musée des Arts Décoratifs.

Up until June, The Woolmark Company is holding 'Draw me a sheep!' workshops for families and children, plus other educational initiatives for students and the public, to educate them about wool. These follow on from a special workshop on weaving, knitting and embroidery that was held in January.

There is a wool display at which promotional material is available, including wool top and yarn, facts sheets, posters and video footage. The Woolmark logo, owned by Australian woolgrowers, is presented on the exhibition's official website page, print (booklets, posters), newsletter, social media posts etc.

This educational program is provided through in-kind support from The Woolmark Company without any financial contribution, which provides incredible value for money. It is expected that approximately quarter of a million people will visit the exhibition. **B**

Visitors to the 'An Encounter with the Little Prince' exhibition at the Musée des Arts Décoratifs in the Louvre in Paris are being educated about wool. (Main photo credit: Starcevic)



First edition of *Le Petit Prince*, 1943. (© Fondation JMP pour LPP)



Deeargee hosts 2022 Fleece to Fashion gala

PHOTO: David Waugh

Deeargee Station near Uralla, NSW, lit up its iconic octagonally-shaped woolshed last month for the Fleece to Fashion Gala Awards night, welcoming 350 black-tie clad patrons through the gates and into the pens to witness a unique wool fashion parade featuring emerging designers.

Based in the New England region of NSW, the Fleece to Fashion Awards is an annual competition that promotes the unique, versatile and sustainable qualities of Merino wool, while celebrating upcoming fashion designers from across Australia who embrace the fibre in their collections.

The Awards are run by Fleece to Fashion, a community based not for profit company that aims to educate and inspire the next generations of designers to continue to experiment and explore the many qualities Merino wool has to offer.

This year's Fleece to Fashion Awards was supported by AWI along with other wool industry sponsors, plus fashion brands that use Merino wool in their collections, including M.J. Bale, Iris & Wool, EMU Australia, Lady Kate, and Akira.

Located in the New England hills behind the township of Uralla, Deeargee Station played host to this year's Fleece to Fashion matinee show and the Gala Awards night. Deeargee is known for producing some of Australia's finest wool and is home to a unique, octagonally-shaped woolshed built in 1872.

Fleece to Fashion board director and local woolgrower Liz Foster says this year's event was a hugely successful gathering for wool producers, fashion designers, the New England community, and wool industry stakeholders.

"The Deeargee Woolshed all lit up for our gala event was truly something to behold," Mrs Foster said.

"We had a bold vision to literally deliver the concept of 'fleece to fashion' in its purest form and thanks to the Sutherland family, owners of Deeargee Station, who allowed us to open their shed to the public for the Awards, the entire production was a tremendous showcase of wool, fashion, in an iconic venue in our local area."

There were eight categories in this year's awards: Secondary School, Emerging Designer, Sportswear, Wearable Art, Diversity in Wool, Race Wear, Evening Wear, and Bridal Wear. As well as awards for each category, there was also a Most Marketable Award and an Innovation Award, plus the Supreme Award which was won by local teenage talent Dechen Kandro of Uralla State School, who said Merino wool is a "very special fibre" to work with. In addition, a bespoke design internship was presented by Australian fashion icon Akira Isokawa.

More information

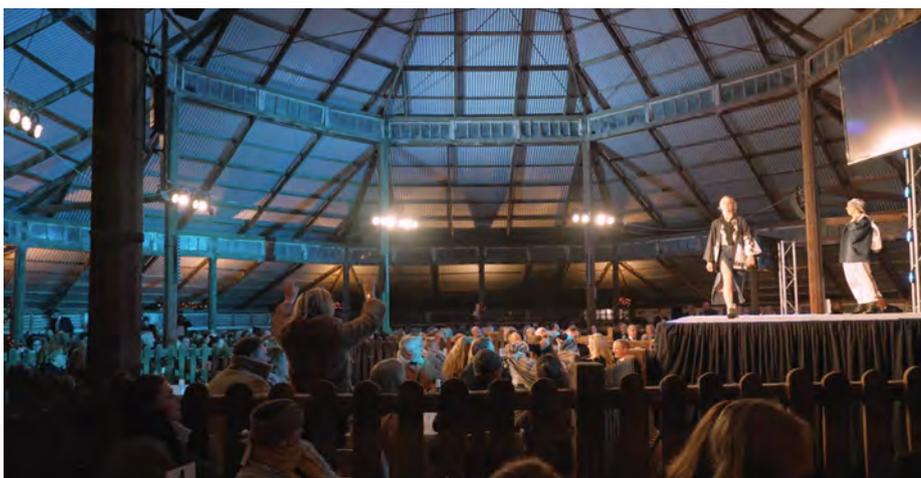
www.fleecetofashion.com.au



The outfit – comprising pant-suit, cape and clouche hat – made entirely from Australian Merino wool that won the **Supreme Award** for local teenage talent Dechen Kandro. "I took my inspiration for the pant-suit from Chanel but I wanted to make something that could be dressed up for a special occasion or be worn on an everyday basis," she said. PHOTO: Damien Gosson



Supreme Award winner **Dechen Kandro** with the judges of the 2022 Awards: Australian fashion icon **Akira Isokawa**, fashion journalist and media personality **Melissa Hoyer** (who was also the Master of Ceremonies), and former designer for RM Williams and Country Road **Jonathan Ward**. PHOTO: Damien Gosson



The **unique woolshed of Deeargee Station** at Uralla hosted this year's Fleece to Fashion Awards.

Market Intelligence

Wool and alternative fibres – price comparison during past two years

The past two years have seen rising wool values following the pandemic-induced price drops. Wool values have been remarkably resilient and recovered well to currently sit slightly above its pre-COVID values. During the past two years, since May 2020, wool prices have improved by 25.9%. Based on the EMI, wool was valued at US\$9,800 per tonne at the beginning of May 2022.

Cotton has more than doubled its value to be trading 112.4% higher than it was two years ago. Raw cotton was trading at US\$1,447/tonne at the end of May 2020 and by the end of April 2022 was worth US\$3,073/tonne. Cotton uses 2.5% of the world's cultivated land but uses 16% of the world's insecticides and 25% of its pesticides. In conventionally grown enterprises, it is estimated approximately 10,000 litres of water go into the production of 1 kilogram of cotton.

During the same period, the most expensive of the man-made fibres (MMF) or petrochemical fibre alternatives, nylon, pushed 24.6% higher which is comparable to the wool price recovery. Nylon is a material which is made from a combination of coal, water, petroleum and other resources. At the start of May 2022, nylon was worth around US\$6,526/tonne.

The percentage increases of both wool and nylon are indicative of the more valuable fibres used in textiles struggling to match the percentage gains of the cheaper alternatives.

During the same two-year reporting period, acrylic has placed 78% more onto its value to currently sit around US\$2,992/tonne. The value of acrylic has increased to be around the same price as the 28 micron crossbred wool type. Acrylic production though emits carbon dioxide, carbon monoxide, formaldehyde, and other compounds. Additionally, acrylic, like most plastic polymers, is not biodegradable. It can last more than 200 years in landfill. Upon the eventual decomposition of the fibre, it releases several toxic materials and fumes that can pollute the atmosphere and nearby water bodies.

FIGURE 1: PAST TWO YEARS' PRICES OF WOOL EMI AND ALTERNATIVE FIBRES IN US\$/TONNE

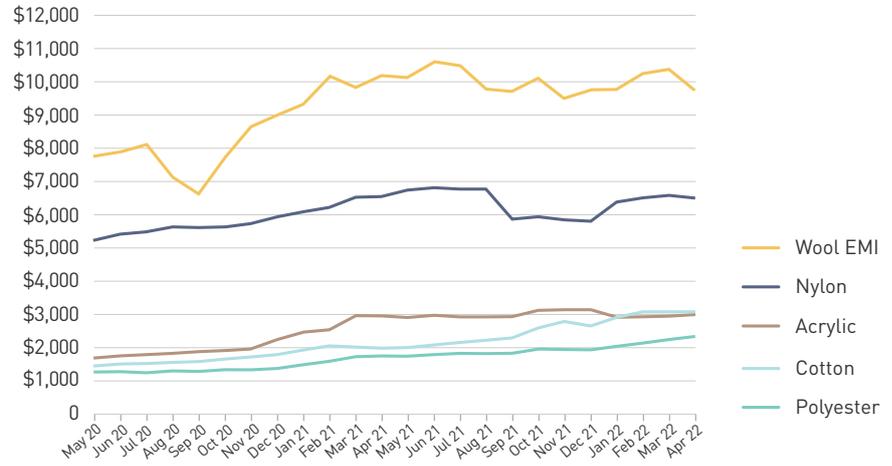


FIGURE 2: CURRENT PRICES OF FIBRE IN US\$/TONNE (AT START OF MAY 2022)

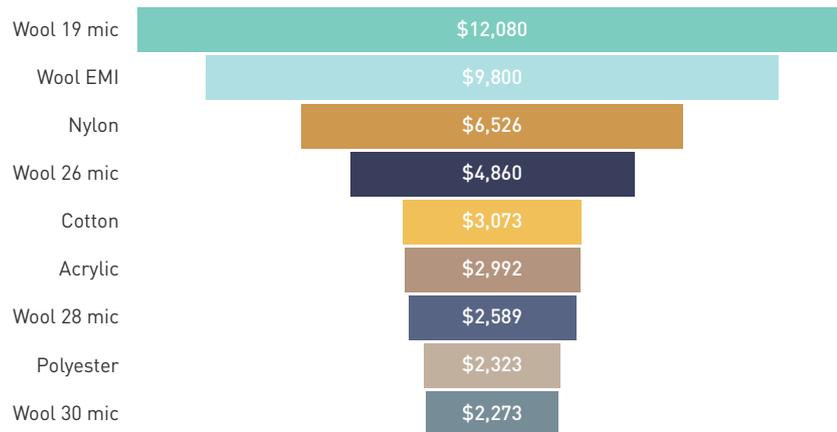


FIGURE 3: ESCALATING PRICES FOR TRANSPORTING SHIPPING CONTAINERS FROM CHINA TO EUROPE AND USA



Source: www.Xenata.com

* FEU = 40-foot equivalent unit, a standard size of shipping container

nice report

The past two years has seen a similarly dramatic increase in price for the **polyester** staple and that MMF is currently sitting 85.5% higher at US\$2,323/tonne. Polyester is the dominant fibre used in textiles, making up around 50% of the raw ingredient in garment making. Polyester garments are a significant source of microplastic pollution. Additionally, polyester contains antimony, a highly toxic substance which is outlawed in some parts of the world and is primarily used for fire retardant purposes. Antimony is a carcinogen, and toxic to the heart, lungs, liver and skin.

Of the world's total polyethylene terephthalate (PET) production – the type of polyester used in textiles – about 60% is used to make fibres for textiles and just 30% used to manufacture bottles. Annual PET production requires 104 million barrels of oil which equates to a need of 70 million barrels annually required to produce the virgin polyester used in fabrics. That means most polyester is manufactured specifically to be made into fibres, NOT bottles, as is the common perception.

Shipping and logistical issues

Trouble accessing finance is a significant issue that plagues buyers' operations, as logistical problems globally impact upon the speed of delivery. Exporters are scrambling to find available vessels, trucks to get deliveries amalgamated, and dumps to accept orders to dump and pack their containers for export. Delays above and beyond the 'normal' now extend to four to five weeks. Making this situation somewhat tolerable is that business and demand is increasingly getting better, both for price and volume.

Vessels being diverted from Australia for more financially lucrative routes to either North America or Europe are now becoming increasingly more prevalent – see Figure 3.

Russian conflict in Ukraine

Another supply chain issue that the wool industry and others face is high oil prices, which could escalate if there is increased military intervention in Ukraine. Russia is the world's third largest producer of oil, after the United States and Saudi Arabia, and accounts for roughly 10% of the world's oil supplies.

The severe economic sanctions imposed upon Russia and the expected severe shortages of this hydrocarbon and critical minerals, metals and energy usually supplied by Russia, will create volatility and impact upon production capacity globally. Key material shortages will arise, material costs increase, and demand become volatile.

As far as direct implications of wool export to Russia go, there is no export of greasy wool to that nation. Some indirect exports of semi-processed Australian wool goes to Russia through several countries in the form of scoured, carbonised, wool top and yarn for further processing and of course finished garments for retailing in the affluent consumer markets of Russia. The impacts are expected to be minimal and dependent on the source nations' participation in imposing economic sanctions upon Russia.

Australian wool production levels continue to recover

The Australian Wool Production Forecasting Committee (AWPFC) met in April and updated its forecast of shorn wool production for the 2021/22 season to 314mkg of greasy wool, a 6.5% increase on the 2020/21 estimated shorn wool production of 294mkg of greasy wool – see Table 1 below.

Incoming AWPFC Chairman, Stephen Hill, said: "Abundant summer feed in many major wool producing regions together with an early break to the season continues to favour sheep and wool production. Average cut per head is expected to increase by 3.2% to 4.54 kg greasy".

Australian sheep producers are continuing to rebuild the flock with an expected 3.1% increase in the number of sheep shorn to 69.0 million head during 2021/22. NSW continues to have the largest sheep flock with 22.35 million sheep shorn resulting in a state production of 103.9 mkg greasy. Interstate transfers and sheep slaughter from WA have returned to normal levels, indicating a rebuild in their sheep flock.

The Committee's first forecast of shorn wool production for the 2022/23 season is 321 mkg greasy, a 2.5% increase on the current season. The main driver is an increase in sheep shorn numbers to 70.9 million, up 2.8%.

AWPFC forecasts are available on the AWI website at www.wool.com/forecasts.

TABLE 1: SUMMARY OF WOOL PRODUCTION ESTIMATES AND FORECASTS FOR AUSTRALIA

	2020/21	2021/22 fourth forecast	Change y-o-y %	2022/23 first forecast	Change y-o-y %
Sheep numbers shorn (million head)	66.9	69.0	3.1%	70.9	2.8%
Average cut per head (kg/head)	4.40	4.54	3.2%	4.54	0.0%
Shorn wool production (mkg greasy)	294	314	6.5%	321	2.5%

Source: AWPFC report, April 2022

Average monthly EMI comparison

The chart opposite provides a snapshot of how the AWEX monthly Eastern Market Indicator (EMI) and a range of microns have performed for the past three months (February 2022 – April 2022) in Australian dollar terms compared with the previous five years February 2017 to January 2022 (circles) and the decade previous to that, February 2007 – January 2017 (squares).

At the end of April 2022, the EMI was more than 60% 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, while prices have generally been steadily rising, the market has also been characterised by having a year of relative stability compared to what has been seen in many previous years.

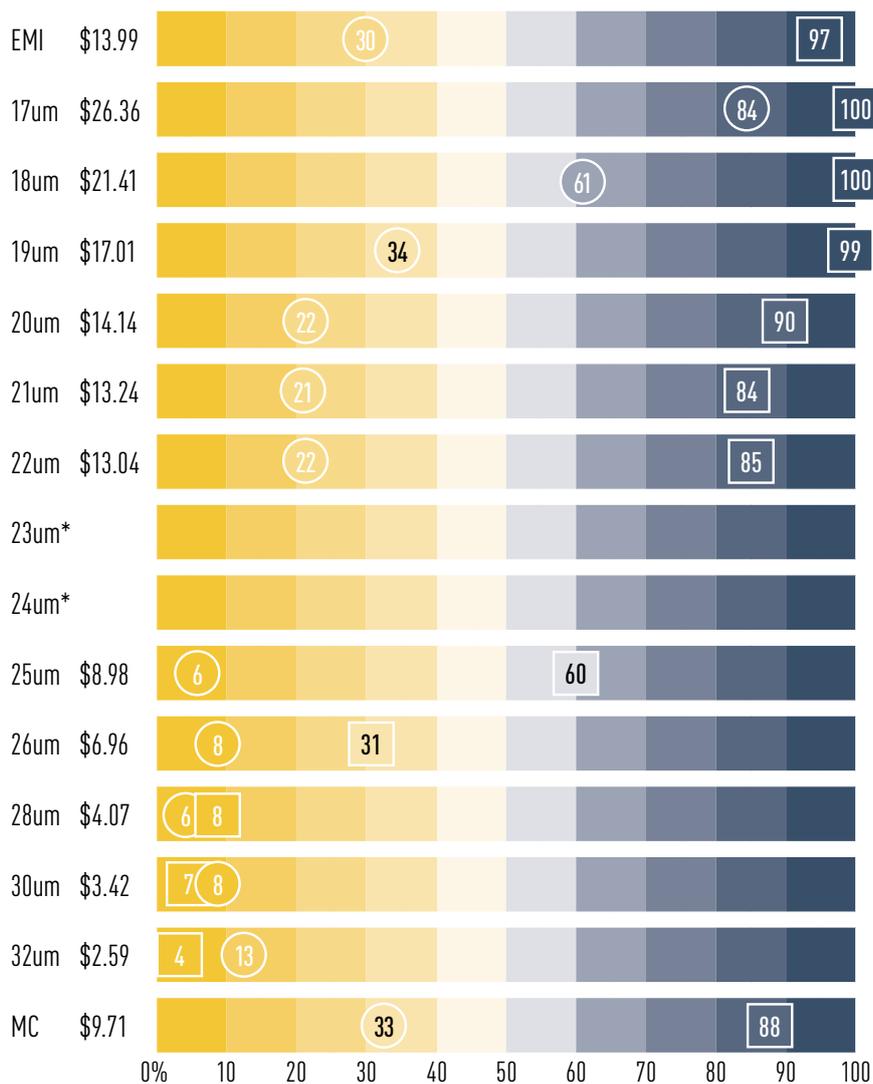
For the past three months, the monthly EMI averaged at \$13.99 which is a 38c rise from the average monthly EMI for the previous three months, and is tracking at the 30th percentile against the previous five-year monthly EMI. This means that in the previous five years the monthly EMI has recorded a lower price than the current \$13.99 (February 2022 – April 2022) for 30% of the time.

While the EMI is tracking at the 30th percentile over the previous five years, it is tracking at the 97th percentile when compared to the decade February 2007 – January 2017. This means the current EMI of \$13.99 (February 2022 – April 2022) is higher now than it was for 97% of that decade.

18 micron averaged at a monthly value of \$21.41 (61st percentile for the previous five years and 100th percentile for the decade before that), 21 micron averaged at \$13.24 (21st percentile for the previous five years but 84th percentile for the decade before that), and 28 micron averaged at \$4.07 (6th percentile for the previous five years and 8th percentile for the decade before that).

For the past three months, Merino Cardings averaged at \$9.71, operating at the 33rd percentile for the previous five years and at the 88th percentile for the decade before that. **B**

AVERAGE MONTHLY EMI FOR FEBRUARY 2022 – APRIL 2022 COMPARED WITH
 ● PREVIOUS 5 YEARS FEBRUARY 2017 – JANUARY 2022
 ■ THE DECADE FEBRUARY 2007 – JANUARY 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

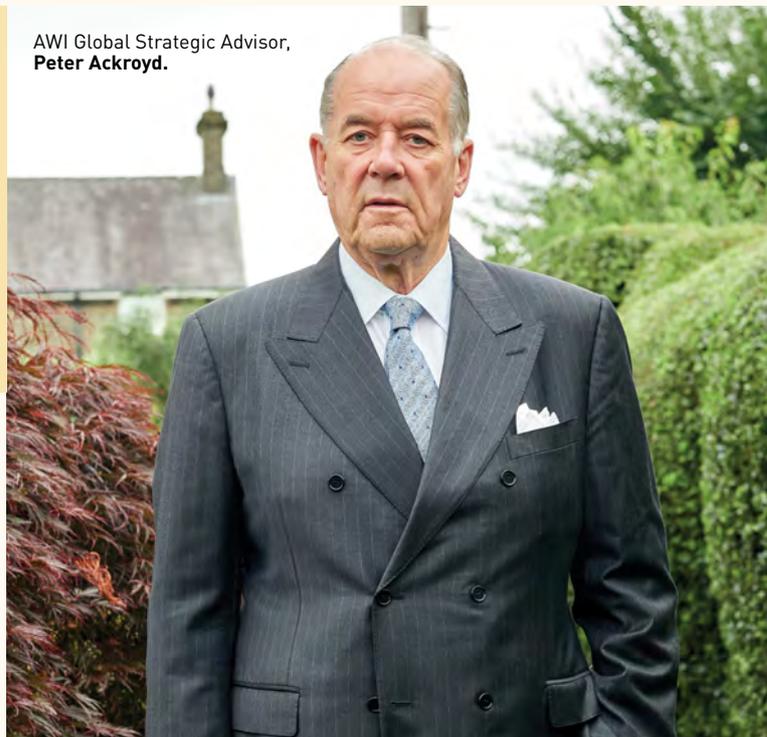
and market intelligence direct to about 6,700 woolgrowers' mobile phones. If you would like to subscribe to the free SMS service, visit www.wool.com/sms where you will be asked to input your name and the mobile phone number to receive the SMS. You can unsubscribe from the service at any time. **B**

More information
www.wool.com/marketintel

Nearshoring: the new post-COVID norm?

AWI Global Strategic Advisor Peter Ackroyd presents an overview of how the historical shift to offshore manufacturing facilitated the rise of fast fashion – and how production might at last be returning closer to the consumer. Mr Ackroyd is a former President of the International Wool Textile Organisation and is Chief Operating Officer of the Campaign for Wool.

AWI Global Strategic Advisor,
Peter Ackroyd.



The good citizens of UK, France, Germany, Japan and perhaps the USA, who like to think their lifestyle is in no way life-threatening to those around them and those set to succeed them, are often shocked to learn between 95% and 98% of clothing sold in these, the world's largest per capita wool consuming countries, is imported. Now, if we compound the felony by adding that much of the better end stuff is 'Made in China', and if it is in cotton, quite probably from the province of Xinjiang that allegedly uses forced Uyghur labour, many folk are in disbelief.

"Why on earth have we allowed this to happen?" was the plaintiff cry from a lady at an open meeting of the Bradford Textile Society the other day.

To say the systematic closure of clothing manufacturing in the G7 nations was purely price driven is perhaps an over-simplification of a process that began in earnest some sixty years ago. Geopolitical factors weighed heavily in policies designed to 'open up the East', as typified by the West German Ostpolitik of the 1960s and 1970s and the movement of knitting, cutting and sewing to behind the then Iron Curtain, where admittedly wages were a tenth of those paid in Deutschmarks.

Coupled to this in East Asia, was a Japanese desire to continue economically, what they had tried to achieve politically pre war, ie lock China into an economic straight jacket that neutralised a potentially belligerent neighbour. Some Japanese chain stores, such as cheap suit supplier Aoki in the early part of this century, even moved manufacturing to North Korea, ostensibly to placate the restless Korean population in Kansai, Western Japan that maintains a curious loyalty to the Kim dynastic dictatorship in Pyongyang.

Placating tyrants with trade agreements is perhaps at long last, a thing of the past, as recent events in Ukraine tragically attest.

To put the current state of the European Union (EU) clothing trade into an international perspective, it is perhaps worth taking a snapshot look at the principal players. According to Eurostat, the EU imported clothing valued at €69 billion (A\$100 billion) in 2020, 30% of which came from China (€21 billion), 18% from Bangladesh (€12 billion) and 12% from Turkey (€8 billion). Much of the rest of the trade was intra EU, with Portugal playing an ever-increasing role in the move towards proximity sourcing, or 'nearshoring'.

Yet, the lure of Chinese predatory price points is still a key factor in the fast fashion industry in Europe, particularly the UK.

One example of how cheap and nasty petrochemical-based garments are able to circumvent the ever more stringent corporate social responsibility (CSR) policies of UK retailers is Shein (pronounced She-in), a rather slick operator in Guangzhou with a sprawling warehouse the size of 250 football pitches from where

cheap tat (T-Shirts at A\$4.00 and frocks at A\$8.00) is dispatched directly to Gen Z consumers, mainly in the UK and USA (where they have an amazing 31% of the fast fashion market), devoted to Pinterest, Facebook, YouTube and more importantly TikTok. Shein recently obtained an eye watering valuation of around US\$100 billion with global sales valued at US\$10 billion, £350 million of which were couriered direct to UK kids, complete with a smiley 😊 emoji.

As Shein seeks to topple H&M, just as H&M almost destroyed GAP, the battle to dominate the global fast fashion business is watched with bemused fascination by 'responsible' retailers here in the UK, the EU, the USA and Japan, all desperately seeking to distance themselves from the toxic combination of Made in China and totally unsustainable chemical fibres.

This, if played out properly, will be to the distinct advantage of wool and the current trend for 'nearshoring' here in Europe. And western Turkey is of course in Europe, a factor not ignored by Hugo Boss which has invested heavily in Turkish manufacturing, and its duty-free access to the EU.

Boss is not alone. Lululemon, Benetton, Next, C&A, Peek & Cloppenburg, Marks & Spencer and many more are seeking to bring manufacturing back to Europe or, to be more precise EuroMed, that includes Egypt, Tunisia and Morocco.

"Even if production costs remain 20% lower in Bangladesh and Vietnam, the benefit is offset by increasingly longer lead times, often up to eight months. When clothes are produced in Egypt, Turkey, Serbia, Croatia and Portugal, in the case of wool garments, lead times can be reduced to four or five weeks," noted the CEO of Benetton, Massimo Renon, in a recent interview with Reuters.

Middle to upper middle fashion brands are increasingly shunning the low-cost manufacturing hubs in Asia, in a shift that could quite easily prove to be a rather welcome lasting legacy of the COVID pandemic.

More feedback on your clip with MyWoolQ

The 'MyWoolQ' tool on WoolQ has been enhanced, with the addition last month of Category Indicators that allow users to view 'categories' that their wool may end up in.

MyWoolQ is a personal dashboard that provides woolgrowers with a secure storage of all their clip information in one location for easy access.

Since the launch of MyWoolQ in 2018, users have been able to gain insights into their individual clips as well as long-term year-on-year trends in their wool production, at the click of a button. MyWoolQ also provides the current estimated market value of their wool.

The introduction of Category Indicators is an additional feature of MyWoolQ.

What are the Category Indicators?

Wool has many uses, and a common comment heard from Australian woolgrowers is there isn't enough feedback on where their wool is put to use. Category Indicators is a tool to help bridge that knowledge gap.

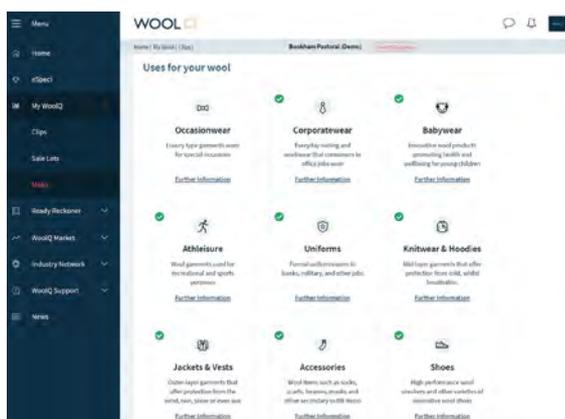
Greasy wool specifications for wool use categories, such as uniforms, corporate wear, knitwear and even shoes are used to provide a link between clip test results and these end categories. By using an eSpeci and linking their test data back to WoolQ, a woolgrower will have a simple overview of the different markets and products their clip might end up in.

For example, a grower producing 16 micron wool, that tests at 40 staple strength may have a variety of end uses, like occasion wear, babywear, athleisure and knitwear & hoodies. Head to WoolQ and use the Bookham Hills demo account to see more examples.

Category Indicators aim to improve access to market feedback for woolgrowers. A trend report for the different categories is in development.

To view your wool production data in MyWoolQ, first an eSpeci must be used to begin the data capture. After submitting the eSpeci to your broker, request your test and sale information be sent back to the WoolQ portal.

There are three sections within MyWoolQ: Clips, Sale lots and Mobs.



Clips section

The **Dashboard** area of the Clips section displays information regarding your current and previous clips which can help you to identify changes from year to year.

Specifically, the top of the Dashboard section summarises the average micron, bale weight and cut per head for your latest clip. The Dashboard section then displays a series of graphs: Mob breakdown (weight or micron); Production (bales by year or micron); Volume & Skirt Ratio (volume and breakdown by wool type); and Micron, Staple Strength and Yield (for each year of production).

The **Analysis** area provides an estimated valuation of each of your wool lots in the current market, plus the total estimated market value for your whole clip or the portion of the clip that you are selling.

If you input your selling charging (eg transport, insurance, storage, lotting), MyWoolQ will also calculate your total selling costs, wool levy and estimated testing costs; thereby providing with an indicative net return.

MyWoolQ estimates your lot value by comparing and getting as close a match as possible to recent actual sale results of lots similar to yours, ie estimates are based on the current market. MyWoolQ also displays the degree of accuracy for its estimates.

Sale lots section

This section provides a central archive of all your sold and unsold lot information and test results.

For each lot, you can see the micron, VM, SD yield, CVD, wool base, comfort factor, staple length, COV, staple strength, POBT, POBM. When the wool sells, the greasy c/kg, clean c/kg and total value will also be displayed.

You can export all this information from MyWoolQ to an Excel or CSV file if you want to.

Mobs section

This is a digital Mob Book, a central archive of information about each of your mobs with simple comparative tools to see what is happening from one season to the next.

For each mob, you can record information including age, breed, sex, mulesing status, wool quality (fine, medium etc), wool growth periods (eg 12 months), average length (mm), VM quantity, VM type, whether the mob is crutched, crutched within 3 months, and mob count. B

More information

Register for WoolQ at www.woolq.com

Please contact info@woolq.com with any questions.

WOOL

The **new feature on WoolQ** indicates the uses for which your specific wool might be used.

Broader micron wools

The latest edition of AWI's *The Broader View* publication provides an overview of how AWI's marketing and on-farm R&D and extension activities support producers of non-Merino wool.



The latest edition of AWI's *The Broader View* publication for non-Merino woolgrowers.

Marketing broader wools

AWI markets Australian wools of every micron. Projects such as the Campaign for Wool continue to champion wool's natural benefits for a wide variety of uses including hardwearing interior products – from upholstery and carpets to bedding and other furnishings – as well as apparel and accessory products. Similarly, many of AWI's educational initiatives, such as the Woolmark Learning Centre and Learn About Wool programs, provide resources to textile professionals and students about the broader as well as finer microns.

Many of our Woolmark licensees manufacture and sell products made from broad wool (such as bedding products and floorcoverings) and use the Woolmark logo in their marketing activities. We currently have about 175 Woolmark interiors licensees worldwide that market their wool products with the help of the Woolmark brand. With its luxurious finish, easy-to-care-for nature and health properties, wool is the natural choice for interiors.

AWI's marketing of all Australian wool, irrespective of the micron, and the Woolmark brand is beneficial to all wool including broader wools.

On-farm R&D and extension

Many of AWI's on-farm R&D and extension projects largely benefit all Australian woolgrowers, irrespective of the breed and micron of their sheep.

AWI continues to invest in areas that producers have told us are important to them, including funding of in-shed shearer and wool handler training, optimising sheep health and welfare, combatting wild dog and fox attacks, increasing the reproductive efficiency of ewes, and harnessing opportunities for on-farm automation.

In addition, AWI delivers practical training programs through our extension networks in each state to increase producers' adoption of best practice on-farm production and management. We also provide timely market intelligence to woolgrowers, hold many face-to-face industry events, and we run projects to encourage the next generation into the industry.

More information

AWI's *The Broader View* publication for non-Merino woolgrowers is available on the AWI website at www.wool.com/broaderview2022

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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*.



PODDY'S JUMPER

Readers might remember how woolgrower **Marie Knight** of 'Berrumbuckle' at **Coonabarabran** in **NSW**, with the help of her husband Tony, began supplying lamb jumpers to farmers across Australia to help with their poddy lambs during the drought. The jumpers have been knitted or crocheted by people from across the world, with Marie distributing about 240,000 during the past few years.

It is such a heart-warming story that it has inspired the production of a children's book *Poddy's Jumper* written by **Patricia Bernard** and illustrated by Krista Brennan. The book is a celebration of the love and care of animals, and of the kindness and sympathy for drought affected Australian farmers. The book can be purchased at www.patriciabernardbooks.com.

For information about Marie's initiative, see her Facebook page called *Lamb Jumpers 'Helping Our Farmers'*.



A RELAXED WALK HOME

Sometimes it's just nicer to get out and walk with the sheep," says **Alison Southwell** from 'Highfield' at **Mangoplah** in the Riverina of **NSW**. Pictured is Alison's nine-year-old daughter and her Poppy, fifth and seventh generation woolgrowers, droving the mob to the woolshed for shearing.



SYNCHRONISED SHEEPING

Grace Corrigan (@fairviewphotos) of **Burrumbuttock** in the Riverina of **NSW** took this great photo of two jumping jumbucks on the family property. Thanks for tagging this photo #beyondthebale on Instagram, Grace.



HOME WITH A VIEW!

Ewes turned out to their 'home with a view' paddock, overlooking Okehampton Bay near **Triabunna** in **Tasmania**, with Maria Island in the background. Thanks to **Merinda Weeding** for emailing in this glorious photo.





SHEARER TRAINING AT VASEY

When shearing was under way recently at **Vasey Farm** in western **Victoria**, Paul Oster from SCAA Shearer Woolhandler Training attended to pass on some of his experience. "It was great to see some talented young shearers being mentored by one of the best and taking it all in," said **Lucy and Bronnie Fenton** of Vasey Farms (@vaseyfarm).



THANKS FOR THE HELP!

After a few hard weeks of shearing, everyone on the team at 'Twin Springs' near **Badgingarra** in **WA** gets a thanks, even the four-legged team members. Thanks to **Adele and Ben McNamara** for emailing in the photo.



HAMILTON LEGACY FLEECE SHOW

Woolgrowers from around the region generously donate fleeces to the annual **Hamilton & District Legacy Fleece Show** in **Victoria**. School children visit the show after the judging with spinners and weavers showing them what can be done with the wool. The wool is sold in Geelong with proceeds going to Legacy for the care of widows and children of ex-servicemen.



WOOL FOR UKRAINE HUMANITARIAN CRISIS

A 162 kg bale of superfine Merino wool, donated by **Brendan and Susan Finnigan** of Kia Ora Merino at **Winslow** in **Victoria**, was sold at auction by Fox & Lillie Rural in Melbourne last month to textile manufacturer Global Merino, based in California, with the \$12,765.60 proceeds being donated to the Ukraine Crisis Appeal. Pictured is Susan Finnigan on the show floor with the lot of 15.9 micron wool.

AWI Graduate Training Program 2023

After another successful year, the AWI Graduate Training Program is back, with applications for the 2023 intake opening on 1 August 2022.

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

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

The program provides the graduates with professional training and development opportunities, to further enhance their career within the industry. It is aimed at graduates from a broad cross section of disciplines who have a background in or connection with the Australian wool industry.

A MESSAGE FROM AWI CEO JOHN ROBERTS:

"2023 will bring the AWI Graduate Training Program's fifth intake of graduates. Having worked intimately with the past and current graduates, I've seen firsthand the value of having such an all-encompassing program within the industry, covering the full supply chain, and the benefits it provides the successful graduates in enhancing their career within wool.

"We continue to focus on attracting and retaining the top talent and the program is just one of the mechanisms we have in creating a talent pipeline and future proofing human resources in the industry." **E**



More information

From 1 August, you can apply at www.wool.com/careers
Applications close on 31 August

Download the AWI Grower App

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Stay up-to-date with what's happening at AWI with the new AWI Grower App.

Get access to the latest weekly market reports, production forecasts, industry news, global marketing initiatives, research and more. A smartphone is all that's required – just scan the QR code on this page to download the App!

You can customise the App to prioritise the content you want to receive and, with continually updated and relevant content and functionality, the App is built to suit your needs.

The App complements AWI's other social media and digital communication channels that include the wool.com website, e-newsletters, The Yarn podcast, Facebook, Twitter, Instagram and YouTube.

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