

# wool production

AWI's Wool Production Department works with and for Australian woolgrowers to help them compete profitably in international markets for wool through the research, development and adoption of on-farm innovations.







## Key outcomes and achievements

### Animal health and welfare

#### Mulesing alternatives – clips

The clips evolved from early test models to pre-commercial prototypes. Several designs were tested in commercial flocks on 1,400 sheep. Modified gas knives were also developed to treat the end of the tail, which until this time has not been satisfactorily addressed by clips. Prototype applicators, dispensers and loading jigs are now available and clip placement on the sheep has been optimised. Several manufacturing materials are being evaluated for strength, stiffness and degradability. A screening study of the welfare implications has shown the clips to offer significantly better welfare outcomes than mulesing. Several potential commercial partners have been identified.

#### Mulesing alternatives – injectables

The focus of development of the injectables shifted from collagenase to cetrimeide for cost, stability, and availability reasons. A needleless injector sourced from Canada is working consistently well, although work continued on two back-up devices. The preferred formulation and pattern of application are almost finalised after several trials. Trials established in five commercial flocks continue to provide extensive data on performance. More than 20 companies have expressed interest in commercialising the injectable alternatives to mulesing. A welfare screening study has shown the injectable product to offer significantly better welfare outcomes than mulesing.

## Highlights

- Sheep Genetics Australia, a new national genetic evaluation system for wool and sheep meat breeds, was launched in October 2005 in partnership with Meat and Livestock Australia. Since the launch, 87,729 new Merino animals have been added to the database. There are currently over 750 ram breeders, with records on over two million animals in the system.
- Two alternatives to surgical mulesing show promise and progressed to field evaluation on commercial properties during spring 2005 and autumn 2006 with the expectation that one or more alternatives will be available by the industry's target date of 2010 to phase out mulesing.
- Practical guidelines on management of riparian areas and native vegetation on wool producing properties were published as part of the Land, Water & Wool program.
- The Sheep Genomics Program, which jointly with Meat and Livestock Australia aims to map the sheep genome and find gene markers that are commercially useful for Australian sheep breeders, underwent a successful, independent mid-term review in early 2006 and progressed successfully with the second lambing of the gene mapping flock at Falkiner Memorial Field Station in May 2006.
- The Selection Demonstration Flock project in South Australia and the QPlu\$ project in NSW successfully concluded in mid 2006 and results clearly demonstrated the potential to increase profitability of Merino sheep by \$8-\$10 per ewe per year at current market prices through simultaneous improvement of wool out and quality.
- Two Upright Posture Shearing Platforms have been developed to the stage of commercial field testing with shearer contracting teams. Throughput rates that are competitive with conventional shearing techniques were achieved in mid-May.
- An Improver/Professional shearing DVD and a Wool Handler DVD were produced and distributed to help raise the standard of training.
- At the end of 2005/06, there were 2,227 woolgrowers involved in AWI funded grower groups across Australia.
- A comprehensive national analysis of the profitability of different farm enterprises over the past 5 years was published in April 2006 – showing that specialist wool producing and dual purpose (wool/sheep meat) enterprises are highly competitive with alternative enterprises at current market prices.

## Mulesing accreditation

The National Mulesing Assurance Program (NMAP) Management Committee was established and is overseeing the implementation of the program. Kondinin, building on work previously funded by AWI, has been delivering training and accreditation. It expects to accredit about 850 people by the critical deadline of December 2006 (after which time all contractors must be accredited). An NMAP secretariat was appointed and a 1800 'hotline' number for the NMAP put in place. A manual and self-assessment tool for mulesing owner/operators was finalised for use with growers next year.

## Integrated Parasite Management – sheep

Regional integrated parasite management for sheep (IPM-s) strategies, developed on 22 collaborating farms around Australia, were consolidated and have been published at [www.wool.com.au/ipm](http://www.wool.com.au/ipm). During 2005/06, 25 field days involving 788 participants were held as part of the project. In addition there were six workshops (regional gatherings of collaborators) with 174 attending, six presentations to conferences and 34 media releases associated with the project. The IPM-s survey of parasite management beliefs and practices was completed and published and a trial to evaluate 'no-mules' management systems in a pastoral environment was established. The WormBoss website [wormboss.com.au](http://wormboss.com.au), a comprehensive information package for sheep worm management, continued to be heavily used with over 70,000 users visiting the site, an increase of 143 per cent from 2004/05.

## Sheep Productivity

### Sheep Genetics Australia

The national genetic information and evaluation service for the meat and wool industries, Sheep Genetics Australia (SGA), was successfully launched by AWI and MLA in October 2005 with MerinoSelect developed to service Merino breeders and Lambplan to service maternal and terminal breeders. Since October, Australian Sheep Breeding Values for over 50 traits have been updated fortnightly. Currently there are over one million Merinos in the MerinoSelect database and it continues to grow at approximately 100,000 new animals per annum. There are now 163 Merino flocks participating in SGA, a 33 per cent increase in the past 12 months.



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- 1 Simple clips could provide Australian sheep producers with an alternative to mulesing as early as 2007.
- 2 Federal Agriculture Minister McGauran examining sheep at the launch of Sheep Genetics Australia.
- 3 The launch of an injectable replacement to mulesing is targeted for 2008 after the registration process is completed.

## CASE STUDY



### Integrated parasite management

As part of a nationally funded program, veterinarian Dr Greg Johnsson is evaluating integrated parasite management strategies for sheep (IPM-s), aimed at providing adequate parasite control and slowing down the build-up of resistance to drenches by small brown stomach worm and black scour worm.

His strategies have been developed specifically for the Mediterranean, dry summer/wet winter conditions experienced in South Australia. This work is being carried out in the sheep flock on John and Jo Symons' Kangaroo Island property.

Traditionally all sheep received between two and three drenches a year; in early and late summer, pre-lambing or one in the winter. Now a single drench in late February has been found to control worm numbers adequately.

Another part of the strategy is regular faecal worm egg counts, together with tactical drenching should it be required. Hoggets are the most susceptible hosts, so their egg counts are taken monthly, while adult dry sheep are monitored every eight weeks.

To monitor sheep mobs, faecal samples are collected randomly from 15 to 20 sheep per mob of 300 to 400 head and submitted to a commercial counting laboratory.

"This combination of tactical drenching and faecal egg counts appears to be slowing drench resistance and is more cost-effective than the traditional approach."

Dr Greg Johnsson

**Top:** Veterinarian Dr Greg Johnsson (left) has worked with Kangaroo Island woolgrower John Symons (right) to slow down the build up of resistance to drenches by parasites.

### SheepGenomics

The virtual sheep genome map has been constructed and bioinformatics platform implemented, with both now available to SheepGenomics researchers for gene mapping work. The 2006 lambing of the world's largest sheep gene mapping flock at Falkiner Memorial Field Station, Deniliquin, NSW was completed with the addition of a bare breach sire and an extreme muscling sire. Approximately half a million independent measurements will be taken for the genomics database. Phenotyping on the 2005 drop approaches completion with around 100 traits collected on each animal. The first gene marker tests for muscling and meat yield are being validated in industry flocks.

### SARDI Selection Demonstration Flock

The Selection Demonstration Flock trial has concluded. The project generated significant interest from all areas of the sheep industry and has provided valuable information for woolgrowers to use in making informed decisions regarding selection practices. Significant improvements in profitability were demonstrated across the selection methods and comprehensive results will be transferred in a targeted communication strategy during 2006/07.

### Merino Superior Sires and Merino Bloodline

Merino Superior Sires 11 was generated using SGA analysis procedures and published in February 2006 with over 3,400 copies distributed. Currently eight active sites in Central Test Sire Evaluation (CTSE), with extreme sires for worm resistance entered into selected sites and additional traits collected at all sites. The Merino Bloodline Performance Package was published in September 2005 with over 2000 copies distributed and a website developed. Additional trait funding was used by 12 bloodline evaluations to collect traits such as staple strength, faecal egg count, wool processing ability and meat traits.

### Sustainable Production Systems

#### Land, Water and Wool

Land, Water and Wool (LWW) is in its final year of operation and the program and its projects are developing final reports, products and launches. New management options for up to half of the 2.5 million hectares of salt-affected agricultural land in Australia are among the key achievements of LWW. During 2005/06, 11 new products were released and 7,904 copies of products were distributed to woolgrowers and advisors. 1,380 woolgrowers were directly involved in LWW through networks and research projects. Over 6,500 woolgrowers have received information and participated in project organised events. Since October 2005, over 4,000 individuals have visited the LWW website. AWI is currently reviewing proposals for the next phase of natural resource management investment.



- 1 AWI investments in genetics should assist woolgrowers to make informed decisions on buying rams and selecting ewes to improve quality and productivity.
- 2 Mt Mercer woolgrower Bluey Smith explaining some of the beneficial results coming from the Land, Water and Wool natural resource management program.
- 3 Farming women from Kangaroo Island who are using the AWI-funded SheepPlus grower network program to learn how to manage their businesses better.
- 4 Farmers examining the rams at a QPLUS open day at Trangie Agricultural Research Centre.

**NAPLIP**

The National Annual Pasture Legume Improvement Program (NAPLIP) concluded in 2006. Future investment in annual legume development will be through Pastures Australia. During 2006, NAPLIP released five new cultivars for commercialisation; Mintaro (sub clover), Mooni and Wilpena (Hedysarum), Jota (Melilotus) and Lusa (Persian Clover). These new cultivars are suited to a range of climatic and soil conditions across the sheep/wheat and high rainfall zones. The wool industry’s long term commitment (30 years) to breeding and development of annual legumes has resulted in more than 50 cultivars being available in the market through a range of commercial partners. Techniques to better integrate new highly productive varieties into farming systems will be a priority for new investment in annual legumes.

**Pastures Australia**

Pastures Australia was established during 2006 as an unincorporated joint venture between AWI, GRDC, MLA, Dairy Australia and Rural Industries Research and Development Corporation. The partners will co-invest in breeding, selection, agronomy, management and extension to increase the profitability of pasture systems and the adoption of new pasture technologies. Pastures Australia will also invest to increase the genetic gain from pasture breeding and selection. During 2006, Pastures Australia undertook comprehensive market research and consultation to determine investment strategies that will meet the needs of the livestock industries.

**Harvesting**

**Upright posture shearing platforms (UPSPs)**

Achieving desired shearing performance on a low cost platform has been more difficult than expected, and this has led to both increased development costs and time slippage. However, good progress is now being made, with the Peak Hill UPSP commercial prototype completing field trials in May 2006. A smaller, lower cost and faster version of this UPSP has now been built and commenced field trials in July. Of the six UPSPs originally funded, three have been terminated as they have not met performance targets. The remaining two (SLAMP, WAUPSP) are currently undergoing field trials and are showing very good potential performance.

Industry feedback on the Peak Hill UPSP as well as the overall UPSP program has been positive, with interest being shown by woolgrowers intending to shear their own sheep, woolgrowers intending to share UPSPs amongst several properties as well as from small and large contractors providing a mobile shearing service. Cost and productivity will continue to be addressed to facilitate commercial success.

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# wool production

## Shearer training

AWI has committed \$3.9 million for the period 2004-07 to implement a national shearer and wool handler training program. In 2005/06, over 2,000 shearers and wool handlers received training under a range of programs in six states. An evaluation of the \$1.79 million spent in 2005/06 highlighted the significant achievement in areas such as regional coaching for shearers and the benefits of national consistency workshops, of which there were five nationally, with over 100 trainers attending. Wool handler training is one area that has been signaled as a challenge and to address this AWI is putting in place new initiatives such as one-day industry workshops which involve whole contractor teams. To help raise the standard of training, an Improver/ Professional shearing DVD and a Wool Handler DVD were produced and distributed.

## Shearing shed guidelines

Shearing shed guidelines are now available through the AWI website. Information that was not readily available to the wool industry has been gathered together in an easy to use format to allow woolgrowers or shed builders to assess a range of ideas for improving OH&S and productivity in new or existing shearing sheds. Information is also available on how new technologies such as UPSPs will affect shed design. For those growers that don't have good web access a CD version is also available from AWI. It is planned to update the information throughout the coming year.

## Education and adoption

### Grower groups

The national network of state woolgrower groups has been progressively revamped. The new approach places a greater emphasis on the projects acting as a conduit for AWI projects as well as participants contributing part payment for the services they receive. AWI has successfully trialed a process to engage woolgrowers who have not otherwise been involved in group activity. The process is called "Facilitated Recruitment" and will be added to the suite of techniques that groups will use to engage woolgrowers. At the end of 2005/06, there were 2,227 woolgrowers involved in AWI funded groups across Australia.



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### Scholarships

AWI again supported industry leadership programs including Nuffield Farming Scholarships, The Australian Rural Leadership Program, the DAFF Science and Innovation Awards, the DAFF Corporate Governance for Rural Women and the Leadership Opportunities for Rural Women Workshop. AWI continues to support the development of young researchers and skilled participants into the wool industry through awarding 15 new academic scholarships for commencement in 2006. These awards included five undergraduate, four Honours, four PhDs and two Post Doctoral Fellowships.

### Sheep CRC undergraduate units

AWI has continued its support of the development of undergraduate units for students enrolled in livestock production and related courses across Australia. The units have been delivered through the University of New England, for their own students and also students from other universities across the country. AWI undergraduate scholarship recipients are also required to undertake two of the units during their degree. To date, the following subjects have been created with 214 students enrolling in the units since 2005: Sheep production; Applied animal nutrition; Sustainable agriculture; Meat technology; Wool biology and metrology; Wool marketing; Wool processing; Sheep meat production and marketing, and Genetic evaluation.

- 1 AWI's Shearing Shed Guidelines includes information about design elements, dimensions, technology, productivity and OH&S.
- 2 The Peak Hill Upright Posture Shearing Platform commercial prototype, which completed field trials in May 2006.
- 3 Recipients of AWI scholarships who aim to make a significant contribution to the future of the wool industry.

## CASE STUDY



### Shearer training

In response to woolgrower and wool industry concerns about shortages of appropriately skilled labour in the shearing industry, AWI has invested funds in a national shearer and wool handler training program.

Under the instruction of some of Australia's best shearers, the on-the-job training program is designed to refine techniques and skills, improving efficiency, work quality and occupational health and safety. In addition to shearer training, experienced wool classers and handlers are coaching wool handlers.

Shearing expert Karl Goodman is one of a number of the industry's best who have been enlisted by AWI to provide personal, on-the-job coaching to other shearers. Mr Goodman is passionate about his career and believes the shearer and wool handler training program is crucial for the industry's future.

"There is a chronic lack of new shearers entering the industry and through this training program we are trying to reverse that by showing young people considering a rural career that shearers are well-trained professionals and that there is a career path for them," Mr Goodman said.

"We are providing in-shed training where we go through their shearing gear, their technique, fitness, diet, even advice with taxation and superannuation."

"We want to support existing shearers with ongoing in-shed training to ensure the wool industry has a future of well-trained, professional shearers."

Karl Goodman, shearing expert

**Top:** Shearing trainer Karl Goodman (centre) demonstrating at a training day in Charleville, Queensland.



# corporate affairs

The aim of AWI's Corporate Affairs portfolio is to deliver effective communication and reputation management between AWI and its key stakeholders. The group seeks to inform and influence:

- woolgrowers, so they better understand the value of what AWI does and are aware of R&D outcomes;
- Government, so it recognises the value of R&D for the Australian Merino wool industry; and
- users of Australian Merino wool (such as manufacturers and retailers), so they understand the benefits of Australian Merino wool and the value of new technologies and innovations.





## Highlights

- Australian Merino wool was showcased by AWI supported designers in front of an audience of key influencers and decision makers at Mercedes Australian Fashion Week in Sydney.
- AWI was given a tick of approval for being accountable and transparent in addressing shareholder interests by receiving a Bronze Award at the prestigious Australasian Reporting Awards.
- More than 800 woolgrowers and industry representatives from across Australia participated in AWI forums during the year.
- AWI projects and initiatives gained widespread coverage in the rural, regional and metropolitan media, as well as the international textile and trade media.
- Visitor numbers to the AWI website increased by 45 per cent during the year to an average of over 1,500 visits per day.
- The 'Next Generation' group of leading young wool industry stakeholders was established to help build industry capability into the future.

## Key outcomes and achievements

### Communicating face to face to woolgrowers

Research shows that woolgrowers are receptive to and benefit from face to face meetings. Forums provide woolgrowers with information and outcomes from AWI-funded activities and practical information on improving the productivity and sustainability of their wool business. AWI hosted five major forums in 2005/06 that were attended by more than 800 woolgrowers and industry representatives:

- Information forum at the AWI Falkiner Memorial Field Station, Deniliquin, NSW.
- 'Pathways to Profit' forums at Goulburn, NSW and Hamilton, VIC.
- Joint AWI/MLA 'Making more from Merinos' forums in Broken Hill, NSW.
- Woolgrower forum and showcase prior to the AGM in Adelaide, SA.

AWI staff or Board members also presented at nearly 80 other industry forums and events internationally and around Australia during 2005/06. Product suitcases showcasing new AWI product developments and/or AWI display stands were on show at over 50 industry events.

### Getting the message out through the media

Media is an important communication tool for AWI, and media releases, advertisements and television were used to gain widespread coverage for AWI projects and initiatives.

There was wide coverage in the rural and regional media, as well as in the metropolitan media, and international textile and trade media.



### Research outcomes and publications

Publications provide woolgrowers with information on new products and practices to improve their on-farm productivity and profitability, and ensure that woolgrowers are made aware of initiatives and activities to increase the demand for Australian Merino wool. AWI's flagship publication *Beyond the Bale* was published five times during 2005/06 and distributed to over 27,000 shareholders and 1,000 other stakeholders. The publication was revamped during the year to give it a sharper focus, full colour and a new size.

The 2004/05 AWI Annual Report received a Bronze Award at the Australasian Reporting Awards (ARA) in June – the ARA Awards are the prime indicator of the quality of reporting by Australian organisations to their stakeholders.

A Product Catalogue of all AWI products and publications was published and distributed to shareholders in August 2005. Over 500 shareholders made requests for publications from the catalogue up until June 2006. Publications were also available on request from the AWI helpline on 1800 070 099, distributed at industry events and most are available electronically on the AWI website [wool.com.au](http://wool.com.au).



### Communicating online with stakeholders

Woolgrowers are increasingly using the internet to access information and resources in their business. During the year, a new AWI website 'homepage' ([wool.com.au](http://wool.com.au)) was implemented to provide a single point of entry to AWI websites and direct target audiences to relevant information. Visitor numbers to [wool.com.au](http://wool.com.au) increased by 45 per cent during the year to an average of over 1,500 visits per day.

New online products have been produced, such as Shearing Shed Guidelines, and other online products have been revamped, such as the online wool pricing tool [woolcheque.com.au](http://woolcheque.com.au).

Marketing of AWI websites has included a Google keywords campaign to increase search ranking, national advertising in rural publications, the production of a guide for woolgrowers and provision of online information and demonstrations at AWI events and forums.



- 1 AWI's flagship publication *Beyond the Bale* which was revamped this year.
- 2 An AWI product catalogue provided woolgrowers with information on and easy access to AWI's publications and reports.
- 3 Forums and events provide woolgrowers with an opportunity to ask questions of researchers and senior staff working in the wool industry.

### AWI helpline – easy access to information

The tollfree AWI helpline – 1800 070 099 – provides woolgrowers and other stakeholders with easy access to information from AWI. The average number of calls to the AWI helpline during the year was 223 calls per month.

During 2005/06, the helpline was used for general information about AWI, company projects and programs (especially shearer training) and event registration.



**Communication to the fashion and textile world**

To help increase the demand for Australian Merino wool, AWI this year established commitments with some of Australia's leading fashion designers to help them get access to some of the newer, easy-care, next-to-skin Australian Merino wool fabrics. In return they are showcasing Australian Merino wool innovations to the decision makers in world apparel.

AWI supported four influential Australian fashion designers, Josh Goot, Jayson Brunsdon, Tina Kalivas and woollivoolli at Mercedes Australia Fashion Week (MAFW) in Sydney – see case study on page 33. AWI held a fashion industry trade event during MAFW, designed to position AWI alongside local and international VIP fashion industry representatives. Over 250 key representatives attended the event, putting AWI in contact with potential future business partners.

The Australian Wool Fashion Awards were held in Armidale in March. The Awards, now in their 25th year, have become one of the most recognised fashion events in rural Australia, this year attracting nearly 400 applicants.

AWI Corporate Affairs also provided support to the AWI Product Marketing team at trade events such as the ISPO international trade fair for sports apparel, and product launches such as Red Island and MerinoActive.

**Liaising with industry and Government**

To help guide AWI's investment of the wool levy, it is important that AWI receives input on industry issues from industry organisation representatives and Government. State farmer bodies and industry representatives provided their input directly to key AWI staff and senior management at seven information exchanges held during the year at AWI Sydney offices and in presentations at their respective meetings. A group of leading young wool industry stakeholders – the 'Next Generation' – was established to help build industry capability into the future. This group met for the first time in October 2005 and consisted of woolgrowers, brokers, scientists, manufacturers and designers.

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AWI continued to take a leading role in the Wool and Sheep Industry Taskforce, which was formed to respond to the campaign by extremist animal rights groups against the Australian wool industry. During 2005/06, the Taskforce's global strategy to minimise the campaign continued to be vigorously applied to ensure a positive outcome for the Australian industry.

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- 1 The Merino Innovation website enables fashion designers and retailers to learn about the benefits of Australian Merino wool.
- 2 Fashion designer Josephine Nathan attended an AWI forum at Falkiner Memorial Field Station this year to explain to woolgrowers the role of fashion in the wool pipeline.

## CASE STUDY



### Merino at Mercedes Australia Fashion Week

AWI supported four influential Australian fashion designers, Josh Goot, Jayson Brunsdon, Tina Kalivas and woolliwoolli at Mercedes Australia Fashion Week spring/summer collections in Sydney.

Each collection showcased Australian Merino wool innovations, from Josh Goot's Merino wool viscose coated dresses to woolliwoolli's Merino wool/lycra blended bikinis, shifting Merino wool from its traditional boundaries in front of Australia's fashion and apparel industry leaders.

Mercedes Australian Fashion Week is an opportunity for buyers around the world to see the depth and diversity of the Australian fashion industry. Each of the four AWI supported designers picked up new local and international retail accounts as a result of MAFW.

For Josephine Nathan of woolliwoolli, Mercedes Australian Fashion Week was a confidence building exercise giving her the motivation to see a manufacturer to help take her garments to a wider audience.

"AWI has helped me make connections in the industry, so I'm talking to a manufacturer in Melbourne about helping me move to the next stage. To take on large contracts you have to be able to guarantee supply," she says.

"AWI has given me lots of opportunities to promote my product I may not have had and I'm just glad to be helping in showing just what Australian Merino wool can do."

Josephine Nathan, fashion designer, woolliwoolli

**Top** Fashion leaders such as woolliwoolli showcased stunning designs using Australian Merino wool at April's Mercedes Australian fashion Week in Sydney.