

# Progress



passion

results

values

people

difference

Australian Wool Innovation Limited gratefully acknowledges the funds provided by the Australian Government to support the research detailed in this publication.

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# CHAIRMAN'S REPORT



Ian McLachlan, Chairman, AWI

## HIGHLIGHTS

- Instigation of new accounting and fiscal policies designed to protect woolgrower and government funds from misuse
- Introduction of more stringent, transparent project approval processes
- Appointment of Dr Len Stephens as CEO
- An acceleration in plant breeding investment that has resulted in 12 new and emerging pasture cultivars including Leura sub clover, Cadiz Seradella and Balansa sub clover
- A genetics investment that positions the industry to capture dramatic future benefits from this vital science

Now in its third year of operations, Australian Wool Innovation Limited (AWI) is in an extremely strong position to take the Australian wool industry to the next stage of wool research, development and innovation. The foundations are in place, a number of exciting R&D projects are showing promise and management are enthusiastic and committed.

However, 2002/2003 was not an easy year for AWI. In October, shareholders elected five new Board members. Those five stood for these positions on the basis that corporate governance would be paramount. While there was no argument with most of the programs in which AWI was investing, there were very serious matters of governance.

The ongoing inquiry by the Senate Standing Committee on Rural and Regional Affairs and Transport has been dealing with many of these issues and we understand it should be making its findings public before the November Annual General Meeting. The October 2002 AGM confirmed that the shareholders of AWI are in control of their corporation and my Board was given a clear mandate to manage the future of wool R&D in Australia.

I am pleased to report that nearly all the problems of corporate governance have been systematically addressed and some recently discovered issues are under investigation. AWI now has better accounting systems, more appropriate levels of financial authority and more stringent project approval procedures.

## A FRESH APPROACH

In 2002/2003 AWI made a number of management appointments that place the company in a good position to move on and focus on its core business.

Our new Chief Executive Officer, Dr Len Stephens, was appointed to lead the team in April 2003. Dr Stephens' qualifications, experience and vision will significantly benefit AWI. We are also pleased to have appointed Les Targ as General Manager Commercial. Mr Targ will ensure all of AWI's operational matters are handled in a professional and thorough manner.

During 2002/2003, AWI endeavoured to be more open and transparent with its shareholders. The Annual Report reflects this new approach. Each portfolio has provided clear details on expenditure and a 'Report of Progress' rates our performance against the Operating Plan. In the Appendices, there is a complete list of every project AWI has funded during 2002/2003.

## AWI'S MISSION AND VISION

Our market research shows that while almost every woolgrower is aware of AWI, there remains some confusion as to what the company actually does.

AWI is a wool R&D company, owned by woolgrowers who fund the company's activities through a two per cent levy on the sale of their wool. AWI also receives a contribution from the Commonwealth Government. The Statutory Funding Agreement between the Commonwealth and AWI specifies the areas in which AWI should be investing. These include wool R&D, innovation, trade policy and related activities and the provision of services to woolgrowers, including education and market intelligence.

This same Agreement prohibits AWI from getting involved in any form of generic promotion of Australian wool. However, we are able to invest in market development and are actively progressing this. By involving commercial partners at an early stage in new product R&D and through an enhanced trade development strategy, AWI is driving the creation of new markets and more opportunities for wool.

Our mission is to drive research, development and innovation that will increase the long-term profitability of Australian woolgrowers. In achieving its mission, AWI facilitates investment in wool R&D that aims to:

- Maintain demand for Australian wool (at least at current levels) against consumer drift, competition from other fibres and economic pressures;
- Lower wool pipeline costs from harvest to finishing by 20 per cent; and
- Sustainably lower average production costs per unit of raw wool.

AWI's Strategic Plan 2003-2008, which was recently distributed to all woolgrowers, details the steps the company is taking to meet these objectives.

## WOOLPOLL 2003

Under the Wool Services Privatisation Act 2000, woolgrowers must vote every three years on the percentage of their wool proceeds they would like to invest in wool R&D – 2003 is one of those years.

While other primary industries such as red meat, grains and cotton benefit from significant research conducted in other countries, Australia is the only country that invests substantially in wool R&D. As the premier global wool supplier, we must keep

pace with change and remain competitive with synthetic fibres. It is imperative we continue to conduct our own R&D.

*“While other primary industries such as red meat, grains and cotton benefit from significant research conducted in other countries, Australia is the only country in the world that invests substantially in wool research and development.”*

The present levy investment is delivering real benefits and I would urge you to ensure the future of your industry by supporting the two per cent levy during WoolPoll 2003.

#### REAL RESULTS

In 2002/2003 AWI invested more than \$16.7 million in on-farm R&D and \$16.2 million in new product and improved processing programs. This Report contains descriptions of many of the project outcomes, but there are three areas of significant importance.

#### Genetics

Genetic selection is a highly effective method of improving production efficiency of animals. Over many years, industry-supported genetic benchmarking systems have resulted in large databases of wool and meat sheep traits. It is now time to combine these valuable data sets into one national database. This will enable the calculation of standardised Estimated Breeding Values (EBVs) for any trait, which can be used by commercial ram buyers to identify rams most suited to their needs. Each breeder can also set goals for improving average EBVs that can result in rapid genetic improvement.

We are actively working with Meat and Livestock Australia (MLA) to establish a single national sheep genetics database. Your Board believes this to be of paramount importance and hopes that Stud Merino breeders will join with AWI and MLA in this exciting endeavour.

#### Shearing Technology

AWI's ambitious mobile wool harvesting system, Shear Express, continued to develop over 2002/2003. This project has always been a high-risk proposition and this year the project started to encounter some difficulties. The original business plan was based on some very optimistic assumptions and a number of these are now

falling short. While the target to deliver a working prototype by September 2003 has been attained, the costs to achieve such a prototype are presently 30 per cent above initial expectations. Along with the present difficulties, it remains for Shear Express to be proven commercially.

In the meantime, the AWI Board is implementing strategies to ensure that woolgrowers have access to other potential shearing developments. In 2003, a comprehensive strategy will be developed to guide long-term investment in new shearing technology and ensure that woolgrowers are provided with commercially-viable alternatives to the present system.

#### Pastures

Since the 1960s, AWI and its antecedents have delivered 59 new pasture cultivars that have changed the way Australian woolgrowers feed their sheep. These include Bolta Balansa Clover, Frontier Balansa Clover, Herald strand medic, Mogul barrel medic and the new releases of Jester barrel medic and the hybrid Toreador disc medic. Some of these new pastures are more salt tolerant, can grow in acid soils and result in the production of greater quantities of feed. AWI has accelerated its investment in this area to ensure that new, smarter varieties continue to be developed and made commercially available to all woolgrowers.

AWI is a young, innovative company that, despite the disruptions of 2002/2003, remains focused on delivering benefits to woolgrowers. We are committed to providing open and transparent accounts of our activities to our shareholders, whether the results are good or bad. Our staff are now being provided with the direction that will ensure the company forges ahead in a professional manner.

Importantly, we have some successful projects under our belt and dozens of other projects in the pipeline that will deliver outcomes to woolgrowers in the future.

Your Board is looking forward to building on the momentum established by AWI and applying wool research and development to enhance the prosperity of the wool industry.



Ian McLachlan AO

# CEO'S REPORT



Dr Len Stephens, CEO, AWI

## HIGHLIGHTS

- R&D investments balanced equally between on-farm and textile research
- Company responds enthusiastically to requirements of the new Board
  - New genomics technology is being applied to age-old problems such as blowflies and worms
  - Non-woven technology gives wool the opportunity to break into markets at a range of price points
- A practical, cost-effective alternative to mulesing is deemed feasible
- A \$3 million Scholarship and Training Program helps secure the future of the industry

Since joining Australian Wool Innovation Limited (AWI) in April 2003, I have gained a very favourable impression of the company. The staff have responded enthusiastically to the requirements of the new Board and are committed to taking the wool industry forward. Fifty new research projects have been initiated, operational procedures have been improved and there have been significant management changes. The flow of products, including research results of real use to the industry, has also increased.

One of our ongoing challenges is to work with all sectors of the industry to ensure the company goals match those of the industry.

The rich diversity of opinions in the wool industry means that AWI receives many different views about the direction research and development (R&D) should take.

Consequently the Strategic Plan, which has been modified by the new Board, now clearly sets out the goals for the company.

Our principal goal is to enhance the prosperity of Australia's woolgrowers. Our strategy is to use the best information available to define problems and opportunities, and to apply the best available technology to the solution. The end results are new products and services for consumers, processors and woolgrowers.

A look at the 'Report of Progress' on page 10 reveals there has already been some significant successes. For example:

- A practical, cost-effective alternative to mulesing has been deemed feasible.
- New pasture varieties of serradella, medics and phalaris were commercially released.
- Two reports on the cost of Ovine Johne's Disease and control options were published.
- A global survey on contamination in wool bales was completed.
- The Murata Vortex Spinning machine was adapted from spinning cotton to wool so it can spin yarn directly from the sliver 20 times faster than conventional spinning.
- Advances in non-woven technology brought about the commercialisation of a Driza-Bone™ wool-lined oilskin vest.

- A non-woven processing facility at Albury, NSW, began production in June as a result of a partnership between AWI and Macquarie Textiles. Non-woven wool is now being evaluated for use in bandages and blankets.
- A machine-washable wool suit was developed in conjunction with Berkeley Apparel for sale in David Jones stores.
- Research conducted with The Woolmark Company (TWC) led to waterproof and breathable fabric for use in conjunction with Sportwool™.

Networks that involve grower groups working directly with scientists are particularly effective at delivering research outcomes. Our aim is to have at least one such network in each state. The Tasmanian 8x5 project, Bestwool 2010 in Victoria, and Look @ Wool in South Australia are current examples and similar initiatives are under discussion for the remaining states.

*"All projects have been chosen on the basis of their ability to provide a return on investment to woolgrowers and the industry."*

On June 30, approximately 200 projects were active, ranging from small feasibility studies to major projects. The R&D portfolio is well-balanced with an equal split of expenditure between on-farm and textile research. All projects have been chosen on the basis of their ability to provide a return on investment to woolgrowers and the industry.

An independent cost-benefit analysis of projects predicted that over the next 10 to 20 years, on-farm projects will produce \$4.50 benefit for woolgrowers for each dollar invested. Textile projects will produce \$5.60 benefit per dollar for woolgrowers over the same timeframe.

Revenue in 2002/2003 was \$81 million, composed of \$60 million from levies, \$16 million from the Commonwealth, and \$5 million from interest and royalties.

Total expenditure in 2002/2003 was \$64 million. Overhead and administration costs of \$21 million were excessive due to staff redundancies, office relocation and legal and audit fees. The 2003/2004 overhead and administration budget is much lower at \$16 million.

Within the constraints of uncertain wool supply and prices, revenue for 2003/2004 is estimated to be \$69 million. Expenditure, as outlined in the Strategic Plan, will be \$85 million.

Our bank balance at 30 June was \$91 million which is budgeted to move to \$74 million by June 2004 as R&D funds in excess of income are invested to achieve the strategic plan goals. Our plan is to reduce this bank balance to \$35 million by 2007, in line with the Board's recommendation for a 2 per cent levy, to be determined at WoolPoll 2003.

Looking forward, much can be done to increase the benefits we deliver to our shareholders.

Consumer product innovations are essential to enhance demand for wool, therefore our relationships with overseas processors and retailers must be strengthened if we are to respond effectively to their R&D needs. A new General Manager will be appointed to achieve this and stronger links will be built with the International Wool Textile Organisation (IWTO).

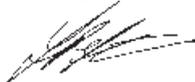
In the area of international wool trading, we will examine market conditions in the countries that are major importers of Australian wool and conduct research into the factors affecting wool tariffs and quotas. This information will assist the Australian Government in trade negotiations and also help Australian wool exporters secure greater market access.

A new attack on the age-old problems of blowflies and worms has been made possible by the advent of the new technology of genomics. This technology has completely changed the way biological science is conducted because it gives scientists the tools to find the sheep genes that have greatest influence on wool production. In the coming year AWI will make a major, long-term investment in sheep genomics in conjunction with Meat and Livestock Australia (MLA).

In 2003/2004, a major study of the rate of adoption of technology will be initiated and AWI's activity in relation to industry training, education and communication will increase. In particular, AWI has put in place a \$3 million Scholarship and Training Project to attract young scientists and woolgrowers to the industry.

The market disruption caused by the wool stockpile and the recent drought has reduced the Australian sheep flock to the lowest level in 50 years. The consequences of this for the processing sector and wool's market share are likely to be felt for some time. However, sheep prices are high, wool is still one of Australia's main agricultural exports and efforts are already underway to rebuild the flock. Australia remains the dominant supplier of the world's most versatile fibre.

Future prosperity in the wool industry will depend on continued innovation in wool products for consumers, improved efficiency along the supply chain and attracting innovative people to the industry. AWI works with the industry to assist innovation in all these areas.



Dr Len Stephens

Some specific goals for the future are:

- Closer co-operation with the textile sector to create opportunities for wool;
- A workable and affordable alternative to shearing;
- Reduction of tariffs and quotas applied to international wool trading;
- A national Merino genetic evaluation scheme; and
- A new generation of woolgrowers and scientists entering the wool industry.

# ABOUT AWI

## ABOUT AWI

### WHO WE ARE

Australian Wool Innovation Limited (AWI) is a research and development (R&D) organisation owned by, and working on behalf of, Australian woolgrowers.

Our mission is to drive research, development and innovation that will increase the long-term profitability of Australian woolgrowers.

While AWI plays an active role in R&D, it is also responsible for providing Government with the economic and social data to support Australian representation on wool industry issues to other nations.

A fully independent public company, AWI is limited by shares, exempt from Company taxation and governed by a Board of directors.

### WHAT WE DO

Each year, AWI:

- Invests in and manages more than 200 R&D projects;
- Communicates the results of its projects to woolgrowers, processors and the industry as a whole;
- Instigates programs to ensure that the research results are adopted by woolgrowers and industry;
- Works with commercial partners to bring R&D outcomes to market; and
- Works with research organisations across Australia and around the world.

AWI invests in projects after:

- Consulting with woolgrowers, industry and Government; and
- Developing strategic plans at corporate, portfolio and program levels.

### Who pays for wool R&D?

Australian woolgrowers pay a research and development levy, which is two per cent of the sale price received for shorn greasy wool. In 2002/2003, woolgrowers invested just over \$62 million in wool research and development.

The Federal Government matches woolgrower investment in R&D projects, capped to 0.5 per cent of the industry's gross value of production (GVP). In 2002/2003, the Federal Government contributed \$16 million to AWI's activities.

### Who carries out wool R&D?

Once the decision has been made to progress with a project, it is AWI's role to assemble the best team for the job and then drive that team to an outcome.

AWI contracts researchers from various organisations such as CSIRO, State Government agricultural departments and Australian and international universities to carry out scientific, developmental, educational and economic projects.

AWI is also committed to the future of wool R&D by funding scholarship and training programs for young scientists and students.

### AWI PORTFOLIOS

AWI R&D activities fall into the following portfolios:

- Sustainable Fibre Production Systems – helping woolgrowers reduce their costs and improve the profitability of their enterprises.
- Fibre Processing, Products and Services – ensuring Australian wool is processed in the best possible way and expanding new markets through the development and application of novel products.
- Trade Policy and Industry Relations – ensuring the movement of raw materials and products along the global wool textile pipeline occurs as efficiently and effectively as possible.
- Communications – informing woolgrowers and the industry about AWI's developments, innovations and future plans.
- Education and Adoption – educating woolgrowers and other industry stakeholders about AWI research and development findings and helping them to adopt these results.



# MISSION, AIMS, VALUES

AWI's mission is to drive research, development and innovation that will increase the long-term profitability of Australian woolgrowers.

In order to meet the changing face of the global textile market, Australia's wool industry needs to achieve substantial change over the next five years. Research and development must contribute to this change because woolgrowers and the industry cannot rely on price increases to improve profitability.

Woolgrowers expect AWI to concentrate on the profitability and sustainability of wool production. They also expect a focus on: new and improved wool products and processes; delivering a more economic fibre throughout the pipeline; having the foresight to address potential threats; and driving the delivery of commercial R&D benefits.

AWI will also provide details of measurable outcomes of R&D projects and demonstrate how and where the levy investment delivers benefits to woolgrowers.

## R&D INVESTMENT VISION

Over the period of the 2003-08 Strategic Plan, AWI aims to:

- Maintain demand for Australian wool at current levels (about five per cent of world apparel textile use) against consumer drift, competition from other fibres and economic pressures;
- Lower wool pipeline costs from harvest to finish by 20 per cent;
- Sustainably lower average Australian wool production costs per unit of raw wool by 20 per cent, and
- Counter probable threats to cost structures, especially on-farm.

## R&D INVESTMENT PRIORITIES

AWI has defined five investment priorities to guide research, development and innovation to meet the overall investment vision. The AWI priorities are:

- A. R&D PERFORMANCE** – high quality planning, evaluation and commercialisation of research.
- B. MARKET PRESENCE** – developing new wool uses, products and access to markets.
- C. INDUSTRY COMPETITIVENESS** – addressing pipeline costs while ensuring consistency of product.
- D. WOOL SHEEP AS GOOD BUSINESS** – products, cost structure and sustainability for long term profitability.
- E. UNDERSTANDING AND ADOPTION** – ensuring relevant research and clear communication of results.

MISSION, AIMS, VALUES



The AWI Board developed a Framework Statement in February 2003 to provide a basis for AWI culture, operation, planning and reporting in 2003 and in the years ahead. This Statement is presented below.

## Board Framework Statement

1. AWI's mission is to drive research, development and innovation that will increase the long-term profitability of Australian woolgrowers.
2. The AWI Board recognises its responsibilities under company law to work for the best interests of all shareholders, and to meet expectations of woolgrowers and Government as expressed through the Statutory Funding Agreement, Levy Polls and communications.
3. AWI will model its reporting on that of a listed company with a wide shareholder and stakeholder base. AWI's formal plans and reports plus ongoing communications will provide informative, reliable material that actively helps stakeholder assessment of AWI performance against accountabilities in the Constitution, Statutory Funding Agreement, company law, and promises made by AWI Board and Executive.
4. AWI's main performance and reporting focus will be its woolgrower shareholders. AWI will provide frank information, with positives and negatives that aims to be useful to woolgrowers, including clear Annual Report financial statements. These reports should also meet the needs of Government and other AWI stakeholders.
5. The Federal Government, wool industry pipeline businesses and researchers are important stakeholders. AWI will consult and work with these groups. The best interests of woolgrower shareholders will often accord with the R&D priorities of Government and with the interests of the wool industry and community – but not always.
6. AWI will strive, through its investment decisions, to achieve commercially attractive business outcomes for its woolgrower shareholders, and not simply to maximise its own profits. A significant proportion of investment in the research, development and innovation portfolio is in programs that cannot yield any monetary returns to AWI itself, therefore the Board has withdrawn the September 2001 Return on Investment Policy.
7. Adoption is essential to R&D success. AWI will work to ensure the relevance and cost effectiveness of research results to encourage adoption. As a general principle, AWI will be looking to commercialise projects through licensing arrangements to provide products and/or services with appropriate royalties to AWI, rather than by owning businesses.
8. Market failure will be an important consideration in R&D investment decision-making. AWI will incorporate a flexible market failure test into project evaluation processes.
9. AWI will develop new advisory and consultation arrangements, with industry and researchers, to contribute to the defining of relevant and technically sound research.

AWI Board Framework Statement February 2003, refined May 2003

# WHERE AWI INVESTED

## REVENUE

Total revenue for 2002/2003 was \$80,954,000, a 12 per cent increase over total revenue in 2001/2002 of \$71,068,000. This increase was due primarily to higher wool prices over the 2002/2003 season. Sources of revenue are shown in the table below.

	2002/2003 \$'000
<b>Revenue</b>	
Federal Government	16,170
Sale of goods and services	309
Royalties	448
Wool levy	60,222
Wool tax	23
Interest	3,782
Revenue from ordinary activities	80,954

## EXPENDITURE

Total expenditure in 2002/2003 was \$64.3 million. Expenditure across each Line of Innovation in the Strategic Plan 2002-07 is shown in the chart top right. More detailed information can be found throughout the rest of this Report and in the Financial Statements on page 51.

Overall, actual expenditure was behind budget partly as a consequence of the operational uncertainty surrounding the change of Board and management during the year.

Expenditure was under budget in specific Lines of Innovation due to a number of factors. Extended planning required for frontier science projects in genomics, soil science and parasitology caused reduced expenditure in Inventiveness. These projects will now begin in 2003-04.

Programs in the Industry Competitiveness area were also delayed in 2002-03, including wool harvesting and improvements to a common wool trading language.

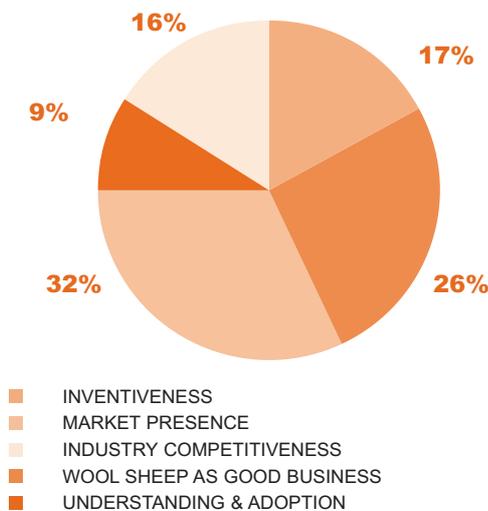
Market Presence expenditure was reduced as a result of decreased trade access activity while many on-farm projects in Wool Sheep as Good Business were cancelled or delayed as a result of the drought. Most of these projects will be resumed in 2003-04.

## EXPENDITURE ON LINES OF INNOVATION

Line of Innovation	Actual Expenditure* \$'000	Strategic Plan 2002-07 Budget \$'000
INVENTIVENESS	7,274	10,850
MARKET PRESENCE	13,546	15,800
INDUSTRY COMPETITIVENESS	6,758	14,330
WOOL SHEEP AS GOOD BUSINESS	11,100	25,080
UNDERSTANDING & ADOPTION	4,001	7,540
SUBTOTAL	42,679	73,600
OVERHEADS	21,648	3,779
TOTAL EXPENSES	64,327	77,379

\* Includes Accruals

## % EXPENDITURE ON LINES OF INNOVATION



The Understanding and Adoption area did not fully commence operations until the appointment of the Program Manager Education and Adoption in February 2003.

Overhead and administrative costs were audited during the year and the method of accounting changed to reflect the true costs. These costs were high due to staff redundancy, office relocation, and legal and audit fees. The overhead budget for 2003/2004 is \$16 million.

WHERE AWI INVESTED

# REPORT OF PROGRESS

## THE AWI 2002/03 REPORT OF PROGRESS AGAINST THE OPERATIONAL PLAN

The information below details what AWI set out to achieve (as outlined in AWI's Strategic Plan 2002-2007 and Operating Plan) and the results of AWI activities undertaken in 2002/2003 to achieve these targets.

Operating Plan Target	Performance Against Target
<b>Priority A. Inventiveness</b>	
<b>Number of feasibility and scoping studies undertaken.</b>	
European Wool Innovation Awards.	Two hundred and fifty applications received from students at 73 design schools across Europe. Awards presented in Paris on 18 June and winning students visited Australia in August 2003.
The Australian Wool Fashion Innovation Awards.	Three hundred people entered TAWFA in 2003, incorporating new AWI fabric innovations. 50 awards were presented at the ceremony in Armidale. The garment collection was paraded a total of 35 times at the Sydney Royal Easter Show in April reaching an estimated half a million people.
Royal Society of the Arts Student Design Innovation Awards.	Over 2,000 applications received. AWI supported the What we Wear, Where we Live section in which applicants must use a minimum of 40 per cent wool.
Postdoctoral fellowships and postgraduate scholarships. Four awards located in commercially focused academic institutions in Australia, NZ, USA and the UK.	AWI Scholarship & Studentship Program approved in June 2003.
Industry Advisory Groups – established in early 2003.	Eight industry advisory panels established, with two meeting prior to 30 June. Five expert panels have been established and four of these met during the year. A Researchers' Roundtable provided feedback to AWI from 120 researchers and consultants in the wool industry.
AWI contribution to and interaction with the International Wool Textile Organisation (IWTO).	The CEO and two directors met with the IWTO Executive and agreed to establish AWI Innovation Inspiration Forums at each IWTO meeting to assist in identifying the R&D needs of wool processors globally. AWI staff also contribute to the technical and commercial committees.
<b>Priority B. Market Presence</b>	
<b>Novel Wool-Using Products.</b>	
Establish a wool non-woven processing line in Australia and produce over 500,000 metres of non-woven fabric a year by 2005.	Plant for the production of non-woven fabrics established in conjunction with Macquarie Textiles Pty Ltd, Albury.
Four to six new non-woven fabric concepts a year with at least one in commercial production each year.	Driza-Bone™ vest with wool non-woven liner launched in June 2003. Emergency blanket developed.
Development of Non-Woven Needle-Punch fabrics.	Development phase completed for stitch-bonded fleece fabric (Australia) and wool/mexlar stretch fabric (Japan).
Wool stretch pile fabric – knitted using lycra.	Development phase completed and now in discussions with a European commercial partner.
Non-Woven Hydroentanglement (Spunlace).	Wool-containing products developed and one product commercially released. Seeking links with new commercial partner.
High Performance Lining system (suits/workwear).	Development in collaboration with commercial partner progressing. Preliminary wearer trials in progress.
Sportwool™ Fleece wool blend yarn.	Technical development complete and commercial knitting partner identified.
Develop new waterproof and breathable Sportwool™ films for out-door applications.	Breathable films and coated fabrics produced in collaboration with commercial partner. Tests have shown products to have excellent moisture vapour transmission properties.
Development of a wireless heated wool blanket.	Technical development achieved and patent pending.
Design four novel woven fabric wool-blend structures for casual/leisurewear for lightweight outerwear.	A range of fabrics were developed and demonstrated to potential commercial partners.
Develop a commercially attractive wool-blend alternative to duck-down.	This project was terminated as the technical requirements were not achieved.
Evaluate a unique yarn structure technology to achieve a lower cost, high performance wool business shirt.	Commercial wear trials underway with Glowave (Australia).
Develop double-layered knit and woven wool-blend samples by 2003.	Thirty knitted/woven fabrics produced. Wearer trials undertaken by Yakka and RM Williams.
<b>New technologies to enhance wool products.</b>	
Produce patented technology for modifying wool fibres with clear benefits in skin comfort.	Feasibility study completed but project terminated due to the technical requirements not being achieved.

Operating Plan Target	Performance Against Target
Investigate the feasibility of atmospheric ion plasma treatment of wool giving softer, low twist knitwear with 20 per cent more yarn strength, machine washability, shrink resistance and lower pilling.	Feasibility study successfully completed. Market survey on technology conducted and two companies identified for further trials.
Investigate a method for permanent setting of 3D surface effects on wool fabrics with machine washability.	Feasibility study completed but project not progressed due to lack of a suitable commercial partner.
Engineer Easycare™ performance garments so that after washing, seams remain flat without pucker, fabric is wrinkle-free and creases or pleats stay sharp.	Total easy-care performance achieved on jackets and trousers on small scale. Work to further optimise processing route underway.
Improve photo-stability of wool treated with fluorescent whitening agents to create a market for bright white and pastel wool garments.	Feasibility successfully demonstrated. Discussion underway with potential commercial partners.
Develop environmentally friendly coatings for wool fibres as a replacement for the chlorine-hercosett shrink resistance treatment.	Feasibility stage completed but problems with stability of coating remain. Further work being conducted by CSIRO.
Investigate the feasibility of a new process to produce fine yarns with soft handle.	Feasibility stage was completed demonstrating that the approach examined did not achieve required effects.
<b>Revolutionary wool directions.</b>	
Develop technologies to apply electrically conductive substances to wool.	Project did not start due to inability to reach agreement on Intellectual Property rights.
Convene a taskforce with CSIRO, WRONZ, DWI and Deakin University to develop and steer collaborative fundamental wool science programs.	Three fundamental projects on fibre structure, properties and colour underway with CSIRO, Canesis (WRONZ) & DWI.
Develop a process to extrude wool continuous filament.	Task force formed and recommendation delivered to AWI for analysis.
<b>Marketing support for use of product innovations.</b>	
A new device to demonstrate the micro-climate benefits of wearing Sportwool™.	Hardware and software developed and delivered to AWI. Prototype instrument in use to demonstrate Sportwool.
<b>Trade policy and market access.</b>	
Publish five reports that profile and benchmark existing or new markets for Australian wool and products.	Reports received and published: <ul style="list-style-type: none"> <li>• Prospects for the expansion of wool processing and textile manufacturing in Australia;</li> <li>• Wool trade relations with Japan;</li> <li>• Wool market review and trade analysis of India; and</li> <li>• Potential for Australian wool in Russia.</li> </ul>
At least halve raw wool and tops tariffs in India and Russia.	In March 2003, India announced reduction in import tariffs on greasy and scoured wool from 15 per cent to five per cent. Progress with Russian tariff reduction is linked with negotiations regarding Russia's WTO membership application.
Eliminate mandatory re-testing of wool and encourage full adoption of IWTO test methods in China by 2007.	These objectives can be progressed more effectively now that China is a member of the WTO. Progress under the Doha Round of WTO negotiations has been slow.
Support the inaugural China International Wool & Wool Textile Conference.	AWI was the major sponsor of the conference and staff made presentations.
Study the opportunities for marketing 'Clean Green Wool'.	Completed in March 2003 as 'Organic and Environmentally Friendly Wool Market Study'.
Participation in the Australia-India Joint Business Group on Natural Fibres & Textiles.	AWI has actively participated and will provide funding for supply chain initiatives if viable.
Assess the implications of a USA-Australia free-trade agreement.	Discussions are ongoing and complex. A formal submission will be made on the impact of the FTA on Australian wool.
<b>Priority C. Industry Competitiveness</b>	
<b>Marketplace understanding and information flow.</b>	
Pricemaker maintained on the AWI website. 600 producers attend 10 Businesses Intelligence workshops each year.	Pricemaker upgraded and integrated with AWI web site. Eleven Pricemaker workshops held nationally.
Report to industry on the Global Wool Pipeline Study 2002 and use the information to assist in R&D investment decisions.	This survey was a disappointment. While it produced a large volume of information, there was no incisive analysis that could be used to guide investment decisions. The data from the survey was used to make the AWI Future Fleece CD that is available for education and training.
AWI Wool Production Forecasting Committee to deliver three forecasts of the wool clip per year and develop indicators for reliable five-year wool supply-demand projections.	Forecasts completed for 2003/2004 with additional meetings called because of drought.

Operating Plan Target	Performance Against Target
<b>Fibre to Fabric – market segments and technical requirements.</b>	
Wool Contamination Surveys.	The global physical contamination study has collected 43,000 samples from 28 mills. Results will be reported in the coming year. Survey of pesticide residues has continued and results will shortly be available for 1,000 lots of fleece wool from 2002/2003, continuing an unbroken data series from 1992/1993.
Communication of Fibre to Fabric project outcomes.	Completed with results presented to woolgrowers and industry via visual presentations and brochure distribution.
Next-to-Skin: Complete a global study linking consumer acceptance of knitwear 'Next-to-Skin' with fibre specifications.	Final report received and analysis of the project outcomes underway.
Develop Wool Producer Delivery To Retail Specifications Education modules.	On-farm and testing stages of document completed. Partners being sought to conduct commercial trials.
<b>Develop a common wool fibre language.</b>	
Develop a routine presale measurement of the risk of dark and medullated fibre contamination.	Four pre-sale measurement projects underway and approximately 40 per cent complete. Associated vendor risk declaration project underway and approximately 50 per cent complete.
<b>Processing – engineering efficiencies and economies.</b>	
Six new technologies in commercial usage by 2005.	Macquarie Textiles adopted non-woven processing technology in May 2003. AWI is continuing its processing work to achieve this goal.
Adaptation of the Murata Air-Jet Spinning machine to mid-micron wool.	Study completed and a technical brochure has been prepared for release to Murata and their customers.
Adaptation of the Murata Vortex Spinning machine to fine wool and wool blends.	Feasibility demonstrated and further work to implement research findings proposed.
Evaluate Air-Condensed Spinning Technology.	Project terminated as technical requirements were not achieved.
Convert traditional high speed, open ended synthetic and cotton spinning systems for wool blend use.	Completed and commercialisation underway.
<b>Processing and manufacturing – practices and locations.</b>	
Study to investigate and quantify opportunities and inhibitors and evaluate likely benefits to wool producers of such expansion of early stage processing in Australia.	Study completed which outlined future investment prospects in early stage processing and manufacturing was limited due to competitive advantages in overseas countries.
Sixteen technical services delivered in key markets by 2005.	Visits to 17 companies in China, India and Vietnam have been completed. Formal presentations coupled with analysis of mill data is currently being undertaken with nine of these companies.
Ten in-mill training courses for wool users internationally, three groups in Australia and three industry seminars.	Training courses are presently being prepared for five clients in China, three in India and one in Vietnam.
<b>Handling, testing, selling – innovation to benefit producers.</b>	
Define market needs for on-farm fibre measurement and assess new fibre measurement devices for on-farm use.	Feasibility, market survey and benefit / cost analysis projects completed. A comparative analysis of relevant technology is 80 per cent complete. National education QA projects have been initiated. All other OFFM projects were terminated at conclusion of scoping studies.
Undertake a pilot trial of electronic identification systems for sheep and wool bales.	Sheep ID trial complete and report received. Follow on project on standards in progress with the Sheep CRC. Bale ID project 90 per cent complete – awaiting report.
<b>Wool harvesting – economies and performance.</b>	
Develop a Shear Express prototype wool harvesting machine.	Substantial progress has been made towards completion of the first prototype. Field trial to begin in the first half of 2003/2004. It is now envisaged that only one machine will be constructed (within the originally approved funding for the project), rather than four machines as originally planned.
Develop a pilot program for the national shearer and shed hand training program.	Pilot program commenced in June 2003 to evaluate the shearer and wool handler rebate scheme, explore the feasibility of a national group training company and design a national program that best fits with existing arrangements through state education systems.
Refinement of the Rotary shearing handpiece.	This project is 60 per cent complete but is on hold due to liquidation of the provider. AWI is in negotiation to purchase the IP from the provider and possibly continue development.

Operating Plan Target	Performance Against Target
<p>Priority D. Wool Sheep as Good Business</p> <p>Sheep – engineering to improve products and efficiency.</p> <p>By 2005, use the SARDI Selection Demonstration Flocks to demonstrate to 2,000 growers the outcomes of alternative breeding strategies to maximise financial return from Merinos in pastoral environments.</p> <p>Evaluate the Western Australia Merino breeding program data for heritabilities of wool growth and quality and the effect of seasons.</p>	<p>Target approximately 90 per cent achieved by newsletter distribution to 700 producers, annual field day attracting 200 growers, articles in rural media, Beyond the Bale and AWI Innovation Radio.</p> <p>Objective achieved and demonstrated that:</p> <ul style="list-style-type: none"> <li>• Selection for fibre diameter, coefficient of fibre diameter, and fibre curvature is possible using short staple length;</li> <li>• Short periods of clean or greasy wool growth are ineffective selection criteria to improve clean fleece weight; and</li> <li>• The same genes that affect staple strength and coefficient of variation of fibre diameter in one season also affect those traits in another season.</li> </ul>
<p>Refinement of the Central Test Merino Sire Evaluation program.</p>	<p>The Australian Merino Sire Evaluation Association (AMSEA) has completed incorporation, appointed an Executive Officer and developed two new research proposals as requested.</p>
<p>The Sheep Genome Map Project.</p>	<p>The project objectives have been achieved including:</p> <ul style="list-style-type: none"> <li>• 136 new markers, including 117 genes and expressed sequence tags (ESTs), have been added to the sheep linkage map;</li> <li>• 14 previously anonymous markers have been identified;</li> <li>• the total number of genes positioned on the sheep linkage map has increased from 120 to 243;</li> <li>• The number of links between the human and sheep linkage maps has increased from 102 to 245, with 233 of the links representing markers associated with genes or ESTs; and</li> <li>• Results have been published for R&amp;D use.</li> </ul>
<p>Examine any genetic basis for apparent resistance by Hermaphrodite sheep to fly strike.</p>	<p>Project completed. No significant results were found. It is unlikely the study will be taken further.</p>
<p>By 2007 develop a vaccine against rumen protozoa for enhanced wool production.</p>	<p>Project is underway with CSIRO.</p>
<p>Use the Lifetime Wool Production Project to develop and demonstrate pregnant ewe grazing and feeding management guidelines by 2007 to increase the lifetime wool production per hectare of ewes and their lambs by 20 per cent.</p>	<p>Year one lambing completed at demonstration sites including Falkiner Memorial Field Station, Tasmania, Victoria, and Western Australia.</p>
<p>Establish a major research program of frontier research in Gene Function focusing on internal parasites, wool production and possibly OJD.</p>	<p>The AWI molecular genetics strategy has been published and a joint MLA/AWI Sheep Genomics Program initiated. The initial focus is to identify novel approaches for controlling internal parasites.</p>
<p>Feeding – pastures and nutrition to lift returns.</p>	
<p>Establish the Paired Paddock Program (PPP) in NSW with 25 woolgrower groups.</p>	<p>The program has been established in NSW but targets for numbers of groups formed has been adversely affected by the difficult drought conditions. A total of 10 new groups were formed.</p>
<p>Release commercially three new Phalaris varieties and develop a more persistent winter active Phalaris.</p>	<p>Several promising lines of persistent winter active phalaris have been identified. Successful development of a cultivar with increased acid tolerance has been achieved. Commercialisation is now under negotiation.</p>
<p>Develop new legume varieties through the National Annual Pasture Legume Improvement Program (NAPLIP) for the sheep/cereal and high rainfall regions.</p>	<p>Already 40 commercially available legumes have been delivered to producers through this program since inception. An additional six cultivars were commercialised in 2002/2003. Numerous promising cultivars are approaching commercialisation stage, such as Margurita and Erica hard-seeded French serradella, Rossiter and Izmir subclovers, Melilotus and other species.</p>
<p>Model optimum spray rates and timing for Red Legged Earth Mites in Mediterranean &amp; high rainfall areas.</p>	<p>Optimum spray dates for east coast regions have been determined and demonstration sites set up in NSW, VIC, Tasmania and SA.</p>
<p>Develop producer information on use and management of bio-control technology for Paterson's Curse &amp; Thistles.</p>	<p>Development of biological control agents continued successfully including pilot field sites. National distribution program was initiated two years ahead of schedule.</p>
<p>Develop at least two genetically modified subclover varieties able to take-up more phosphorous (P) from soil and to suit different environments.</p>	<p>Progress continues to be made in this project. Laboratory trials have successfully shown plants with phytase expression in root surface cells lead to increased P uptake. However, control field trials have not been as successful.</p>

Operating Plan Target	Performance Against Target
Undertake investigations into satellite remote sensing and interpretation of pasture data for grazing applications.	Evaluation of commercially available remote sensing software completed. Review of research proposals has led to two specific research opportunities, one of which has been developed and approved to project stage. This pilot project will evaluate the use of satellite remote sensing technology to predict pasture productivity.
<p><b>Enhance the natural resources base for wool production.</b></p> <p>Natural Resource Management (NRM) – The Land, Water &amp; Wool program (LWW).</p> <p>AWI Pilot Revegetation Advisory Support Service. (Woodlot Program)</p>	<p>All major research sub-programs successfully initiated in 2002/2003. The largest sub-program, Sustainable Grazing on Saline Lands (SGSL) launched with 40 producer networks established by June 2003. The LWW Best Practice Survey was released nationally in June 2003 as part of the benchmarking sub-program. The LWW Native Vegetation and Biodiversity sub-program is underway and working with woolgrowers in four states. The River Management and Water Quality sub-program is working with woolgrowers to establish best practice guidelines specific to woolgrower needs. The LWW pastoral sub-program commissioned three scoping projects in 2002/2003 including feral animal management. Managing Climate Variability has developed five projects to increase grower awareness and use of seasonal forecasts with long lead times.</p> <p>Project review process initiated in November 2002, and the project subsequently terminated in June 2003.</p>
<p><b>Health, welfare, chemicals – productive and easier care sheep.</b></p> <p>Develop a commercially-viable alternative to the mulesing operation through Breech Strike prevention technology.</p>	<p>Current project completed and satisfactory progress made with prototype technology. Flystrike protection in lambs has been demonstrated but ease of fit with current systems requires resolution.</p>
<p>Develop a commercially-viable alternative to the mulesing operation through permanent wool removal.</p>	<p>Initial phase of the project completed with proof of concept established. New phase of work commenced in January 2003.</p>
<p>Develop a worms website with 10 per cent of producers accessing it by 2003.</p>	<p>'SCIPS' project terminated in April 2003 by mutual agreement. There is limited uptake of the present website. A new project has been developed with the Sheep Industry CRC to expand the site and increase its utility.</p>
<p>Gain adoption of the Nemesis genetic selection process for worm reduction by twelve studs in Victoria testing rams and selling with EBVs by 2003.</p>	<p>Market research in Victoria showed major barriers to adoption of Nemesis by studs, principally due to a perceived lack of commercial demand for worm-resistant rams. Target of new stud participation was therefore not achieved.</p>
<p>Develop knowledge on genetic and phenotypic correlation of worm resistance &amp; scouring.</p>	<p>Project completed and all objectives met. Technical outcomes to be communicated to genetics providers and practical recommendations developed for stud and commercial breeders by December 2003.</p>
<p>By 2003 establish a validated computer model able to provide real-world simulations of population dynamics of three major sheep worm species.</p>	<p>Project completed and all objectives met. WormWorld software and documentation will be upgraded prior to wide distribution.</p>
<p><b>Inventiveness and old problems.</b></p> <p>Undertake a study on worker exposure from hand jetting operations (Diazinon).</p>	<p>Project delayed. Data requirements renegotiated with Australian Pesticides and Veterinary Medicines Authority and National Occupational Health and Safety Commission. A more focused project due to continue from September 2003.</p>
<p>Evaluate the impact of sheep coats on fibre quality characteristics in the wool top used for Eco-Wool Production.</p>	<p>Project completed and results distributed. Research showed that coating lambs achieved up to \$3.40 per head in increased fleece value, and that the rate of chemical breakdown in the fleece was dramatically slowed. Coated sheep also suffered far less fleece rot and blowfly strike.</p>
<p>Establish the 'Outfox' fox eradication program in Tasmania.</p>	<p>Project completed with all objectives met in August 2002. New project Outfox II commenced December 2002. Achievements to date include training courses for field officers and woolgrowers, publication of two high-quality videos on fox control and a first-aid booklet for dogs.</p>

Operating Plan Target	Performance Against Target
<b>Priority E. Understanding and Adoption</b>	
<b>Reaching broadly – ideas &amp; knowledge for producers.</b>	
Falkiner Memorial Field Station (FMFS) established as a national demonstration site.	FMFS was adversely affected by drought, impacting research trials and station redevelopment works. All sheep were successfully feedlotted and breed trial results were communicated. Plans to rebuild the irrigation infrastructure have been approved.
AWI Mobile Information Unit to reach 25 per cent of Australian woolgrowers a year by attending 40 major events across Australia.	AWI Showcase launched in October 2003. Approximately 2,000 woolgrowers reached and 12 field days and shows attended by 30 June 2003.
ABARE – Australian Agricultural Grazing Industry Survey of 1100 producers. A sheep farm financial performance survey including wool-specific reports.	Survey, annual report and wool specific report successfully completed. Data provided to the AWI Wool Production Forecasting Committee.
Distribute Phosphorus decision support ready reckoner & brochure to 15,000 wool producers in temperate NSW, SA, WA and all of Tasmania by end 2002.	Project outputs delayed due to difficulties in reaching agreement with state departments of agriculture on data standards and content of the brochure. Distribution to be completed by December 2003.
<b>Targeted extension activity – higher expectations.</b>	
Prepare a revised version of Grassgro model with 60 lead advisers trained.	Two proposals received but not yet progressed due to re-assessment of priorities.
Bestprac – Improving farm production efficiency in range lands.	The program was re-established in early 2003. Bestprac network is now being revitalised under new management arrangements and requirements for benchmarking.
Building Tasmanian 8x5 Wool Profit Program to 240 producers by 2004/2005.	This broad-based integrated research & adoption program is progressing with program milestones being met. However, some difficulties exist around securing producer involvement in benchmarking.
Four open field days/workshops a year on the Focus Farm Cicerone.	A producer-led farm looking at profitability and sustainability of grazing systems. In excess of 10 field days/workshops have been held at the farm addressing issues including pasture management, animal husbandry and plant and animal nutrition.
<b>Shareholders – understanding where AWI is going and why.</b>	
1800 Information Line operating in 2002.	Operating from February 2003 with calls building steadily to reach 200 calls per month by June 2003.
AWI website redeveloped by end 2002.	Re-developed website launched October 2002.
Five thousand shareholders subscribing for email news by mid 2003.	Eight thousand shareholders subscribing to email news updates as at June 2003.
Beyond the Bale newsletter published bi-monthly from July 2002.	Publication successfully achieved with 67 per cent of shareholders rating it as 'very high' or 'fairly high' after five editions.
A series of short Project Fact sheets established	Insight and Innovator series commenced with 30 project information sheets produced.
<b>Decision-makers – communication for understanding.</b>	
Committee review of NSW Agriculture's services to the wool industry and the direction of R&D in the NSW wool industry over the next decade.	Draft review completed and in process of finalisation of submission to AWI and NSW Agriculture during 2003/2004.

# SUSTAINABLE FIBRE PRODUCTION SYSTEMS



A team funded by AWI is working to ensure there is a pain-free alternative to mulesing in the not-too-distant future.

## HIGHLIGHTS

- Land, Water & Wool benchmarking sub-program delivers final report
- Sustainable Grazing on Saline Land program launched nationally with 40 woolgrower research sites established
- 'Dipstick' lice detection test being validated with research partners
- Worms, lice and blowflies targeted through an integrated parasite management program
- AWI and MLA join forces to invest \$30 million in the Australian Sheep Genomics Program
- Development of a new protein promises a painless mulesing alternative
- The NAPLIP pasture legume development program delivers 40 commercially available legumes since its inception

## case study

### SEEKING A MULESING ALTERNATIVE

An AWI-funded team at the University of Adelaide, SA, is leading the way in the development of a pain-free mulesing alternative.

Researchers Professor Phil Hynd and Ms Natasha Penno have identified a protein that completely inhibits fibre growth. When applied to the skin of the sheep, this protein results in the follicles dying and ultimately falling out.

"We have treated approximately 30 sheep, of which eight were treated at lamb-marking under normal farm conditions," Professor Hynd said.

"Those treated using our method ran back to their mothers with no apparent pain and no bleeding. A few weeks later the skin in treated areas was healthy, pink and hairless."

The big question yet to be answered is whether the new treatment prevents blowfly strike on the breech.

According to Professor Hynd, wool removal from the breech is only one aspect of mulesing.

"The other is that mulesing removes wrinkles as well as stretching the bare area."

"It remains to be seen whether wool removal alone is sufficient to prevent fly strike, or whether our treatment also causes skin stretching."

Over the next year, the research team will seek to answer additional questions such as whether the wool removal is permanent, whether the substance can be applied easily and safely in a commercial situation and whether the method is cost-competitive with mulesing.

If the studies over the next year are successful, the team will be conducting extensive field trials throughout Australia.

### WHAT WE SPENT IN 2002/2003

#### Sustainable Fibre Production Systems

Area	No of projects	Program expenditure
Sustainable Fibre Production	23	\$9,639,000
Logistics and Fibre Specification	18	\$3,137,000
Animal Health	16	\$2,518,000
Genetic Technologies	14	\$1,348,000
Total	71	\$16,642,000

## REAL WAYS TO RAISE PROFIT

Finding ways to help woolgrowers reduce their costs and improve the profitability of their enterprises is the overarching objective of AWI's Sustainable Fibre Production Systems.

The department is committed to:

- Finding cost-effective solutions to existing problems faced by woolgrowers at an on-farm level; and
- Identifying and developing opportunities whereby woolgrowers can create better sheep and better wool.

The financial year 2002/2003 marked a period of consolidation for the Sustainable Fibre Production Systems program. In January 2003, all projects were examined for their potential to deliver outcomes to woolgrowers. While the vast majority of projects were preserved and enhanced, the Pilot Revegetation Advisory Service was terminated due to high costs and low woolgrower adoption.

Forty-three new projects have been approved since January 2003, increasing the total number of active projects under Sustainable Fibre Production Systems to 71 at the end of June 2003. For a full list of projects, please refer to the Appendices section.

## ACHIEVEMENTS

### *Sustainable Fibre Production*

### National Annual Pasture Legume Improvement Program

Outstanding results continue to flow from the National Annual Pasture Legume Improvement Program (NAPLIP). This project, which is responsible for developing and commercialising new pasture legume varieties, is a collaborative effort between AWI, Grains Research &

Development Corporation (GRDC), CSIRO and the five State Departments of Agriculture. In addition to the 40 commercially available legumes already delivered by the program since its inception, a number of exciting alternatives are showing enormous promise for degraded soils. For example, trials have shown that the Melilotus legume can produce more than 10 tonnes of dry matter per hectare per annum from saline soil, is drought tolerant and able to simultaneously lower the water table while improving soil fertility.

### Land, Water & Wool

Woolgrowers across Australia will have viable, practical and beneficial solutions for managing natural resources on their farms thanks to Land, Water & Wool (LWW), a five-year, \$60 million collaboration between AWI and Land & Water Australia (LWA). The program, which is the most comprehensive natural resource management (NRM) research and development (R&D) program ever undertaken for the Australian wool industry, is the only national initiative that addresses the productive management of land and water specifically for woolgrowers.

- Sustainable Grazing on Saline Land (SGSL) is the largest of the seven LWW sub-programs. A benchmarking survey commissioned by LWW in 2002 revealed dryland salinity directly affects 41 per cent of woolgrowers nationally. In Western Australia, the figure is as high as 78 per cent. The official launch of SGSL was a highlight of the 2002 Productive Uses and Rehabilitation of Saline Lands (PUR\$) conference in Western Australia. This sub-program has been extremely well received by growers, with 40 producer network and research sites established across Australia as at June 2003. SGSL is looking to support 120 producer research sites nationally over the



WA woolgrower Andrew Nixon with his new pasture, Cadiz Serradella, which he discovered through NAPLIP.



Growers and researchers inspect Land, Water & Wool Sustainable Grazing on Saline Land sub-program research sites.

- next five years. Many of Australia's leading saltland pasture, animal health and NRM researchers are working with local producer groups to develop management options for saline land, including new pasture mixes and grazing management strategies, to help woolgrowers make more informed decisions about their salt-affected land.
- More than three-quarters of all Australian woolgrowers have areas of native bush, scrub or grasslands on their properties. The LWW Native Vegetation and Biodiversity sub-program is currently working with woolgrower groups in four States to identify options for managing wool production profitably while helping to protect, sustain and improve native vegetation and the diversity of life on-farm. Major projects underway this year are: collaboratively developing best-practice guidelines for managing native pastures and bushland; contributing to the development of accreditation schemes to build on the 'clean green' image of the industry; and investigating the economic benefits of these management systems.
  - Healthy rivers, creeks and streams are the

*“Melilotus legume can produce more than 10 tonnes of dry matter a hectare per season on saline areas. This holds huge promise for woolgrowers.”*

arteries of the Australian environment and the lifeblood for our wool industry. The River Management and Water Quality sub-program of LWW is working with growers to develop best practice guidelines specific to

the needs of wool production enterprises. Projects currently underway are examining gully and streambank erosion, water quality, weed management and riparian zone management within a total grazing system.

- There are around 2,000 woolgrowers in the pastoral areas of Australia. The management issues for pastoralists are diverse and vary from region to region. Three scoping projects were commissioned in 2002/2003 as part of the LWW Pastoral sub-program to seek a range of views and experience from pastoralists about the production and NRM issues relevant to their region. The newest of the LWW sub-programs, this initiative aims to develop balanced management approaches for the pastoral zone which include production and NRM needs such as stocking rates, water and fence placement, ferals, pests, weeds and grazing management in the context of the pastoral zone. The focus on issues will vary depending on regional priorities, as identified by woolgrowers.
- The priority of the LWW Managing Climate Variability sub-program is to work with woolgrowers in the pastoral zone to make more effective use of improved seasonal climate forecasts in grazing management decisions. New tools for the wool industry in the pastoral zone are in the technical development phase. These tools aim to assist woolgrowers in their strategic decision-making on the basis of climate forecasts. Five projects have now been established as part of this sub-program to increase grower awareness and use of more accurate seasonal forecasts with longer lead times to help manage the season ahead, initially in priority, drought-prone regions.

- The Future Woolscales sub-program aims to establish a new benchmark for stimulating debate about the future of the wool industry in order to provide an insight into the challenges, threats and opportunities that lie ahead in 20 to 30 years' time. An implementation plan has been established and will commence in 2003/2004, which will involve working with woolgrowers and industry to forecast what impact emerging global trends (such as population demographics, technological change, environmental, production and trade issues) will have during the next 20 to 30 years and what the implications might be for the wool industry. This landmark research project will identify future options for the Australian wool industry and consider the impact of global change on its research and policy deliberations.
- A major highlight for LWW in 2002/2003 was the national launch of findings from the LWW Best Practice Survey, managed under the Benchmarking sub-program. This national survey of woolgrowers' attitudes toward on-farm environmental practices, the most comprehensive to date, revealed a strong focus on managing natural resources. The survey of 1,500 growers found nine out of 10 considered NRM as an important part of their farm business and 91 per cent were either doing something about it now or had already taken some action. The survey was widely reported by national media following its launch in June 2003; a summary of the key findings is available from the LWW website: [www.landwaterwool.gov.au](http://www.landwaterwool.gov.au)

### *Logistics and Fibre Specification*

#### **On-Farm Fibre Measurement**

After a two-year period of intensive stakeholder consultation and detailed research, AWI has committed \$2 million to a National On-Farm Fibre Measurement (OFFM) Quality Assurance (QA) Program and a linked education program. The OFFM technology involves measuring the fibre on the sheep's back immediately after it is shorn. The QA and education programs will enable woolgrowers to confidently apply OFFM technology to their own businesses. By allowing more accurate classing of wool and selection of sheep, OFFM increases the rate of genetic improvement.

The OFFM education program will consist of a series of 180 workshops for woolgrowers and service providers, a high-quality resource manual, independent technical publications, fact sheets and decision-support tools.

An independent accreditation scheme for OFFM operators and fleece testing laboratories will also be established. It will include training, communication, comparison trials and validation of new OFFM technologies.

#### **Eliminating dark and medullated fibres**

Processors around the world have expressed concerns about the increasing incidence of dark and medullated fibres found in Australian wool. In 2002/2003, AWI initiated a \$1.36 million program in collaboration with industry to overcome the problem. The program consists of two strategies.





The first is the development of a practical vendor declaration system for Merino clips in collaboration with the Australian Wool Testing Authority (AWTA) and the Australian Wool Industry Secretariat (AWIS). The aim is to ensure that buyers are provided with a credible declaration of the risk of purchasing dark or medullated fibre-contaminated wool but at a low-cost to woolgrowers.

The second is to develop a low-cost test for dark and medullated fibre for pre-sale assessment of the risk of contamination by wool buyers, as a back up to the vendor declaration. AWI has funded four competitive projects to deliver low-cost tests to commercial evaluation stage.

Results from this program are expected by mid-2004.

#### *Animal Health*

##### *Lice detection test*

A new lice detection test has the potential to save the Australian wool industry up to \$40 million per year and enhance our 'clean green' image by reducing unnecessary chemical use. Approximately 80 per cent of sheep are currently treated on the basis that they may have or may contract lice. Research has shown that only 25 per cent of sheep are actually infested at any time. AWI has signed an agreement with NSW Agriculture and CSIRO to validate the 'dipstick' lice detection test, which

has shown that it is possible to detect lice infestations at very low levels using wool grease collected from shearing handpieces.

##### *Vaccine to boost wool production*

Initial laboratory trials suggest that a simple vaccination could enable a sheep's stomach to be more efficient with processing food – resulting in a three per cent increase in liveweight gain, a six to 15 per cent increase in the amount of wool produced per annum and a substantial increase in feed conversion efficiency. AWI has joined forces with CSIRO Livestock Industries to develop and commercialise the vaccine, which manipulates the rumen microflora and microfauna in a sheep's stomach to eliminate 'problem' species. The vaccine is expected to have environmental benefits, including reducing the greenhouse gas emission from sheep.

##### *Wild dog and fox control*

With the use of the poison 1080 threatened by changes to animal control legislation, AWI is committed to finding a quick and humane solution to the problem of wild dogs and foxes. Woolgrowers across Australia are well aware of the damage that wild dogs and foxes can have on sheep flocks. Up until now, 1080 has been one of the main control methods.

Research by the Pest Animal CRC has discovered that an old compound, long ago discarded by pharmacists, may be highly toxic to dogs without hurting other animals. Based on this discovery, a \$3 million research project, funded by AWI, is focusing on a combination of active compounds with 'synergistic' chemicals, which exploit certain aspects specific only to the dog and fox metabolism. Humane, dog-specific control methods as potential replacements for 1080 have already been deemed feasible and a potential commercial partner has expressed interest in the project.

### *Genetic Technologies*

#### Sheep Genomics Program

Laying the foundation for the next decades of genetic progress for the entire Australian sheep flock is the aim of a \$30 million Australian Sheep Genomics Program, a co-investment of AWI and Meat and Livestock Australia (MLA). Genomics is the discovery and use of gene markers within DNA to identify animals of superior genetics. Under the Sheep Genomics Program, AWI and MLA will work together to reduce duplication in R&D and provide greater resources for industry challenges such as the control of parasites and diseases and efficiency of feed conversion to meat and wool.

## looking to the future

The next three years will mark an exciting time for Sustainable Fibre Production Systems as projects currently in progress come to fruition.

Specifically, in the next 12 months, Sustainable Fibre Production Systems will:

- Receive results of the Ovine Johnes Disease (OJD) risk-based trading paper, which will include an outline of the costs and impacts that deregulation would have on the industry;
- Establish a pilot program to focus on improving the skills of shearers and wool handlers;
- Develop a National Sheep Genetics Database to identify the strengths and weaknesses of the Merino Genetic Services and Merino Benchmark databases and combine them into a single, more useable database;
- Evaluate the costs and benefits for each breeding approach in the SARDI Selection Demonstration Flocks;
- Enhance biological control of Paterson's Curse and thistles through the bulk breeding and release of insects at trial sites; and
- Enable more effective control of Red Legged Earth Mite (RLEM) in Mediterranean and high rainfall areas.

# PROCESsing

## FIBRE PROCESSING, PRODUCTS AND SERVICES



An example of non-woven woolen fabric.

### case study

#### DRIZA-BONE™ MOVES INTO A NEW NON-WOVEN ERA

Innovations in Australian wool are helping one of the great Australian success stories – the Driza-Bone™ company – move into a new era. Australian Wool Innovation and Driza-Bone™ have formed a partnership to bring new non-woven wool fabrics into the Driza-Bone™ range. Its first creation, a non-woven wool lined vest, has already been offered to Australian woolgrowers.

Driza-Bone™ Managing Director John Maguire has also indicated that non-woven wool could be included in many of the company's garments.

"We decided to start with a vest which features the ruggedness and weather resistance usually associated with oilskin but now with the warmth and comfort of wool using a fabric which does not shed or pill," Mr Maguire said.

Advances in non-woven technology are already paying dividends for the wool industry by delivering significant new market opportunities.

Non-woven fabrics are manufactured at Macquarie Textiles in Albury as part of a \$6 million, three-year project between AWI and Canesis (formally the Wool Research Organisation of New Zealand – WRONZ).

As a result of the technology, wool fabric can be produced without the need for spinning or weaving, thereby cutting costs by up to 40 per cent. The wool industry is therefore more able to compete with lower-cost synthetic fabrics and has the potential to break into new markets for surfwear, skiwear, babywear, the elderly and extreme sports.

#### HIGHLIGHTS

- Machine washable wool suit produced commercially through Berkeley Apparel
- AWI targets the \$US600 million global electrostatic filter market
- Unique properties enable wool to be used in bandages to help burns victims
- Driza-Bone™ use non-woven wool fabric to line two of their oilskin vests
- Vietnamese mills start to use wool, providing huge future opportunities for the Australian wool industry
- Murata Vortex Spinning pilot trials indicate a 20 per cent saving on current costs

#### WHAT WE SPENT IN 2002/2003

##### Fibre Processing, Products and Services

Area	No of projects	Program expenditure
Fundamental wool science	10	\$1,524,000
Revolutionary wool directions	12	\$1,326,000
Novel wool-using products	23	\$7,480,000
Easy care	8	\$1,545,000
Improved appearance retention	6	\$1,548,000
Processing cost competitiveness and quality	9	\$1,167,000
Building on wool's natural image	4	\$888,000
Training and technology transfer	15	\$748,000
Total	87	\$16,226,000

## REAL WOOL ON THE RETAIL SHELF

Fibre Processing, Products and Services conducts research on wool after it has come off the sheep's back and is on its journey through the processing pipeline to become a finished product in the marketplace.

The department seeks the world's best science in an endeavour to create processing efficiencies and novel products. The results of this research are: new consumer products; new technology that results in a softer feel and better performance; and new methods of processing that are cheaper and more competitive with synthetic methods.

In 2002/2003, the focus of the group was to establish strong international working relationships to address some of the more significant problem areas of wool fibre technology. AWI is partnering with other organisations so that projects are increasingly funded jointly and the intellectual property is shared. This approach means AWI is no longer limited to a few projects and research providers but has the opportunity to expand the portfolio of projects to other innovative institutions around the world.

In line with its global approach, the department continued to build its technical mill training program to ensure processing mills use Australian wool in the best possible way to obtain a high-quality product and maintain wool as a viable business.

Successful commercialisation of R&D projects is a major aim of the Fibre Processing, Products and Services portfolio. This involves:

- Ensuring the products resulting from R&D make it onto retail shelves and into the hands of consumers through the sale and licensing of technology;

- Identifying and further developing new opportunities for the use of wool; and
- Identifying appropriate commercial partners for projects as early as possible.

## ACHIEVEMENTS

### Expanding use of wool in Vietnam

Vietnam, a country that has a strong reputation for working with synthetics, is now looking seriously at wool, providing a great opportunity for the Australian wool industry. Currently there is only a tiny wool industry in Vietnam but it is now devising five, 10 and 20-year development plans with wool firmly fixed in its sights.

An AWI team is working with three mills in Vietnam, which are considering investing in new machinery to process wool. The team is holding seminars for the mills, showing them how to dye and finish wool. Practical courses in Australia will be held for the more senior technical managers who will learn how to use the computer software necessary to get the most out of their new equipment.

Over the past year, AWI has also been building key relationships in China, India and Italy. Technological support has been provided to 20 companies in the areas of greasy wool, early stage processing, recombining, spinning, weaving, dyeing and finishing.

To support this area of activity, AWI transfers relevant past and present R&D outcomes to ensure woolgrowers' investment in processing research is maximised. This involves presentations tailored to individual requirements and in-mill technical audits that identify specific problem areas to be addressed.



A promotional image of the machine-washable wool suit as seen on the back of buses in Sydney.



An example of a machine-washable wool suit.



AWI is exploring new ways of processing wool.

### Murata Spinning machine

Reducing the cost of spinning is the aim of a partnership between AWI and CSIRO. The team is working to adapt air-spinning systems to wool, including Murata Air Vortex, which is the newest and most productive spinning system ever produced.

The implications for wool could be big. In the case of the Murata Vortex Spinning machine (MVS), the systems can deliver a saving of 20 per cent of the present cost by delivering yarn at up to 400 metres a minute. Ring spinning, the traditional method by which wool is spun, normally delivers yarn at less than 15 metres a minute. If the technology can be adapted for mid-micron wool, there will be potential to produce inexpensive furnishing textiles that have the comfort of wool and its superior wool qualities.

*“The Murata Vortex Spinning machine can deliver a saving of 20 per cent of the present cost by delivering yarn at up to 400 metres a minute.”*

Another interesting result is the fact that wool-blend fabrics produced from MVS yarn have pill resistance ratings comparable to those of worsted-spun yarn and meet or exceed Woolmark standards.

### Contamination Report

In 2002/2003, AWI and CSIRO continued to conduct research into the incidence of contamination in Australian wool. The final component of the two-year project was a survey of 28 companies around the world that process Australian wool. Each company was asked to send a sample of contaminated Australian wool to CSIRO for testing to identify the sources of the contamination. A total of 43,000 samples were analysed as part of this project.

The results of this report are currently being collated and will be communicated to all woolgrowers and industry in November 2003.

### Wool filter project

The industrial filter market is expected to grow more than \$US600 million per annum. With particular growth in personal face-masks and ventilation filters for the home and office, an AWI-CSIRO Textile and Fibre Technology project aims to give wool a competitive edge. Despite wool's properties of biocompatibility, hypo-allergen and low flammability, in the past wool has mostly been displaced by synthetic fibres when it comes to filter materials. As part of the project, AWI and CSIRO will develop new ways of manufacturing wool-containing filters, which exhibit a long-life electrostatic charge. The project will also involve the development of a technology package to help industry stakeholders produce wool-containing filters and share in the growth potential.

### Washable wool suit

A revolutionary wool-blend suit that can simply be washed in a regular washing machine has helped to position wool as 'progressive' and in step with the times. The machine-washable suit, which is now available in David Jones stores throughout Australia, is the culmination of two-years' product development managed by AWI in conjunction with commercial partner, Berkeley Apparel, a large suit manufacturer.

As part of the development, the properties of the wool fibre and suit components were carefully analysed to ensure shrinkage and fabric distortion problems did not occur during the washing and drying process. The suit meets the market for time-limited business people looking to save time as well as money on drycleaning. It comes with a special wash bag and can simply be machine-washed and hung out to dry on the washing line.

The suit is 40 per cent polyester and 60 per cent wool of 20 to 21 microns, and has been proven to keep its shape and appearance after 50 washes. The suit retails for \$529 and for every suit sold, a percentage royalty goes to AWI for investment in further R&D.

#### Medical textile project

Wool may soon be used in bandages to help burns victims, thanks to a joint venture between AWI, Smith and Nephew Pty Ltd, CSIRO and the University of Wollongong.

Scientists have recognised that wool has cooling properties that can help regulate body temperature and bandage manufacturer Smith and Nephew Pty Ltd believes it has potential for the medical market. A one-year feasibility study aims to develop wool-containing products that can be used for injury prevention and smart wound dressings. Research already indicates opportunities exist for new or improved products for heat retention, wound treatment and injury prevention. For woolgrowers, this means

another market for wool, as it becomes more attractive and multi-faceted.

#### Emergency blankets

Wool blankets may soon help victims of accidents or natural disasters by providing warmth and protection in an emergency. AWI is working with Canesis (formally the Wool Research Organisation of New Zealand – WRONZ) to develop disposable, lightweight wool blankets for use in emergencies. Samples of the wool blankets have been developed and are being tested by Red Cross in New Zealand. Disaster relief agencies and humanitarian organisations – ranging from police and ambulance services through to the United Nations and the World Health Organisation – are looking for materials, which are not only lightweight and warm but also provide a degree of protection and meet price and branding requirements.



AWI continues to seek the best science the world has to offer

## looking to the future

Over the next year, Fibre Processing Products and Services is committed to:

- Delivering at least four new fabric concepts;
- Developing double-layered knit and woven wool/cotton blend samples;
- Commercialising breathable wool film for further enhancement of Sportwool™;
- Identifying new high-tech wool and wool-blend yarns;
- Identifying two new medical textile products suitable for wool;
- Successfully patenting a process that delivers lightfastness to wool;
- Ensuring novel wool and wool blend products become commercially available;
- Releasing the results and implementing the actions of the Wool Contamination Survey;
- Ensuring the adoption of new spinning innovations by mills;
- Continuing to seek the best science the world has to offer;
- Providing mill management with the market intelligence and skills to understand and implement best practice in wool buying, processing and manufacturing; and
- The assembly of relevant technical knowledge into training manuals, demonstration sessions, technical manuals and other publications.



Wool moves through many countries in its journey from Australian farms to retail consumers

# TRADE AND INDUSTRY RELATIONS

## HIGHLIGHTS

- AWI establishes office in Beijing to make the most of Chinese market growth opportunities
- Russian mills and consumers re-emerge as potentially significant future wool users
- AWI works closely with Commonwealth Government in formal trade negotiations at multilateral (WTO), regional and bilateral levels

## REMOVING THE BARRIERS

### Trade and Industry Relations

With approximately 98 per cent of the annual Australian wool clip consumed overseas, wool and wool products move through many countries in their journey from Australian farms to retail consumers.

Trade and Industry Relations focuses on removing trade and market access barriers that add unnecessary costs to, and create inefficiencies in, the wool pipeline. To achieve this, the group must succeed in convincing Australian Government negotiators to pursue issues of importance to the wool industry, through the provision of arguments backed up by credible research and data.

In February 2003, the management of Trade and Industry Relations was reviewed in order to gain greater efficiencies. A decision was made to outsource research activities and consolidate management of the services in Melbourne. This decision has enabled AWI to maintain the same level of trade policy services at a more reasonable cost to woolgrowers.

## ACHIEVEMENTS

### Establishment of China Office

China is the Australian wool industry's most significant trade partner, accounting for 40 per cent of Australian primary wool exports. With its growing economy and 1.3 billion people, the potential for an increase in domestic consumption of wool in China is great. To make the most of this opportunity, AWI has established its first international office in Beijing. Headed up by Jeff Zhu, the China office will be responsible for initiating R&D projects of value to the Chinese and Australian wool

industries. It will monitor China's compliance with World Trade Organisation rules and liaise with the Chinese Government on issues such as the wool tariff quota system. A Mandarin language website, which will provide China with valuable information on AWI research and the Australian wool industry, is currently being constructed and due to be launched in September 2003.

### World Trade Organisation negotiations

Reducing or eliminating all agricultural (raw wool) and industrial (tops, yarns, fabrics and garments) tariffs on Australian wool and wool products remains high on AWI's agenda, particularly under the WTO Doha Round of negotiations. AWI is ensuring that Australian wool industry interests are appropriately represented in these negotiations, due to be completed by 1 January 2005. This is also the date from which all remaining global textile quotas are to be eliminated under the WTO Agreement on Textiles and Clothing.

### Free Trade Agreements

Full liberation of tariffs and quotas in the United States market is estimated to be worth A\$17 million each year to Australian woolgrowers, according to a study commissioned by the former Australian Wool Research and Promotion Organisation (AWRAP) in 1998. As a result, AWI is vigorously pursuing the elimination of the current US import tariffs on raw wool, tops, yarn, fabric and garments, which average 10 per cent on textiles and clothing.

### Reviews on Japanese, Indian and Russian markets

In order to remain abreast of developments in the wool textile industry in foreign markets, AWI commissioned reports on Japan, India and Russia.

## WHAT WE SPENT IN 2002/2003

### Trade and Industry Relations

Area	No of projects	Program expenditure
Country and market reviews	8	\$573,000
China Office	1	\$273,000
Operating costs – salaries, travel, relocation, etc	NA	\$1,105,000
Total	9	\$1,951,000

- The Japanese study focused on developing a new strategy for increasing consumption of wool products, which has decreased by 40 per cent since the mid-1990s. Future research in Japan will need to consider the dominant position that Japanese retailers now occupy as importers of finished goods, rather than the historical position that Japan held as an importer of raw wool.
- In India, the review established that the country is increasingly looking to become an intermediate processor of finished wool products for export to Europe and other consumer markets. The review also looked at how mills could be assisted to produce better quality and designed products for export and how domestic consumption of wool blend products could be increased. AWI is now working with the Indian Government and processing industry to examine ways in which AWI can assist them in reaching their goals using Australian wool.

*“Trade and Industry Relations aims to ensure that the movement of raw materials and products along the global wool textile pipeline occurs as efficiently and effectively as possible.”*

- The study on Russia and the Commonwealth of Independent States (CIS) established that there is a growing affluent middle class of consumers in Russia, who have a positive attitude towards wool products. The study also confirmed that some Russian mills are beginning to re-emerge as potentially-significant wool users in the future, providing a significant opportunity for the Australian wool industry.

Actions to be taken by AWI as a result of the Japan and Russia studies will now be considered by its Trade Policy Committee (refer below to the ‘looking to the future’).

#### Local processing study

An AWI study on the potential for expanding local processing in Australia has found it is not realistic or feasible to invest in ‘traditional’ processing locally but that opportunities do exist for ‘non-traditional’ processing. Development of the kind undertaken by Macquarie Textiles, in establishing its new non-woven textile plant in Albury, is an example.

The goals of the Trade and Industry Relations group are to:

- At least halve existing global trade barriers for wool by 2008;
- Provide credible and practical reports to shareholders, Government and industry on existing or emerging barriers of a regulatory or commercial nature affecting trade in Australian wool and wool products;
- Ensure the interests of the Australian wool industry have been appropriately represented in formal Government negotiations at the multilateral, regional and bilateral levels, including proposed Free Trade Agreements;
- Maintain databases of information relating to trade and market access barriers; and
- Establish the AWI China office as a key point of reference and advice on wool R&D within the Chinese wool textile industry.

To enhance its operations, AWI is establishing an Industry Trade Policy Committee to advise on trade and market access research.

The committee will meet for the first time in September 2003 and comprises representatives from wool industry organisations including *WoolProducers*, The Woolmark Company and the Australian Wool Industry Secretariat (AWIS).

# COMMUNICATIONS

## case study

### WEBSITE RADIO DELIVERS THE NEWS

An exciting new communications initiative, Innovation Radio, is providing woolgrowers with a unique way to receive up-to-date information on AWI research, development and innovation projects.

An Australian first for an agricultural R&D organisation, AWI is utilising the latest on-line technology to deliver a fortnightly radio program via the company's website. During each program, presenter Chris Brown interviews research partners, woolgrowers and AWI staff about a specific program, its benefits to Australian woolgrowers and the wool industry.

The President of the International Wool Textile Organisation (IWTO), Juan Casanovas, said that Innovation Radio provided a focused explanation of AWI programs.

"I am very glad to see that wool grown in Australia brings back a clear benefit to the final consumer in your country. Receive my best compliments for your work."

Program Manager Georgia McCafferty said that Innovation Radio is designed for woolgrowers who connect to the Internet on lower bandwidths.

"It is delivered in a Windows™ streaming format, which means the program begins to play as it is downloading – it is a small quick program and no special software is required."

"Each program runs for 10 minutes and listeners can minimise the Windows Media Player™ and continue to work on their computer, with the radio program playing in the background," Ms McCafferty said.

Written transcripts of each program can also be downloaded in a small Word™ document.

Programs in 2002/2003 discussed topics such as non-woven wool garments, a lice-detection test for in-shed use, the sheep coats trial, the SARDI selection demonstration flocks and the production of electrostatic wool filters.

Previous programs are available through the Innovation Radio Archive, on the AWI website and plans are afoot for production of a CD and cassette tape.

### WHAT WE SPENT IN 2002/2003

#### Communications

Area	Program expenditure
Events, Showcase and Field Days	\$358,000
Advertising	\$787,000
Publications and direct mail	\$424,000
Website	\$245,000
Media	\$70,000
Planning	\$22,000
Educational film	\$410,000
Beyond the Bale	\$509,000
Total	\$2,825,000



AWI's travelling information truck, Wool Innovation Showcase, has visited 12 field days and ram sales throughout Australia since its launch in 2002.

### HIGHLIGHTS

- Two-thirds of woolgrowers rate their overall approval of Beyond the Bale as 'very high' or 'fairly high'
  - www.wool.com.au redeveloped to provide more information and faster, easier access for woolgrowers
  - Wool Innovation Showcase visits field days and agricultural events
- AWI educational film in progress and on schedule
- Quarterly letters from the Chairman improve accountability and transparency

## COMMUNICATING REAL RESULTS

To keep woolgrowers fully abreast of research developments, innovations and future plans, AWI's Communications department undertakes activities ranging from print and audio communications to media liaison and events.

The activities are all targeted towards increasing woolgrower understanding of wool research and development (R&D) outcomes and providing growers with the information to be able to get involved in specific projects.

In a continuing effort to improve AWI communication activities, an independent study was conducted to assess whether details of our research results were reaching Australian woolgrowers.

TQA Research, who conducted the study involving three focus groups and 615 phone interviews, concluded that AWI's effort in raising the profile of its activities in the industry had been effective.

Specifically, the research found that as many as 97 per cent of Australia's woolgrowers are aware of AWI, compared with 55 per cent in 2001.

However, challenges lie ahead, with indications that while awareness of AWI is high, only 39 per cent of woolgrowers perceive that they are 'very well' or 'fairly well' informed about AWI's technical research and development outcomes.

The Communications department works with AWI stakeholders including the Commonwealth Government, state farm organisations, *WoolProducers*, breeding associations, researchers, commercial partners and international wool industry bodies to keep them abreast of the latest innovations in Australian wool.

Under the direction of the new Board, AWI's communications activities are focused sharply on providing shareholders with better information on how their investment is performing.

## ACHIEVEMENTS

### Wool Innovation Showcase

Woolgrowers can now meet AWI staff members face-to-face in regional locations to obtain information and feedback. The Wool Innovation Showcase is a Pantec Truck displaying AWI information and project results that visits field days and ram sales throughout Australia. The Showcase, which has visited 12 shows since it was launched in October 2002, contains information on a large number of topics in an easily-accessible format. Growers can see most of AWI's latest products, watch an informative video or speak to an AWI staff member for more information.

### Beyond the Bale

More than two-thirds of woolgrowers have endorsed AWI's new bi-monthly newspaper, *Beyond the Bale*, according to the TQA Communications Study. The study found that 67 per cent of woolgrowers rate its style, layout, design and content 'very high' or 'fairly high'. Particularly aimed at growers who don't have time to access the AWI website, *Beyond the Bale* provides information about current innovation initiatives, as well as industry research managed and funded by AWI. The newspaper, which is mailed to all shareholders, was launched in July 2002.



*Beyond the Bale* provides information about current AWI initiatives and industry research managed and funded by AWI.



Upgraded in 2002 and updated daily, AWI's website, [www.wool.com.au](http://www.wool.com.au), is now more informative and quicker to use.

### Website

AWI's website, [www.wool.com.au](http://www.wool.com.au), is now more informative and quicker to use. The website was upgraded in 2002 and is now updated daily. Slow-loading files and large graphics have been avoided to make the site faster and it has been designed to be easily-accessible, with a powerful site search engine. Some of the unique features of the website include:

- Newsletters, which users can subscribe to receive as email updates;
- Pricemaker, a wool pricing tool;
- Innovation Radio, AWI's own radio program that has interviews with staff and research partners and provides comprehensive project discussions;
- Market intelligence through weekly market news stories and reviews;
- Your Mail, which is a free web-based email account with an @wool.com.au address;
- An event calendar listing wool industry events;
- Drought resources, which include access to national and state-based drought help resources;
- Free electronic access to AWI publications;
- Contact details for key AWI staff; and
- An email feedback form.

*“An independent study found that 97 per cent of Australia’s woolgrowers are aware of AWI while 39 per cent feel ‘very’ or ‘fairly well’ informed of AWI’s activities.”*

Analysis shows the website has become an important tool in promoting Australia's wool industry internationally, with more than half of website visitors coming from overseas. In Australia, the Communication Study found that the website was used by 14 per cent of survey participants.

Eighty per cent of those who had accessed [www.wool.com.au](http://www.wool.com.au) rated its layout, design and ease of navigation 'very high' or 'fairly high'.

AWI aims to increase the number of woolgrowers using its website in 2003/2004 by providing more interactive content such as discussion groups and by raising awareness of its features.

### AWI educational film

In 2002/2003, a decision was made to invest \$1 million in the development of a film showcasing the Australian wool industry. The script for the project, which is managed by the Communications department, focuses on pipeline education. The footage will be used by AWI over the next five years in education and adoption programs and the Sheep CRC will also use the film as part of their broad educational package throughout schools and universities.

By 30 June 2003, footage had been shot in the UK and Italy while the Chinese and Australian components are due for completion in September 2003. The project is on schedule for delivery in October 2003.

### Insight and Innovator fact sheets

Woolgrowers can access targeted information on individual projects in an easily-digestible form through new project fact sheets. The one-page sheets – known as *Innovators* and *Insight* – are available on the website, by mail, by calling 1800 070 099 and via the Showcase. *Innovators* focuses on woolgrowers who are participating in research projects managed and funded by AWI, while *Insight* provides information on the individual research projects being undertaken in rural and regional Australia. Twenty-eight editions of *Innovators* and *Insight* were published in 2002/2003 and another 30 are planned for 2003/2004.

### AWI Helpline

AWI's freecall 1800 070 099 number, launched in April 2003, provides woolgrowers with an easy avenue to find out more about AWI's initiatives and research programs. By calling the Helpline, woolgrowers can speak to informed staff that are able to provide information on AWI programs and projects and fax or mail additional information. The call centre operates from 7am in the morning until 8pm at night to provide convenient access to help. If the Helpline is unable to assist you, callers are put in contact with an appropriate AWI staff member.

Over 400 phone calls were made to the 1800 number during the first four months of its operation, with the number rising steadily as awareness increased. AWI aims to raise awareness of the Helpline service among woolgrowers in 2003/2004.

### Media relations

Continuous, proactive media relations in 2002/2003 has helped to keep the wool industry and the wider Australian public abreast of AWI's activities and innovations. More than 55 media

releases, on subjects ranging from international trade to on-farm and off-farm innovations, were distributed to mainstream, agricultural, rural and regional media during the year, resulting in extensive media coverage.

### Quarterly letters

Quarterly letters from the Chairman have provided greater accountability and transparency through open, up-to-date feedback to woolgrowers. The letters, which are mailed directly to shareholders, outline AWI's progress and developments throughout the year.

### another Australian Wool Innovation

Growers can now clearly identify where their levies are being spent with the introduction of AWI's orange co-brand, which clearly labels 'another Australian wool innovation' for projects that are partly funded by AWI.

Specific targets for Communication in 2003/2004 are to:

- Develop a greater level of understanding of AWI's programs and projects among shareholders;
- Increase grower awareness of the 1800 Information Line to 40 per cent by 2004;
- Hold two Wool Profit Days by mid-2004;
- Boost use of the AWI website from 14 per cent of shareholders to 25 per cent by 2004;
- Have 10,000 shareholders subscribing for email news by mid-2004;
- Increase awareness of Beyond the Bale from 68 per cent of shareholders to 80 per cent by mid-2004; and
- Cover all AWI projects in editions of *Insight* and *Innovators*.

# EDUCATION AND ADOPTION



Despite the drought, Steve Shepherd experienced an improvement in his paddock performance with the help of Triple P.

## HIGHLIGHTS

- New Education & Adoption portfolio established
  - \$450,000 invested to support innovation in study and research through the Australian Sheep Industry CRC
- A \$3 million Scholarship & Studentship program established to attract high-quality scientists to work in the wool industry
  - Farmers continue to experience an average 42 per cent increase in stocking rate with the help of Triple P
- Look @ Wool grower group program launched in South Australia to develop more highly skilled, motivated and profitable woolgrowers

## case study

### REAL RESULTS AT CROOKWELL

Gross margins have increased substantially on Steve Shepherd's Crookwell property with the help of Triple P during 2003.

Mr Shepherd, who runs Merinos and prime lambs on 620 hectares at 'Shepard's Lodge', Crookwell on the NSW south-west slopes, believes Triple P has taught him how to assess and use his pasture more effectively.

"I now have a much better understanding of how to match my stocking rate to the feed supply. During the drought I was able to identify critical minimum levels of pasture across the property and match stock appropriately," Mr Shepherd said.

"I now refer to a paddock in more specific terms and know its worth. Whereas once I would have said it had 'a bit of feed', I am now able to accurately measure the pasture bulk and relate that back to tonnes of feed and dry matter content."

Importantly, Mr Shepherd has seen a large improvement in paddock performance during what was a very tough season.

"Triple P is showing me how to make things happen on 'Shepard's Lodge' that will have long-term benefits for our farming operation."

### WHAT WE SPENT IN 2002/2003

#### Education and Adoption

Area	No of projects	Program expenditure
Coordinate, manage and expand AWI investment in grower focused R&D extension and adoption programs	9	\$1,402,000
Strengthen wool industry education and career pathways across schools, vocational education and universities	2	\$20,000
Address knowledge and skills issues along the pipeline	1	\$42,000
Total	12	\$1,464,000

## ADOPTING RESEARCH ON FARM

At the beginning of 2003, AWI established a comprehensive Education & Adoption program. This development illustrated AWI's strong commitment to education and the adoption of research, and signalled the commencement of a more concerted effort to facilitate innovation both on-farm and in institutions that service the industry.

The program has three main objectives:

1. To coordinate, manage and expand AWI investments in grower focused R&D extension and adoption programs;
2. To strengthen wool industry education and career pathways across universities vocational education and schools; and
3. To increase knowledge and skill levels in all people employed along the wool pipeline from brokers to retail.

Under objective one, work commenced to develop industry-based, integrated research and adoption programs in NSW, Western Australia and Queensland. A review of the potential to expand the Triple P program from Victoria to other states was also initiated. In addition, AWI has commenced work on a woolgrowing good practice guide in order to establish a framework for benchmarking industry practices and measuring the rate of adoption of new technology.

In support of objective two, negotiations commenced with the Australian Sheep Industry Cooperative Research Centre (CRC) to implement one of Australia's largest scholarship and studentship programs, involving 100 award recipients over the next two years. While

scholarships are an important incentive for universities to reintroduce wool and wool science into their curriculum, the availability of comprehensive and up to date teaching materials is an added incentive. Consequently, AWI, the Sheep Industry CRC and the Australian Wool Testing Authority Ltd (AWTA) Wool Education Trust are funding development of a comprehensive package of learning materials using leading-edge instructional design technologies. These two developments will see the study of wool and wool science reintroduced into major Australian universities by the end of 2004.

*“Eighty per cent of Bestprac group members have made changes to their operations and 15 per cent have reported increased profits resulting from the program.”*

Progress toward objective three began by re-engineering shearing and wool handling training and career pathways in Australia. A pilot program commenced in mid-2003 will determine the nature and scope of the national program to be introduced in early-2004. This program will augment the activities of state education and training authorities and increase the range of training opportunities available. Other training projects to be considered under this objective will be developed with the wool apparel and textile processing sectors.



Programs such as Bestwool 2010 in Victoria and Look @ Wool in SA assist woolgrowers in implementing sustainable farm practices.



Through its Education and Adoption program, AWI aims to develop more highly-skilled, motivated and profitable woolgrowers

## ACHIEVEMENTS

### Grower-focused education and adoption programs

In Victoria, a further three years funding has been provided for Bestwool 2010. The collaborative project involving AWI, the Victorian Department of Primary Industries and the Victorian Farmers Federation Pastoral Group assists woolgrowers to implement innovative and sustainable farm practices.

The program aims to increase average on-farm productivity growth from 0.1 to three per cent per annum across Victoria by the year 2010 and ensure one in three woolgrowers is taking advantage of advanced wool marketing and risk management practices by 2005. At 30 June 2003, over 1,200 producers were involved in more than 50 grower groups.

Look @ Wool is a new industry network established in South Australia in conjunction with the Department of Primary Industries and Resources SA. Initiated in June 2003, it aims to develop more highly-skilled, motivated and profitable woolgrowers by facilitating self-directed learning that tackles production challenges through group activities. The three-year grower group program will support up to 250 woolgrowers in their efforts to share information and become more profitable. Objectives of the program include an average on-farm productivity growth of three per cent per annum by 2007, measurable improvement of sustainability, and a five per cent increase in profitability among Look @ Wool properties over a five-year period.

The Bestprac program is part of AWI's approach to extension and adoption in the rangelands of Queensland, New South Wales, South Australia and Western Australia. Feedback shows that up

to 80 per cent of Bestprac group members have made changes in areas such as budgeting, pasture management, animal health, wool quality, nutrition, marketing, natural resource management and buying and selling strategies. Close to 15 per cent of participants have also reported increased profits as a result of the Bestprac program. Bestprac fosters an environment whereby growers share information and work on common problems. Over 30 groups from Queensland, New South Wales, South Australia and Western Australia are presently involved in the Bestprac program. By 2006, Bestprac aims to have 318 specialist woolgrowing businesses in the network.

### Sheep Industry CRC

In 2002/2003 AWI became a core funding partner for the Australian Sheep Industry CRC, investing \$450,000 to support wool innovation through study and research at the University of New England, Armidale, NSW. An initial investment of \$300,000 was made for undergraduate and post-graduate scholarships and resource development, with the balance directed as in-kind contributions by AWI staff working on selected projects.

### Triple P

While the Paired Paddock Program (Triple P) has been established for some time in Victoria, AWI supported expansion of the program into NSW in 2002/2003. Latest trials in NSW have proven to be exceptional, with participating farmers experiencing an average 42 per cent rise in stocking rate and 37 per cent increase in gross margins. Despite the harsh 2002/2003 summer, farmers also achieved a fall of 30 per cent in the net cost of production.

Triple P enables farmers to assess and use their pastures more effectively. More importantly, the program also gives woolgrowers the confidence to exercise greater control of their production even in extremely dry situations. Research by Dr Jason Trompf has found that Triple P can play an important role in starting producers on a 'learning journey', and analysis by the Victorian Department of Primary Industry (DPI) indicated that Triple P producers were on average 20 per cent more profitable than non-participants. A further 20 per cent increase in profit was possible if they went on to participate in a Bestwool 2010 group.

In order to ensure that Triple P is adopted across as many grazing regions as possible, the consultancy group ACIL Tasman were appointed in 2002/2003 to undertake an assessment of the national market potential of the program. The scoping study will outline how AWI can add value to Triple P and make it relevant to a wider number of producers.

Specific targets for Education and Adoption are to:

- Have 250 specialist wool businesses in 25 producer groups applying management systems that will lift individual profit and environmental indicators by five per cent, and enhance wellbeing through the Look @ Wool program in South Australia by 2005;
- Ensure 500 new producers have joined the Bestwool 2010 network by 2005 and an additional 240 producers join the Tasmanian 8x5 Wool Profit Program by 2004/2005;
- Expand the Bestprac network by 2006 to involve 318 specialist wool producing businesses in high performance teams who are achieving improvement in profit, environment and wellbeing;
- Introduce industry 'owned' research and adoption networks of wool producers in WA, NSW and QLD during 2003/2004;
- Involve over 100 award recipients in the AWI Scholarship & Studentship Program across all education sectors by 2004/2005;
- Implement a national Shearing & Wool Handling Program during 2003/2004 to improve training and career pathways and support ongoing employment in the wool harvesting sector;
- Reintroduce studies in wool and wool science into agriculture faculties of Australian universities by 2005, in partnership with the Sheep Industry CRC;
- Establish a world-class, electronic wool technology information system by 2005 in partnership with the International Livestock Resource Information Centre (ILRIC);
- Encourage young people to consider a career in the wool industry by piloting a community-based program linking school students with the wool industry in two localities during 2003/2004;
- Develop and trial a professional development program for wool educators by 2005; and
- Implement a major study of the rate of adoption of new technology by wool producers and establish base-line measurements by June 2004.

# INTELLECTUAL PROPERTY & COMMERCIALISATION



As part of an MOU, UK retailer Marks and Spencer and AWI will focus on bringing innovative wool and wool blend products to the market

## HIGHLIGHTS

- Dedicated Intellectual Property Committee established by the AWI Board
- Commercial success established with machine-washable wool suits and non-woven wool technology
- Royalty income contributes \$448,095 to AWI
- Investment in non-woven technology shows strong promise for intellectual property
- Memorandum of Understanding with UK retailer Marks and Spencer aims to jointly bring innovative wool products to market

## NEW PROJECTS CREATE REAL ASSETS

A continuing, important focus of AWI's business is managing intellectual property for the benefit of shareholders. Any intellectual property created is regarded as one of AWI's greatest assets – like any asset, it must be utilised for the benefit of its owners.

AWI's prime purpose in intellectual property management is to deliver results and benefits to woolgrowers as quickly as possible. A second imperative is to earn money from commercialisation to contribute to further research funding.

In recognition of the vital role of intellectual property in AWI's future, an Intellectual Property Committee of Board members has been established. The Intellectual Property Committee, which met twice in 2002/2003, focuses on the opportunities and issues arising for intellectual property from all research and development (R&D) projects.

A change in Board policy has seen AWI place greater emphasis on forming partnerships with research organisations and jointly funding projects to increase the spread and diversity of AWI's R&D efforts. The end result is that AWI has a greater capacity to invest and build intellectual property.

AWI is also focused on achieving commercial success from appropriate R&D projects and returning this benefit to shareholders. For applicable R&D, every effort is made to engage in commercial partnerships at an early project stage to ensure that the product or process under development has the best opportunity of reaching commercial fruition. This strategy has so far proven successful, as the accomplishment of the machine-washable wool suit and the non-woven wool technology demonstrate. Further details about these products can be found in the Fibre Processing, Products and Services section.

Fostering the early involvement of commercial partners also brings industry skills and market

knowledge to the project that AWI and the science provider may not necessarily have. Experience has shown that the tests and tolerances that commercial partners provide allow the project to be developed in a form that is more in line with consumer needs.

While commercial returns from R&D are actively pursued where appropriate, there is no intention to establish AWI as a fully self-funding company. Financial returns are being generated from successfully commercialised research, but these will not be enough to enable AWI to continue without levy funding, as the new Board Framework clearly states.

AWI will continue to pursue projects, including genetics research and natural resource management programs, that may provide substantial benefits to woolgrowers but which by their very nature are unlikely to deliver significant commercial returns to AWI.

## ACHIEVEMENTS

### Licenses signed and executed

In 2002/2003, AWI signed and executed six commercial arrangements. These were:

- Non-Wovens;
- Machine-Washable Suit;
- Sensory Fabrics;
- Assignments of AWI's interest in Lucitrap and Twist Fungus;
- Wool processing technology; and
- Portfolio Software license.

In the first, a commercial agreement for the production of non-woven wool was signed with Macquarie Textiles in Albury, NSW, and has resulted in successful technology adoption, as highlighted below. In another example of successful technology adoption, machine-washable wool suits can now be found in David Jones stores nationally. In conjunction with our partner, Berkley Apparel, these suits are being produced commercially and further licensing opportunities are being explored. More details

about the success of the machine-washable wool suit can also be found on page 24.

In 2002/2003, AWI signed a collaborative agreement to examine the intrinsic benefits of wool and market potential in the area of smart textiles, or sensory fabrics. Sensory fabrics use electricity-conducting textiles to fabricate switches, which are combined with sensors that are lightweight, flexible, cost-effective and sensitive to pressure. While such textiles feel the same as normal fabric, they can be interwoven with a range of support fabrics and result in products that can tell where, when and how they are touched. Examples include lighting and pressure sensitive fabrics for use in furniture and fittings.

*“By forming partnerships and jointly funding R&D projects, AWI has a greater capacity to invest, deliver results to its shareholders and potentially build its intellectual property.”*

Agreements were signed for the assignment of AWI's interest in Lucitrap and Twist Fungus technology. A confidential license agreement with the potential to dramatically change a part of wool processing was also signed.

#### Non-woven technology

The construction of a non-woven wool processing facility at Macquarie Textiles in Albury, NSW commenced in March 2003, enabling production of wool fabrics at costs up to 40 per cent less than traditional spinning and weaving by July 2003. This successful example of technology adoption was achieved through identification of an appropriate processor, Macquarie Textiles, and involving them in the project at a very early stage. As a result, exciting new market opportunities for wool have been created, while the agreement also significantly builds AWI's intellectual property. The opening of the new facility in Albury is complementary to a three-year project researching non-woven technologies.

#### MOU with Marks and Spencer

As part of a two-year Memorandum of Understanding (MOU), leading UK retailer Marks and Spencer and AWI will focus on developing joint projects to bring new and innovative wool and wool-blend products to the market. Marks and Spencer is a market leader in the introduction of innovative apparel products that meet the needs of its customers. AWI aims to collaboratively tap into this knowledge and use it to help formulate strategies and new joint projects. Emphasis will also be placed on developing improved and more cost-effective fabrics for incorporation in the Marks and Spencer product range.



AWI has signed a collaborative agreement to examine the benefits of wool in the area of sensory fabrics.

Specific objectives for Intellectual Property and Commercialisation in 2003/2004 are to:

- Obtain income from appropriate intellectual property agreements;
- Develop an intellectual property management plan;
- Commercially launch at least one new fabric concept a year;
- Integrate an intellectual property register in the AWI Project Management System; and
- Conduct intellectual property education and training for all staff.



AWI is driving the R&D funding process by identifying woolgrowers' research needs and then proactively sourcing and funding appropriate projects

## HIGHLIGHTS

- AWI is becoming more proactive in attracting new proposals, ensuring that the scope of each project is closely aligned to the company's objectives and priorities
- Program-based strategies for key areas developed in conjunction with woolgrowers and key industry organisations

# STRATEGIC R&D MANAGEMENT R&D

## PROACTIVE APPROACH TO FUNDING

During 2002/2003, AWI took a strategic approach to determining investment areas with the release of its Strategic Plan 2002-2007.

Strategic R&D management starts with the process of carefully planning R&D objectives and then inviting research groups to submit R&D proposals. These proposals are assessed by AWI according to how they meet stated program objectives. If a proposal is approved, appropriate contracts are put in place before the project commences.

Initially AWI encouraged all proposals for R&D funding on an open basis. This policy generated so much project activity that it was not possible to manage them effectively.

Between January and March under the direction of the new Board, AWI reviewed all existing projects and drew up and executed formal contracts where none had previously existed. Importantly, a policy was implemented to ensure work did not start on any new projects without contracts first being put in place.

The Board is also involving itself more in shaping the R&D investment program through consideration and approval of program-based strategies and enhanced reporting of projects under consideration. New procedures, whereby the CEO can only approve projects under \$500,000, mean the Board is also required to formally approve all high-value projects.

AWI has become more proactive in the way it attracts new proposals, ensuring that the scope of each project is closely aligned to the company's objectives and priorities. Furthermore, program-based strategies for key areas including animal health, genetics and shearer and shed-hand training were developed in conjunction with woolgrowers and key industry organisations to guide long-term investment in these strategically important areas.

AWI is now driving the R&D funding process by identifying woolgrowers' research needs and then proactively sourcing and funding appropriate projects using the best global technology providers to achieve its objectives.

*“At the end of the day, woolgrowers aren't just investing in something that delivers a nice report – rather, their levies are being directed toward actually improving profitability.”*

Once a research project has been funded, AWI focuses sharply on ensuring it delivers benefits to woolgrowers. All Program Managers set and closely monitor research milestone targets to ensure that objectives are being met and to ensure funding only continues for projects providing beneficial outcomes.

An Education and Adoption Manager, appointed at AWI in January, is dedicated to the priority task of ensuring project outcomes are adopted by woolgrowers. This means woolgrowers aren't just investing in something that delivers a nice report – rather, their levies are being directed toward actually improving profitability.

#### ACHIEVEMENTS

- In 2002/2003, AWI developed a five-year Strategic Plan and an Operating Plan to set out the overall direction, objectives and priorities of the new organisation. These contained background information

on the factors presently affecting the industry and technological development as well as input resulting from consultation with woolgrowers and industry. Both the Strategic Plan and Operating Plan were distributed to all woolgrower shareholders.

- Following extensive consultation with woolgrowers and industry organisations, AWI developed and published portfolio strategies on areas including animal health, genetics and pastures. These program-specific strategies guide investment by identifying problem areas and opportunities and structuring R&D to specifically target these.

Specific objectives for Strategic R&D Management in 2003/2004 are to:

- Routinely provide independent economic evaluation of AWI's R&D investment portfolio and summaries of economic return to woolgrowers;
- Continually improve the project evaluation process and share the assessment criteria with shareholders and researchers; and
- Design and initiate a new approach to measurement of R&D adoption in conjunction with other rural R&D companies.

# SUBSIDIARIES

## SUBSIDIARIES AND JOINT VENTURES



An illustrated image of Shear Express, which continues to be the subject of great public interest.

### HIGHLIGHTS

- First Shear Express machine commissioned
- Joint MLA and AWI Sheep Genomics Program to improve animal health, welfare and productivity in the future

### PARTNERSHIPS FOR THE FUTURE

AWI is committed to developing and consolidating relationships within the industry that will ultimately benefit woolgrowers. In 2002/2003 a decision was made by AWI to form research collaborations with more organisations, allowing the company to invest in a wider range of projects and to share intellectual property.

### ACHIEVEMENTS

#### Shear Express

Shear Express Limited is 99.9 per cent owned by AWI with the other shareholder being Wool Harvesters Pty Ltd. Three of the six directors on the Shear Express Board were appointed by AWI.

Shear Express, a sequential wool harvesting process housed inside a self-powered B-Double trailer, continues to be the subject of great public interest. It aims to provide woolgrowers with an efficient, safe and cost-effective means for harvesting wool without the need for shearing sheds and other infrastructure.

Other expected benefits of Shear Express include:

- Improved productivity in wool harvesting;
- Higher consistency of clip quality and preparation; and
- Improved occupational health and safety conditions.

The Shear Express project commenced in Western Australia in late January 2002. By the end of June 2003, the first machine

was in the course of assembly and had been relocated to Bendigo, Victoria. Unfortunately, like many ambitious projects, Shear Express has not been without its problems – it is running six months behind its original schedule and has gone beyond budget. The original budget was \$3.9 million up until the end of the field trials – this has now been increased to \$5.4 million. In addition to this, AWI has spent approximately \$600,000 managing its investment.

Currently the first Shear Express machine is being commissioned and AWI is awaiting the result of field trials, which will be conducted from October to December 2003.

#### Sheep CRC

A joint venture formed with the Australian Sheep Industry Cooperative Research Centre (CRC) demonstrates AWI's commitment to attracting outstanding graduates back to wool science. In March 2003, AWI announced its decision to become a core funding partner in the Australian Sheep Industry CRC, committing \$450,000 to help boost industry education.

This includes \$300,000 towards funding for undergraduate scholarships in the new University of New England sheep and wool course and for other postgraduate courses with a wool focus. In the long term, AWI will consider investing in other CRC program areas such as genetics, wool biology, innovation and technology adoption.

### Land & Water Australia

An initiative between AWI and Land & Water Australia is providing viable, practical and beneficial solutions for managing natural resources on farms. AWI has committed \$20 million over five years to Land, Water & Wool, which is the most comprehensive natural resource management (NRM) research and development program ever undertaken for the Australian wool industry. More than 50 research projects are currently being conducted on farms and on demonstration sites across Australia. Full details of this initiative can be found in the Sustainable Fibre Production Systems section.

### Meat and Livestock Australia

A joint Meat and Livestock Australia (MLA) and AWI Sheep Genomics Program aims to identify sheep genes and their functions in order to improve animal health, welfare and productivity. The collaboration ensures wool and sheepmeat producers will benefit from a wider-ranging and more substantial research program that removes duplication. The \$30 million, five-year initiative will also ensure the sheep industry is able to capitalise on the explosion in gene technology in other agricultural areas.

The program will concentrate on the discovery of genes that control the sheep's response to worms, genes that control the production of fibre by the wool follicle, and genes that affect nutritional efficiency and production of meat.

*“The \$30 million, five-year initiative between MLA and AWI will ensure the sheep industry is able to capitalise on the explosion in gene technology in other agricultural areas.”*



# INTERNATIONAL



Using wool in unique ways – one of the innovative entries in the Royal Society of the Arts Student Design Innovation Awards.

## HIGHLIGHTS

- Leading wool research scientists from across the world come together to increase innovation and eliminate duplication in research
  - AWI continues to sponsor design awards to boost awareness of Australian wool in Europe
- International Wool Textile Organisation (IWTO) invited to create 'wool innovation inspiration forums' to foster international wool innovation

## REAL DEALS WITH OVERSEAS WOOL EXPERTS

With approximately 98 per cent of Australian wool processed overseas, it is imperative that AWI has strong relationships with users of Australian wool throughout the world. It is also important for AWI to stay up to date with the most reliable information on all factors affecting wool, whether it is on-farm or off-farm.

## ACHIEVEMENTS

### Collaborative science project

Greater innovation and less duplication will result from collaboration between leading wool research scientists from across the world. The Fundamental Wool Science Collaboration Group was formed in March 2002 and involves scientists from CSIRO Textile and Fibre Technology, Wool Research Organisation of New Zealand (WRONZ), the German Wool Research Institute (DWI) and Deakin University.

In 2002/2003, the group began research on three specific projects looking at surface, brightness and whiteness, and structure of wool. These projects aim to make wool a more appealing product to consumers.

The formation of the group provided a unique opportunity to bring together complementary skills and facilities from around the world. It is anticipated that collaboration among group members will end years of research competition and isolation and, by uniting some of the world's greatest textile minds, make a very real difference to the quality of wool research.

### Supporting wool design awards

As part of a strategy to increase awareness of Australian wool among European fashion designers, AWI sponsors the European Wool Awards and the Royal Society of the Arts Student Design Innovation Awards. These events give design students the opportunity to

use wool in a unique and new way. Those students, who create the best designs, win a two-week tour of the Australian wool industry. Planning is in progress to expand the European Wool Awards to involve Asia/Pacific countries.

### Working with the IWTO

In May 2003, AWI Chairman Ian McLachlan addressed the International Wool Textile Organisation (IWTO) conference in Buenos Aires. He encouraged the IWTO, which comprises commercial wool specialists from 24 countries, to create 'wool innovation inspiration forums' with the aim of attracting wool spinners, weavers and retailers from all major wool processing countries to foster innovation in the industry.

*"A key focus for AWI is to invest time in developing relationships with key industry players around the world and to seek their input and partnership."*

All members of the IWTO were invited to consider themselves part of a strategy forum to contribute solutions to remedy disadvantages in the wool business, improve processing performance and generate new ideas for innovation in international R&D projects.

Of the 70 current AWI textile R&D projects, 33 are conducted overseas with research institutions and wool processors. Most projects are based in New Zealand, Italy, Germany, the UK, India and China. AWI also collaborates with The Woolmark Company and AWTA, using their international connections to help identify industry's R&D needs for the ultimate benefit of Australian woolgrowers.

To support international activities, total AWI expenditure on overseas travel in 2002/2003 was \$849,000.

# CORPORATE GOVERNANCE

## REAL ACCOUNTABILITY AND TRANSPARENCY

“Corporate governance is the system by which companies are directed and managed. It influences how the objectives of the company are set and achieved, how risk is monitored and assessed and how performance is optimised.”

This definition, provided by the Corporate Governance Council of the Australian Stock Exchange, encapsulates the importance of corporate governance as the AWI Board sees it.

## THE BOARD

At the beginning of 2002/2003, Australian Wool Industry (AWI) Board members were Ms Maree McCaskill (Chairman), Mr Colin Dorber (Managing Director), Mr Michael Staley (Director), Ms Patricia Murphy (Director) and Mr Don Nelson (Director).

On 7 August, Professor Alan Trounson was appointed to the Board and on 14 August, Mr Peter Sykes was appointed as a Board member.

At the Annual General Meeting of 31 October 2002, five former members of the Board were voted out and new directors were appointed. The new members appointed were the Hon Ian McLachlan AO, Dr Kevin Bell, Mr David Boyd, Mr Hugh Nivison and Mr Brian van Rooyen.

The new members replaced Ms McCaskill, Ms Murphy, Mr Nelson, Mr Staley and Professor Trounson. Mr Sykes was re-elected to the Board.

At the first meeting of the Board on 6 November, Mr McLachlan was appointed Chairman and Mr van Rooyen was appointed Deputy Chairman in May 2003.

On 11 December, Mr Dorber ceased to be Managing Director of AWI and on 10 April, Dr Christopher Abell was appointed to the Board, bringing the total number of Board members to seven.

Dr Stephens was appointed Chief Executive Officer of AWI on 28 April and is not a member of the Board.

The Board has met monthly since November 2002 and has concentrated on core functions, which include:

- Enhancing corporate governance systems and providing transparent, balanced reporting of company operations to shareholders;
- Further developing planning processes, including the 2003-2008 Strategic Plan;
- Building a portfolio of programs and projects aimed at enhancing the long-term profitability of woolgrowers; and
- Preparing key information and documentation for WoolPoll 2003.

## COMMITTEES

The Board has established a number of committees to monitor and guide specific activities. On 30 June, there were four committees in place:

- **Finance and Audit Committee** is chaired by Mr van Rooyen and additional members are Mr Boyd and Dr Abell. The committee has been very active, generally meeting monthly and taking action to commission major audits into corporate governance and financial matters. The committee's main role is to:

- assist the Board in managing its responsibilities relating to all financial matters;
  - ensure the company's financial controls are working effectively; and
  - monitor and guide the company's approach to risk management.
- **Intellectual Property Committee** is chaired by Mr McLachlan and additional members are Dr Abell, Mr Nivison and Mr Sykes. The committee's major role is to provide policy direction for the management of AWI's Intellectual Property (IP) portfolio. Since its inception, the committee has finalised the AWI IP policy and developed a comprehensive IP register.
  - **Remuneration and Appointments Committee** is chaired by Mr McLachlan and additional members are Mr Nivison and Mr van Rooyen. This committee sets remuneration, terms of employment and conditions, staffing policies and staffing levels. In 2002/2003, the committee met monthly.
  - **Falkiner Memorial Field Station Committee** is made up of two members – Dr Abell and Mr Nivison. The committee's role is to provide oversight and guidance for the major capital redevelopment of Falkiner Memorial Field Station.

## REMUNERATION

All Board directors receive payment of \$50,000 a year, with the exception of the Chairman who receives \$100,000 a year. In addition to this, directors receive \$5,000 for each committee they sit on.

## REPORTING AND ACCOUNTABILITY

For the 2002/2003 year, AWI reported progress, developments and future plans to woolgrowers through the following channels:

- Quarterly letters from the Chairman to woolgrowers;
- AWI's bi-monthly newspaper, Beyond the Bale;
- AWI's website, [www.wool.com.au](http://www.wool.com.au);
- The Wool Innovation Showcase;
- AWI's Strategic Plan 2002-07;
- The comprehensive review of AWI's performance conducted by Dr Sandra Welsman; and
- The Annual Report.

Every effort has been made to ensure that the 2002/2003 Annual Report conforms to the reporting requirements in Schedule 3 of the Statutory Funding Agreement between AWI and the Commonwealth Government, as well as the Global Reporting Initiative (GRI) guidelines for best practice reporting.

# LEGISLATIVE

## OTHER LEGISLATIVE REPORTING REQUIREMENTS

### ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION

AWI is committed to protecting the environment and biodiversity both on its operational farm – the Falkiner Memorial Field Station – and through the projects in which the company invests.

One of the company's major investments is the \$20 million, five-year Land, Water & Wool program in partnership with Land & Water Australia. The program aims to assist woolgrowers tackle problems including salinity, soil acidity, weeds and water management while enhancing their profitability and biodiversity.

### SENATE STANDING COMMITTEE ON RURAL AND REGIONAL AFFAIRS AND TRANSPORT: INQUIRY INTO AWI EXPENDITURE OF FUNDS UNDER THE STATUTORY FUNDING AGREEMENT

On 26 May 2003, the Australian Senate Rural and Regional Affairs and Transport Legislation Committee adopted the above inquiry and will report its findings to the Senate later in 2003.

### OCCUPATIONAL HEALTH AND SAFETY

AWI operates in four locations in Australia and has an operational farm – the Falkiner Memorial Field Station. The company has a Occupational Health & Safety (OH&S) policy in place but recognises the need to enhance the present OH&S processes. The policy is now being reviewed to examine areas including staff activities outside of the office environment.

A comprehensive OH&S plan is in the process of being developed for the Field Station. AWI is taking steps to upgrade some equipment and buildings and is planning improvements to the shearing shed.

# RISK MANAGEMENT

## AUDIT COMMITTEE

AWI has a Finance and Audit Committee, which, among other activities, has been commissioning major audits into financial matters.

## ANNUAL ACCOUNT AUDIT

A certificate of the Annual Account Audit can be found on page 74 of this Annual Report.

## INTERNAL AUDIT

Prior to March 2003, PricewaterhouseCoopers (PwC) conducted internal audit and external audit functions for AWI. The Finance and Audit Committee and PwC agreed that it was not appropriate for a single company to carry out both these functions. After a competitive tender process, Deloitte Touche Tohmatsu was appointed to undertake the internal audit and PwC retained to carry out the external audit.

The internal audit program is based on a risk assessment that Deloitte Touche Tohmatsu carried out together with AWI senior management.

In 2002/2003 the Finance and Audit Committee, concerned at the level of corporate governance adopted by the previous AWI Board, separately commissioned a review of AWI's financial arrangements by PwC.

The review findings were received in May 2003 and identified a number of areas of concern including unusual or poorly substantiated payments, potential inconsistencies with the Statutory Funding Agreement and some project management issues. These findings were communicated to all woolgrower shareholders and the Commonwealth Government in June 2003.

AWI has acted on the recommendations of PwC and in some instances, where necessary, also created and acted upon its own additional recommendations. Financial controls and delegations have been reviewed and tightened, payments to service providers

are not made before contracts are signed, risk and fraud prevention policies are being developed and internal audit procedures have been strengthened. Furthermore, no AWI payments will now be made for re-election campaigning of any directors and voting entitlements at the 2003 Annual General Meeting (AGM) will be accurately based on levies paid in the three years to 30 June 2003. Finally, a standard human resources and remuneration policy has been formulated and is now being implemented.

PwC's mid-year review also raised the issue of money owed to AWI. In line with the review's recommendation, AWI is in the process of taking action to recover all money owed where legally or commercially appropriate.

The findings of this review have now been included as part of an ongoing Senate inquiry into the Statutory Funding Agreement, which has focused on the activities of the previous Board.

## INSURANCE

AWI has public liability insurance, professional indemnity insurance, directors and officers insurance and fraud insurance.

## INDEMNITIES AND INSURANCE PREMIUMS FOR OFFICERS

Officers of the company are indemnified by the company's constitution. AWI has received legal advice that its indemnity needs to be strengthened. Accordingly, a resolution will be put to the AGM to gain shareholder approval to extend the indemnity provided to directors, consistent with wider commercial practice.

## RISK MANAGEMENT AND FRAUD CONTROL

AWI is in the process of developing a risk management plan building on the risk assessment conducted by Deloitte Touche Tohmatsu.

# OTHER REPORTING REQUIREMENTS

## WORKING WITH GOVERNMENT

The Commonwealth Government collects levies from woolgrowers on behalf of the industry, under the auspices of the Wool Services Privatisation Act, 2000. In addition, the Commonwealth contributes taxpayer funds up to a maximum of 0.5 per cent of the wool industry rolling three-year average annual gross value of production (GVP). Accordingly, the Commonwealth Government, on behalf of Australian taxpayers, is a substantial stakeholder in AWI's activities.

Expenditure of the levy funds and the Commonwealth contribution is governed by the Statutory Funding Agreement between the Commonwealth Department of Agriculture, Fisheries, and Forestry – Australia (AFFA) and AWI. In managing the interests of the Commonwealth, AFFA provides AWI with guidelines for investment of taxpayer funds.

AWI works closely with AFFA to ensure that these guidelines and other expectations are met. Directors and staff from AWI have met with AFFA representatives on numerous occasions. The AWI Strategic Plan and Operating Plan are provided to the Commonwealth Government, along with other information as required.

## THE NATIONAL RESEARCH PRIORITIES

There are nine Commonwealth Government National Research Priorities that guide the investment of taxpayer funds in research and development. AFFA monitors AWI's performance against the seven of these that relate to agricultural investment. These National Research Priorities are:

- 1.** Sustainable Natural Resource Management
- 2.** Improving Competitiveness through a Whole-of-Industry Approach
- 3.** Maintaining and Improving Confidence in the Integrity of Australian Agricultural, Food, Fish and Forestry Products
- 4.** Improved Trade and Market Access
- 5.** Use of Frontier Technologies
- 6.** Protecting Australia from Invasive Diseases and Pests
- 7.** Creating an Innovative Culture

The table on page 48 provides a summary of AWI's Research, Development and Innovation Investment projections to 2006/2007 aligned to these priorities.

## THE NATIONAL RESEARCH PRIORITIES – AWI INVESTMENT ALIGNMENT

	2002/03 \$m	2003/04 \$m	2004/05 \$m	2005/06 \$m	2006/07 \$m
Projected Federal Government matching contribution	14	15	15	16	16
<b>Lines of Innovation and Projects</b>					
<b>Sustainable Natural Resource Management</b>					
D3. Enhance the natural resources base	9.00	8.41	8.00	8.00	8.00
<b>Improving Competitiveness through a Whole-of-Industry Approach</b>					
Priority C. Industry competitiveness	14.33	14.07	13.93	13.67	12.62
<b>Maintaining and Improving Confidence in the Integrity of Australian, Food, Fish and Forestry Products</b>					
D4. Health, welfare, chemicals – prod'n, care.	2.00	3.00	3.50	3.50	2.50
D5. Inventiveness and old problems	1.29	1.00	1.00	1.00	1.00
<b>Improved Trade and Market Access</b>					
B5. Trade policy and market access	2.00	2.00	2.00	2.00	2.00
C5. Processing - mill practices – locations	1.75	2.05	2.05	2.05	1.00
<b>Use of Frontier Technologies</b>					
A1. Frontier research	10.58	10.48	10.35	10.35	10.35
B1. Novel wool using products	6.16	4.52	5.80	5.00	5.00
B2. New technology, enhance wool products	3.64	3.99	3.74	3.00	3.00
B3. Revolutionary wool directions	3.00	3.00	3.50	3.50	3.50
<b>Protecting Australia from Invasive Diseases and Pests</b>					
D4. Health, welfare, chemicals.	2.00	3.00	3.50	3.50	2.50
<b>Creating an Innovative Culture</b>					
A3. Awards and rewards	0.82	1.06	0.87	0.87	0.90
A5. Studentships and scholarships	0.50	0.68	0.80	1.00	0.80

## INDUSTRY CONSULTATION

Industry consultation with AWI Shareholders and Stakeholders is an important priority for AWI. In April 2002, an industry based consultative process was announced, incorporating Industry Advisory Panels and Open Strategy Forums to ensure woolgrower input into the strategic direction of the company and its programs.

This new advisory structure replaces the previous Wool Advisory Group (WAG) and is designed to be more inclusive of and accessible to shareholders and other stakeholders.

The forums provide a mechanism through which the Board can obtain shareholder and industry feedback on longer-term strategic direction, while the use of specialist Research Project Panels provide the company with specific expert advice on individual project selection, monitoring and management.

Since the success of research, development and innovation investments will be measured by rates of uptake, it is essential to have potential customers involved in the AWI process from the outset.

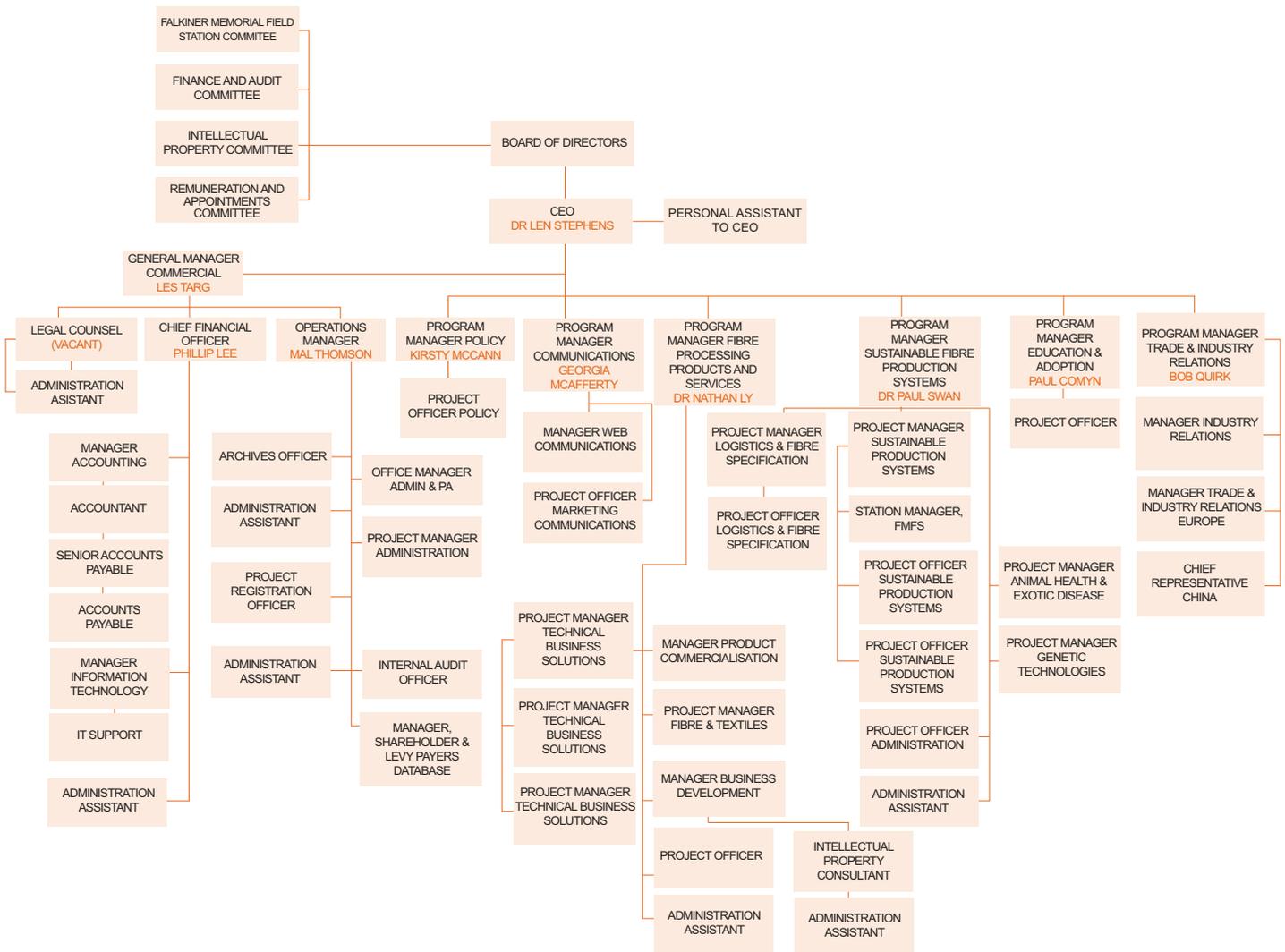
AWI also conducts regular, ongoing industry consultation with the research community. In April 2003, AWI held a round table forum with its research providers. As a result of this forum, AWI, where appropriate, has amended the way it operates and works with its research partners.

## INDUSTRY PARTNERS

AWI works with many varied industry partners. The full list of AWI's industry partners can be found in the Project List in the Appendices.

# CORPORATE SERVICES

AWI CORPORATE ORGANISATIONAL STRUCTURE AS AT 30 JUNE 2003



### AWI JOB FUNCTIONS AND STAFF MEMBERS

At 30 June 2003, AWI had 54 staff comprising 47 employees and seven permanent full-time contractors located in offices in Sydney and Melbourne.

Four main departments manage the investment of funds into R&D programs and ensure that these programs progress according to the research milestones set. These departments are:

- Sustainable Fibre Production Systems – investing in on-farm R&D;
- Fibre Processing, Products and Services – managing investment in pipeline and new product R&D;
- Education and Adoption – investing in programs that assist the uptake of research results; and
- Trade and Industry Relations – investing in funds aimed at removing trade and market access barriers to wool.

In addition to these four main departments there are three other departments. The Communications department manages the open and transparent supply of information on AWI activities to all its stakeholders, the Policy department coordinates AWI's strategic planning functions, and the Commercial department manages AWI's business functions including intellectual property, accounting, legal and operations.

### FINANCIAL MANAGEMENT

AWI has significantly improved the reporting of its financial position in terms of openness and transparency so that all operational costs are now clearly identified. Disclosure of operational costs and a number of new financial policies introduced in 2002/2003, including new internal audit requirements and a tightening of financial authorities, have resulted in better control of AWI's finances.

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## DIRECTORS' REPORT

Your directors present their report on the consolidated entity consisting of Australian Wool Innovation Limited and the entities it controlled at the end of the year ended 30 June 2003.

### DIRECTORS

The following persons were directors of Australian Wool Innovation Limited during the year.

The Hon. I M McLachlan AO was appointed as a director on 4 November 2002 and continues to hold office at the date of this report.

Mr B P van Rooyen was appointed as a director on 4 November 2002 and continues to hold office at the date of this report.

Dr C J Abell was appointed as a director on 26 March 2003 and continues to hold office at the date of this report.

Dr K J Bell was appointed as a director on 4 November 2002 and continues to hold office at the date of this report.

Mr J D O Boyd was appointed as a director on 4 November 2002 and continues to hold office at the date of this report.

Mr H P Nivison was appointed as a director on 4 November 2002 and continues to hold office at the date of this report.

Mr P S Sykes was appointed as a director on 14 August 2002, re-elected on 4 November 2002 and continues to hold office at the date of this report.

Mr C J Dorber was a director from the beginning of the financial year until his resignation on 11 December 2002.

Ms M P McCaskill was a director from the beginning of the financial year until her resignation on 4 November 2002.

Ms P A Murphy was a director from the beginning of the financial year until her resignation on 4 November 2002.

Mr D M Nelson was a director from the beginning of the financial year until his resignation on 4 November 2002.

Mr M J Staley was a director from the beginning of the financial year until his resignation on 4 November 2002.

Prof. A O Trounson was appointed as a director on 7 August 2002 and resigned on 4 November 2002.

### REVIEW OF OPERATIONS AND RESULTS

	2003	2002
	\$'000	\$'000
Revenue	80,954	71,068
Surplus from ordinary activities	16,627	30,177

### Dividends Paid

There have been no dividends paid or recommended for the 2003 financial year (2002: Nil).

### Share options

There have been no share options granted to any directors or executives of the company.

### Principal activities

The principal activity of Australian Wool Innovation Limited as recorded in its adopted strategic plan is to drive research, development and innovation that will increase the long-term profitability of Australian woolgrowers. To achieve that mission, the company receives funding from the Commonwealth Government of Australia by way of both a statutory levy imposed upon Australian woolgrowers and a capped matching contribution from the Government on behalf of Australian taxpayers.

### Significant changes in the state of affairs

There have been no significant changes in the state of affairs of the company during the year.

### Matters subsequent to the end of the financial year

There have been no material financial matters subsequent to the end of the financial year.

### Likely developments and expected results of operations

Information on likely developments in the company's operations and the expected results of operations have not been included in this report because the directors believe it would be likely to result in unreasonable prejudice to the company.

### Environmental regulation

The entity's operations are not subject to any particular or significant environmental regulations under either Commonwealth or State legislation.

### Proceedings on behalf of the company

No person has applied to the Court under section 237 of the Corporations Act 2001 for leave to bring proceedings on behalf of the company, or to intervene in any proceedings to which the company is a party for the purpose of taking responsibility on behalf of the company for all or part of those proceedings.

No proceedings have been brought or intervened in on behalf of the company with leave of the Court under section 237 of the Corporations Act 2001.

## INFORMATION ON DIRECTORS

Director	Experience	Special responsibilities
I M McLachlan	President of the National Farmers Federation from 1984 to 1988. Previously Minister of Defence and a Cabinet Member of the Federal Coalition Government. Chairman of the Australian Wool Industry Future Directions Task Force. Currently President of the South Australian Cricket Association.	Chairman of the AWI Board  AWI Remuneration & Appointments Committee Chairman  AWI Intellectual Property Committee Chairman
B P van Rooyen	Currently Chief Executive Officer of Australian Country Spinners Pty Ltd. Director of the Australian Wool Testing Authority Ltd. Former Executive Chairman of Kolotex (Australia) Pty Ltd. Former director of Norwellan Textiles Ltd, Woolstock Australia Ltd and Bruck Textiles Pty Ltd. Past President of the Australian Wool Processors Council. Past member of the CSIRO Textiles, Clothing and Footwear Sector Advisory Committee.	Deputy Chairman of AWI  AWI Finance & Audit Committee Chairman  AWI Remuneration & Appointments Committee member  Shear Express Committee member
C J Abell	Former director of Vision Systems Limited 1986-2001 and LADS Corporation Limited Chairman 1992-2001. Former director of Woolstock Australia Limited 1999-2002. Currently a non-executive director of Saab Systems Pty Limited and Pacific Marine Batteries Pty Limited. South Australian woolgrower.	AWI Finance & Audit Committee member  AWI Intellectual Property Committee member  Falkiner Memorial Field Station Committee member  Shear Express Committee member
K J Bell	Since 1983, self-employed consultant with sheep growers in South-Western Australia. Prior to this, spent five years completing postgraduate research fieldwork and study involving sheep enterprises and has five years experience in international development projects. Sheep cereal zone consultant representative on the zone farmer advisory committees of the former Australian Wool Research and Promotion Organisation (AWRAP).	Director of Shear Express  Shear Express Committee member
J D O Boyd	Chairman and Chief Executive Officer of Clyde Agriculture, which is a major cotton, wool, wheat and beef producer. Director of John Swire & Sons Pty Ltd and Frigmobile Pty Ltd. Former General Manager – Rural of Dalgety Farmers Limited, now Landmark. Former Board member of Wool International and a former Deputy Chairman of the peak cotton grower body, Cotton Australia. Has served on the boards of the Australian Wool Exchange and Dekalb Shand Seed Company Pty Ltd. Past member of the CSIRO Textiles, Clothing and Footwear Sector Advisory Committee. Currently a Trustee of the McGarvie Smith Institute, which is engaged in agricultural and veterinary research.	AWI Finance & Audit Committee member
H P Nivison	Currently the joint Managing Director of Mirani Pty Ltd, a fine wool stud. Board member of Australian Sheep Industry CRC and U.N.E. Rural properties. Executive committee member of Merino Benchmark and course 8 graduate of the Australian Rural Leadership Program. Former member of the Woolmark High Rainfall Zone Advisory Committee and the Woolmark Wool Quality Program Advisory Group.	AWI Remuneration & Appointments Committee member  AWI Intellectual Property Committee member  Falkiner Memorial Field Station Committee member
P S Sykes	Currently Managing Director of Woolaby Australia, a business focusing on research, product development, marketing and retail within the wool industry. Director of G A Sykes and Sons, and an AWI shareholder running 7,000 Merino sheep and 700 beef cattle in southern NSW. Mr Sykes has nine years experience in financial markets with Westpac Banking Corporation in money market trading, risk management and distribution.	AWI Intellectual Property Committee member  Shear Express Committee member  Chairman of Shear Express

## MEETINGS OF DIRECTORS

Director	Full meeting of directors		Finance & Audit Committee		Audit Committee		Finance Committee		Falkiner Memorial Field Station Committee		AWI Committee Remuneration & Appointments Committee		AWI Intellectual Property Committee	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
I M McLachlan	8	9									4	5	2	2
B P van Rooyen	9	9	7	7							5	5		
C J Abell	4	4	2	2					1	1			1	1
K J Bell	9	9												
J D O Boyd	9	9	7	7										
H P Nivison	9	9							1	1	5	5	2	2
P S Sykes	10	10											2	2
C J Dorber	4	5											1	1
M P McCaskill	3	3			1	1	1	1						
P A Murphy	2	3					1	1						
D M Nelson	2	3			1	1	1	1						
M J Staley	3	3											1	1
A O Trounson	1	1												

A = Number of meetings attended

B = Number of meetings held during the time the director held office.

## DIRECTORS' AND EXECUTIVES' EMOLUMENTS

The Board undertakes an annual review of its performance and the performance of the board committees against goals set at the start of the year. Bonuses are not payable to non-executive directors.

Details of the nature and amount of each element of the emoluments of each director of Australian Wool Innovation is set out in the following tables.

### Non-executive directors of Australian Wool Innovation Limited

Name	Directors' base fee <sup>(a)</sup> \$	Committee fees \$	Super-annuation \$	Other benefits <sup>(b)</sup> \$	ETP \$	Bonus \$	Total \$
I M McLachlan, Chairman <sup>(1)</sup>	68,667	5,291	6,656	–	–	–	80,614
B P van Rooyen <sup>(1)</sup>	34,465	5,348	3,583	–	–	–	43,396
C J Abell <sup>(2)</sup>	14,460	3,526	1,619	–	–	–	19,605
K J Bell <sup>(1)</sup>	34,465	–	3,102	–	–	–	37,567
J D O Boyd <sup>(1)</sup>	34,465	3,004	3,372	–	–	–	40,841
H P Nivison <sup>(1)</sup>	34,465	5,982	3,658	–	–	–	44,105
P S Sykes <sup>(3)</sup>	44,369	2,931	4,257	–	–	–	51,557
M P McCaskill <sup>(4)</sup>	19,830 <sup>(6)</sup>	1,731	3,209	16,002	–	–	40,772
P A Murphy <sup>(4)</sup>	2,003 <sup>(6)</sup>	1,731	1,604	7,911	–	–	13,249
D M Nelson <sup>(4)</sup>	19,383	–	–	–	–	–	19,383
M J Staley <sup>(4)</sup>	2,994 <sup>(6)</sup>	1,731	1,694	7,911	–	–	14,330
A O Trounson <sup>(5)</sup>	12,479	–	1,123	–	–	–	13,602

### Executive directors of Australian Wool Innovation Limited

Name	Base salary <sup>(c)</sup> \$	Committee fees \$	Super-annuation \$	Other benefits <sup>(b)</sup> \$	ETP \$	Bonus \$	Total \$
C J Dorber <sup>(7)</sup> Managing Director	146,255 <sup>(8)</sup>	–	42,804	84,687	1,146,433	108,674	1,528,853

- (a) Directors' base fee includes the base fee, less salary sacrifice amounts for current year fringe benefits and prior year advance payments as fringe benefits
- (b) Other benefits includes fringe benefits and fringe benefits tax
- (c) Base salary includes the base salary, less salary sacrifice amounts for current year fringe benefits and prior year advance payments as fringe benefits
- (1) Director appointed 4 November 2002 and continued in office at year end
- (2) Director appointed 26 March 2003 and continued in office at year end
- (3) Director appointed 14 August 2002 and continued in office at year end
- (4) Director from 1 July 2002 until resignation on 4 November 2002
- (5) Director appointed 7 August 2002 until resignation on 4 November 2002
- (6) Base fee includes a reduction for salary sacrifice amounts of \$7,911 for other benefits paid in the current year and \$7,911 for other benefits paid in advance in the prior year
- (7) Director from 1 July 2002 until resignation on 11 December 2002
- (8) Base salary includes a reduction for salary sacrifice amounts of \$84,687 for other benefits paid in the current year and \$9,713 for other benefits paid in advance in the prior year

**INSURANCE OF OFFICERS**

During the year, Australian Wool Innovation Limited paid an insurance premium of \$36,492 to insure the directors and officers of the entity against liability and professional indemnity.

**ROUNDING OF AMOUNTS**

The company is of a kind referred to in Class Order 98/0100, issued by the Australian Securities & Investments Commission, relating to the 'rounding off' of amounts in the directors' report and the accounts. Amounts in the directors' report and accounts have been rounded off in accordance with that Class Order to the nearest thousand dollars, or in certain cases, to the nearest dollar.

**STATUTORY FUNDING AGREEMENT OBLIGATIONS**

The following additional requirements are imposed upon the company as a consequence of a Statutory Funding Agreement entered into between Australian Wool Innovation Limited and the Commonwealth of Australia by virtue of Schedule 3 of that Agreement.

Those matters not elsewhere dealt with in this annual report include:

1. Obligations under and compliance with Statutory Funding Agreement.
2. Other significant matters notified to the company by the Commonwealth from time to time.

In accordance with Schedule 3 of the Statutory Funding Agreement between the Commonwealth of Australia, represented by the Minister for Agriculture, Fisheries and Forestry, Australian Wool Innovation Limited ("AWI") and AWRAP (now Australian Wool Services Limited), AWI will report against the above mentioned items direct to Government.

In addition to the above matters, the company is also required to report the following matters:

1. The Annual Report, or a separate report if desired by the Company, should cover research and development activities, with reference to funds spent on each significant research, development and innovation activity and project allowing identification of expenditures of Commonwealth Matching Funds.

A number of the matters identified in this report contain commercial in confidence information and the company has elected to exercise its prerogative to provide that report separately to the Commonwealth on an 'in confidence' basis.

This report is made in accordance with a resolution of directors.



I M McLachlan  
 Chairman  
 2003 Sydney

## FINANCIAL REPORT – 30 JUNE 2003

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The financial report covers both Australian Wool Innovation Limited as an individual entity and the consolidated entity consisting of Australian Wool Innovation Limited and its controlled entities.

Australian Wool Innovation Limited is a company limited by shares, incorporated and domiciled in Australia. Its registered office and principal place of business is:

Level 5  
16-20 Barrack Street  
SYDNEY NSW 2000

A description of the nature of the consolidated entity's operations and principal activities is included in the review of operations and activities in the Directors' Report on pages 52-55.

## STATEMENT OF FINANCIAL PERFORMANCE

AS AT 30 JUNE 2003

	Notes	Consolidated		Parent entity	
		2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Revenues from ordinary activities	3	80,954	71,068	80,954	71,068
Research, development and innovation expense		(42,679)	(27,952)	(42,679)	(27,952)
Employee benefits expense		(10,797)	(3,597)	(10,797)	(3,597)
Depreciation and amortisation expenses		(673)	(102)	(673)	(102)
Legal and professional expenses		(2,139)	(431)	(2,139)	(431)
Travel expenses		(1,959)	(924)	(1,959)	(924)
Write-down in interest on properties for resale		–	(6,088)	–	(6,088)
Other expenses from ordinary activities		(6,080)	(1,797)	(6,080)	(1,797)
Surplus from ordinary activities	16	16,627	30,177	16,627	30,177
Total changes in equity attributable to members of Australian Wool Innovation Ltd other than those resulting from transactions with owners as owners		16,627	30,177	16,627	30,177

The above statement of financial performance should be read in conjunction with the accompanying notes.

FINANCIAL PERFORMANCE

## STATEMENT OF FINANCIAL POSITION

AS AT 30 JUNE 2003

	Notes	Consolidated		Parent entity	
		2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Current assets</b>					
Cash assets	5	91,368	66,629	91,368	66,629
Receivables	6	2,420	5,443	2,420	5,443
Investment properties	7	1,373	–	1,373	–
Other	8	24,334	24,149	24,334	24,149
<b>Total current assets</b>		<b>119,495</b>	<b>96,221</b>	<b>119,495</b>	<b>96,221</b>
<b>Non-current assets</b>					
Property, plant and equipment	9	3,507	2,383	3,507	2,383
Investment properties	10	–	1,373	–	1,373
<b>Total non-current assets</b>		<b>3,507</b>	<b>3,756</b>	<b>3,507</b>	<b>3,756</b>
<b>Total assets</b>		<b>123,002</b>	<b>99,977</b>	<b>123,002</b>	<b>99,977</b>
<b>Current liabilities</b>					
Payables	11	13,294	4,632	13,294	4,632
Interest bearing liabilities	12	–	2,480	–	2,480
Provisions	13	486	345	486	345
<b>Total current liabilities</b>		<b>13,780</b>	<b>7,457</b>	<b>13,780</b>	<b>7,457</b>
<b>Non-current liabilities</b>					
Provisions	14	1,548	1,473	1,548	1,473
<b>Total non-current liabilities</b>		<b>1,548</b>	<b>1,473</b>	<b>1,548</b>	<b>1,473</b>
<b>Total liabilities</b>		<b>15,328</b>	<b>8,930</b>	<b>15,328</b>	<b>8,930</b>
<b>Net assets</b>		<b>107,674</b>	<b>91,047</b>	<b>107,674</b>	<b>91,047</b>
<b>Equity</b>					
Contributed equity *	15	–	–	–	–
Retained surplus	16	107,674	91,047	107,674	91,047
<b>Total equity</b>		<b>107,674</b>	<b>91,047</b>	<b>107,674</b>	<b>91,047</b>

\* At 30 June 2003 contributed equity in the consolidated entity and the parent entity was \$100.

The above statement of financial position should be read in conjunction with the accompanying notes.

## STATEMENT OF CASH FLOWS

AS AT 30 JUNE 2003

	Notes	Consolidated		Parent entity	
		2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Cash flows from operating activities</b>					
Receipts from customers (inclusive of goods and services tax)		87,945	88,512	87,945	88,512
Payments to suppliers and employees (inclusive of goods and services tax)		(62,907)	(51,688)	(62,907)	(51,688)
		25,038	36,824	25,038	36,824
Interest received		3,782	2,092	3,782	2,092
Other revenue		309	701	309	701
<b>Net cash inflow from operating activities</b>	29	<b>29,129</b>	<b>39,617</b>	<b>29,129</b>	<b>39,617</b>
<b>Cash flows from investing activities</b>					
Payments for property, plant and equipment		(1,920)	(1,660)	(1,920)	(1,660)
Proceeds from sale of property, plant and equipment		10	–	10	–
<b>Net cash outflow from investing activities</b>		<b>(1,910)</b>	<b>(1,660)</b>	<b>(1,910)</b>	<b>(1,660)</b>
<b>Net increase in cash held</b>		<b>27,219</b>	<b>37,957</b>	<b>27,219</b>	<b>37,957</b>
Cash at the beginning of the financial year		64,149	26,192	64,149	26,192
<b>Cash at the end of the financial year</b>	5	<b>91,368</b>	<b>64,149</b>	<b>91,368</b>	<b>64,149</b>

The above statement of financial performance should be read in conjunction with the accompanying notes.

CASH FLOWS

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AS AT 30 JUNE 2003

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## NOTES TO THE FINANCIAL STATEMENTS

AS AT 30 JUNE 2003

### NOTE 1.

#### SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

This general purpose financial report has been prepared in accordance with Accounting Standards, other authoritative pronouncements of the Australian Accounting Standards Board, Urgent Issues Group Consensus Views and the Corporations Act 2001.

It is prepared in accordance with the historical cost convention, except for certain assets which, as noted, are at valuation. Unless otherwise stated, the accounting policies adopted are consistent with those of the previous year. Comparative information is reclassified where appropriate to enhance comparability.

#### (a) Principles of consolidation

The consolidated financial statements incorporate the assets and liabilities of all entities controlled by Australian Wool Innovation Limited as at 30 June 2003 and the results of all controlled entities for the year then ended. Australian Wool Innovation Limited and its controlled entities together are referred to in this financial report as the consolidated entity. The effects of all transactions between entities in the consolidated entity are eliminated in full. Outside equity interests in the results and equity of controlled entities are shown separately in the consolidated statement of financial performance and statement of financial position respectively.

Where control of an entity is obtained during a financial year, its results are included in the consolidated statement of financial performance from the date on which control commences. Where control of an entity ceases during a financial year, its results are included for that part of the year during which control existed.

#### (b) Abbreviations

AWS	Australian Wool Services Limited
TWC	TWCH Holding Pty Limited
SEPL	Shear Express Pty Limited
CSL	Chain Shearing Limited

#### (c) Income tax

Australian Wool Innovation Limited is exempt from income tax in Australia under Section 50-40 of the Income Tax Assessment Act 1997.

#### (d) Foreign currency translation

##### Transactions

Foreign currency transactions are initially translated into Australian currency at the rate of exchange at the date of the transaction. At reporting date amounts payable and receivable in foreign currencies are translated to Australian currency at rates of exchange current at that date. Resulting exchange differences are recognised in determining the surplus or deficit for the year.

#### (e) Acquisition of assets

Purchases of property, plant and equipment are recognised initially at cost in the statement of financial position, except for purchases costing less than \$2,000, which are expensed in the year of acquisition.

#### (f) Revenue recognition

Revenue for the sale of goods is recognised upon the delivery of the goods to the customers.

Revenue for the disposal of non-current assets is recognised when control of the asset has passed to the buyer.

Revenue from the rendering of a service is recognised by reference to the stage of completion of contracts or other agreements to provide services.

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

#### (g) Receivables

Collectibility of trade debtors is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off. A provision for doubtful debts is raised when some doubt as to collection exists.

#### (h) Recoverable amount of non-current assets

The recoverable amount of an asset is the net amount expected to be recovered through the cash inflows and outflows arising from its continued use and subsequent disposal.

Where the carrying amount of a non-current asset is greater than its recoverable amount, the asset is written down to its recoverable amount. Where net cash inflows are derived from a group of assets working together, the recoverable amount is determined on the basis of the relevant group of assets. The decrement in the carrying amount is recognised as an expense in net surplus or deficit in the reporting period in which the recoverable amount write-down occurs.

#### (i) Revaluations of non-current assets

Land and buildings are recognised at cost. Investment properties are measured at fair value being the amounts for which the assets could be exchanged between knowledgeable willing parties in an arm's length transaction. Revaluations are made with sufficient regularity to ensure that the carrying amount of each piece of land and each building does not differ materially from its fair value at reporting date. Annual assessments are made by the directors, supplemented by independent assessments at least every three years.

Revaluation increments are credited directly to the asset revaluation reserve, except that, to the extent that an increment reverses a revaluation decrement in respect of that class of asset previously recognised as an expense in net profit or loss, the increment is recognised immediately as revenue in net profit or loss.

Revaluation decrements are recognised immediately as expenses in net profit or loss, except that, to the extent that a credit balance exists in the asset revaluation reserve in respect of the same class of assets, they are debited directly to asset revaluation reserve.

Revaluation increments and decrements are offset against one another within a class of non-current assets, but not otherwise.

**(j) Investments**

Investments are stated at cost less amounts written off for permanent diminution in their value. Investment income is recognised in the statement of financial performance when receivable.

**(k) Depreciation of property, plant and equipment**

Depreciation is calculated on a straight line basis to write off the net cost or revalued amount of each item of property, plant and equipment (excluding land) over its expected useful life to the economic entity. Estimates of remaining useful lives are made on a regular basis for all assets, with annual reassessments for major items. The expected useful lives are as follows:

Category	Useful life	Depreciation basis
Buildings	40 years	straight line
Plant and equipment	2-6 years	straight line

**(l) Leasehold improvements**

The cost of improvements to or on leasehold properties is amortised over the unexpired period of the lease or the estimated useful life of the improvement to the consolidate entity, whichever is the shorter. Leasehold improvements held at reporting date are being amortised over seven years.

**(m) Trade and other creditors**

These amounts represent liabilities for goods and services provided to the company prior to the end of the financial year and which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition.

**(n) Employee entitlements**

**(i) Wages, salaries and annual leave**

Liabilities for wages, salaries and annual leave expected to be settled within 12 months of the reporting date are measured at the amounts expected to be paid when liabilities are settled. Liabilities for non-accumulating sick leave are recognised when the leave is taken and measured at the rates paid or payable.

**(ii) Long service leave**

The liability for long service leave expected to be settled within 12 months of the reporting date is recognised in the provision for employee benefits and is measured in accordance with (i) above. The liability for long service leave expected to be settled more than 12 months from the reporting date is recognised in the provision for employee benefits and measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date.

**(o) Cash**

For the purpose of the statement of cash flows, cash includes deposits held at call with a bank, funds under management and investment securities. There were no standby credit facilities in place at 30 June 2003.

**(p) Rounding of amounts**

The company is of a kind referred to in Class Order 98/0100, issued by the Australian Securities and Investments Commission, relating to the 'rounding off' of amounts in the financial report. Amounts in the financial report have been 'rounded off' in accordance with that Class Order to the nearest thousand dollars, or in certain cases, to the nearest dollar.

**NOTE 2. SEGMENT INFORMATION**

**Business Segments**

Australian Wool Innovation Limited operates predominately in research, development and innovation in the wool industry.

**Geographical segments**

Australian Wool Innovation Limited operates in one geographic segment, that being Australia.

**NOTE 3.  
REVENUE**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2002 \$'000	2002 \$'000
<b>Revenue from operating activities</b>				
Contributions	16,170	14,428	16,170	14,428
Sale of goods and services	309	168	309	168
Royalties	448	459	448	459
Wool levy	60,222	53,733	60,222	53,733
Wool tax	23	115	23	115
	77,172	68,903	77,172	68,903
<b>Revenue from outside the operating activities</b>				
Rental income	–	73	–	73
Interest	3,782	2,092	3,782	2,092
	3,782	2,165	3,782	2,165
<b>Revenue from ordinary activities</b>	<b>80,954</b>	<b>71,068</b>	<b>80,954</b>	<b>71,068</b>

**NOTE 4.  
SURPLUS FROM ORDINARY ACTIVITIES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Net gains and expenses</b>				
Surplus from ordinary activities includes the following specific net gains and expenses:				
<b>Expenses</b>				
Depreciation				
Buildings	61	–	61	–
Plant and equipment	612	102	612	102
<b>Total depreciation</b>	<b>673</b>	<b>102</b>	<b>673</b>	<b>102</b>
Other Provisions				
Employee entitlements	216	268	216	268
Rental expense relating to operating leases	619	62	619	62

**NOTE 5.  
CURRENT ASSETS – CASH ASSETS**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Cash on hand and at bank	781	3	781	3
Funds under management	90,587	66,626	90,587	66,626
	91,368	66,629	91,368	66,629
The above figures are reconciled to cash at the end of the financial period as shown in the statement of cash flows as follows:				
Balances as above	91,368	66,629	91,368	66,629
Less: Bank overdrafts (note 11)	–	2,480	–	2,480
<b>Balances as per statement of cash flows</b>	<b>91,368</b>	<b>64,149</b>	<b>91,368</b>	<b>64,149</b>

**NOTE 6.****CURRENT ASSETS – RECEIVABLES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Trade debtors	240	171	240	171
Provision for doubtful debts	(58)	–	(58)	–
	182	171	182	171
Accrued wool levy	2,238	5,272	2,238	5,272
	2,420	5,443	2,420	5,443

**NOTE 7.****CURRENT ASSETS – INVESTMENT PROPERTIES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Investment properties				
At directors' valuation	1,373	–	1,373	–

Subsequent to the year ending on 27 August 2003 contracts were exchanged for sale of this property for a selling price of \$1.5 million. Settlement is expected to occur on 25 November 2003.

**NOTE 8.****CURRENT ASSETS – OTHER**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Goods and services tax receivable	305	47	305	47
Prepayments	29	102	29	102
Interest in properties held for resale	24,000	24,000	24,000	24,000
	24,334	24,149	24,334	24,149

During the year ended 30 June 2002, Australian Wool Innovation Limited (AWI) and the CSIRO entered into an agreement to conclude any equity (real or perceived) in a number of properties owned by the CSIRO. AWI Ltd will receive an agreed settlement of property and cash subsequent to the sale of certain CSIRO interests. Based on the agreed settlement terms with the CSIRO, the interests in the property portfolio were written down by \$6.088 million during the year ended 30 June 2002. Proceeds from settlement are expected to be received in the next 12 months.

**NOTE 9.**
**NON-CURRENT ASSETS – PROPERTY, PLANT & EQUIPMENT**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Land &amp; buildings</b>				
Freehold land – at cost	650	650	650	650
Buildings				
At cost	736	599	736	599
Less: Accumulated depreciation	(70)	(9)	(70)	(9)
	666	590	666	590
<b>Total land and buildings</b>	<b>1,316</b>	<b>1,240</b>	<b>1,316</b>	<b>1,240</b>
<b>Plant and equipment</b>				
Plant & equipment				
At cost	2,922	1,262	2,922	1,262
Less: Accumulated depreciation	(731)	(119)	(731)	(119)
	2,191	1,143	2,191	1,143
<b>Total plant and equipment</b>	<b>2,191</b>	<b>1,143</b>	<b>2,191</b>	<b>1,143</b>
	<b>3,507</b>	<b>2,383</b>	<b>3,507</b>	<b>2,383</b>

**Reconciliations**

Reconciliation of the carrying amounts of each class of property, plant and equipment at the beginning and end of the current and financial year is set out below:

	Buildings \$'000	Plant and equipment \$'000	Total \$'000
Carrying amount at 1 July 2002	1,240	1,143	2,383
Additions	137	1,783	1,920
Disposals	–	(123)	(123)
Depreciation/amortisation expense	(61)	(612)	(673)
Carrying amount at 30 June 2003	1,316	2,191	3,507

**NOTE 10.**
**NON-CURRENT ASSETS – INVESTMENT PROPERTIES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Investment properties				
At directors' valuation	–	1,373	–	1,373

**NOTE 11.**
**CURRENT LIABILITIES – PAYABLES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Unsecured</b>				
Trade creditors	2,769	136	2,769	136
Other payables – RDI contract payments accrued	9,595	4,133	9,595	4,133
Other creditors	930	363	930	363
	13,294	4,632	13,294	4,632

**NOTE 12.**
**CURRENT LIABILITIES – INTEREST BEARING LIABILITIES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Unsecured</b>				
Bank overdraft (note 5)	–	2,480	–	2,480

NOTE 13.  
CURRENT LIABILITIES – PROVISIONS

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Provisions – annual leave	346	274	346	274
Provisions – other employee entitlements	140	71	140	71
	486	345	486	345

NOTE 14.  
NON-CURRENT LIABILITIES – PROVISIONS

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Provisions – long service leave	96	21	96	21
Provisions – accrued by AWRAP (under contract)	1,452	1,452	1,452	1,452
	1,548	1,473	1,548	1,473

NOTE 15.  
CONTRIBUTED EQUITY

	Parent entity		Parent entity	
	2003 Shares	2002 Shares	2003 \$	2002 \$
(a) Share capital				
Ordinary shares – fully paid	36,654	36,632	100	100

(b) Ordinary shares

The \$100 represents the initial capital contribution on the establishment of the company. Each woolgrower has a right to one vote for every \$100 of wool levy or wool tax contributed during the three previous financial years, as defined in the Wool Services Privatisation Act 2000 (Cth). These shares do not entitle woolgrowers to participate in any profit distributions or in any proceeds on the winding up of the entity.

(c) Movements in ordinary share capital

Date	Details	Number of shares	Issue price	\$
1 July 2001	Opening balance	100	–	100
1 May 2002	Share issue on demerger from AWS	36,532	Nil	Nil
30 June 2002	Balance	36,632		100
4 December 2002	Share issue	2	Nil	Nil
5 December 2002	Share issue	8	Nil	Nil
3 January 2003	Share issue	3	Nil	Nil
15 January 2003	Share issue	1	Nil	Nil
13 February 2003	Share issue	2	Nil	Nil
12 March 2003	Share issue	1	Nil	Nil
13 May 2003	Share issue	2	Nil	Nil
30 June 2003	Share issue	3	Nil	Nil
30 June 2003	Balance	36,654	–	100

**NOTE 16.  
RETAINED SURPLUS**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Retained surplus at the beginning of the financial year	91,047	60,870	91,047	60,870
Net surplus attributable to shareholders of Australian Wool Innovation Limited	16,627	30,177	16,627	30,177
<b>Retained surplus at the end of the financial year</b>	<b>107,674</b>	<b>91,047</b>	<b>107,674</b>	<b>91,047</b>

**NOTE 17.  
EQUITY**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Total equity at the beginning of the financial year	91,047	60,870	91,047	60,870
Total changes in equity recognised in the statement of financial performance	16,627	30,177	16,627	30,177
<b>Total equity at the end of the financial year</b>	<b>107,674</b>	<b>91,047</b>	<b>107,674</b>	<b>91,047</b>

**NOTE 18.  
FINANCIAL INSTRUMENTS**

**(a) Credit risk exposures**

The consolidated entity's maximum exposures to credit risk at reporting date in relation to each class of recognised financial asset is the carrying amount of those assets as indicated in the statement of financial position.

The consolidated entity has no significant exposures to any concentrations of credit risk.

According to Australian Wool Innovation Limited's Treasury Policy, counterparties for Financial Instruments must have a minimum credit rating AA- (long term) and A1+ (short term) as rated by S&P's Australian Standards. AWI manages all risks by only approving expenditure in Australian dollars with a fixed exchange rate set at the rate prevailing at 4pm the day before any contract is signed.

Australian Wool Innovation Limited holds cash funds in interest bearing deposits or bank bills to meet future commitments.

**(b) Interest rate risk exposures**

The consolidated entity's exposure to interest rate risk and effective weighted average interest rate by maturity periods is set out in the following table.

2003	Notes	Fixed interest maturing in:			Total \$'000
		Weighted average interest rate %	Floating interest rate \$'000	Non interest bearing \$'000	
<b>Financial assets</b>					
Cash and deposits	5	4.25	777	4	781
Funds under management	5	4.80	90,587	–	90,587
Receivables	6	–	–	2,420	2,420
			91,364	2,424	93,788
<b>Financial liabilities</b>					
Bank overdraft and loans	12	–	–	–	–
Trade and other creditors	11	–	–	(13,294)	(13,294)
			–	(13,294)	(13,294)
<b>Net financial assets / (liabilities)</b>			<b>91,364</b>	<b>(10,870)</b>	<b>80,494</b>

2002	Fixed interest maturing in:				
	Notes	Weighted average interest rate %	Floating interest rate \$'000	Non interest bearing \$'000	Total \$'000
<b>Financial assets</b>					
Cash and deposits	5	–	–	3	3
Funds under management	5	4.94	66,626	–	66,626
Receivables	6	–	–	5,443	5,443
			66,626	5,446	72,072
<b>Financial liabilities</b>					
Bank overdrafts and loans	12	4.25	(2,480)	–	(2,480)
Trade and other creditors	11	–	–	(4,632)	(4,632)
			(2,480)	(4,632)	(7,112)
Net financial assets			64,146	814	64,960

(c) Net fair value of financial assets and liabilities

On-balance sheet

The net fair value of cash and cash equivalents and non-interest bearing monetary financial assets and financial liabilities of the economic entity approximates their carrying amounts.

NOTE 19.

REMUNERATION OF DIRECTORS

	Consolidated		Parent entity	
	2003 \$	2002 \$	2003 \$	2002 \$
Income paid or payable, or otherwise made available, to directors by entities in the consolidated entity and related parties in connection with the management of affairs of the parent entity and its controlled entities.	1,947,874*	881,365	1,947,874	881,365*

The numbers of company directors whose total income from the company or related parties was within the specified bands are as follows:

\$	\$	2003	2002
10,000	–	5	1
30,000	–	1	–
40,000	–	4	1
50,000	–	1	–
70,000	–	–	1
80,000	–	1	2
140,000	–	–	1
430,000	–	–	1
1,520,000	–	1	–

\* includes termination payment.

NOTE 20.

REMUNERATION OF EXECUTIVES

	Consolidated		Parent	
	2003 \$	2002 \$	2003 \$	2002 \$
Remuneration received, or due and receivable, from entities in the consolidated entity and related parties by Australian-based executive officers (including directors) whose remuneration was at least \$100,000:				
Executive officers of the parent entity	3,347,335*	1,474,149	3,347,335*	1,474,149
Executive officers of other entities in the consolidated entity	–	–	–	–
	3,347,335	1,474,149	3,347,335	1,474,149

The numbers of Australian based executive officers (including directors) whose remuneration from entities in the consolidated entity and related parties was within the specified bands are as follows:

\$	\$	Consolidated		Parent	
		2003	2002	2003	2002
100,000 – 109,999		–	1	–	1
110,000 – 119,999		–	1	–	1
130,000 – 139,999		–	2	–	2
150,000 – 159,999		1	–	1	–
170,000 – 179,999		–	2	–	2
200,000 – 209,999		–	1	–	1
210,000 – 219,999		2	–	2	–
250,000 – 259,999		1	–	1	–
280,000 – 289,999		1 *	–	1 *	–
290,000 – 299,999		1	–	1	–
330,000 – 339,999		1	–	1	–
340,000 – 349,999		1	–	1	–
350,000 – 359,999		1 *	–	1 *	–
430,000 – 439,999		–	1	–	1
1,520,000 – 1,529,999 (includes termination payment)		1	–	1	–

\* Len Stephens (Chief Executive Officer) and Les Targ (General Manager Commercial) were employed during the year, and due to their period of employment did not receive in excess of \$100,000 during the year and would ordinarily be excluded from the above table. Had they been employed for the full year, they would be included in the above table where indicated.

NOTE 21.

REMUNERATION OF AUDITORS

	Consolidated		Parent entity	
	2003 \$	2002 \$	2003 \$	2002 \$
During the year the auditor of the parent entity and its related practices earned the following remuneration:				
Audit of financial reports of the entity or any entity in the consolidated entity	108,000	51,500	100,000	45,000
Other audit-related work	26,487	–	26,487	–
Other assurance services	255,102	58,930	255,102	58,930
Total audit and other assurance services	389,589	110,430	381,589	103,930
Advisory services	14,066	15,750	14,066	15,750
Taxation	99,400	38,791	99,400	38,791
Total remuneration	503,055	164,971	495,055	158,471

**NOTE 22.****COMMITMENTS FOR EXPENDITURE**

	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Other Commitments</b>				
Commitments in relation to research and development, technical proving and transfer and, the cost of various goods and services contracted for at the end of the reporting date but not recognised as liabilities, payable:				
Within one year	38,222	29,157	38,222	29,157
Later than one year but not later than five years	35,234	31,448	35,234	31,448
Later than five years	–	401	–	401
	73,456	61,006	73,456	61,006
<b>Lease commitments</b>				
AWI leases premises in Geelong, Victoria, Canberra, ACT and Sydney, NSW				
Commitments in relation to leases contracted for at the reporting date but not recognised as liabilities, payable:				
Within one year	404	411	404	411
Later than one year but not later than five years	1,221	577	1,221	577
	1,625	988	1,625	988
Representing:				
Non-cancellable operating leases	1,625	988	1,625	988

**NOTE 23.****EMPLOYEE BENEFITS**

	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
<b>Employee benefit and related on-costs liabilities</b>				
Provision for employee benefits - current (Note 13)	486	345	486	345
Provision for employee benefits - non-current (Note 14)	96	21	96	21
<b>Aggregate employee benefit and related on-costs liabilities</b>	582	366	582	366
<b>Employee Numbers</b>				
Number of employees at 30 June	46	37	46	37
Number of full-time contractors at 30 June	7	2	7	2
	53	39	53	39

**NOTE 24.****RELATED PARTIES****Directors**

The names of persons who were directors of Australian Wool Innovation Limited at any time during the financial year are as follows: I M McLachlan, B P van Rooyen, C J Abell, K J Bell, J D O Boyd, H P Nivison, P S Sykes, C J Dorber, M P McCaskill, P A Murphy, D M Nelson, M J Staley, A O Trounson.

All of these persons were also directors during the year ended 30 June 2002, except for A O Trounson who was appointed on 7 August 2002, P S Sykes who was appointed on 14 August 2002, C J Abell who was appointed on 26 March 2003 and I M McLachlan, B P van Rooyen, K J Bell, J D O Boyd and H P Nivison who were all appointed on 4 November 2002. A L Vizard was also a director during the period 1 July 2001 – 14 June 2002.

**Remuneration**

Information on remuneration of directors is disclosed in note 19.

**Directors' interests in contracts**

During the year ended 30 June 2003 no director, or director-related entity entered into a contract or had any transactions on other than normal terms and conditions with Australian Wool Innovation Limited.

### Loans to directors and director-related entities

Loans to directors of entities in the consolidated entity and their director-related entities comprise.

	Consolidated		Parent entity	
	2003 \$	2002 \$	2003 \$	2002 \$
Balance outstanding at start of year:				
C J Dorber	18,621	–	18,621	–
M P McCaskill	16,703	–	16,703	–
P A Murphy	16,703	–	16,703	–
M J Staley	16,703	–	16,703	–
A L Vizard	17,582	–	17,582	–
	86,312	–	86,312	–
Loans Issued & Fees Paid in advance to:				
C J Dorber	–	23,016	–	23,016
M P McCaskill	8,091	32,021	8,091	32,021
P A Murphy	–	23,016	–	23,016
M J Staley	–	23,016	–	23,016
A L Vizard	–	23,016	–	23,016
	8,091	124,085	8,091	124,085

### Loans to directors and director-related entities

	Consolidated		Parent entity	
	2003 \$	2002 \$	2003 \$	2002 \$
Repayments & Recoveries:				
C J Dorber	9,713	4,395	9,713	4,395
M P McCaskill	14,342	15,318	14,342	15,318
P A Murphy	16,703	6,313	16,703	6,313
M J Staley	16,703	6,313	16,703	6,313
A L Vizard	17,582	5,434	17,582	5,434
	75,043	37,773	75,043	37,773
Balance outstanding at year end:				
C J Dorber	8,908	18,621	8,908	18,621
M P McCaskill	10,452	16,703	10,452	16,703
P A Murphy	–	16,703	–	16,703
M J Staley	–	16,703	–	16,703
A L Vizard	–	17,582	–	17,582
	19,360	86,312	19,360	86,312

The fees paid in advance were advanced in relation to the above directors as fringe benefits and include the amount of the fringe benefit provided and the applicable fringe benefits tax. The advances were to be repaid by way of reduction of future directors fees. These advances were non-interest bearing.

### Other transactions with directors and director-related parties

During the financial year and prior year there were director-related persons employed by the entity. These persons were terminated during the year and received termination payments.

### Other related parties

Aggregate amounts included in the determination of surplus from ordinary activities that resulted from transactions with each class of other related parties.

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Net expenses to TWC Group and AWS				
Controlled entities	–	447	–	447
Payment to TWCH and TWC for delivery of services				
Controlled entities	–	3,386	–	3,386

### Shear Express Pty Limited

The parent entity is committed to contribute a further \$1,944,000 to Shear Express Pty Limited. This company's principal activity is the development of innovative products for wool harvesting.

### Ownership interests in related parties

Interests held in the controlled entities are set out in note 25.

**NOTE 25.****INVESTMENT IN CONTROLLED ENTITIES**

Name of entity	Country of incorporation	Class of shares	Equity holding	
			2003	2002
Shear Express Pty Limited	Australia	Ordinary	99.99%	99.99%
Chain Shearing Limited	Australia	Ordinary	99.99%	99.99%

On 4 April 2002 the parent entity acquired 99.99% of the equity and 70% of the voting rights of Shear Express Pty Limited for \$500,000. At 30 June 2003 the parent entity is committed to contribute a further \$1,944,000 to Shear Express Pty Limited. On 4 April 2002 the parent entity also acquired a controlling interest in Chain Shearing Limited, a controlled entity of Shear Express Pty Limited.

**NOTE 26.****ECONOMIC DEPENDENCY**

Australian Wool Innovation Limited is dependent upon receipt of Wool Levy through the Commonwealth Government who collect the levy and provide the funds in accordance with the Statutory Funding Agreement.

**NOTE 27.****EVENTS OCCURRING AFTER REPORTING DATE**

There were no material financial events that occurred after reporting date that have not been included in the financial report.

**NOTE 28.\*****CONTINGENT LIABILITIES**

The parent entity and consolidated entity had contingent liabilities at 30 June 2003 in respect of:

**Claims**

There are several claims against the entity at year end. The directors are vigorously defending these claims to ensure that these claims result in minimal financial loss to the entity. The directors believe that the claims may result in a maximum potential aggregate payment of \$500,000 to settle the claims.

\* The directors are not aware of any other potential claims or contingent liabilities against the parent entity or consolidated entity.

**NOTE 29.****RECONCILIATION OF SURPLUS FROM ORDINARY ACTIVITIES TO NET CASH INFLOW FROM OPERATING ACTIVITIES**

	Consolidated		Parent entity	
	2003 \$'000	2002 \$'000	2003 \$'000	2002 \$'000
Surplus from ordinary activities	16,627	30,177	16,627	30,177
Depreciation and amortisation	673	102	673	102
Write down of interest in properties held for resale	–	6,088	–	6,088
Loss on sale of property, plant and equipment	113	–	113	–
Change in operating assets and liabilities				
Decrease (increase) in trade debtors	(69)	903	(69)	903
Decrease (increase) in prepayments	73	(96)	73	(96)
(Increase) in other operating assets	(200)	(47)	(200)	(47)
Decrease in accrued wool levy	3,034	3,396	3,034	3,396
Increase (decrease) in creditors	8,662	(9,464)	8,662	(9,464)
Increase in accrued government contribution	–	7,850	–	7,850
Increase in provisions	216	708	216	708
Net cash inflow from operating activities	29,129	39,617	29,129	39,617

## DIRECTORS' DECLARATION

AS AT 30 JUNE 2003

### 30 JUNE 2003

The directors declare that the financial statements and notes set out on pages 56 to 72:

- (a) comply with Accounting Standards, the Corporations Regulations 2001 and other mandatory professional reporting requirements; and
- (b) give a true and fair view of the company's and the consolidated entity's financial position as at 30 June 2003 and of their performance, as represented by the results of its operations and of their cash flows, for the financial year ended on that date.

In the directors' opinion:

- (a) the financial statements and notes are in accordance with the Corporations Act 2001; and
- (b) there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of the directors.



I M McLachlan  
Chairman  
2003 Sydney

# INDEPENDENT AUDIT REPORT TO THE MEMBERS OF AUSTRALIAN WOOL INNOVATION LIMITED

AS AT 30 JUNE 2003

## AUDIT OPINION

In our opinion, the financial report of Australian Wool Innovation Limited:

- gives a true and fair view, as required by the **Corporations Act 2001** in Australia, of the financial position of Australian Wool Innovation Limited and the Australian Wool Innovation Limited Group (defined below) as at 30 June 2003, and of their performance for the year ended on that date; and
- is presented in accordance with the **Corporations Act 2001**, Accounting Standards and other mandatory financial reporting requirements in Australia, and the **Corporations Regulations 2001**.

This opinion must be read in conjunction with the rest of our audit report.

## SCOPE

### The financial report and directors' responsibility

The financial report comprises the statement of financial position, statement of financial performance, statement of cash flows, accompanying notes to the financial statements, and the directors' declaration for both Australian Wool Innovation Limited (the company) and the Australian Wool Innovation Group (the consolidated entity), for the year ended 30 June 2003. The consolidated entity comprises both the company and the entities it controlled during that year.

The directors of the company are responsible for the preparation and true and fair presentation of the financial report in accordance with the **Corporations Act 2001**. This includes responsibility for the maintenance of adequate accounting records and internal controls that are designed to prevent and detect fraud and error, and for the accounting policies and accounting estimates inherent in the financial report.

### Audit approach

We conducted an independent audit in order to express an opinion to the members of the company. Our audit was conducted in accordance with Australian Auditing Standards, in order to provide reasonable assurance as to whether the financial report is free of material misstatement. The nature of an audit is influenced by factors such as the use of professional judgement, selective testing, the inherent limitations of internal control, and the availability of persuasive rather than conclusive evidence. Therefore, an audit cannot guarantee that all material misstatements have been detected.

We performed procedures to assess whether in all material respects the financial report presents fairly, in accordance with the **Corporations Act 2001**, Accounting Standards and other mandatory financial reporting requirements in Australia, a view which is consistent with our understanding of the company's and the consolidated entity's financial position, and of their performance as represented by the results of their operations and cash flows.

We formed our audit opinion on the basis of these procedures, which included:

- examining, on a test basis, information to provide evidence supporting the amounts and disclosures in the financial report; and
- assessing the appropriateness of the accounting policies and disclosures used and the reasonableness of significant accounting estimates made by the directors.

When this audit report is included in an Annual Report, our procedures include reading the other information in the Annual Report to determine whether it contains any material inconsistencies with the financial report.

While we considered the effectiveness of management's internal controls over financial reporting when determining the nature and extent of our procedures, our audit was not designed to provide assurance on internal controls.

Our audit did not involve an analysis of the prudence of business decisions made by directors or management.

### Independence

In conducting our audit, we followed applicable independence requirements of Australian professional ethical pronouncements and the **Corporations Act 2001**.

PricewaterhouseCoopers



WD McCluskey  
Partner

2003 Sydney

APPENDICES 2002/2003

# APPENDICES

APPENDIX A: PROJECT LIST 2002/2003

Strategic aim	Title	Start date	Finish date	Project cost	Primary research provider *
A1 Frontier research	Completion of useful sheep genome map	1/08/2000	30/06/2003	180,225.00	CSIRO Livestock Industry
	Golden Ram	8/07/2002	30/11/2005	950,000.00	The University of New England
	Genetic technologies	20/08/2002	10/10/2002	2,032.43	AWI
	Analysis of sheep, haemonchus contortus relationship	11/06/2003	1/04/2006	214,250.00	Meat & Livestock Australia
	Validation of Thoil metabolism as a drug target for parasitic nematodes	10/03/2003	1/04/2005	274,500.00	Meat & Livestock Australia
	Novel approaches for control of sheep nematode parasites	1/01/2003	1/04/2006	299,000.00	
A2 Feasibility and scoping studies	SCIPS scoping study	19/11/2001	25/07/2002	50,000.00	CSIRO Livestock Industry
	Anthelmintic investigation	1/10/2002	30/11/2003	108,297.00	Baron Strategic Services Pty Ltd
	Benefit cost analysis of AWI investment proposal 'Enzymatic bioremediation'	6/03/2003	2/04/2003	10,000.00	BDA Group
	Producer guarantee – financial guarantee for wool	28/06/2002	16/07/2002	13,750.00	MAC Stats & Analysis
	Review of costs and impacts of OJD	10/10/2002	4/04/2003	105,900.00	Hassall & Associates Pty Ltd
	Desalinisation and drought	1/11/2002	28/02/2003	8,000.00	Keringal Pty Ltd
	GxE review	13/12/2002	20/12/2003	20,000.00	CSIRO Livestock Industry
	Cost of production survey	30/03/2003	30/06/2003	28,050.00	Wool Market Linkages Ltd
	An evaluation of the market potential for EMR protective wool textiles and clothing	1/04/2002	30/07/2002	12,000.00	WRONZ
	Proposed business plan/feasibility study of Working Wool Museum in Echuca/Moama	1/10/2002	30/01/2003	6,000.00	Stubberfield Partners
A3 Awards and rewards	The European Wool Awards	1/07/2002	1/07/2007	2,296,709.00	Interlaine – EWA
	The Australian Wool Fashion Awards	18/12/2001	18/12/2004	180,000.00	Australian Wool Fashion Awards Ltd
	Exploring multicultural influences on design for wool apparel and textiles	8/11/2002	8/10/2003	75,600.00	Royal College of Art
A4 Commercialisation ventures	Shear Express	4/04/2002	4/09/2004	6,900,000.00	
	Non-woven machinery joint venture	1/07/2002	30/06/2003	1,500,000.00	Macquarie Textiles Group Limited
	Validation of fibre to fabric outcomes	20/01/2003	20/01/2004	330,000.00	AWI
A5 Studentships, scholarships, innovative tuition	Armidale Animal Breeding Summer School	12/02/2003	12/04/2003	13,000.00	The University of New England
	University of Bremen student visit	3/04/2003	10/08/2003	10,000.00	Hochschule Bremen
	Post graduate honours fashion and design student – Linclab/RMIT	1/07/2002	31/12/2002	22,000.00	Linclab
	PhD scholarship: Finishing very light weight wool fabric	1/07/2002	30/06/2006	182,200.00	Linclab
	Post doctoral research scholarship on smart textiles	1/12/2002	31/12/2004	304,000.00	WRONZ
	AWI industry scholarship – USA	1/07/2003	30/06/2004	92,592.60	
	Education - Biella Masters program	10/10/2001	30/09/2004	32,033.25	
	Australian Wool Innovation's sponsorship of RSA Student Design Awards 2001-2004	1/10/2001	1/10/2004	361,816.61	Royal Society of Arts
Ms Emma Malady – Bachelor of Arts (Fashion) degree – RMIT Melbourne	3/01/2003	3/01/2004	10,794.00	RMIT University	
A6 Expert and inventive advice	NSW Agriculture Review	20/12/2001	31/10/2002	70,000.00	Ecoservices Pty Ltd
	Establishment of the Sheep Research Council of WA	25/10/2002	11/02/2003	6,000.00	The Sheep Research Council of WA
	Evaluation of on-farm R&D investment portfolio	17/01/2003	31/03/2003	70,000.00	BDA Group
	Continuous wool filament task force – David James	1/08/2002	30/08/2003	52,400.00	Ecoservices Pty Ltd
	Continuous wool filament task force – Chris Wilcox	30/09/2002	6/12/2002	86,730.00	TWC
	Continuous wool filament task force – Frank Kisvarda	25/09/2002	7/12/2002	67,000.00	Apparel Management Pty Ltd
	Technical consultancy – Mr Hans Hebecker	22/11/2002	22/11/2003	8,500.00	Hans Hebecker

PROJECT LIST 2002/2003

APPENDIX A: PROJECT LIST 2002/2003 (CONT)

Strategic aim	Title	Start date	Finish date	Project cost	Primary research provider *
B1 Novel wool-using products	TPT – Non-woven needle punch (apparel)	1/01/2001	30/09/2002	757,529.00	TWC
	TPT – Sportwool outdoor	1/02/2002	30/09/2003	888,756.00	TWC
	TPT – Non-woven hydroentanglement (Spunlace)	1/01/2001	30/10/2002	1,019,820.00	TWC
	TPT – Short staple blends	1/01/2001	30/11/2003	645,000.00	TWC
	"Up Wool" fill material	20/08/2001	30/04/2003	141,000.00	WRONZ
	Wool stretch pile fabric	20/08/2001	31/03/2003	270,000.00	WRONZ
	Pure wool business shirt	28/08/2001	30/04/2003	250,000.00	WRONZ
	Non-woven umbrella project – six sub-projects	8/01/2001	8/01/2004	6,000,000.00	WRONZ
	High performance lining system for suits and work wear	15/04/2002	15/10/2003	459,874.00	TWC
	Sportwool fleece	15/04/2002	15/04/2003	399,716.00	TWC
	Smart yarn development	15/04/2002	15/04/2003	676,285.00	TWC
	Heated wool bedding	1/06/2002	30/07/2004	578,000.00	WRONZ
	Double layer knit structures with technical benefit	7/01/2002	17/12/2002	379,796.44	CSIRO Textile & Fibre
	AFAY-SPUN wool/cotton yarns – feasibility	1/03/2003	30/11/2003	45,000.00	WRONZ
	Novel knit fabric – feasibility study	30/08/2002	30/06/2003	175,000.00	WRONZ
	Cease-fire 'Bush Fire Curtain'	3/03/2003	12/04/2003	17,400.00	Cease-Fire Technologies
	Electrostatic wool filters	1/04/2003	30/06/2003	1,128,190.00	CSIRO Textile & Fibre
	Medical textiles	1/01/2003	1/01/2004	884,000.00	CSIRO Textile & Fibre
	Sensory fabric for ubiquitous interfaces	1/12/2002	3/06/2003	978,041.31	Brunel University
	B2 New technologies to enhance wool products	TPT – Machine wash wool blankets	2/01/2002	30/10/2002	238,171.00
TPT – Metal free dyeing		1/01/2001	30/12/2002	306,937.00	TWC
Fibre modification to enhance skin comfort		17/10/2001	2/12/2002	773,354.00	CSIRO Textile & Fibre
Unique surface effects for wool textiles		11/01/2001	14/09/2002	824,643.00	CSIRO Textile & Fibre
Total Easy Care jacketings		15/04/2002	15/04/2003	545,536.38	TWC
Enhance technology for casual/leisurewear woven blend		15/04/2002	15/04/2004	329,145.00	TWC
Permanent bright shades for wool		21/01/2002	31/01/2003	1,048,000.00	CSIRO Textile & Fibre
Enhanced wool properties through surface modification		14/01/2002	31/03/2003	943,875.00	CSIRO Textile & Fibre
Pilling reduction technologies for knitwear		1/11/2002	31/01/2004	260,000.00	WRONZ
Fine and soft wool yarns		1/04/2002	1/09/2002	98,852.00	Deakin University
Garment treatment for Easy Care wovens		1/10/2002	30/10/2004	478,703.69	TWC
Mens washable wool blend suit		1/06/2002	30/06/2003	617,000.00	Berkeley Apparel Pty Ltd
High lightfastness dyeings for wool fabrics		1/09/2002	30/06/2005	639,740.00	WRONZ
Thermal comfort of wool bedding products		1/05/2003	7/03/2004	160,177.00	TWC
Prototype heated wool sock development		4/12/2002	4/12/2006	100,000.00	WRONZ
B3 Revolutionary wool directions		Producing micro-particles from wool proteins	1/04/2003	30/03/2004	246,314.00
	Coloured conductive textiles	1/07/2002	30/12/2005	1,354,064.00	Deakin University
	Continuous wool blend filament	1/07/2002	30/12/2005	1,974,956.00	Deakin University
	Fundamental Wool Science Collaboration: A – Fibre surface and cuticle studies – DWI	1/12/2002	1/12/2005	825,398.00	DWI
	Fundamental Wool Science Collaboration: A – Characterisation and modification of the proteolipid surface of wool – CSIRO	31/03/2003	30/10/2005	1,241,000.00	CSIRO Textile & Fibre
	Fundamental Wool Science Collaboration: A – Fibre surface and cuticle studies – CSIRO	1/12/2002	1/12/2004	291,000.00	CSIRO Textile & Fibre
	Fundamental Wool Science Collaboration: A – Fibre surface and cuticle studies – WRONZ	1/04/2003	30/03/2006	1,320,000.00	WRONZ

PROJECT LIST 2002/2003

APPENDIX A: PROJECT LIST 2002/2003 (CONT)

Strategic aim	Title	Start date	Finish date	Project cost	Primary research provider *
B3 Revolutionary wool directions	Fundamental Wool Science Collaboration: C – Brighter white wool – DWI	1/12/2002	30/11/2004	467,162.00	DWI
	Fundamental Wool Science Collaboration: C – Brighter white wool – CSIRO	1/12/2002	30/11/2004	833,400.00	CSIRO Textile & Fibre
	Fundamental Wool Science Collaboration C – Photoyellowing – WRONZ	1/04/2003	1/04/2005	460,000.00	WRONZ
	Smart textiles – Preparation of six concept proposals	1/03/2002	31/12/2002	201,125.17	WRONZ
	Fundamental Wool Science Collaboration: B – Element mapping of wool fibre morphological components – DWI	1/12/2002	1/12/2005	517,131.00	DWI
	Fundamental Wool Science Collaboration: B – Fibre ultrastructure and cellular morphology – WRONZ	1/04/2003	1/04/2006	1,140,000.00	WRONZ
	Fundamental Wool Science Collaboration: B – Merino wool structural database – CSIRO	28/04/2003	28/10/2004	131,000.00	CSIRO Textile & Fibre
B4 Marketing support for use of innovations	To produce a colour forecast for AWI providers	18/07/2002	31/12/2002	9,348.00	WRONZ
	Technical briefing from Austrade Japan	1/07/2002	30/06/2003	24,000.00	AUSTRADE
C1 Marketplace understanding and information flow	Pricemaker software	15/08/2002	30/06/2003	601,000.00	TWC
	Wool production forecasting committee	19/04/2002	31/12/2006	510,155.00	TWC
	Business Intelligence Services	20/08/2001	30/06/2004	340,000.00	TWC
	Strategic grower industry intelligence	15/08/2001	1/06/2004	1,253,000.00	TWC
	Scoping study for "Wool Netco" proposal – Riverina woolgrowers	16/07/2002	16/01/2003	41,000.00	Riverina Wool Growers Pty Ltd
	Tasmanian Merino Eco Wool trademark	1/06/2002	31/12/2002	35,000.00	Roberts Limited
C2 Fabric to fibre – wool market segments and technical requirements	Relationship of 'comfort' factor between fabric and greasy fibre specification	14/06/2002	31/08/2003	50,000.00	Wool Comfort Australia
	Benefit cost analysis (BCA) of OFFM and sheep ID	4/11/2002	12/07/2003	53,500.00	BDA Group
	OFFM evaluation trial	14/06/2002	31/10/2003	455,000.00	Dr J.W. James
	Systemic fibre measurements scoping study	28/06/2002	31/10/2002	182,211.00	Interactive Wool Group Pty Ltd
	Organic/eco wool market study	15/04/2002	15/10/2002	306,583.00	TWC
	Wool producer delivery to direct retail specification	1/04/2002	28/02/2003	187,300.00	TQW Trading
	Contamination survey	11/02/2002	14/07/2003	628,265.00	CSIRO Textile & Fibre
C3 Developing and implementing a common wool fibre language	Test for dark and medullated fibre (IWG)	26/11/2002	17/03/2004	300,000.00	Interactive Wool Group Pty Ltd
	Test for dark and medullated fibre (WRONZ)	4/12/2002	1/12/2003	395,000.00	WRONZ
	Test for dark and medullated fibre (CSIRO)	1/12/2002	6/03/2004	449,261.00	CSIRO Textile & Fibre
	Test for dark and medullated fibre (SARDI)	26/11/2002	3/08/2003	45,000.00	SARDI
	Rapid pre-sale test for dark fibre contamination of sale lots	23/07/2002	30/09/2002	5,000.00	ManuTech (VIC) P/L
	Project management and consulting services by GMAC	19/10/2001	28/03/2003	309,749.00	GMAC Consulting Pty Ltd
	OFFM extension and adoption – initial study	8/11/2002	20/01/2003	116,192.00	Dept of Natural Resources & Environment
	Hand held device development for OFFM testing	10/02/2003	25/05/2003	18,500.00	Timbaigl Optics Pty Ltd
	OFFM QA program – QA manual	25/10/2002	18/02/2003	72,900.00	Qualitas Consulting Pty Ltd
	Implementation of dark and medullated fibre measurement standards	21/03/2003	5/12/2003	169,640.00	Australian Wool Industries Secretariat
	Create dark and medullated reference samples – stage 1	26/05/2003	17/07/2003	13,634.25	CSIRO Textile & Fibre

APPENDIX A: PROJECT LIST 2002/2003 (CONT)

Strategic aim	Title	Start date	Finish date	Project cost	Primary research provider *
C4 Wool processing – engineering and efficiencies and economies	TPT – New equipment development	2/01/2002	31/12/2002	303,420.00	TWC
	TPT – Open ended spinning	1/01/2001	31/08/2002	303,369.00	TWC
	Plasma treatment of wool	12/01/2001	22/05/2003	741,891.56	CSIRO Textile & Fibre
	Permanent soft-lustre process	31/10/2002	30/09/2004	462,962.91	TWC
	Air-condensed spinning	7/01/2002	14/03/2003	477,921.00	CSIRO Textile & Fibre
	Murata Air-Jet spinning of mid-micron wool	17/12/2001	14/02/2003	383,354.00	CSIRO Textile & Fibre
	Murata Vortex spinning of fine wool	17/12/2001	20/06/2003	461,411.00	CSIRO Textile & Fibre
	Improvements to the Sirosett process for crease stabilisation	1/10/2002	30/10/2004	537,037.00	TWC
	Valorisation of sludge from wool scouring	1/10/2002	1/01/2004	213,348.00	Zhangjiagang Yangtse Wool Combing Co Ltd
A survey of the current status of digital printing of textiles	1/06/2003	1/12/2003	30,000.00	Linclab	
C5 Processing and manufacturing efficiencies – practices and locations	Globalisation of TopMaker and TopSpin	28/10/2002	28/10/2004	90,000.00	
	Technical consultancy – Bob Mayfield	1/12/2002	30/11/2003	60,000.00	Bob Mayfield
C6 Handling, testing, selling – innovations to benefit producers	World wide technology search	8/04/2002	26/08/2002	298,500.00	Invetech Operations Pty Ltd
	OFFM quality assurance study	23/04/2002	4/09/2002	66,660.00	Miracle Dog P/L
	OFFM decision support systems scoping study	20/11/2002	24/01/2003	65,000.00	MAC Stats & Analysis
	Electronic bale ID	26/03/2002	30/04/2003	220,000.00	Creative Logistics Pty Ltd
	Electronic sheep ID	30/07/2002	30/04/2003	230,000.00	Creative Logistics Pty Ltd
	Sheep ID business plan and standards committee – stages 1 and 2	9/12/2002	31/01/2003	67,600.00	ManuTech (VIC) P/L
C7 Wool harvesting – economies and performance	Refinement and further development of a rotary hand piece for shearing Australian sheep	1/08/2002	30/04/2003	299,060.00	Parke Rotary Shears Aust Ltd
	Shearer and wool handling training initiative	25/11/2002	8/08/2003	5,070.00	Holmes Sackett & Associates P/L
	Reclaiming of commercially viable dag wool	17/01/2003	14/06/2003	130,000.00	Riverina Refrigeration Pty Ltd
D1 Sheep – engineering to improve products and efficiency	Merino breeding programs – part records	3/02/2000	28/02/2003	17,672.00	Agriculture Western Australia
	Rampower WA	8/06/2000	31/01/2003	180,000.00	Agriculture Western Australia
	Investigation of flystrike resistance in hypospadic sheep	2/04/2002	31/01/2003	69,000.00	University of Melbourne
	SARDI selection demonstration flock	3/10/2001	15/12/2005	1,404,326.00	SARDI
	Genotyping sheep with diversity arrays	25/11/2002	15/03/2004	350,000.00	Centre for the Application of Molecular Biology to Intern Agriculture
	Ovine genomics program	28/02/2003	15/07/2003	45,000.00	Darvat Pty Ltd
	Operational and administrative support for Merino Sire Evaluation in Australia	17/02/2003	11/03/2006	132,000.00	University of Melbourne – AMSEA
	Toward novel approaches for the control of parasitic nematodes of sheep	11/06/2003	1/04/2005	270,400.00	Meat & Livestock Australia
	Novel approaches for control of sheep nematode parasites	11/06/2003	11/03/2005	300,000.00	Meat & Livestock Australia
	Drug discovery in sheep nematodes by functional genomics in Caenorhabditis elegans	11/06/2003	11/03/2006	225,000.00	Meat & Livestock Australia
	Enabling technologies to advance research into control of internal parasites of sheep	11/06/2003	11/03/2006	155,837.50	Meat & Livestock Australia
	D2 Feeding – pastures and nutrition to lift returns	Effective biological control of Paterson's Curse and thistles	20/04/1998	30/05/2005	1,774,494.50

PROJECT LIST 2002/2003

APPENDIX A: PROJECT LIST 2002/2003 (CONT)

Strategic aim	Title	Start date	Finish date	Project cost	Primary research provider *
D2 Feeding – pastures and nutrition to lift returns	Biocontrol of Paterson's Curse and thistles	1/01/1998	30/06/2005	-855,362.00	Meat & Livestock Australia
	Biological control of Paterson's Curse and thistles	1/10/2002	30/09/2003	39,500.00	DPS Strategy Pty Ltd
	Delivery through Woolpro of improved spray timing of Timerite for red legged earthmite control RLEM	17/10/2000	31/12/2002	283,291.00	CSIRO Entomology
	Improved phalaris varieties	31/12/2000	31/12/2007	685,998.00	CSIRO Plant Industry
	NAPLIP (high rainfall zone)	28/11/2000	30/06/2005	541,632.00	Dept of Natural Resources & Environment
	NAPLIP (sheep/cereal zone)	22/03/2001	30/09/2005	1,120,375.00	Grain Research Development Corp
	Genetically modified pastures	14/09/2000	30/06/2005	344,217.00	CSIRO Plant Industry
	NAPLIP coordination	1/07/2000	30/06/2003	90,000.00	Agriculture Western Australia
	National Rhizobium Program 2002-2007	1/01/2003	31/12/2007	1,469,000.00	Murdoch University
	Benchmarking with GrassGro	12/12/2002	24/12/2005	379,676.00	CSIRO Plant Industry
	Remote sensing earth observation systems	1/07/2002	30/06/2003	347,297.00	AGRECON – Agricultural Reconnaissance Technologies Pty Ltd
	Lifetime wool production	14/01/2003	14/01/2008	6,422,000.00	Dept of Natural Resources & Environment
	Predicting pasture growth rate	1/01/2003	30/06/2006	2,004,000.00	CSIRO Livestock Industry
	Reducing the impact of dry seasonal conditions	13/03/2003	16/04/2003	10,000.00	Dept of Natural Resources & Environment
D3 Enhance the natural resource base for wool production	Sustainable Grain and Grazing Systems	1/02/2003	30/06/2003	100,000.00	Grain Research Development Corp, MLA, LWA
	AWI Pilot Revegetation Advisory Service	22/01/2002	31/12/2003	1,998,237.50	Norfor Pty Ltd
	Land, Water & Wool	4/07/2001	30/06/2006	19,150,000.00	Land and Water Australia
	Drought feed strategies for the Australian wool industry	11/12/2002	1/02/2003	55,000.00	Synecon Pty Ltd
D4 Health, welfare, chemicals – productive, easier care sheep	Adoption of Nemesis	27/10/2000	31/05/2003	187,678.00	CSIRO Livestock Industry
	Breec strike prevention technology	24/04/2000	30/06/2003	295,890.00	CSIRO Livestock Industry
	Permanent wool removal	25/02/2002	30/08/2004	320,583.01	The University of Adelaide
	Characterisation of the relationship between scouring and genetic resistance	15/05/2000	30/06/2004	137,085.75	CSIRO Livestock Industry
	Multi-species wormworld	4/05/2000	31/03/2003	208,943.00	CSIRO Livestock Industry
	Adoption of Nemesis technology in Victoria	2/04/2001	4/03/2003	103,330.00	University of Melbourne
	Pesticide residue testing for quality assurance groups services C/T A	20/09/2001	25/08/2003	57,000.00	Australian Wool Testing Authority Ltd
	A vaccine for wool production	3/01/2003	30/12/2010	4,552,082.00	CSIRO Livestock Industry
	Development and field validation of a lice detection test	30/04/2003	30/04/2003	374,198.00	NSW Agriculture
	WormMaster coordination	29/11/2002	30/09/2003	90,000.00	Mike Stephens & Associates
	OJD consultancy – risk-based trading	7/11/2002	31/03/2003	20,000.00	Animal Health Services
	Consultancy to guide AWI footrot strategy	10/02/2003	28/09/2003	19,600.00	Allworth Sheep and Cattle Production Services
	D5 Inventiveness and old problems – lower case, easier care	Farm Health and Safety Joint Venture 2002/2003 to 2006/2007	1/07/2002	30/09/2007	300,000.00
Economic viability of sheep coats for eco-wool production		31/03/2001	31/03/2003	44,034.00	Wesfarmers Landmark
Improved footrot diagnosis		16/05/2002	10/09/2004	301,829.00	The University of New England
Develop and conduct a generic study into worker exposure to ectoparasitocides		1/03/2002	30/06/2003	334,750.00	National Farmer's Federation Limited
Tasmanian fox eradication		18/05/2002	31/12/2002	200,000.00	Pest Animal Control CRC (sms)
"Out-fox" awareness and eradication program – stage 2		9/10/2002	3/11/2003	250,000.00	Pest Animal Control CRC (sms)

APPENDIX A: PROJECT LIST 2002/2003 (CONT)

Strategic aim	Title	Start date	Finish date	Project cost	Primary research provider *
E1 Reaching broadly – ideas and knowledge for producers generally	Falkiner Memorial Field Station	1/01/2002	31/12/2007	1,500,000.00	Falkiner Memorial Field Station (FMFS)
	Bestwool 2010, phase II	1/07/2002	30/06/2005	1,400,000.00	Dept of Natural Resources & Environment
	Making sensible fertiliser decisions	1/11/2002	15/11/2003	290,500.00	Agriculture Victoria Services Pty Ltd
	SCARM database and publications	1/06/2001	1/06/2006	12,002.23	Primary Industries & Research South Australia
	Research on the national market potential for Triple P	20/06/2003	30/07/2003	22,727.28	ACIL Tasman Pty Ltd
	Survey of farm financial performance in the sheep industry	1/07/2002	20/06/2003	332,704.00	Australian Bureau of Agriculture Resource Economics (ABARE)
	Extending the use of Grazfeed and GrassGro for the management of sheep grazing annual pastures in Mediterranean environments	9/12/2002	10/10/2003	23,099.00	Agriculture Western Australia
	Shearing exhibition/training centre	26/01/2002	26/01/2005	305,000.00	Shear Outback
	Global wool pipeline	7/01/2001	30/11/2002	867,159.00	Global Information Services P/L
E2 Targeted activities – higher understanding of adoption expected	Bestprac, phase II	1/05/2003	1/05/2006	976,739.61	Rural Directions Pty Ltd
	Tasmanian 8x5 wool profit program	1/05/2002	30/06/2005	1,011,000.00	University of Tasmania
	Development of Triple P beyond the paired paddock	30/09/2001	30/06/2004	522,672.00	Mike Stephens & Associates
	Improving profitability of WA Woolpro farmers #2	25/01/2000	30/06/2005	770,000.00	Agriculture Western Australia
	Spring shearer woolhandler training 2002	20/08/2002	30/12/2002	50,581.00	Ausgrow Training
	Cicerone focus farm	1/02/1999	1/06/2003	120,000.00	The Cicerone Project Inc
	Fast tracking wool producer group business development with Look @ Wool	Approved only	Approved only	180,000.00	
	Decision support tools to enhance wool producer's profitability	1/06/2002	31/05/2005	337,016.00	The University of New England
	Increased adoption of Timerite to improve feed utilisation	18/03/2003	31/07/2004	213,000.00	CSIRO Entomology
	OFFM extension and adoption – business plan	26/11/2002	14/03/2003	33,500.00	GMAC Consulting Pty Ltd
	OFFM extension and adoption – implementation	25/07/2003	30/06/2006	1,804,800.00	NSW Agriculture
	Facts and fictions about feedlotting sheep in times of drought	6/03/2003	30/06/2003	49,010.00	Holmes Sackett & Associates P/L
	Wool dyeing and finishing technician training course	2/10/2002	31/12/2002	89,700.00	CSIRO Textile & Fibre
E3 Shareholder– knowing what AWI is doing and why	Evaluation of off-farm R&D investment portfolio	28/06/2002	30/10/2002	85,000.00	BDA Group
E4 Australians – understanding wool through educational support	ILRIC scoping	9/05/2003	11/07/2003	30,000.00	DNR Group Pty Ltd
	Postgraduate sponsorship	28/02/2002	25/05/2003	4,386.00	AWI

PROJECT LIST 2002/2003

APPENDIX B: SCHEDULE OF MEMORANDA OF UNDERSTANDING (MOU)  
AND SIMILAR RELATIONSHIP AGREEMENTS IN 2002/2003

PARTIES

- Meat & Livestock Australia Ltd and Australian Wool Innovation Limited (AWI)
- Mayer Industries Inc, Wool Research Organisation of New Zealand (WRONZ) and AWI
- Grains Research Development Corporation (GRDC), Meat & Livestock Australia, Land & Water Australia (LWA) and AWI
- Marks & Spencer PLC and AWI
- University of Leeds and AWI
- Deakin University Geelong and AWI

APPENDIX C: TABLE OF REGISTERED INTELLECTUAL PROPERTY  
WHICH IS OWNED BY AWI OR IN WHICH AWI HAS AN INTEREST

IP Title	IP Category	Registered in Australia	Registered Overseas	IP Title	IP Category	Registered in Australia	Registered Overseas
Iron regulated promoter and uses thereof	Patent	Y	Y	Enzyme based bioremediation	Patent	Y	Y
Semi-automated manipulator for manual shearing	Patent	Y	Y	Malathion carboxylesterase	Patent	Y	Y
Animal leg restraint	Patent	Y	Y	Method and apparatus for determining a first parameter(s) of an object	Patent	Y	Y
Head restraint for animal manipulator	Patent	Y	Y	Breathable Films	Patent	N	Y
Semi-automated manipulator for manual shearing	Patent	Y	Y	Expression of phytase in plants as a method of modifying plant productivity	Patent	Y	Y
Automated manipulator for manual shearing	Patent	Y	Y	Improving the availability of nutrients in a ruminant using piromyces or neocallimastix fungi	Patent	Y	Y
Doffing animal coat and fleece removal	Patent	Y	Y	Larval development assay	Patent	Y	N
Control flystrike on sheep	Patent	Y	N	Detection and isolation of, and protective immunisation against, the phomopsin mycotoxins	Patent	Y	N
Fungal sulphur source and method of using the same	Patent	Y	Y	Vaccine and assay	Patent	Y	N
Veterinary formulation	Patent	Y	Y	Method for treating animals	Patent	Y	N
DNA encoding ovine adenovirus and its use as a viral vector	Patent	Y	Y	Continuous pressure decatizing of fabrics and setting of staple fibre assemblies	Patent	Y	Y
Chemically assisted protein annealing treatment	Patent	Y	Y	Fibrillation of natural fibres	Patent	N	Y
Device for sampling liquids	Patent	Y	Y	Triple P	Trademark	Y	N
Pneumatic splicing of Yarns	Patent	Y	Y	Siroscour	Trademark	Y	N
Sorting pneumatically conveyed material	Patent	Y	Y	Si-ro-mark	Trademark	Y	N

APPENDIX C: TABLE OF REGISTERED INTELLECTUAL PROPERTY  
WHICH IS OWNED BY AWI OR IN WHICH AWI HAS AN INTEREST (CONT)

IP Title	IP Category	Registered in Australia	Registered Overseas	IP Title	IP Category	Registered in Australia	Registered Overseas
Timerite	Trademark	Y	N	Persian Clover – Nitroplus	Plant variety	Y	N
Siromin	Trademark	Y	N	Persian Clover – Persian Prolific	Plant variety	Y	N
Woolpro	Trademark	Y	N	Phalaris – Atlas PG	Plant variety	Y	N
Rampower	Trademark	Y	N	Phalaris – Australian II	Plant variety	Y	N
Wool Profit Map	Trademark	Y	N	Phalaris – Holdfast	Plant variety	Y	N
Siroprint	Trademark	Y	N	Phalaris – Landmaster	Plant variety	Y	N
Grassgro	Trademark	Y	N	Serradella – Charano	Plant variety	Y	N
Rural Connect	Trademark	Y	N	Subterranean Clover – Denmark	Plant variety	Y	N
A liquid sample collection card	Registered Design	Y	Y	Subterranean Clover – Goulburn	Plant variety	Y	N
Balansa Clover – Bolta	Plant variety	Y	N	Subterranean Clover – Gosse	Plant variety	Y	N
Balansa Clover – Frontier	Plant variety	Y	N	Subterranean Clover – Leura	Plant variety	Y	N
Barrel Medic – Caliph	Plant variety	Y	N	Subterranean Clover – Riverina	Plant variety	Y	N
Barrel Medic – Jester	Plant variety	Y	N	Subterranean Clover – York	Plant variety	Y	N
Burr Medic – Cavalier	Plant variety	Y	N	Wallaby Grass – Bunderra	Plant variety	N	N
Burr Medic – Scimitar	Plant variety	Y	N	Wallaby Grass – Taranna	Plant variety	N	N
Cefalu Clover	Plant variety	Y	N	Sweet Clover – Jota	Plant variety	Y	N
Yellow Seradella – Santorini	Plant variety	Y	N	Sweet Clover – JAQUI	Plant variety	Y	N
French Seradella – Cadiz	Plant variety	Y	N	Shear Express IP			
Disc Medic Rivoli	Plant variety	Y	N	Method of harvesting wool	Patent	Y	Y
Lucerne – Acquarius	Plant variety	Y	N	A restraint	Patent	Y	Y
Lucerne – Eureka	Plant variety	Y	N	Apparatus for spreading a sheet-like article	Patent	Y	Y
Lucerne – Genesis	Plant variety	Y	N	Animal processing conveyor	Patent	Y	Y
Lucerne – Hallmark	Plant variety	Y	N	Apparatus for use in harvesting wool	Patent	Y	Y
Lucerne Jindera	Plant variety		N	Mobile collapsible shelter	Patent	N	Y
Lucerne – Sceptre	Plant variety	Y	N				
Lucerne – Sequel HR	Plant variety	Y	N				
Lucerne – Super 7	Plant variety		N				
Lucerne – Venus	Plant variety	Y	N				
Medic – Toreador	Plant variety	Y	N				
Mitchell Grass – Turanti	Plant variety	N	N				
Mitchell Grass – Yanda	Plant variety	N	N				
Persian Clover – Kyambro	Plant variety	Y	N				
Persian Clover – Morbulk	Plant variety	Y	N				

IP TABLE

## APPENDIX D: PUBLICATION LIST

Type	Title	Provider	Date	Security
Report	Land, Water & Wool Business Plan	Land & Water Australia and Australian Wool Innovation Limited	Jun-02	Commercial in Confidence
Report	Review of Australia's Wool Trade with the Commonwealth of Independent States (CIS)	ACIL Tasman	01-Jun-02	Released
Report	Reclamation of Commercially Viable Dag Wool	Pivotal Management Consultants	30-Jun-02	Commercial in Confidence
Report	A Quality Assurance Program for On-farm (OFFM) and Off-farm Fleece Measurement	Department of Primary Industries, Vic	01-Jul-02	Commercial in Confidence
Report	An Evaluation of the Market Potential for EMR and EMI Protective Wool Textiles and Clothing	LinLab Australia	01-Jul-02	Commercial in Confidence
Report	Benefit Cost Analysis of a Proposed OFFM QA Program	BDA Group	22-Jul-02	Commercial in Confidence
Series	Beyond the Bale	Australian Wool Innovation Limited	01-Aug-02	Released
Report	National Wool Production Forecast	AWI Wool Production Forecasting Committee	01-Sep-02	Released
Report	A Search for a New Sheep Anthelmintic	Baron Strategic Services	01-Oct-02	Commercial in Confidence
Report	Decision Making During Drought	AWI and various collaborators	01-Oct-02	Released
Report	Review of the Market Potential for Russia for Australian Wool Use	The Woolmark Company	01-Oct-02	Released
CD-rom	FutureFleece	Australian Wool Innovation Limited	01-Oct-02	Released
Series	Insight	Australian Wool Innovation Limited	01-Oct-02	Released
Series	Innovators	Australian Wool Innovation Limited	01-Oct-02	Released
Web	AWI website	Australian Wool Innovation Limited	30-Oct-02	Released
Web	e-Newsletters	Australian Wool Innovation Limited	30-Oct-02	Released
Report	Development and Field Validation of a Simulation Model for Sustainable Control of Internal Parasites of Sheep – Ecological Studies in WA 1999/2001	Department of Agriculture WA	01-Nov-02	Not released
Report	Emergency Animal Disease Response Plan for the Australian Wool Industry – Perpetual Draft	Dr Tony Brightling	01-Nov-02	Not released
Report	Shearer and Wool Handler Training Initiative	Australian Wool Innovation Limited	25-Nov-02	Released
Report	Improving fibre specification and measurement through the wool textile pipeline	Interactive Wool Group	01-Dec-02	Commercial in Confidence
Report	National Wool Production Forecast	AWI Wool Production Forecasting Committee	01-Dec-02	Released
Report	Prospects for Further Wool Processing in Australia	Centre for International Economics	01-Dec-02	Released

## APPENDIX D: PUBLICATION LIST (CONT)

Type	Title	Provider	Date	Security
Report	Review of Strategic Factors and Australian and New Zealand Capabilities in Animal Genomics Related to Sheep Industry Requirements, and a Recommended Framework to Guide R&D Investment	David Campbell, Brian McQuirk	1-Dec-02	Commercial in Confidence
Report	Specification for a Data Acquisition and Management System for Shear Express	Invetech Pty Ltd	18-Dec-02	Commercial in Confidence
Report	Delivery Through Woolpro of Improved Spray Timing for Redlegged Earth Mite Control	CSIRO Entomology, Perth WA	20-Dec-02	Commercial in Confidence
Report	Increased Profit from sheep that can withstand stressful environments	Norm Adams	Jan-03	
Report	Implications of the Smart Textile Revolution for Australian Wool	WRONZ	01-Jan-03	Commercial in Confidence
Report	QA Manual for On-Farm Fibre Measurement Fleece Measurement QA scheme (FMQAS)	Qualitas Consulting Pty Ltd	01-Feb-03	Commercial in Confidence
Report	AWI Trial of the Training Rebate for Shearers and Wool handlers in South Australia – Spring 2002	Augrow Training Services Network	01-Feb-03	Commercial in Confidence
Report	Improving the Environmental Sustainability of the Australian Wool Supply Chain	The Woolmark Company	01-Feb-03	Commercial in Confidence
Series	Drought Manager	Australian Wool Innovation Limited	01-Feb-03	Released
Report	Evaluation of AWI's Off-farm R&D Investment Portfolio	eSYS and BDA Group	03-Feb-03	Commercial in Confidence
Report	Part Records in Merino Breeding Programs	Department of Agriculture WA	11-Feb-03	Commercial in Confidence
Report	Project Plan for the Integrated Sheep ID Project (ISIDP)	ManuTech (Vic) Pty Ltd	19-Feb-03	Commercial in Confidence
Report	Continuous Wool Filaments	AWI Task Force	23-Feb-03	Commercial in Confidence
Manual	Fleece Measurement Quality Assurance Scheme (FMQAS) Procedures Manual	Qualitas Consulting Pty Ltd	01-Mar-03	Commercial in Confidence
Report	Adoption of Nemesis Technology for the Sustainable Control of Internal Parasites in Victoria	University of Melbourne	01-Mar-03	Not released
Journal	Farm Financial Performance – Drought Cuts Farm Incomes After An Excellent Year in 2001/02, Australian Commodities, Vol. 10, No. 1, March Quarter 2003	ABARE	01-Mar-03	Published article
Report	Quantitative Assessment of the Risk of Ovine Johne's Disease in Sheep Flocks	AusVet Animal Health Services	01-Mar-03	Released
Report	Applied Genetics Sub-program Strategic Plan for 2002-07	Australian Wool Innovation Limited	01-Mar-03	Released

## APPENDIX D: PUBLICATION LIST (CONT)

Type	Title	Provider	Date	Security
Report	Molecular Genetics Sub-program Strategic Plan for 2002-07	Australian Wool Innovation Limited	01-Mar-03	Released
Report	Economic Viability of Sheep Coats for Wool Production	Ian Campbell	01-Mar-03	Released
Report	National Wool Production Forecast	AWI Wool Production Forecasting Committee	01-Mar-03	Released
Report	NAPLIP Annual Collaborators Meeting	Australian Wool Innovation Limited	06-Mar-03	Commercial in Confidence
Report	Completion of a Useful Sheep Genome Map	Centre for Animal Biotechnology, University of Melbourne	24-Mar-03	Commercial in Confidence
Report	The Use of Part Records in Merino Breeding Programs – The Inheritance of Wool Growth and Fibre Traits During Different Times of the Year to Determine Their Value in Merino Breeding Programs	Johan Greeff and B. Paganoni	31-Mar-03	Commercial in Confidence
Report	Merino Selection Demonstration Flocks – Field Day Activities	SARDI, Adelaide University, PIRSA	01-Apr-03	Commercial in Confidence
Report	Preliminary Technical Evaluation of Microdyne WoolView 20/20	Timbaigl Optics	01-May-03	Commercial in Confidence
Report	Evaluation of AWI's On-farm R&D Investment Portfolio	eSYS and BDA Group	01-May-03	Commercial in Confidence
Report	Characterisation of the Relationship between Scouring and Genetic Resistance in the Sustainable Control of Internal Parasites in Sheep	Department of Agriculture WA, CSIRO Livestock Industries	01-May-03	Not released
Report	Market Analysis and Review of India	The Woolmark Company	01-May-03	Released
Report	Enzymatic Bioremediation of Pesticides Project Review and Due Diligence	David McKinna, Ian Rae, Andreas Betzner	06-May-03	Commercial in Confidence
Report	Enzymatic Bioremediation of Pesticides – Project Review and Due Diligence	McKinna et al	06-May-03	Commercial in Confidence
Report	A Brief Business Plan for an Extension and Adoption Program for OFFM	GMAC Consulting Pty Ltd	12-May-03	Commercial in Confidence
Report	Development and Validation of a Computer Simulation Model for the Sustainable Control of Internal Parasites of Sheep – Completion of Multi-species WormWorld Model	CSIRO Livestock Industries	16-May-03	In progress
Report	Use of Molecular Markers in Selection of Plants and Animals	Carol Nottenburg & Caroline Roa Ridrigues	Jun-03	Commercial in Confidence
Report	R&D Directions for Ovine Johne's Disease – Discussion Paper	Australian Wool Innovation Limited	01-Jun-03	Released
Report	National Wool Production Forecast	AWI Wool Production Forecasting Committee	01-Jun-03	Released
Report	Economic and Situation Analysis of the Australian Sheep Industry	Holmes Sackett & Associates	01-Jun-03	Released
Report	Land, Water & Wool Risk Review	Phillips Fox	21-Jun-03	Commercial in Confidence

## APPENDIX D: PUBLICATION LIST (CONT)

Type	Title	Provider	Date	Security
Report	Producing Sheep that are Resistant to Flystrike	Centre for Animal Biotechnology, University of Melbourne	23-Jun-03	In Progress
Report	Review of Wool Trade Relations with Japan	The Australia-Japan Research Centre, Australian National University	24-Jun-03	Not released
Report	Woolen Threads – Information Flows and Supply Chain Structures of the Australian Wool Industry	Walker	25-Jun-03	Commercial in Confidence
Report	Completion of a Useful Sheep Genome Map	Jill Maddox	30-Jun-03	Commercial in Confidence
Report	Textile Technology Program – Priorities for 2003-2008	Australian Wool Innovation Limited	30-Jun-03	Commercial in Confidence
Report	Electronic Sheep Identification within the Wool Industry	Creative Logistics Pty Ltd	01-Jul-03	Commercial in Confidence
Report	Implementation a Brief Business Plan for On Farm Fibre Measurement Quality Assurance Program (OFFMQA)	Miracle Dog Pty Ltd (in conjunction with GMAC Consulting Pty Ltd)	14-Aug-03	Commercial in Confidence
Report	Assessment of Bioinformatics Requirements of the MLA-AWI Sheep Genomics Program	Brian Dalrymple	Sep-03	Commercial in Confidence
Report	Physical Mapping of the Ovine Genome: A Suggested Strategy	Allan Crawford	Sep-03	Commercial in Confidence
Report	Bioinformatics Analysis of Sheep and Cattle EST Data Sets: Genome Coverage and Implications for Expression Profiling	Brian Dalrymple, Sigrid Lehnert, Toni Reverter-Gomez, Bill Barendse and Ross Tellam	Sep-03	Commercial in Confidence
Report	Technical Due Diligence of EST Libraries (x2)	Sigrid Lehnert	Sep-03	Commercial in Confidence
Report	An Initial Benchmark Survey of Raw Fibre Properties in Next-to-skin Retail Pure Wool Knitwear	Stanton, Ladyman & Hardwick	9/1/2003 Draft	Commercial in Confidence
Report	Exercise Minotaur – Lessons for the Australian Wool Industry	Dr Tony Brightling		Not released

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