

annual report 2004/05



making innovation work

• australian wool
innovation
• limited

contents

upfront

about awi	01
awi board of directors	02
chairman's report	04
ceo's report	06
2004/05 report of progress against operational plan	08

report of program operations

wool production	23
textile technology	31
trade development	37
corporate affairs	43

research development innovation



good business 47

managing our r&d strategically	48
corporate review	51

financial statements 57

directors' report	58
financial report	63
directors' declaration	83
independent audit report to members	84

appendixes 85

appendix a – project list	86
appendix b – intellectual property table	100
appendix c – publications list	104
subject index	109

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

Australian Wool Innovation Limited
ABN 12 095 165 558

About AWI

Company overview

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

AWI invests funds in wool research, development and innovation activities aimed at increasing the long-term profitability, productivity and sustainability of Australian woolgrowers. AWI invests in the areas of wool production, textiles, trade development and industry affairs.

AWI brings together world leading research organisations and Australian and global commercial companies to collaborate on projects that aim to bring products to market.

AWI mission

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

This means collaborating with organisations and companies to create new on-farm solutions for woolgrowers to use. In the textiles/trade area, this means developing new wool products and marketing their benefits to global designers, manufacturers and retailers to get wool innovations to the consumer.

AWI investments are funded through an R&D levy paid by woolgrowers (currently two per cent of the sale price received for their shorn greasy wool) and a contribution from the Australian Government, capped at 0.5 per cent of the value of total greasy wool sales. Woolgrowers vote every three years on the percentage of wool proceeds they would like to invest in wool R&D. The next WoolPoll vote is in 2006.

AWI has a total of 74 staff at offices in Sydney (head office), Melbourne, Geelong, Gosford and overseas in Shanghai, Beijing and New York. AWI also owns and runs a 3,126 hectare field station near Deniliquin, NSW.

Where AWI invests Australian woolgrower funds

AWI invests in four key areas:

Wool Production

AWI works with woolgrowers to help them compete profitably in the international markets for wool and sheep meat through the adoption of on-farm innovations. AWI aims to help woolgrowers reduce the cost of production on their farms through innovation in areas such as pastures and grazing, sheep health, genetic technologies to breed more productive sheep, and shearing.

Textile Technology

AWI works in the science arena with organisations and companies to develop new and improved wool products for the fashion apparel, sports, activewear, protective clothing, medical and filtration markets. AWI also works to develop new fundamental knowledge about the properties of wool fibre, and develop processes that may lead to new Merino fibre yarns and fabrics.

Trade Development

AWI provides a vital link between the research and development chain and the market by forming business to business relationships to commercialise wool innovations and build the demand for Australian wool. AWI also plays a key role in working with industry and government to increase market access into Australian wool/textile importing countries, and providing shareholders and industry with the latest market information.

Corporate Affairs

Through the use of publications such as *Beyond the Bale*, the AWI website, events and forums, and the rural and metropolitan media, AWI seeks to inform woolgrowers, the government, and users of Australian wool (such as textile manufacturers and retailers) about the value of the Australian wool industry. AWI also manages industry wide activities such as training, issues management and public relations.

AWI Board of Directors

The directors of Australian Wool Innovation Limited during 2004/05, their qualifications, experience and special responsibilities as at 30 June 2005 are listed below.

All the directors were in office during the whole of the financial year, except Mr Boyd who was not re-elected to the Board at the AGM held on 19 November 2004 and Mr Merriman who was elected a director of the Board on the same day.



I M McLachlan AO

Mr McLachlan is a woolgrower with pastoral interests in South Australia and New South Wales. Mr McLachlan was the Chairman of the Australian Wool Industry Future Directions Task Force in 1999. He was a Federal Member of Parliament from 1990 to 1998 and was the Minister of Defence and a Cabinet Member of the Federal Coalition Government from 1996 to 1998. Previously he was the President of the National Farmers Federation from 1984 to 1988. He is currently the President of the South Australian Cricket Association and a Board Member of Cricket Australia.

Special responsibilities

Chairman of the Board, AWI/AWS Integration Committee Chairman, Remuneration & Appointments Committee member, Intellectual Property & Commercialisation Committee member.



B P van Rooyen

Mr van Rooyen is currently the Chief Executive Officer of Australian Country Spinners Pty Ltd and a Director of the Australian Wool Testing Authority Ltd, New Zealand Wool Testing Authority Ltd and Power Farming New Zealand Ltd. Mr van Rooyen is a former Director of Norwellan Textiles Ltd, Woolstock Australia Ltd and Bruck Textiles Pty Ltd. He is a past President of the Australian Wool Processors Council and a past member of the CSIRO Textiles, Clothing and Footwear Sector Advisory Committee.

Special responsibilities

Deputy Chair of the Board, Finance & Audit Committee Chairman, Remuneration & Appointments Committee Chairman, AWI/AWS Integration Committee member.



C J Abell Dipl Mech Eng, BE (Hons), Ph D

Dr Abell is a South Australian woolgrower and is currently a non-executive Director of Saab Systems Pty Ltd and Pacific Marine Batteries Pty Ltd. Dr Abell is a former Director of Vision Systems Ltd (1986 to 2001) and a former Chairman of LADS Corporation Ltd (1992 to 2001). He is also a former Director of Woolstock Australia Ltd (1999 to 2002).

Special responsibilities

Falkiner Memorial Field Station Committee Chairman, Finance & Audit Committee member, Intellectual Property & Commercialisation Committee member, AWI/AWS Integration Committee member.



K J Bell B V Sc (Hons), Ph D, AAAC (WA)

Dr Bell has been a self-employed consultant with sheep growers in south-western Australia since 1983. Prior to this, Dr Bell spent five years completing postgraduate research fieldwork and study involving sheep enterprises and has five years experience in international development projects. He was a sheep-cereal zone consultant representative on the zone farmer advisory committees of the former Australian Wool Research and Promotion Organisation (AWRAP). Dr Bell has recently been appointed Professor of Animal Production Systems at Murdoch University, overseeing the progression of a new degree program in Animal Science.

Special responsibilities

Falkiner Memorial Field Station Committee member



J D O Boyd

Mr Boyd is the Chairman and Chief Executive Officer of Clyde Agriculture, which is a major cotton, wool, mutton, lamb, wheat and beef producer. Mr Boyd is a Director of John Swire & Sons Pty Ltd and Frigmobile Pty Ltd. He is the former General Manager – Rural of Dalgety Australia Ltd, now Landmark. He is also a former Board Member of Wool International and a former Deputy Chairman of the peak cotton grower body, Cotton Australia. Mr Boyd has served on the boards of the Australian Wool Exchange and Dekalb Shand Seed Company Pty Ltd. He is a past member of the CSIRO Textiles, Clothing and Footwear Sector Advisory Committee. Mr Boyd is currently a Trustee of the McGarvie Smith Institute, which is engaged in agricultural and veterinary research.

Mr Boyd was not re-elected to the Board at the AGM held on 19 November 2004.



W B Merriman

Mr Merriman is Managing Director of the Merryville Stud. He oversees extensive commercial pastoral interests giving him broad farming and grazing experience. Mr Merriman has served on several industry boards, including National Woolgrower Forum and Major Woolgrowers Group, and is past-president of both NSW and Australian Stud Merino associations.

Mr Merriman was elected a director of the Board at the AGM held on 19 November 2004.

Special responsibilities

Remuneration & Appointments Committee member.



H P Nivison B V Sc

Mr Nivison is currently the joint Managing Director of Mirani Pty Ltd, a fine wool stud and commercial wool production business running some 25,000 sheep and 1,500 cattle in northern NSW. Mr Nivison is also a Director of Australasian Rural Investments Pty Ltd, a company focused on sourcing and managing high quality rural businesses for non-traditional investors. Mr Nivison is a member of the Executive of Merino Benchmark, a group of Merino Breeders committed to maximising genetic gain through quality assured across flock evaluation. Mr Nivison is Chair of UNE Rural Properties and a graduate of the Australian Rural Leadership Program. Mr Nivison is also a registered veterinary surgeon.

Special responsibilities

Intellectual Property & Commercialisation Committee Chairman, Finance & Audit Committee member, Falkiner Memorial Field Station Committee member.



P S Sykes

Mr Sykes is currently the Managing Director of Woolaby Australia Investments Pty Ltd, a business focusing on research, product development, marketing and retail within the wool industry. He is also a Director of Sykes Holdings Pty Ltd, 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.

Special responsibilities

Intellectual Property & Commercialisation Committee member, AWI/AWS Integration Committee member.

Company secretaries

Leslie Mark Targ and Christopher Maitland Chapman Dip Law, MBA, FAICD, FCIS

Chairman's report



In the past year Australian Wool Innovation has worked hard to deliver products through research and innovation that will help improve the businesses of Australian woolgrowers.

Significant advances have been made in new shearing technology, mulesing alternatives, genetics, and most importantly, partnerships with designers, retailers and manufacturers around the globe to build demand for Australian Merino wool.

Research by its very nature can be slow but the Directors of AWI have been, and continue to be, committed to doing whatever they can to speed up the process and bring the results to market more quickly.

Now more than ever, innovation is essential to our survival as individual businesses and as an industry. Quite simply, we innovate or we perish, both on and off the farm.

Wool prices for the past couple of years have been disappointing to many shareholders. Neither AWI nor growers can control wool prices to any material degree. The single most dominant influence on our wool price is external – the Australian US Dollar exchange rate. A steady recovery in the US economy would be of enormous help to all of us.

We can and must address the things we can influence – that is building on-farm productivity and dealing with issues such as shearing, mulesing and parasites, to name but a few. Equally, the business of building apparel industry alliances has evolved significantly in the past 12 months. AWI now focuses sharply on building alliances with designers, retailers, manufacturers and garment makers around the world – the people who make the decisions about the fibre used in

apparel. We now have developed successful alliances in China, the US and our next step is into Europe.

We are also working with partners on point-of-sale marketing that highlights the performance attributes customers are looking for, such as softness and easy care.

This is the best way to build demand for Australian Merino wool. There is obvious potential to increase sales through this approach, with some targeted marketing at point-of-sale in conjunction with retailers.

In April this year, the AWI Board took on the International Wool Textile Organisation's (IWTO) idea of co-funding with the rest of industry a test marketing program focused on high quality apparel in key markets. AWI Directors quickly decided to offer US\$5 million to this program, on condition that it be matched by the rest of industry.

In November last year, AWI initiated discussions with Australian Wool Services, owners of The Woolmark Company, on some form of integration between the two companies.

The process has proved complex and was delayed for some time while Woolmark Directors considered alternative options. These discussions are continuing.

This year has also seen AWI working hard with other industry representatives to defend Australian wool and sheep producers, and the industry, against the campaign by extreme animal rights groups to ban mulesing and live sheep exports.

Sadly this has also been the excuse for some of the most divisive actions by minority sections of the industry that I have ever seen in my time in the wool industry.

The overwhelming majority of the Australian sheep and livestock industries have combined with the National Farmers' Federation and the Australian Government to unite as one voice on this issue – as represented by the Australian Sheep and Wool Industry Taskforce.

Together we have supported over 300 retailers globally and undertaken an international trade advertising campaign to combat the threats, highlighting the Australian sheep industry's high animal welfare standards and promote the quality of Australian Merino wool.

As well, AWI is doing everything it can to deliver mulesing alternatives as fast as possible.

We also launched legal action against People for the Ethical Treatment of Animals (PETA) and its Australian affiliates to stop them intimidating retailers and propagating misinformation. The Australian Federal Court has determined that AWI has a prima facie case against PETA for breaches of the *Trade Practices Act* and the common law.

These animal activists are not winning, and those who suggest we should negotiate with them or attempt to do so are misguided at best. AWI will expend the necessary resources to ensure the industry is properly defended.

There is no point negotiating with a group whose whole future revolves around you not having one.

Ironically, the campaign against us by PETA has opened the doors of senior retail executives around the world to AWI. As a result many are now interested in new Merino wool products and innovations.

Thus, we do have a strong and exciting future.

We must remember we are in the sheep industry, with multiple products, one of which – that is, lamb – is increasing in price in real terms. In Australia, the Merino sheep is the ultimate basis of the lamb industry, so whilst wool is our common activity, it should not be forgotten the sheep itself presents other rewards.

The opportunities before us in increasing on-farm productivity and in building demand for Merino wool are many.

However we have to seize and vigorously pursue these opportunities. No business can afford to stand still or it will be overtaken. We have to innovate or perish.

Innovation is AWI's business and ongoing investment in it is fundamental to the future of the Australian wool industry.



Ian McLachlan AO
Chairman
Australian Wool Innovation Limited

16 September 2005

CEO's report



This year was one in which AWI delivered significant benefits to Australian woolgrowers. Our report of progress against the operational plan for the year, on pages 8 to 22 of this report, shows that we fully achieved around 60 per cent of our targets and partly achieved a further 20 per cent.

Wool production

Some of the products delivered during the year by the Wool Production portfolio were the worm management package *WormBoss*, two new pasture legume cultivars for use in alkaline soils, a new sub clover for use in neutral to acid soils, and the feral dog bait attractant *FeralMone*. New woolgrower extension networks were established in New South Wales (*Wool4Wealth*), Western Australia (*The Sheep's Back*) and Queensland (*Leading Sheep*). We now have networks in each state to assist in delivery of R&D outcomes to more than 3,000 woolgrowers. This is in addition to the 7,600 woolgrowers

who have benefited from the *Land, Water & Wool* natural resources management program. Also, the shearer and wool handler training program delivered in-shed training to 1,750 shearers and 778 wool handlers in five states.

Next year we are on schedule to deliver new approaches to mulesing, upright posture shearing platforms, ewe nutrition guidelines for optimising the lifetime wool of Merinos, a lice detection test and Sheep Genetics Australia – the industry owned sheep genetics database.

Textile technology

In the apparel area, major outcomes during the year were the development and commercial uptake of five new trans-seasonal wool and wool blend fabrics, Merino Super Soft knitwear and featherweight wool fabrics.

These fabrics were developed as part of our new Textile Product Development Themes or marketing platforms, which are used to guide fabric development into areas of highest market priority. Working with retailers, designers and garment makers, these themes have been developed to enhance the opportunities for wool in each consumer market sector. It is pleasing to have some very successful designers working with us to boost the use of wool in apparel.

In textile technology there have been successes in the development of dark fibre testing, on-farm fibre measurement quality assurance, wool bandages, wool filters, low temperature scouring, techniques for improved wool whitening, and the

transfer of total easy care technology to woven garments.

Our www.woolontheweb.com.au technical website was also successfully established towards the end of March and had 7,975 downloads by the end of June.

In the coming year we will be releasing new natural stretch/easy care light fabric, more innovations for Merino Super Soft knitwear, total easy care apparel into key northern hemisphere markets, and new innovative apparel ranges in conjunction with designers world-wide.

To ensure our new clothing products reach the retail shelf, we are working closer with manufacturers and retailers to provide marketing support in the form of consumer research, point-of-sale material, technical information about the features of wool and background stories. Our efforts in this area will grow as more products come on stream.

Trade development

Over the past year our Trade Development department has refined our approach to establishing business to business relationships with major wool users. These commercial alliances ensure we are customer focused and ensure the fastest, most effective route to market for research outcomes. Currently we have development and commercialisation activities underway with over 50 companies throughout the world.

As the major buyer of Australian wool, China receives special attention. During the year we moved our principal operations in China

to the fashion hub of Shanghai and employed additional account managers to work with commercial partners. Examples include our work with menswear manufacturer Heilan to produce machine washable wool blend suits for the Chinese domestic market. Nanshan, a major worsted fabric maker, is also commercialising a new lightweight fabric for use in shirts, trousers and jackets.

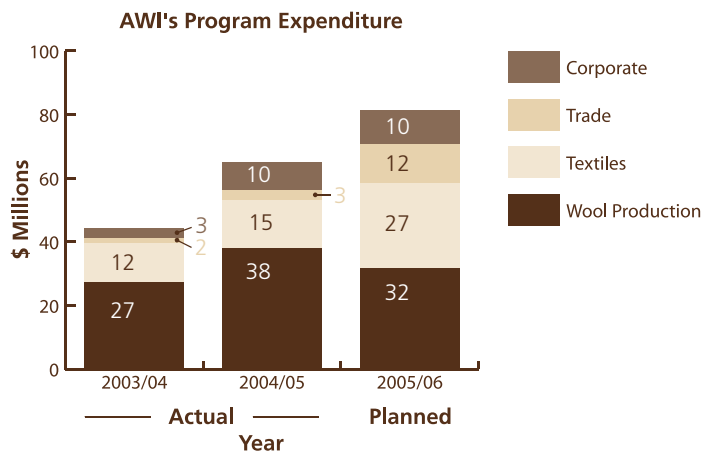
We have also been working in conjunction with the Australian Government to ensure the wool industry's interests were supported during free trade agreement negotiations between Australia and China.

In the USA an office has been established in New York to directly engage with domestic and international brand partners and introduce them to the latest wool innovations.

Our work with companies in India is also increasing as a result of the formation of a joint industry advisory group. Projects involving total easy care technology for use in trousers, knitwear and shawls are underway.

Corporate affairs

In conjunction with the Australian Wool Industry Taskforce, AWI staff have worked all year to fend off attacks on wool retailers by extremist animal welfare groups. Our combined strategies of intensive public relations, legal defence and advertising have been effective but the need to invest this effort is regrettable. Far more productive is the exciting research into mulesing alternatives which are progressing extremely well.



We are always looking for opportunities to communicate the results of R&D to our shareholders. This year we conducted seven very successful woolgrower forums, expanded our website and issued 24 new or updated fact sheets about key program areas.

Finances and staff

Total revenue for the year was \$65 million, compared to \$63 million last year. This was comprised of \$43 million levies, \$13 million government contributions, \$7 million investment income and \$2 million of other income.

The year's expenditure was \$79 million, composed of \$38 million on-farm, \$18 million for trade and textiles, \$10 million in corporate affairs and \$13 million for support services.

We finished the year with funds under investment and cash in hand of \$101 million and forward liabilities committed and planned for research contracts of \$78 million. The breakdown of next year's expenditure by program is shown in the chart above.

During the year we employed an additional thirteen staff bringing the total on 30 June 2005 to 74. These staff contributed to all areas of the company in Australia and overseas.

AWI primarily achieves outcomes for the wool industry by working in cooperation with a wide range of stakeholders. Efforts made throughout the year by woolgrower organisations, growers, scientists, governments and a wide range of people connected with the textile industry have been extremely important and are greatly appreciated.

Overall, we are in good shape for the coming year to deliver new products for woolgrowers and textile innovations to help build the demand for Australia's wool.

Len Stephens
Chief Executive Officer
Australian Wool Innovation Limited

16 September 2005

2004/05 report of progress against operational plan

The information below summarises the results of AWI activities undertaken in 2004/05 against operating targets.

Wool Production	
Profitable Grazing For Wool Sheep	
2004/05 Operating Plan target	Performance against target
Plant breeding	
Commercial release of six cultivars from the National Annual Pasture Legume Improvement Program (NAPLIP): Coolamon (<i>Trifolium subterraneum</i>), Urana (<i>Trifolium subterraneum</i>), Napier (<i>Trifolium yannanicum</i>), Cavalier (<i>Medicago polymorpha</i>), Scimitar (<i>Medicago polymorpha</i>), Erica French Serradella (<i>Ornithopus sativus</i>), Margurita French Serradella (<i>Ornithopus sativus</i>).	All six cultivars are now commercially available to woolgrowers. In addition to this a further four cultivars have been released to commercial seed companies for seed buildup in 2005. It is expected that Moonbi and Wilpena (<i>Hedysarum coronarium</i>), Mintaro (<i>Trifolium subterraneum</i>) and SARDI Persian (<i>Trifolium resupinatum</i>) will be widely available to woolgrowers in 2006.
NAPLIP to release two 'Ute Guides' containing agronomic and management information for use of new cultivars.	Southern zone Ute Guide published. Northern Zone Ute Guide still in preparation.
NAPLIP to establish 24 cultivar demonstration sites across Australia and conduct field days to provide producers with information on the best cultivars for their business.	Demonstration sites in place and being utilised. All other NAPLIP projects completed June 2005.
Acid soils	
Release of information on the economic impact of lime application for wool production in arable and non-arable environments.	In October 2004, information sheets were published by NSW DPI and are currently available through their website and field days.
Development of extension products for woolgrowers regarding ameliorating soil acidity.	Product development for Grain & Graze still under planning and negotiation.
Soil biology	
Demonstrate the relationship between soil biological status and pasture productivity through key projects including: plant rhizosphere studies, development of DNA markers for significant plant pathogens, quorum sensing signals between bacteria and plants, and biocide trials.	All key projects have been contracted and key staff and students appointed. The biocide trials to determine the productivity effects of removing pasture pathogens have been completed.
Pasture management and utilisation	
Through investment in Grain & Graze contribute to developing mixed farming systems with increased livestock productivity.	Eight regional Grain & Graze projects are in place, a ninth region has been approved. Forty case studies of mixed farming systems have been completed.
Weed bio control agents delivered throughout NSW, Victoria, SA and WA, with ongoing monitoring and evaluation of impact of agents on pasture productivity.	381 releases of bio control agents for Paterson's Curse, thistles, horehound and blue heliotrope were made around Australia.
Publication of management guidelines for bio control agents.	CSIRO, with input from the State agencies has published a series of pamphlets on managing the bio control agents for Paterson's Curse and thistles. These are available on the CSIRO website.
TIMERITE® decision support system for redlegged earth mite control to be launched in July 2004 for eastern Australia.	TIMERITE® was released in July 2004. Since then 3,886 optimum spray dates have been provided to wool producers. 2,746 have been generated by the TIMERITE® website, and 1,140 by the AWI helpline.
Lifetime Wool: release of best bet ewe nutrition guidelines for optimising progeny lifetime wool production by autumn 2005.	Release delayed due to difficulties with economic modelling and additional data analysis requirements. On track for delivery in spring 2005.
Commercial release of seven day forecast of Pasture Growth Rate through Fairport Technologies Ltd.	Available through subscription to the web based service Pasture Watch. The information is validated for Western Australia and unvalidated for eastern Australia.

Continued investment in Pasture Growth Rate projects to develop a longer term forecast.

Release of three drought management products: 'Which sheep do I keep?', 'Management of price and fodder supply risk during drought', and 'Managing sheep in droughtlots'.

Provision of ten Stockplan training days for drought affected wool producers.

Development of a Weeds Strategy in conjunction with MLA by December 2004.

Consultation with woolgrowers has indicated that validation of pasture growth rate information (real time and seven day forecast) for eastern Australia is a higher priority than development of a longer term forecast. The project is being revised.

Publications released in July 2004 – available on the AWI website or from the AWI helpline on 1800 070 099.

Fourteen training days well received by 160 producers.

Strategy being finalised. MLA has made some initial investments in new weed projects with AWI currently assessing new projects in bio control, serrated tussock and lippia.

Demonstration of pasture systems

Scope a network of commercially relevant pasture demonstration sites to showcase new technology, benchmark productivity and provide a focus for extension activities – maximising engagement with existing AWI producer groups and the Grain & Graze Program.

Planning is well advanced. Two scoping workshops held with producers in Benalla (VIC) and Katanning (WA). Discussions are occurring with MLA regarding potential collaboration.

Pastoral zone

Complete AWI's strategy for investment in pastoral zone wool production, and ensure the support of pastoral zone wool producers.

Ongoing review of current information held by AWI on producer needs, plus ongoing consultation with pastoralists in Bestprac groups and research and extension providers.

Falkiner Memorial Field Station

Develop FMFS as a research station offering facilities for wool industry research and development

Irrigation development and fencing and stock water systems completed. Central Test Sire Evaluation and Sheep Genomics Program underway and on schedule. FMFS has installed RFID equipment which will be made available for woolgrower field days and information days. Wetland and grassland rehabilitation trials established on the property.

Natural Resource Management

2004/05 Operating Plan target

Encourage more people to join Sustainable Grazing of Saline Lands groups that are forming in NSW, VIC, WA and SA.

Provide information products and field days to demonstrate improved management of riparian land and native vegetation.

Implementation of Pastoral sub-program projects which will engage with individuals and *Bestprac* groups.

Performance against target

SGSL has a network of 120 producer demonstration sites nationally. 1,200 producers are regularly involved in the activities of these local projects. An additional 300 producers not involved with the producer network have participated in a series of regional forums throughout the year.

NSW Northern Tablelands Native Vegetation project held a successful field day launching three native vegetation and biodiversity case studies and have had three other well attended field days at participating farms throughout the year. Native grasslands management fact sheets have been produced and released for Victoria. A Vegetation Insights publication is in the final stages of development. The Victorian project has demonstrated that subdivision fencing and rotational grazing of hill country result in increased stocking rates and groundcover and retention of native perennials. The Rivers site at Yass has collected valuable information on the loss of soil and nutrients from eroded gullies and the impact on water quality. Following remediation of the site changes in soil and nutrient loss and water quality will be monitored.

The Pastoral sub-program has been implemented in WA, SA, NSW and QLD with five projects. Four of the projects are focused assessments of carrying capacity in a given season, leading to more informed stocking rate decisions and sustainable grazing practices. The fifth project is investigating the potential for remote sensing to provide woolgrowers in SA with better information on ground cover and resource condition.

Tailoring and delivery of products from each of the LWW sub-programs through the Grain & Graze Program.

Development of a network of woolgrower leaders and advocates in productive natural resource management.

Production of Rivers Guides for the sheep/wheat and high rainfall zones.

Production of a rapid assessment tool for riparian land management on wool producing properties.

Production of a range of new tools for improved management of stocking rates in the pastoral zone.

Delivery of findings from the Future Woolscapes project.

Production of three LWW Insight publications relating to key issues in production and management of native vegetation.

A climate forecasting tool for pastoral zone producers to be piloted and made widely available.

Phase 1 findings from Sustainable Grazing of Saline Lands grower networks to be delivered.

Local events and field days to be held in wool production areas, exploring issues relating to riparian, native vegetation, biodiversity, salinity and water quality management.

In consultation with the SWAG, finalise AWI's strategy in the following areas: continuation of R&D activities undertaken in LWW, climate forecasting, climate change, demonstrating the wool industry's environmental credentials, and strengthening the linkages between AWI's production and NRM portfolios.

LWW products, such as the Rivers Guides, native grasslands management guidelines and findings from SGSL have been identified for delivery to the nine Grain & Graze regional projects and through the national extension effort of Grain & Graze.

Woolgrowers are encouraged to speak publicly about their experiences with NRM at field days and to the media. Tom Dunbabin, Chairman of the Sustainable Wool Advisory Group was awarded the McKell Medal in 2005 recognising his contribution to natural resource management. The members of the four state committees of SGSL are actively engaged in leadership development opportunities.

Comprehensive high-rainfall zone and sheep-wheat zone River Guides are on track to be delivered by October 2005 in hard copy and electronic form.

A Rapid Assessment of Riparian Condition (RARC) tool is being incorporated into the River Guides and the River Guide summaries.

Five projects focused on improving stocking rate decisions in dry seasons and to ensure sustainable rangeland management have commenced. At their completion in June 2006 the projects will have assisted pastoralists in each state to develop new skills and tools to assess rangeland condition and optimal stocking rates.

The project has been completed and the AWI Board and management have received presentations on the project, scenarios and key outcomes. A summary report will be released to woolgrower and other industry groups in spring 2005.

One native vegetation Insights publication is on track to be delivered in November 2005.

Research has been completed and a series of tools and extension information are being developed.

Information from all sites involved in the SGSL Sub Program will be summarised under five key theme projects and delivered to woolgrowers in 2005/06 and 2006/07. The five key themes are:

- Salt and water movement from saltland;
- Siting, establishment and performance of saltland species;
- Performance and utilisation of saltland pastures;
- Biodiversity impacts from saltland pastures; and
- Economics of saltland pastures.

SGSL has had nine large field days throughout the year, four in WA, four in NSW and one in SA. The Rivers sub-program has run a total of ten field days and workshops in Tasmania, Burra, SA and Yass, NSW. The Native Vegetation and Biodiversity sub-program has conducted 22 field days, workshops and industry events. The Climate sub-program has conducted nine workshops throughout the pastoral zone in the previous 12 months.

Strategy to be submitted to AWI Board by September 2005.

Animal Health

2004/05 Operating Plan target

Performance against target

Make better use of existing technologies

Occupational health and safety data on treatments using diazinon submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

Trial completed in August 2004 and the APVMA is using the report in its diazinon review, which is not yet complete.

Complete trials to develop better replenishment regimes for diazinon, making the product a more effective dip.

Twenty three demonstration farms complete the first full year of their integrated parasite management program, and each hosts at least one field day, with more than 700 producers expected to attend.

Develop new products and practices

A collaborative development agreement for a new anthelmintic is finalised with a commercial partner by December 2004.

Artificially mass-produce a particular blowfly protein and start to use it to screen potential new compounds for blowfly control.

Test strains of *Bacillus thuringiensis*, a natural bacterium, against blowflies on sheep to establish proof of concept.

Identify suitable strains of insect-destroying nematodes (worms), develop ways of applying them, and commence testing on lice and flies on sheep.

Develop tools and commence work on the identification of 'target' genes in blowflies.

Identify fungi capable of destroying lice and flies.

Develop tools and commence 'knocking out' single genes in lice to identify targets for new treatments.

Develop new diagnostic tests

Secure the commitment of State laboratories to footrot test development, and make significant progress in establishing that the test works on strains of footrot from around Australia.

Identify new manufacturing partner for dipstick version of lice detection test, establish the sensitivity of the laboratory test through controlled trials, and complete most field validation of the lab test on commercial properties, with duplicate samples stored for testing with the dipstick as it becomes available.

Replace or improve undesirable practices

Progress to be made in developing a commercial alternative to mulesing for use by sheep producers.

Progress to be made on a new dog bait to replace 1080.

Deliver an effective lure for dogs to the market.

Shower and plunge dipping work completed.

Number of farms reduced to 22 after one withdrew but the target of 700 was met. Clear messages on best practice parasite control identified and promoted. Responses to comprehensive survey of parasite management practices received and partly analysed. WormBoss information resource, successfully launched in March 2005.

This initiative was abandoned after commercial assessment.

Project commenced in May 2005. Scientists and equipment are in place and preparation of materials has started.

Project was abandoned. There were significant delays in contracting and AWI priorities changed during the period, with more emphasis placed on mulesing alternatives.

Proof of concept that the nematodes can destroy lice and maggots established and workable formulation for application to wool developed.

Project commenced in November 2004. Staff appointed and tools developed.

Test systems established, background infection levels on lice and flies quantified, 27 strains of spores produced, and screening commenced.

This project was taken up by a multinational animal health company and therefore no longer requires AWI funds.

R&D project completed in March 2005 and a commercialisation phase commenced. Agreement has been secured to pilot the test at Orange and Albany labs during 2005. The drought made it difficult to source samples but almost 800 have been obtained and tested.

Field evaluation of laboratory test on commercial properties and controlled sensitivity test completed, with the test performing well. One of the project partners has made significant progress towards a 'dipstick' test and negotiations are underway with two other potential developers.

Collagenase treatment parameters finalised (depth, spacing etc), effects on skin described, several sources of collagenase tested and suppliers identified. Formulation work commenced. Feasibility of two alternatives to collagenase established and further testing planned. Two proof-of-concept injection devices successfully developed and two more in reserve. Work commenced on surgical aspects of mulesing to simplify application. Planning well advanced for field trials in spring 2005.

Initial assessment of non-target species susceptibility conducted, but decision taken to undertake much more comprehensive trial, which is in progress. Work on environmental fate of toxin commenced. Dose/responses of dogs and foxes under experimental conditions completed and lethal trials using formulated toxin completed for dogs.

FeralMone (pheromone attractant) launched in April 2005. Work continuing on a device for mounting the FeralMone can on the outside of aircraft and on lures for use with mechanical ejectors (on schedule).

Contribute to crisis planning

Three new AUSVETPLAN manuals to be completed (wool stores, processing plants, and exporters) by December 2004.

Delayed due to changed priorities. Aiming to complete by December 2005.

Capripox virus: Develop and import materials for test development from Canada; commence work on histopathology, electron microscopy, DNA-based and antibody detection tests.

Project on track with objectives for 2004/05 achieved in full.

Molecular Genetics

2004/05 Operating Plan target

Performance against target

Develop a virtual sheep genome map

Core molecular genetics sub-Program leader appointed by end of October 2005.

Professor Frank Nicholas, Sydney University was appointed as Core Technology sub-program leader.

Expression of Interest process for specific bioinformatics projects and services for sharing DNA libraries completed by November 2004, and key projects contracted by end-December 2005.

Formal review and tendering process completed by end of February 2005. Due to complexities arising however, it is not anticipated that contracting will be completed until August 2005.

Discover genes affecting important performance traits

By June 2005, to have identified key chromosomal regions relating to specific Quantitative Trait Loci (QTL) of importance (to 5–10cM) for each trait of economic importance (ie host resistance to internal parasites, sheep meat eating quality).

Following a formal project review, the program was varied such that the three regions will be mapped to 1cM by June 2006. A subcontractor is likely to be taken on to perform fine mapping in an effort to speed the research process.

By end of August 2004, to have completed lambing of ewes subject to round one biochemical interventions targeting foetal follicle development.

On-track, lambing successfully completed for initial drop.

By end of March 2005, progress validation of promising therapeutic biochemical targets, and initiate second round joinings.

On-track, second round joinings completed, and lambs have been born.

By June 2005, to have completed initial characterisation of lambs born in August 2004 in relation to key wool and skin attributes.

Report to be completed by August 2005.

Invest in practical, low cost parentage and marker delivery systems

By end of December 2004, complete EOI process for re-licensing of CSIRO/AWI DNA parentage IP, and have licensed product to a new Australian service provider able to deliver technology for a 30% reduction in the unit price at 95% effectiveness. By end of June 2005, initiate comparative evaluation process for various commercially available parentage technologies, including those not using the CSIRO/AWI IP.

A non-exclusive license was put in place with Signagen NZ and a second non-exclusive license arrangement is being considered by Genetic Technologies (GT). The GT parentage test has been released to the international market at a pricing 35% cheaper than the existing Signagen BAA-Code product, with projected 99% accuracy.

By end of September 2004, complete evaluation CAMBIA Diversity Arrays technology, for simultaneous application of parentage and performance markers.

Technical difficulties have required an extension until July 2005, following which a commercial review will take place.

Applied Genetics

2004/05 Operating Plan target

Performance against target

Refine existing tools and establish Sheep Genetics Australia

An additional 10 Central Test Sire Evaluation (CTSE) site joinings around Australia.

Acceptable progress has been made – 6 of 10 active sites joined in 2004/05. The number of active sites joining has been negatively affected by the drought in the Eastern states.

The publication of four quarterly updates and the annual publication of the Merino Superior Sires (MSS) reports 10 and 11.

MSS 10 published on web (<http://mss.anprod.csiro.au>) and in hard copy (distributed to 3,000 ram breeders). MSS 11 to be published by January 2006.

By October 2004, enact agreement between MLA, AWI and AMSEA ensuring automated uploading of CTSE data into the Sheep Genetics Australia (SGA).

On track, negotiations between SGA and AMSEA continue with resolution now due by August 2005.

Progress in ensuring MSS report generated via the ASGD database. Commencement of a project to investigate new traits in CTSE.

On track, planned for January 2006.

On track, commenced June 2005 with guidelines for collection of measurements.

Updated results of the SARDI Selection Demonstration Flock (SDF) delivered at the 2005 field day with attendance of 250 wool producers. SDF annual newsletter distributed to over 1,000 Merino industry participants.

Research into ram purchase decisions: By December 2004, complete planning process, develop contract and commence research.

By October 2004, finalise SGA business plan.

By November 2004, quality assurance protocols and standards for data entry, analysis, reporting and Australian Sheep Breeding Values (ASBV) trait accreditation will be completed.

By December 2004, four standard ASBVs in use by the Merino industry.

A completed combined national Merino Bloodline Evaluation report and the publication of an updated standard procedure for running bloodline evaluations.

On track, with 150 attending the field day. Newsletter released July 2005 to include outcomes from industry forums' technical review, and future project planning sessions.

On track, producer interviews commenced and national survey to be finalised by September 2005.

SGA Business Plan was finalised end of June 2005, and subsequently released for industry consultation in July 2005.

The technical development and standardisation process has involved substantially higher levels of difficulty than expected, and is expected to be completed in August 2005. The QA manual is to be released in July 2005.

ASBVs will be released in November 2005.

On track, Merino Bloodline Performance Package to be published late August 2005. Updated wether trial guidelines to be released late July 2005.

Research

Research in progress to develop ASBVs for structural and visually assessed traits. Traits in development include staple strength, fibre curvature, reproductive performance, hoof conformation, mouth, etc.

Ongoing refinement of ASBV genetic parameters for meat, reproductive, parasite resistance and wool traits.

Receipt of final report of genetic alternatives to tail docking and mulesing, and recommendations incorporated into Applied Genetics strategic plan.

'Visual traits in across flock genetic evaluation' project with NSW DPI commenced. 'Novel Merino wool quality traits – pilot' project with AGBU finalised in July 2005, addressing 'trueness-to-type' and compressibility breeding values.

On track, parameters for major visually assessed traits to be delivered by November 2005.

Received and published on AWI website.

Ensure widespread adoption

By end of December 2004, completed planning of the national sheep genetic education program that includes extension of SGA activities and other genetic technologies including bloodline evaluations and MSS.

Animal Breeding Summer School conducted at the University of New England completed with emphasis on wool industry traits.

Good progress made on QA manual and other aspects: outcome expected end of December 2005.

Course completed with 37 participants.

Unique Sheep

Investigations established into the development of an easy care sheep flock, including examination of the mode of inheritance for 'bare breach' and 'tail less' animals.

Review of genetic alternatives to mulesing complete. Genetic assessment of tail-less ram and crutchless sheep underway.

Wool Harvesting

2004/05 Operating Plan target

Performance against target

Develop new harvesting technologies

Deliver as commercial prototypes at least two single stand UPSP models that are as productive as current shearing and also meet OH&S, cost and wool quality targets.

Two platforms currently in field trials. Peak Hill UPSP due for commercial release December 2005. SLAMP and Western UPSPs will start field trials in October 2005.

Procedures established by which electro immobilisation (EI) can be safely and humanely used for restraint of sheep.

EI study will be completed in October 2005.

Chemical de-fleecing: Complete stage 2 of the polymer coating feasibility study. Finalise forward strategy with Bioclip.

Polymer coating review to be completed August 2005. Bioclip collaboration not needed following additional commercial involvement.

Develop "add on" shearing technologies

Initiate a project to deliver an improved handpiece in collaboration with an existing handpiece manufacturer.

One promising new technology identified. This will be trialled via a low cost feasibility study.

Commence project to build 'rare earth' based electric motor.

At least one handpiece supplier will include Shear Express dead man switch in existing product line.

Complete purchase of rotary handpiece IP and commence further development if warranted.

Harvesting area of AWI website operational by end 2004.

Collate all existing information on shearing shed design and OH&S and make available to industry.

Collate 'best practice' design of crutching cradles and make available to current suppliers.

A large handpiece manufacturer has indicated interest in developing this technology.

Now available from Heiniger and potentially from other manufacturers, but more research needs to be carried out into 'lockup' safety issues before this is made commercially available.

No interest from any manufacturer in this technology.

Completed and operational.

Supply of practical information to allow building and modification of shearing sheds to be completed in November 2005.

This project is being done in collaboration with the Kondinin Group and assesses crutching trailer design via a comparative analysis. A report will be published in October 2005 with design guidelines supplied to manufacturers.

Address the supply and quality of shearing labour

Support training of shearers and wool handlers in partnership with state education authorities.

Establish a national training network to deliver skills required by emerging new harvesting technologies.

All training organisations to use a standard set of quality shearer/wool handler learning materials.

First national 'train the trainer' workshop held.

Action plans in place for each state involving 11 different training organisations. In-shed training was delivered to 1,750 shearers and 778 wool handlers in five states.

Network of 20 registered training organisations (RTOs) established. All RTOs participate in two national workshops. All national and state Project Advisory Panels established.

Training organisations committed to a standard approach to delivering and assessing shearer and wool handler training. Learning objects and assessment tools developed and endorsed by RTOs. Audit of existing resource materials completed. Resource development plan completed. Novice Shearing DVD completed. Work commenced on Improver / Professional and Shed Skills DVDs.

First workshops held in Dubbo, Geelong and Narrogin. 75 shearer trainers participate.

Education and Adoption

2004/05 Operating Plan target

Introduce a project that links existing 'early adopter' networks and provides further support for high level innovation on farm through workshops and networking.

Coordinate the reporting of adoption with other RDCs and report to government and other agencies as required.

Investigate a model of industry recommended production practices (BMP) that establishes targets for the industry and informs AWI product and service delivery.

Resource state grower networks to provide producers with the opportunity to be involved in participatory research and development.

Implement best practice recruitment and market segmentation strategies to increase participation and adoption rates amongst producers.

Work with industry partners to have a national network of grower extension programs in place that target the 'aspirant' market segment and support 50% of participants making a change on-farm to their production or management practices.

Progress the implementation of a web based sheep knowledge warehouse, with business plan agreed by September 2004, build phase completed by March 2005, and content available by June 2005.

Performance against target

All workshops now to be delivered during 2005 calendar year. By June 2005, 153 growers attended first round of three workshops. Information kits, research needs and international links to be reported on by December 2005.

RDC Top 100 Adoption Targets booklet published.

Demand identified through industry consultations. MLA has agreed to be project partner. Initial development work commenced February 2005.

Producer Research on Wool (PROW) Program approved and pilot established. Further roll out of program postponed after budget review.

Recruitment research report will be completed in 2005 calendar year. Market segmentation project cancelled due to review of program budget.

Programs commenced in each state. New state woolgrower groups for NSW (Wool4Wealth), WA (The Sheep's Back) and Queensland (Leading Sheep). Impact evaluation system in place for each program.

Delayed due to problems with the ILRIC knowledge warehouse which will not proceed. However, AWI joined Sheep and Beef CRC to implement livestock e-library. Content was available to pilot group by May 2005 with public release due by December 2005.

Progress the implementation of three international e-learning networks that manage the delivery of wool technical content to students and industry through vocational and university providers on a regional basis.

Develop and distribute 150 copies of a schools resource kit to improve the quality of wool technical education in schools.

Develop undergraduate multi-media e-learning units for the delivery of wool technical education in industry, universities and vocational providers.

Six regional career initiatives to be contracted by December 2004. Careers CD completed by December 2004. 30 students involved in regional initiatives by June 2005.

Introduce a project to build leadership skills in AWI-funded woolgrower groups.

Assist over 150 new entrants into the wool industry through scholarships and support of other agency initiatives.

Scoping study identified limited demand. Negotiations with individual universities put on hold due to limited demand.

Future-Fleece CD revision completed. Schools kit revision delayed due to staffing issues within Sheep CRC. Kits to be distributed during school in-service programs during 2005.

Units completed for Early Stage Wool Processing, Sheep Genetics, Sheep Meat Science & Biology, Clip Preparation & Wool Marketing, Sheep Production (wool and meat), Wool Metrology, and Wool Biology.

Delayed due to staffing issues within Sheep CRC. Activities to be completed during 2005.

Project cancelled due to relative high cost.

146 award recipients funded by AWI.

Textile Technology

Improved Appearance Retention

2004/05 Operating Plan target

Performance against target

Bright colours

Complete an evaluation of a commercial product to improve bleaching.

Commercial partner ready to market product once pilot-scale trial have confirmed its benefits. Probability of technical success in achieving improved whiteness of wool products is high.

Identify new formulae to minimise photo-yellowing.

Treatment effective in laboratory found unsuitable for commercial use. Alternative Fluorescent Whitening Agents and pre-treatment for the wool being evaluated.

Pilling

Technical report detailing current information on pilling for industry distribution. Determine the effectiveness of combinations of existing spinning and chemical technologies to improve pilling.

A fundamental study into pilling has developed a potential new approach to the problem which is expected to be fully evaluated by October 2005.

Loop distortion

Verify performance of low-twist spinning technologies and conclude agreement with commercial partner.

A project started in April 2005 with the necessary spinning machinery donated by a German machine manufacturer. A separate fundamental study of spirality and loop distortion in knitwear is to be completed in 2007.

Setting and wrinkling

Complete the formulation of crease setting technology and have an agreement with a manufacturing and distribution partner.

Commercial trials successful with effort now targeted at broad adoption in China and Thailand.

Lightfastness

Select the most appropriate technology to enhance the lightfastness of wool fabrics and complete commercial proving trials.

A project to deliver clean dyeing of wool had successful trials and the technology is ready for commercialisation.

Easycare

Complete industrial trials of TEC technologies for woven products.

Technical work successfully completed with commercialisation underway in Asia. Some technology transfer problems being managed. A separate TEC jacketings projects experienced serious technical problems in garment manufacture and partners are being sought in China to find cost effective solutions.

Licensing agreements for the production of TEC trousers and smart casual or suit jackets signed with at least two commercial partners and marketing plan agreed to.

Licensing agreement signed with one company in Asia. Negotiation underway to roll out technology in China.

Work with selected US retailers to introduce TEC knitwear made from Australian Merino wool for the US market.

Commercialisation plan for TEC blankets and under-blankets approved by October 2004.

Retailers in USA, Talbots and LLBean, ready to launch product in August 2005.

Commercialisation plan received and reviewed but the evaluation concluded that further commercialisation of wool bedding technologies was unwarranted at this time.

New Markets for Australian Merino Wool

2004/05 Operating Plan target

Performance against target

Market analysis

Report identifying market potential and access routes to the surfwear, childrenswear and extremewear markets.

Report identifying potential partners in Europe received. A new product development project for this market is being developed.

Product development with designers and garment makers

One designer and retailer forum to be held. Commission eight market development projects with eight new brand/distribution partners.

Akira Isogawa project completed successfully and a new textile development is selling through his distributors around the world. Josephine Nathan project completed successfully with her presentation and show at Hong Kong fashion week.

Development and commercialisation of novel products

Develop 10 marketing platforms that provide the science portfolio with the appropriate vehicle to commercialise the successful research work. Provide marketing packages for delivery to brand/distribution partners.

Fifteen textile product development themes (marketing platforms) developed. These are being used to direct R&D.

Five brand/distribution partners by June 2005 established for the development of a range of innovative fabrics that enhance the tactile properties of wool garments.

Projects started with brand/distribution partners in China, Australia, UK, Japan, India and USA.

Licensing agreement signed with one vertical partner in China and one in India to commercialise the easy care wool business shirt technology.

Licence agreements signed with partners in China and India. Initial technology transfer trials in China completed successfully. Products being assessed with retail buyers. Technology transfer with South Korean company due to start in September 2005.

One commercial northern hemisphere non-woven needle punch facility operational.

Macquarie Textiles utilising the nonwoven facility to manufacture products of an industrial textile nature. New apparel samples being prepared for USA market. Agreement not to spend any further funds on commercialisation.

Two commercial northern hemisphere fibre-knit facilities operational.

Technology transfer and commercialisation phase under way. Two manufacturing companies in UK and Italy have agreed to commercialise the technology and apply it to wool.

Processes to improve softness of wool fibre in commercial use.

Kookai/ABMT Supersoft project completed successfully with product in Australian stores.

Cost Competitive Wool Processing

2004/05 Operating Plan target

Performance against target

Complete existing machinery development projects

A preliminary assessment by several industry partners of the fitness for use of vortex spun wool blend products by December 2004, and marketing plans to extend the technology subsequently in place.

Research successfully completed. Five assessments by industry partners of the MVS system successfully completed. Successful commercial trial in Hong Kong and the undertaking of initial planning for the technology transfer to China and Indonesia.

Small scale prototype of new wool finishing machine built and evaluated by April 2005.

Project abandoned due to withdrawal of partner.

Modified scouring practises to be available to processors that will significantly increase top yield.

Successfully completed the development of a low temperature detergent with potential energy saving of up to 25%. Commercial trial in progress in India with plan for further trials in China.

Feasibility study completed to reduce the cost of carding wool by introducing a new technology.

Significant delays with equipment damage and poor results to date. Project partners to review in July 2005.

As a step to having a high production woollen spinning system, compare yarn quality and associated productivity increases with current practice.

Feasibility study failed. Project has been terminated.

Establish research partnerships with machinery manufacturers to identify two new targets for innovation in spinning of wool.

A project to reduce imperfections in fine worsted yarns has started with Indorama in Thailand. A proposal relating to a single phase multi-fold yarn formation system was rejected on grounds of excessive cost. AWI is now working directly with the machinery manufacturer.

Establish limitations of current practices to eliminate the effect of variation in raw material on the colour of dyed wool textiles, and source industry relevant materials by March 2005.

Samples of wool with different dyeing properties collected from industry. Fibre and fabric evaluation in progress.

Develop new machinery and process developments

Reduce the pollution load and improve the spinning quality and yield of tops by transferring best established practice to Chinese scourers.

Deferred pending review of route for technology transfer of existing wool processing knowledge in China and India.

Decide on commercial need and decide on best route to market for spinning prediction systems.

Topmaker and Topspin successfully transferred to mills in China and India. No further activities planned.

Commission R&D project on new finishing techniques to allow a range of finishes from a single wool base.

Preliminary laboratory scale work showing promise. A project is being developed with corresponding provider.

Building on wool's natural image

Progress the development of a cost effective and robust non-chlorine continuous process for producing machine washable wool.

Plasma project not started due to commercial partner withdrawal. Zero AOX project started, initial trial completed and data being analysed.

Using metal free dyes, develop a cost effective technique for reducing dyeing time.

Commercial partner ready for the selection of prime compounds for large scale trials – probability of success is high.

Identify and exploit more environmentally-friendly routes for processing wool to end product by developing an Eco-wool marketing platform.

Industry experts consulted and Eco-wool report completed in February 2005. Two key recommendations being considered by AWI.

Evaluate the use of microwave technology in wool scouring.

Terminated due to technical failure of industrial trials.

Transfer of existing knowledge

CAWIN: Undergraduate and visiting fellowship programs in China to commence by July 2004. Masters and PhD scholarships to commence by February 2005. Six R&D projects to be conducted by participating institutes in collaboration with local Chinese mills by January 2005.

Number of students studying wool at CAWIN universities has increased significantly since 2003: from 50 to 131 undergraduate students, from 18 to 54 Masters students in 2005. Four Ph D students have been selected to study at Deakin University on wool topics. Six R&D projects are being conducted by CAWIN university staff and students in collaboration with key wool mills. Two exciting projects are (1) development of PLA wool blend uniforms and (2) development of wool fancy yarns.

Two training courses in wool measurements and buying specifications as requested by Nanjing Wool Market completed by October 2004.

One training course completed in September 2004 in Shanghai involving 120 senior managers and technical managers. Other courses will be conducted as required.

Within the China strategy, select partners by March 2005 and agree on a plan to reduce manufacturing cost by at least 10%.

One mill has expressed interest. With the establishment of AWI Shanghai Office, routes for technology transfer in China are being reviewed.

Initiate three technology transfer projects with four participating mills in India.

Laboratory trials of TEC shawls successful with planning of industrial trials underway. Wool cotton scoping study final report due in September 2005. Two more projects being developed.

Fundamental Wool Science

2004/05 Operating Plan target

To help with technical advances in processing and product performance (eg pilling and handle), determine the amino acid composition, molecular weight and sequence of the key portions of the labelled peptides/protein of wool fibres.

Performance against target

Techniques developed for labelling thio-ester link and characterising the protein on the surface of the wool fibre. These will provide anchor points for the application for new finishes to wool fibres.

Prepare at least three papers on the chemistry and morphology of the proteolipid layer and exocuticle for the World Quinquennial Wool Conference in Leeds 2005.

Identify the most appropriate technique for stripping the lipid layer from the wool surface and replacing it with an alternative layer to enable modification of the surface of the fibre.

Complete the collection of images and information for a database of information on fine structure of wool fibres that can be used to evaluate implications for fibre properties.

Identify and characterise yellowed wool fibre protein fragments.

Initiate a project analysing the geometry of fibres within yarns from the residual torque characteristics.

13 papers detailing new knowledge on the wool fibre have been submitted to the Wool Conference at Leeds.

Stripping of 70% to 80% of the lipid layer achieved. Appropriate reactive chemical that can be attached to the uncovered protein layer identified so that new finishing agents can be attached.

Collection of images and quantitative information on the morphology of the wool fibre proceeding with storage on a nearly developed database.

New mechanism for accelerated photoyellowing in the presence of Fluorescent Whitening Agents identified. This represents a potential breakthrough in developing new approaches to overcome the photo yellowing of wool.

Project initiated and on track to be completed by 2007.

Trade Development

Market Information

2004/05 Operating Plan target

Review and improve current market information supplied by TWC with view to broadening scope of TWC market intelligence in 2005.

Continue to provide TWC market intelligence to growers through monthly market briefings, the quarterly Woolmark Business Survey, business intelligence news distributed through a variety of media, grower business briefings/workshops, access to the Harvest database and TWC's website.

Initiate Trade Policy business intelligence service to provide stakeholders with significant information on matters of international trade impacting on the wool industry.

To improve wool production and levy forecasting, develop and test stage 1 of national flock model, including improved data collection required for above.

Replace the existing Pricemaker[®] service with improved AWEX based service, including a link to spot market prices and benchmarking.

By March 2005 complete China Consumer Demand Survey, providing vital market intelligence for future strategic marketing platforms in China whilst identifying significant project proposals to stimulate sustainable growth in Chinese domestic consumption of wool apparel.

Performance against target

Market Intelligence expanded to include key market case studies and manufacturing / retail focused articles.

Market Intelligence reports are now included in the *Beyond the Bale* publication, expanding the dissemination of TWC intelligence to around 28,000 woolgrower shareholders.

Service is outsourced to industry specialists ITS Global. Intelligence includes monthly multilateral trade updates to be included on the AWI website, in addition to specific bilateral trade reports including analysis on the potential China-Australia FTA.

Stage 1 of flock model completed and will be trialled for September Wool Production Forecasting Committee meeting.

New 'Woolcheque' service launched July 2005 and has been very successfully received by woolgrowers.

Consumer survey completed. Forthcoming analysis was used during the development of AWI's China Strategy.

Wool Quality and Logistics

2004/05 Operating Plan target

Fibre specification

40% target market take up of the Dark and Medullated Fibre (DMF) vendor declaration by end 2005.

One automated DMF test in commercial trials at AWTA.

Identify appropriate raw material and supply chain to source raw wool ranging from 18.5–20.5 micron for optimal next to skin wearer comfort.

Performance against target

Uptake for 2004/05 averaged 28%, and additional investments made available to lift adoption rate.

Agreement reached between CSIRO, AWTA and AWI on industrial trialling, and AWI have provided resources to enable CSIRO technical support of installation, training, and trialling.

Project postponed, pending outcomes of 'Merino Super Soft' marketing platform initiation.

By end of August 2004, staple strength predictor project to be approved and contracted.

Complete 25% of all grower and other stakeholder OFFM workshops, with significant resulting on-farm practice change.

Delayed, but the project is underway and progressing.

Nineteen woolgrower workshops completed. Majority of feedback from participants has been overwhelming positive. Sixty per cent of participating non-users of OFFM indicate intent to implement OFFM following the workshops.

On-farm logistics

Complete on farm database and data transfer standards for information exchange across supply chain.

Finalise sheep coat standards and set up six demonstration sites.

Finalise sheep ID standards and accredit key existing suppliers.

First stage completed June 2004. Unlikely to continue further because of lack of Sheep CRC funding.

Project abandoned because analysis indicated the market may be smaller than thought.

Low priority for Sheep CRC. No further work expected in this area short term.

Off-farm logistics

Deliver stage 1 of a computer model, enhancing the data currently provided by the 'Sheep's Back to Mill' (SBTM) publication.

Industry advisory group will consider current bale labels and potential for bale ID, based on previous AWI trials.

Project currently underway, with start delayed until review of data sources for SBTM publication was completed.

Technology and cost/benefit studies underway, funded 50:50 by AWI and AWEX. Bale label design reviewed and will be changed.

Market Access and Trade Development

2004/05 Operating Plan target

Performance against target

China

The AWI China office to lobby Chinese industry and Government in favour of a China-Australia Free Trade Agreement (FTA) which benefits Australian wool and China's wool textile industry.

The AWI China office to include technical resources in textile technology so as to be identified as able to provide specialised innovation and development to the Chinese wool industry.

AWI retains a presence in Beijing that allows for localised lobbying of Chinese Government. This takes place through liaisons, government submissions and further negotiating dialogue.

In October 2005 AWI set up an office in Shanghai. Six staff were recruited representing specialist knowledge in all facets of textile technology. The office is focused on engaging with manufacturing and retail brand partners and building credibility for both AWI and Australian wool.

Market access

Represent the Australian wool industry during negotiations on a possible China-Australia FTA.

Publish of analysis and recommendations regarding technical and non technical barriers during China-Australia FTA negotiations.

Provide submissions through the Australian Government to Chinese Government regarding recommendations for management of quota allocation for raw wool and tops.

Work closely with the Joint Working Group to overcome Fit For Purpose issues in China.

Prepare a paper detailing the benefits to Australia and the EU of tariff reductions between tops and raw wool.

Work with the India Joint Working Group to negotiate with Government regarding tariff reductions.

We are continuing to pursue dialogues and strategies which enable us to effectively represent the wool industry during FTA negotiations.

AWI developed its own Trade Policy market intelligence resource to keep both industry and government up to date on all aspects of wool related trade policy.

Completed.

The Fit For Purpose survey has been completed and identified action that the wool textile industry in both countries could take to ensure the image of Australian wool is of the highest calibre.

Not initiated due to lack of industry support and shift in priorities.

A new Joint Advisory Group on India has been set up which focuses on engaging the retail and manufacturing industry, dealing with their concerns relating to woollen apparel. The first meeting was held in July 2005 identifying areas of potential projects to help build the domestic consumption and export of Australian wool based apparel in/from India.

Providing Indian Ministry of Textiles with information justifying reductions in tariffs.

Work with industry associations like the Indian Woollen Mills Federation and Shawl Club to encourage domestic support for tariff reduction.

Provide submissions to Government on behalf of Australian wool outlining the industry's position regarding negotiations on both WTO Agriculture and Textiles and Clothing.

Ongoing.

AWI undertook three visits and conferences since September 2004. Projects pending.

Submissions made through NFF.

Trade development

In China, establish R&D partnerships with at least five major wool garment makers and retailers to develop new wool products for the Chinese domestic market.

Chinese wool Industry summit to be organised by end 2004.

R&D conference to be held in China in conjunction with IWTO and Chinese Wool Textile Association.

Two to four seminars held with the top 50 buyers in China to ensure the quality of Australian wool meets their requirements.

In India, establish R&D partnerships with at least two major wool garment makers and retailers to develop new wool products for the Indian domestic market.

The machine washable suit (Heilan Group); Esquel cotton/wool golf polo shirts; Xinlong non woven skin care; Novetex Soft wool project; anti moth woollen knitwear.

JWG to be held late 2005.

Sponsorship of IWTO meeting in Shanghai.

Seminar held over two days and attended by 80 people on each day. Other seminars held in individual mills.

A project for TEC application on suits, blazers and trousers for domestic retail and export market was established with a target of 360,000 garments in the first year rising to 720,000 garments in the second year. A larger project was implemented in applying TEC to shawls which account for about 3.5 million kilograms of Australian wool in India.

Initiate a detailed country report for Italy, Japan, Korea or Taiwan outlining technical and non technical trade barriers.

Scoping for this project has begun with initiation of multilateral trade reviews from ITS Global focusing on WTO Agreement on Textiles and Apparel.

Initiate a detailed analysis of the potential for Australian wool exports / domestic retail market in Turkey.

Delayed due to China Trade priorities.

Initiate a series of project proposals through specific consultant contacts operating in Russia.

Scoping study to be carried out by October 2005.

Wool trading

Conduct a scoping study into hedging, futures, forward contracts and other methods by which woolgrowers and processors can more effectively reduce the risk caused by the volatility in wool auction prices.

Report produced on the current and potential wool marketing and risk management options available to Australian woolgrowers and pipeline participants through to early stage processing.

Corporate Affairs

Communications

2004/05 Operating Plan target

Performance against target

Shareholder communications

Produce and distribute to shareholders and other stakeholders six issues of *Beyond the Bale*.

Six issues of *Beyond the Bale* produced and distributed to shareholders and 650+ industry and government stakeholders.

Deliver Chairman's letter to shareholders three times during the year.

Chairman's letter sent September 2004, April 2005 and June 2005.

Produce and deliver a product catalogue for shareholders and stakeholders.

Project underway but completion delayed until August 2006.

Events

At least 150 shareholders attend the AGM Forum and AGM.

More than 200 people attended the 2004 AGM and Forum, including 185 shareholders.

An average of 150 shareholders attend each of four AWI woolgrower information forums held in key woolgrower centres throughout Australia.

An average of 220+ woolgrowers attended the five AWI woolgrower information forums held during 2004/05, totalling over 1,100 woolgrowers for the year.

AWI Showcase is refitted annually and information updated prior to each event to ensure visitors receive most up-to-date information on AWI activities.

A decision was made in October 2004 to sell the Showcase.

AWI displays and/or product suitcases and/or speakers at each of the state farm organisation (SFO) conferences.

Displays and product suitcases were at each SFO conference during the year.

AWI speakers or nominated speakers participate in scheduled events for the AWI Showcase and an additional 10 industry events targeting shareholders.

In addition to AWI's five woolgrower forums, AWI speakers presented at 60+ key events or seminars around Australia during 2004/05.

Web communications

Improve useability of the AWI website, as measured by before and after user surveys.

Results from the survey show that users found the website easier to navigate with faster download times, resulting in a greater number of revisits.

Increase by 30% the number of email update subscriptions.

Email update subscriptions increased 56% during 2004/05 to 5,133.

Increase the range of project information on the website, as identified through the web index.

Information on all areas greatly expanded with new areas included such as Design & Marketing and Trade & Markets.

Maintain an average of at least eight website page views per visit session each month.

An average of at least eight website page views per visit session was maintained during 2004/05 with peaks of 13 reached and an average of 9.5 for the year.

Increase by 20% the average daily visits to the AWI website.

Average daily visits increased 42%, from 774 over 2003/04 to 1097 over 2004/05.

Increase from 10% to 20% the proportion of woolgrowers who have visited the AWI website.

To be measured by market research in August 2005.

Publications

Produce *Insight and Innovators* fact sheets to cover all AWI program areas during the year.

Total of 24 new or updated fact sheets, such as *Woolfleece* and *Battling the blowfly*, produced during 2004/05 and all key program areas covered.

Produce and annually update wool industry fact sheet.

Updated October 2004.

Wool brokers and agents

Involve wool brokers and agents in AWI woolgrower information forums.

Wool brokers and agents were involved in each of the five AWI woolgrower forums held in 2004/05.

Voice of the Woolgrower

Develop and undertake a *Voice of the Woolgrower (VOW)* survey on woolgrowers' R&D priorities.

Due to extensive stakeholder consultation during 2004 and ongoing consultation through industry groups, decision made not to undertake VOW on woolgrower R&D priorities. Communications market research began in June 2005 due for completion August 2005.

Industry and Government Relations

2004/05 Operating Plan target

Performance against target

Industry relations

Complete a yearly survey of 20 woolgrowers from woolgrower industry organisations.

Survey was to be included in the *Voice of the Woolgrower* survey which was not initiated.

Hold five AWI *Information Exchange Sessions* per year with WoolProducers and woolgrowers associations, the major woolgrower group and breeder groups.

Two Information Exchange Sessions undertaken, each attended by 40 industry leaders, including the Strategic Planning Workshop.

Government relations

A bi-monthly update on current wool industry matters and AWI RDI activities is published and sent to Australian MPs in wool growing electorates.

WoolMatters published and distributed.

Industry crisis management

By November 2004, a completed wool industry incident management plan is endorsed and circulated to industry.

Wool Industry Management strategies developed as part of the Australian Wool and Sheep Industry Taskforce in defending the wool industry from PETA boycott.

By February 2005, industry stakeholders and AWI staff participate in an annual wool industry crisis rehearsal and review workshop.

Deferred to 2005/06 due to commitment to the Australian Wool and Sheep Industry Taskforce in defending the wool industry from PETA boycott.

Advisory panels

Fifty woolgrowers through ten new advisory panels to have input into AWI research.

Ten new panels established with 27 new woolgrower members.

Strategic plan for industry

The Australian wool industry to have held a workshop to establish the vision and goals for the industry.

Wool Strategic Plan overtaken by merger discussion between AWI and AWS.

Next generation of woolgrowers

Ten next generation, 25–40 year of age woolgrowers participate in two AWI Information Exchange Sessions.

Project to be implemented in 2005/06.

Complete annual Industry Leaders International Wool Research Study Program by April 2005.

Project to be implemented in 2005/06.

Hold a young wool industry seminar by November 2004.

Project to be implemented in 2005/06.