agresearch

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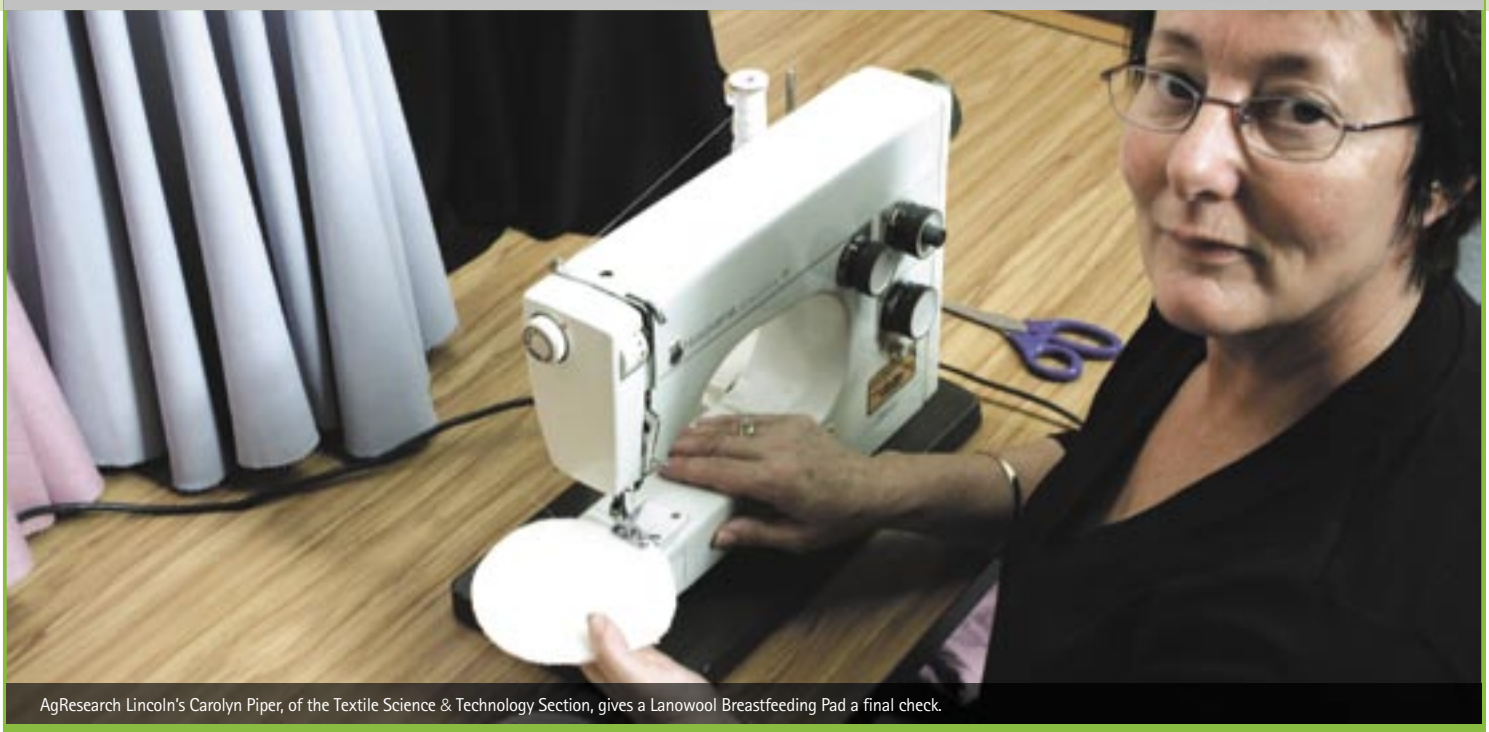


AgResearch Lincoln's Carolyn Piper, of the Textile Science & Technology Section, gives a Lanowool Breastfeeding Pad a final check.

Wool breast pads a worldwide hit

An innovative product developed by AgResearch is adding value to the merino wool clip and putting smiles on the faces of new mothers the world over.

Technical staff from the textile processing team have developed a technique to impregnate medical-grade lanolin into a custom-made knitted merino fabric that is used to make Lanowool Breastfeeding Pads. The whole manufacturing process takes place at AgResearch Lincoln's processing plant under the guidance of plant manager John Lindsay.

"We listened to the client, Lene Alexandersen, and defined her requirements for the product. After the initial development work we were able to set the wool and yarn specifications, develop the knitting structure for the fabric, develop a finishing route to compact the knitted fabric so it is soft and bulky but doesn't loose it's shape during washing, and develop a method to apply the lanolin into the fabric."

The lanolin-enriched fabric stops the pads from sticking to the skin and reduces chafing and cracking. The re-usable pads are being sold in Europe, Australia, the UK, and through hospitals and retailers in New Zealand.

"Lene says consumers, especially in Europe, are looking for natural, sustainable, environmentally-friendly products.

"We get a lot of these sorts of projects from individuals who have an idea or vision but don't know how to develop it to get the product to market. It's all about adding value and manufacturing specialised products which not only meet market demand but often create a demand."

The development of products such as Lanowool is part of AgResearch's focus on developing innovative products that benefit New Zealanders.

"We always encourage people who have different ideas for the end uses and added value of wool — and the size of an operation is irrelevant. Lanowool, for instance, obviously is a very good new niche market product for our wool and we're very happy that it's taken off the way it has.

"The more we can add value to the wool clip the better. It's an area where the kiwi attitude of giving anything a go comes to the fore."

With more international distributors and retailers taking on Lanowool, and the growing trend of baby-safe products, 2008 looks to be a record year, says Lene who is originally from Christchurch.

"We couldn't have done it without AgResearch. Research and development is their speciality and taking our idea to them was the best thing we could have done. They have world-class resources and are a very smooth operation.

"We were amazed by their standard of research, their resources, their innovative staff and their world-class understanding of the technical properties of wool."

Important farming research wins funding

AgResearch has won an extra $15 million from the Foundation for Research, Science & Technology (FRST) for research projects that will benefit New Zealand's farming sector. This takes AgResearch's FRST funding to a total of $64 million.

FRST is a Crown agent established to invest annually in science and technology research that benefits New Zealand.

Future-proofing the New Zealand cow is the focus of one project that will receive about $9 million over the next six years. Led by AgResearch Ruakura-based Dr Kuljeet Singh of the Dairy Science & Technology Section, the project expects to make significant gains in the productivity of New Zealand's dairy industry by investigating the links between milk production and environmental influences.

"Researchers will study how mammary glands respond to cues such as nutrition and hormone production within the cow, to control milk production," Kuljeet says.

"Once the critical genes and trigger factors are understood, the information will feed into breeding programmes and ultimately to farmers, with a goal of improving yields and efficiency."

A project that aims to keep New Zealand wool products at the cutting edge through enhanced wool quality will receive about $8 million in FRST funding over the next six years. The project has five objectives that cover the entire wool production chain, says AgResearch Lincoln-based project leader Dr Jolon Dyer of the Growth & Development Section.

The first objective is to identify how gene and protein expression relates to wool quality traits such as strength and crimp. The ultimate aim is to develop gene marker tests for accelerated selective breeding. Another objective is to develop self-crutching sheep – optimising fleece distribution so wool production costs are minimised and wool quality is optimised.

The final three objectives are post-farm gate wool projects that aim to develop technologies that add bulk, block the mechanisms that lead to photodegradation, and deter insects from eating wool carpets.

Another grant of $2.5 million over five years is for research into advanced sensors for biosecurity. It will help progress technology that concentrates and analyses molecules found in air pockets trapped in shipping containers, ultimately identifying biological threats.

AgResearch appoints new Board Director

The newest addition to AgResearch's Board of Directors has considerable scientific expertise and a wealth of industry experience, particularly with food technology in public and private sectors.

Dr Jane Adams is currently employed by Zespri Group Ltd as Innovation Leader, managing research into kiwifruit productivity and market access as well as extension services.

"I feel privileged to be joining the Board of AgResearch and hope that my background in science, education and management enables me to positively contribute to the development of innovative, sustainable research and business strategies for this CRI," she says.

Dr Adams replaces Dr Peter Andrews who has been on the Board since July 2003.

AgResearch sponsors Science Fairs

AgResearch's annual sponsorship of regional Science Fairs kicked off this month. It also had a booth at three university careers expos.

These initiatives are part of AgResearch's commitment to encouraging students to study science and consider agricultural science as a career. In recent years AgResearch has provided sponsorship in the form of prizes at numerous Science Fairs and at the culmination of those fairs — Realise the Dream. During August, AgResearch had booths at the careers expos of the University of Otago, Victoria University and the University of Auckland. Earlier this year it featured at Massey University, the University of Canterbury, Lincoln University and the University of Waikato.

AgResearch Invermay Human Resources Advisor Jane Stumbles was in charge of the University of Otago booth and says there was a lot of interest in the campus' summer student internships.

"We connected with the students at a local level and told them about the five internships we'll have on offer. The scheme links tertiary and research campuses, giving a group of talented, potential science graduates exposure to research in the real world. It also generates interest in future employment opportunities."

Students chosen for the internship must complete a specific science project drawn from AgResearch Invermay's local programmes.

Helping man the Otago stand throughout the day were AgResearch Invermay's Richard Muirhead, Anar Khan, Selai Letica, Gemma Payne, Luke Proctor and Natalie Weston.

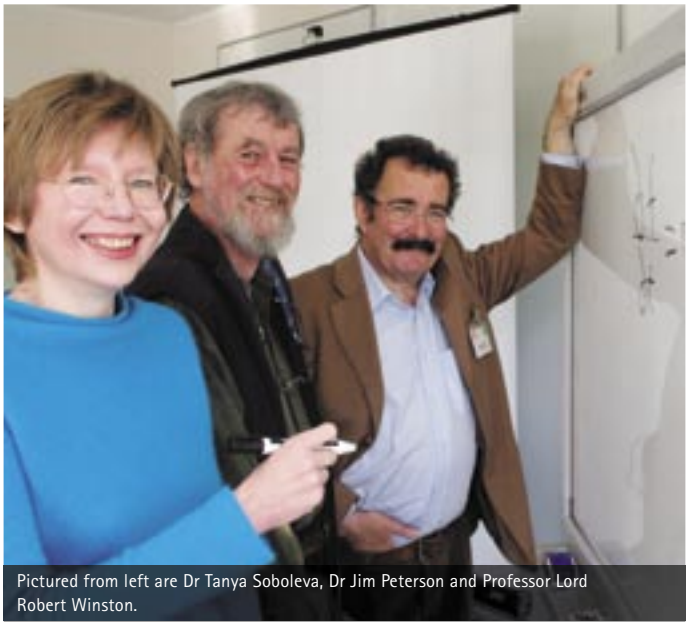
During August, AgResearch sponsored prizes at Science Fairs in the Far North, Manawatu, Wellington, Southland, Bay of Plenty, Otago and Waikato. Judging or presenting prizes on behalf of AgResearch were Board Director Danny Chan, Animal Health Section Manager Dr Wayne Hein, Research Associate Chris Smith, Education Advisor Colin Nicol and scientists Dr Kristy Demmers, Dr Marian Price-Carter and Dr Liz Carpenter.

Chris, of the Climate, Land & Environment Section and based at AgResearch's Woodlands Farm in Southland, says AgResearch's involvement in the Science Fairs raises its profile in the wider community — not just in agricultural circles.

"The Science Fairs are a very useful way of encouraging the students to consider scientific careers — especially when they realise there's a lot more to it than just teaching or working in a laboratory."

World-leading professor visits AgResearch Ruakura

The mammalian reproductive system was under the spotlight during a two-day visit to AgResearch Ruakura by Professor Lord Robert Winston this month.



Pictured from left are Dr Tanya Soboleva, Dr Jim Peterson and Professor Lord Robert Winston.

One of the world's most respected medical academics and researchers of the human reproductive system, Lord Winston was assessing significant developments in the work on mathematical modelling of the mammalian reproductive system and embryo quality. He met with AgResearch Drs Jim Peterson and Tanya Soboleva, whose work around the mathematical analysis is the basis for the new knowledge. Their work is particularly notable because of the interface between biology and applied mathematics which is helping scientists understand the path that leads from unfertilised human eggs to healthy babies. The aspect of embryo quality affecting subsequent development and adult health was discussed with AgResearch's Dr Allan Sheppard.

During the scientific demonstrations, he met with General Manager for Applied Biotechnologies Dr Jimmy Suttie, Reproductive Technologies Section Manager Dr Vish Vishwanath, Lindsay McGowan and Marty Berg.

Lord Winston is best known as the presenter of the Human Body and Super Human television series but he also heads up a world-leading human fertility research team.

Public science lectures attract huge crowds

For the second year in a row, AgResearch was a sponsor of the hugely successful HOT Science with Kim Hill public lecture series in Christchurch.

About 1000 people packed the James Hay auditorium at the Christchurch Town Hall on each of the event's three nights. Broadcaster Kim Hill and a panel of local experts led robust debate on the science behind hot topics for those living in both the town and country — water wars, climate change and whether we're food producers or polluters. Well known AgResearch scientist Dr Stephen Goldson was a panel member for the climate change lecture and says most of the audience seemed to accept that global warming is happening, were worried about it and wanted to know how they could help prevent it.

"Climate change is being taken far more seriously now than it was even as recently as last year," he says.

"Science is very useful in its ability to analyse and explain what's going on, so the audience was informed. There was some talk about how science can potentially be used to mitigate issues around climate change."

Frosts are great killers of pests and disease, so there are implications for Canterbury as New Zealand warms up, says Stephen whose expertise is in pest management and biosecurity.

"If we intensify farming and our country becomes drier and warmer, pests and diseases are likely to show up more because production systems become more finely balanced and subject to disruption. Warmer weather, particularly in Auckland, increases the chance of disease-bearing insects getting into New Zealand and from there could well spread."

AgResearch is supporting a range of public science lectures in New Zealand's major cities this year.

"It's part of our focus on social responsibility," says Corporate Affairs Manager Allanah James.

"AgResearch wants to help the community understand and engage in important issues that science is involved in."

HOT Science was organised by the Lincoln Resource — a group of companies and organisations, including AgResearch Lincoln, involved in land-based research and its application in business. The event's major sponsors were the Ministry of Agriculture and Forestry and The Press. Topic sponsors were Environment Canterbury and the Christchurch City Council.

The Christchurch Town Hall was packed during this year's HOT Science with Kim Hill public lecture series.

AgResearch scientists win prestigious awards

Above: AgResearch's Dr David Scobie, right, and Meat & Wool New Zealand's Dr Andy Bray with their NZIAHS Canterbury section award.

Right: AgResearch's Dr Stephen Goldson, right, receives the Jubilee Medal from New Zealand Institute of Agricultural and Horticultural Sciences (NZIAHS) president John Lancashire.

AgResearch's Dr Stephen Goldson has won the New Zealand Institute of Agricultural and Horticultural Sciences' (NZIAHS) premier award — the Jubilee Medal.

Other AgResearch scientists to receive NZIAHS awards are Dr Warren McNabb (Fellow) and Dr Rachel Anderson (Postgraduate Award). Dr David Scobie, Denis O'Connell and former AgResearch employee Dr Andy Bray received the PGG Wrightson Seeds Significant Achievement Award for 2007 that was presented by the Canterbury section of NZIAHS.

The Jubilee Medal recognises outstanding contribution to science that supports primary industries. As a recipient, Stephen is seen as a leader in his areas of expertise — pest management and biosecurity. Stephen recognised the importance of subspecies in major biological control initiatives in grassland ecosystems. At the same time, he has shown outstanding leadership and inventiveness in recognising how science can address difficult biosecurity problems. An example is his contribution to Sniffertech™ — a technology that seeks to detect unwanted biological material in shipping containers.

Warren's award recognises his outstanding service to agricultural science. Based at Grasslands, he is Section Manager for AgResearch's Food, Metabolism & Microbiology Section. Warren leads research that seeks to understand the interactions between nutrition and gene regulation in animals. This leading-edge research aims to develop added-value foods with improved functionality, and improved animal productivity and health.

Rachel is in her first year of postdoctoral research and is a member of the Food, Metabolism & Microbiology Section. It is the second year in a row that a member of the Section has won the award, with it being awarded to her colleague Dr Matthew Barnett last year. The premier Postgraduate Award is worth $2000 and Rachel will use it attend and present at a conference next year. Her presentation will feature results from her Foundation for Research Science & Technology (FRST) Postdoctoral Fellowship project. This project aims to advance the knowledge of the processes fundamental to intestinal function and could lead to new strategies for improving intestinal health and potentially influence how primary resources are used in the New Zealand food industry.

Andy, who now works for Meat & Wool New Zealand, David and Denis were rewarded for their development of low-cost, easy-care sheep — those that have a genetically short tail and no wool on the head, legs, belly or breech.

"Competition for this award was the toughest it's ever been," says NZIAHS Canterbury section chairman Dr John Keoghan.

"The winning team has shown the most amazing courage and determination to keep an idea going in the face of high levels of scepticism — an idea that is key to the future of the sheep industry."

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New Zealand Journalists see collaboration first-hand

From left, the four journalists who visited AAHL – the world's most advanced containment facility: Tony Leggett, Countrywide; Mary-Jane Angus, Rural News; Mark Peart, National Business Review; and Tim Cronshaw, The Press.

A group of New Zealand journalists recently visited Australia to learn more about collaborative projects AgResearch is planning with the Livestock Industries division of the Commonwealth Scientific and Industrial Research Organisation (CLI).

The four journalists visited research facilities in Armidale and Geelong to learn about the projects that will help benefit the pastoral sector. While there, they met with senior CLI scientists and AgResearch CEO Dr Andrew West and executive team members Dr Travis Glare and Dr Jimmy Suttie who were involved in planning with the division. The media visit was arranged by AgResearch Corporate Affairs to coincide with the meeting between the two organisations.

Journalists talked with a wide range of science teams including those working on joint projects with AgResearch in the areas of lamb survival and low-cost easy-care sheep. CLI senior scientists also gave presentations on work ranging from sheep immunology to gene mapping for parasite resistance.

The highlight of the journalists' trip was visiting the Australian Animal Health Laboratory (AAHL) at Geelong which is the world's most advanced containment laboratory. AAHL undertakes diagnostic work on Avian Influenza, rabies and SARS, along with a range of other diseases. Apart from diagnostic services, AAHL also provides Australia's National Emergency Response Capability, trains veterinarians in early recognition of exotic diseases and is an international reference centre for new and emerging diseases.

The tour is one example of AgResearch's focus on increasing collaborations with Australian research organisations. Earlier this year, AgResearch signed Heads of Agreement Memorandums with both CLI and the Plant Industry Division of the Commonwealth Scientific and Industrial Research Organisation (CPI). It is also teaming up with the University of Queensland to jointly fund a new Chair in Systems Thinking.