MEET THE 2007
SCIENCE AND INNOVATION
AWARDS FOR YOUNG PEOPLE
IN AGRICULTURE, FISHERIES AND FORESTRY
WINNERS

Innovative scientific projects to benefit agriculture, fisheries, forestry, food or natural resource management industries.

www.daff.gov.au/scienceawards
Overview

Now in its seventh year, the annual Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry, support young Australians who have an idea that uses science, technology or innovation, to benefit Australia’s rural industries in the long term. Since 2001 the awards have benefited 117 young Australians in bringing their ideas to fruition.

This year there are eight state winners and nine rural Research and Development Corporation sponsored winners. Each award recipient receives up to $10,000 to undertake a project on an innovative or emerging scientific issue that will contribute to the ongoing success and sustainability of Australia’s agriculture, fisheries, food or forestry industries.

The Awards enhance the use and recognition of science, innovation and technology in rural industries and further the careers of Australia’s young scientists.

Not only will a range of industry, government and tertiary institutions benefit from these projects, but the winners will also have the opportunity to tap into broader networks and share their ideas with others working in their particular field.

Who was eligible to apply for the awards?

To qualify, applicants had to be aged between 18 and 35 years and working, employed or studying, in an agricultural, fisheries, food or forestry related industry. Applicants were required to provide an outline of a scientific or research-based project that could be completed within twelve months. The awards are coordinated by the Bureau of Rural Sciences (BRS) on behalf of the Department of Agriculture, Fisheries and Forestry.
THE 2007 SCIENCE AND INNOVATION AWARDS FOR YOUNG PEOPLE IN AGRICULTURE, FISHERIES AND FORESTRY WINNERS
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The 2007 winners were selected from a competitive field throughout Australia. They will undertake their scientific or innovative project, benefiting rural industries, within the next year. The projects were assessed for level of innovation or scientific relevance and for their potential benefit to Australia’s agriculture, fisheries or forestry industries.

Since 2001, 117 young people throughout Australia have received a Science and Innovation Award for Young People in Agriculture, Fisheries and Forestry.

**These awards make a difference to the lives of the recipients.**

Here are some of the comments of previous award winners:

‘First and foremost it significantly enhanced my self-confidence. Secondly, it helped me to have an absolute trust in the system and in this country that my endeavours will be duly recognised and rewarded.’

*2001 winner, Soressa Kitessa.*

‘Gaining external recognition for my ideas contributed greatly to me being able to justify spending time in this research area.’

*2002 winner, Aaron Ingham.*

‘It was a great opportunity to receive recognition for my efforts in science as an early career scientist’

*2003 winner, Caroline Kerr.*

‘I enjoyed working on my project and this has influenced me to remain in the research of agricultural science.’

*2004 winner, Susan Lambert.*

‘It has created fantastic opportunities for networking, carrying out high-quality scientific research and getting both my name and research recognised in worldwide scientific communities.’

*2005 winner, Dianne Mayberry.*

‘I believe this Award offers not only valuable research funds but also incentives to stay working in the primary industries and to continue high quality research.’

*2006 winner, Syed Ali.*
Understanding grain invaders

A simple DNA test could help prevent one of the world’s most voracious seed-eating pests from entering Australia.

The khapra beetle feeds on grain and seed kernels, and can decimate storage systems. In fact, heavy infestations can destroy thousands of kilos of stored grain in a matter of weeks.

The good news is that the khapra beetle is not present in Australia. The bad news is that, if the khapra did get in, controlling it would be extremely difficult as the larvae can remain in hibernation for up to eight years.

And while the khapra is not yet in Australia, its sister species, the warehouse beetle has become widespread.

Given that the two beetles are virtually indistinguishable, the potential for confusion is a serious concern for Australia’s quarantine system and our grain industry.

The University of Canberra’s Dr Katarina Mikac; however, is looking at an innovative solution.

“By using DNA fingerprinting, I aim to develop a species identification test and investigate the genetic diversity, gene flow and dispersal of warehouse beetle populations in Australia,” she said.

“It is important that more is known about the distribution and movement patterns of the warehouse beetle to better understand the consequences of the inadvertent introduction of the more serious khapra beetle.”

The project will build on Australia’s already tough quarantine and biosecurity strategies, as well as the specific control measures targeting the khapra beetle.

‘By using DNA fingerprinting, I aim to develop a species identification test and investigate the genetic diversity, gene flow and dispersal of warehouse beetle populations in Australia.’

Dr Katarina Mikac
Mr Warren Conaty
New South Wales

Reading between the leaves for efficient water use

With Australia’s water resources stretched to the limit, efficient and effective irrigation practices are essential.

In the cotton industry, for example, growers currently rely on soil/water deficit measurements to determine their irrigation needs.

But Warren Conaty, a PhD researcher at the University of Sydney, believes a new method, involving leaf canopy temperatures, may be more effective.

“It is well established that stressed plants exhibit higher leaf temperatures due to reduced evaporative cooling,” Warren said.

“By using infra-red thermometers, leaf temperatures in the canopy can be monitored to determine when a crop is water stressed.

“Water savings can then be achieved by scheduling irrigation at the optimum temperature threshold.”

This is the rationale behind BIOTIC (Biologically Identified Optimal Temperature Interactive Console), an irrigation scheduling tool developed in the United States (US).

Warren is investigating its suitability for Australian conditions.

“BIOTIC has been shown to reduce water consumption, while maintaining cotton and peanut yields in the US.

“Through field and laboratory experiments, I will investigate if BIOTIC can improve water use efficiency in both furrow and over-head application systems.”

“The financial support from the Award will enable me to expand my field experiments into a wider variety of cotton growing regions, ensuring the validity of my research.”

BIOTIC not only has the potential to reduce water consumption and keep rural communities alive, it may also lead to increased environmental flows for our stressed inland river systems.

‘Through field and laboratory experiments, I will investigate if BIOTIC can improve water use efficiency in both furrow and over-head application systems.’

Mr Warren Conaty
Ms Rachel Meldrum
Northern Territory

Fungus free bananas for the future

Tropical cyclones have devastated Australian banana crops in recent times, but according to Department of Primary Industry, Fisheries and Mines graduate trainee Rachel Meldrum, a soil-borne fungus poses the biggest threat to the industry.

“Fusarium wilt is regarded as one of the most destructive plant diseases in the history of agriculture,” she said.

Australian bananas are not immune — a particularly infectious strain, referred to as ‘tropical’ race 4 (TR4), has caused a 60 per cent decline in the Northern Territory’s banana production since it was discovered 10 years ago.

The fungus infects the plant via the root and spreads rapidly both within and between farms. At present there is no long-term solution for eradication, so limiting its spread is vital for the sustainability of the banana industry.

Rachel aims to investigate whether the spread of TR4 may be assisted by another destructive agent — the banana weevil, which damages plants by boring into the stem.

“Knowing whether banana weevils are vectors could assist in the prevention of the potentially catastrophic spread of the disease,” she said.

Rachel’s Award winning project aims to determine the presence of TR4 on, or in, banana weevils and if they are capable of carrying the fungus between farms.

“This project will allow me to expand our knowledge of TR4 epidemiology and, in doing so, help our local banana industry.”

‘This project will allow me to expand our knowledge of TR4 epidemiology and, in doing so, help our local banana industry.’

Ms Rachel Meldrum
Ms Jennifer Firn
Queensland

Beating the weeds

In the war on exotic weeds, Australia’s native grasses may prove to be the key.

A range of exotic grass species have been introduced into the country over the years, with the aim of improving Australia’s pastures. And while some of these introductions have been successful, many have failed to live up to expectations.

African Lovegrass, for example, has proven unpalatable to stock and low in nutritional value.

Unfortunately, it is extremely vigorous and spreads rapidly. It is now regarded as a noxious weed in many parts of Australia.

Jennifer Firn, a PhD scholar from the University of Queensland, says that native grasses may have the potential to help slow the spread of unwanted exotic species.

‘As current control efforts are not working, it’s important to explore solutions outside the boundary of conventional farming practices.’

Ms Jennifer Firn

“Native grasses are better adapted to the harsh climate and soil conditions that characterise Australian ecosystems,” she said.

Jennifer is using her Award to investigate whether two native species, Pitted bluegrass and Kangaroo grass, can out-compete African Lovegrass.

She will conduct a series of glasshouse experiments, altering the soil nutrient and water conditions, to measure competitive ability.

“If the right species can be found, it could be valuable for building competitive pasture communities that are able to stave off invasion while at the same time ensure sustainable production levels,” Jennifer said.

“As current control efforts are not working, it’s important to explore solutions outside the boundary of conventional farming practices.”
Mr Adam Loveys
South Australia

Portable chickens keep the pests at bay

Controlling pests in vineyards is now only a phone call away.

Adelaide Hills grape grower, Adam Loveys, is developing an innovative, chemical-free means of weevil control in vineyards — and it involves using mobile phone SMS technology.

"Weevils damage leaves, shoots and grapes, reducing vigour and yield, and severe infestations may even lead to the death of newly established vines," he said.

"Normally they are controlled by spraying broad spectrum insecticides, but there’s an increasing push to develop alternative approaches, less reliant on chemical inputs."

Adam will use his Award to develop an innovative mobile poultry housing system for use in vineyards to aid the control of weevils.

"Foraging chickens eat weevils residing in the leaf litter and topsoil on the vineyard floor."

"The challenge of managing free-ranging chickens in fox-inhabited regions has restricted their widespread use as pest controllers until now."

An automatic door mechanism, remotely-controlled by mobile phone SMS messaging technology will ensure chickens are securely locked away.

The operator is automatically sent a message by mobile phone alerting them when the door has successfully opened or closed every morning and night.

"The mobile system allows chickens to be moved around the vineyard or between properties targeting areas where weevil infestations are high. And the remote-controlled door is not only convenient; it also provides peace of mind.

"If managed successfully, additional income could be derived from eggs or meat produced by foraging chickens."

"I believe that the future of Australian viticulture — and agriculture generally — depends on our ability to adopt and apply innovations rapidly, particularly those that contribute to environmental sustainability."

‘If managed successfully, additional income could be derived from eggs or meat produced by foraging chickens.’

Mr Adam Loveys
Dr Robert Shellie
Tasmania

Breeding a better beer

Although all beers contain essentially the same four basic ingredients — barley, hop, yeast and water — connoisseurs recognise that not all beers are created equally.

Hop is an essential ingredient as it contributes to the flavour, aroma and bitterness of beer. While there are many hop varieties grown around the world, including Australia’s south-east, brewers are thirsty for new types with improved characteristics to enhance their ‘liquid gold’.

Dr Robert Shellie from the University of Tasmania is using his Award to research ‘smart’ ways to breed new hop varieties.

“Recent advances in biotechnology and analytical chemistry have made it possible to achieve unprecedented success in plant breeding strategies to improve agricultural crops,” he said.

“Using this technology I will be able to identify the biological pathways that control flavour and aroma compounds in hop.”

Dr Shellie’s research will provide a foundation upon which smart breeding programmes — targeting specific flavour and aroma profiles — can be developed to create new hop varieties for current and emerging markets.

“This Award will advance the science of hop breeding and provide opportunities for Australian hop growers to remain competitive in the global market.”
Dr Andrew Merchant
Victoria

Breeding tolerant trees

Australian trees are renowned for their ability to tolerate harsh climates.

In fact, the responses they use to counter tough climatic conditions not only ensure survival, but long-term growth as well.

And it’s these responses to stress that are of interest to Dr Andrew Merchant, a research fellow at the University of New South Wales.

“Marginal landscapes present a significant challenge to expanding Australia’s forest plantation estate,” he said.

“In many instances, substantial tree plantings have failed due to the inability of the selected species to survive the harsh conditions.

“By better understanding the chemical and molecular processes that lead to stress tolerance in Australian trees, improved species selection and breeding programmes can be developed for specific climates.”

Dr Merchant’s project involves studying the presence of cyclitols, a group of compounds that maintain plant cellular function and accumulate during periods of dehydration, in selected eucalypt and acacia species.

“By conducting a range of experiments, exposing plants to periods of high light and temperatures, I will be able to identify the conditions inducing cyclitol accumulation in plants to determine its suitability as a selection criterion for breeding programmes,” he said.

“This should prove a breakthrough in the work to identify the chemical basis of stress adaptation in native Australian trees.”

‘This should prove a breakthrough in the work to identify the chemical basis of stress adaptation in native Australian trees.’

Dr Andrew Merchant
Salt tolerant plants fuel Australia’s biodiesel industry

After a highly promising start, Australia’s biodiesel industry has suffered in recent years, largely because of a lack of suitable oilseed stocks.

But a native, salt-tolerant succulent — samphire — may be the key to turning the industry’s fortunes around.

Samphires are found around the world, mostly in naturally salty areas. They have also been farmed for animal fodder in many arid regions, including in the United States, Mexico and Saudi Arabia.

Western Australia is home to 30 samphire species, and Daniel Evans, from BioWorks Australia, is researching their potential to produce biodiesel and livestock fodder.

“My project involves analysing seeds from different locations and checking their oil properties.”

Mr Daniel Evans

“Australian samphires have been studied for classification purposes, but are yet to be assessed for their commercial potential,” he said.

“My project involves analysing seeds from different locations and checking their oil properties.”

By collecting seed from a variety of different areas, Daniel will get a better idea of the variability of oil seed production across different climate zones.

He will also analyse the mineral content and digestibility of the most promising plants to determine their suitability as animal fodder.

“This project is the pre-cursor to a new industry in the arid coastal areas of Western Australia, and will help open up a host of research opportunities in breeding and management practices.”
Dr Cheryl Jenkins
Australian Pork Limited

Even pigs catch colds

Pneumonia is nothing to sneeze at, particularly if you’re a pig farmer.

The disease represents the most significant economic burden to the Australian pork industry, costing farmers nearly $20 million each year in lost production.

Pig pneumonia is caused by a bacterium, *Mycoplasma hyopneumoniae*, which adheres to the hair-like cilia and microvilli of the pig’s respiratory tract. Infected pigs rapidly lose condition and become increasingly susceptible to secondary infections.

Current vaccines are only partially effective in ameliorating disease symptoms and outbreaks, and do not prevent initial infection.

According to Dr Cheryl Jenkins, a research fellow at the University of Wollongong, the key to developing a successful vaccine lies in identifying the mechanisms the bacterium uses to damage cells in the pig’s respiratory system.

“While the proteins that the bacterium uses to adhere to the cilia have been identified, it remains unclear how adherence leads to cellular damage,” she said.

With her Award, Dr Jenkins will travel to Germany to work with world renowned experts in microbial pathogenesis and microscopy, researching the early stages of infection of *M. hyopneumoniae*.

“If we can work out how the bacterium damages the cells in the host’s respiratory tract without triggering an immune response, we’ll be closer to developing an effective vaccine.”

‘If we can work out how the bacterium damages the cells in the host’s respiratory tract without triggering an immune response, we’ll be closer to developing an effective vaccine.’

Dr Cheryl Jenkins
Dr Angus Crossan
Cotton Research and Development Corporation

One-size-fits-all, or does it?

As demand for food and fibre increases, so too will our reliance on crop protection to maintain the yield and quality of agricultural produce.

While the current risk assessment framework that regulates pesticide use in Australia is internationally recognised, the University of Sydney’s Dr Angus Crossan believes that it may not necessarily be the best strategy for a country as large and climatically variable as ours.

“Many catchments in Australia are unique and should be managed as such,” he said.

“For example, protection of the Great Barrier Reef Marine Park should not dictate chemical use in western NSW or vice versa.”

“My aim is to explore the option of catchment-specific pesticide management to ensure sensitive ecosystems are protected, while still meeting the needs of rural industries.”

Dr Angus Crossan

With his Award, Dr Crossan will develop a catchment-based risk assessment framework, incorporating land use and climatic data.

“Existing pesticide regulation is based on a ‘one-size-fits-all’ approach,” he said.

“My aim is to explore the option of catchment-specific pesticide management to ensure sensitive ecosystems are protected, while still meeting the needs of rural industries.”

Dr Crossan will work closely with the rural industry, environmental authorities and government regulators to help design a better method with more common ground for sustainable pesticide use.
Dr Melony Sellars
Fisheries Research and Development Corporation

Less isn't necessarily more

Does an extra set of chromosomes mean bigger prawns?

Dr Melony Sellars, a CSIRO molecular biologist, is hoping to answer this question.

She is investigating the potential benefits of triploid production in Kuruma prawns, a species commonly used in aquaculture.

“Triploid prawns have three sets of chromosomes, rather than the usual two,” Dr Sellars said.

“Triploidy occurs sporadically in nature, and for some aquaculture species it has commercial benefits such as faster growth.”

Dr Sellars will investigate two types of triploidy: the first involves retaining both sets of maternal chromosomes; while the second involves replicating one maternal chromosome. In both situations, the remaining chromosome is obtained from the male.

The prawns will be produced by subjecting newly spawned eggs to environmental conditions that inhibit cell division during meiosis.

They will be raised in tanks and their growth performance compared to diploid offspring from the same family.

Genetic techniques will be used to determine whether any observed differences in growth rates between sibling prawns relate to differences in the diversity of their genes.

If successful, the technique could complement industry-backed domestication and selective breeding research tailored to improve the health, quality and production efficiency of Australia’s farmed prawns.

‘Triploidy occurs sporadically in nature, and for some aquaculture species it has commercial benefits such as faster growth.’

Dr Melony Sellars
Mr Matthew Brookhouse
Forest and Wood Products Australia

Trees hold the secret to river flow

There’s no doubt the recent drought has been a stark reminder to Australians of just how vulnerable our water supplies are.

And while debate continues about long-term weather patterns, it is becoming increasingly clear that the future sustainability of our water supplies is uncertain.

The ANU’s Matthew Brookhouse believes that long-term climate and river flow records could be the key to resolving that uncertainty.

“Unfortunately, climate records for south east Australia often span less than a hundred years; and the records for water supply are even shorter,” he said.

But tree-rings might provide an unlikely solution to this problem.

‘The award will improve our understanding of river flow and drought frequency, which is critical to the sustainability of rural communities and industry throughout Australia.’

Matthew Brookhouse

The annual, radial growth of trees is sensitive to changes in climate, opening up the potential for reconstructing climatological and hydrological data sets much further into the past.

Matthew will use his award to analyse tree-ring data from *Eucalyptus pauciflora* — some of which are more than 375 years old — to reconstruct river flows in the Murrumbidgee and Cotter Rivers.

“Eventually, I aim to develop similar records nationwide,” he said.

“The award will improve our understanding of river flow and drought frequency, which is critical to the sustainability of rural communities and industry throughout Australia.”
Ms Amanda Mader
Grape and Wine Research and Development Corporation

Weighing up the benefits of estimating grape yield

A new method of estimating grape yield may provide the boost the Australian wine industry has been waiting for.

Amanda Mader, a viticulturist at Yalumba Wines, says if you can’t measure the grape crop accurately, vines can’t be managed for quality improvement.

“Currently the standard method of estimating yield requires a person to count flowering structures, the number of berries per bunch and weigh the mature bunches,” she said.

“It is extremely time consuming and expensive, which limits the sampling frequency and as a result, the accuracy.”

Amanda’s idea is to estimate yield by measuring tension on the trellis wire, the structure holding the vine.

As the grapes grow on the vine, tension on the wire also increases. By continually measuring the wire tension via a data taker program, bunch weights can be accurately estimated up to the time of harvest.

Using this method, Amanda believes the variance between actual and estimated tonnage can be reduced to five per cent, which is half the current wine industry standard.

“The economic benefits associated with improved crop estimation techniques are substantial and believed to be in the order of tens of millions of dollars a year.

“At the same time, overall wine grape quality will lift as the crop can be manipulated via shoot and bunch thinning in a timely manner.”

Amanda’s method may also provide useful data on berry growth dynamics and continuous changes in bunch weight due to variations in rainfall, climatic conditions and irrigation practices.

‘Currently the standard method of estimating yield requires a person to count flowering structures, the number of berries per bunch and weigh the mature bunches.’

Ms Amanda Mader
Mr Sam Trengove
Grains Research and Development Corporation

Sensing the weeds

Why spray the whole paddock when only the weedy patches need treating?

Sam Trengove from Allan Mayfield Consulting is investigating the use of weed sensing technology to control ryegrass in broadacre crops such as lentil and canola.

"Ryegrass costs the agricultural sector millions of dollars annually in herbicide application and lost production," he said.

"And with the risk of herbicide resistance, there is added incentive for farmers to control the amount of product being applied."

Sensors that detect differences in plant growth will be used initially to identify ryegrass density and then Global Positioning System (GPS) technology will map areas of high and low density.

Once mapped, variable rate spray technology can be used to apply heavier doses of herbicide on dense patches and lower doses across the remainder of the paddock.

"This technology will enable farmers to tailor control measures to site-specific requirements."

"Historically farmers confronted with variable ryegrass density across a paddock had two options; use a high cost treatment across the entire paddock to achieve optimal control or use the lower cost treatment and accept the yield losses associated with dense ryegrass patches."

"The use of weed sensing and variable rate spraying provides farmers with the best aspects of both options and allows them to gain the greatest return from their herbicide investment."

While ryegrass will be the focus of this study, Sam believes there is potential to apply this technology to controlling other weeds, particularly those that are found in dense patches.
Mr Mark McHenry

Land & Water Australia

Cashing in on climate change

While climate change poses considerable challenges for Australian agriculture, it also offers exciting new opportunities for our innovative farmers.

The growing, global push to reduce greenhouse gas emissions is opening the door for renewable energies. And, according to Murdoch University’s Mark McHenry, Aussie farmers are well placed to take advantage.

Mark is researching the options available to Western Australian farmers to become involved in new energies and carbon markets.

“Australia’s rural areas have abundant access to renewable energy resources, such as solar, wind, agricultural waste and residues, forest by-products and other hydrological options,” he said.

“There’s even potential for farmers to sell the excess energy they produce on their own farm; generating a new market, not only in energy trading, but also in value-adding products traditionally considered as waste.”

The problem for the farmers however, is the difficulty of getting hold of quality information on the type of energy or carbon market best suited to their business.

With his award, Mark will collect wind energy data in Western Australia’s south-west to complement existing solar, rainfall, temperature, biomass growth and natural resource data.

“I will use this data to assess the financial viability and applicability of integrating wind, solar and biomass technologies into local agricultural production systems,” he said.

“Through the integration of agricultural production and appropriate renewable energy technologies the agricultural sector can attract new investment and income streams.”

‘Through the integration of agricultural production and appropriate renewable energy technologies the agricultural sector can attract new investment and income streams.’

Mr Mark McHenry
Ms Samantha Bickell
Meat and Livestock Australia

Taking the fear out of motherhood

The first three days of life are the most important for a lamb.

This is when the bond with its mother is established — without it, the lamb is likely to be rejected.

In fact, it’s estimated that one in two lambs die during this early period, either because the bond is established too late or not at all.

As you would expect this represents a significant loss for Australia’s sheep industry.

Samantha Bickell, a PhD scholar at the University of Western Australia, is investigating the role that temperament plays in establishing the ewe-lamb bond.

‘By understanding this behavioural role I hope to find innovative solutions to the problem of lamb mortality, thus improving sheep farming enterprises, as well as animal welfare.’

Ms Samantha Bickell

She believes that calmer ewes are better mothers as they are not as easily frightened.

“If the ewes are easily frightened, a disturbance could cause them to abandon their lambs,” she said.

Samantha’s study will focus on Merino sheep that have been selectively bred for either ‘calm’ or ‘nervous’ temperaments.

“This award will give me access to technologies that I can use to generate and analyse behavioural data never before obtained under field conditions,” she said.

“By understanding this behavioural role I hope to find innovative solutions to the problem of lamb mortality, thus improving sheep farming enterprises, as well as animal welfare.”
Bullies in the crocodile pen

If you thought bullying was confined to the school yard, think again.

Dr Sally Isberg believes that some crocodiles are also being bullied. Not surprisingly, the ‘bullies’ are other crocodiles.

A senior research scientist at Porosus Pty Ltd, Dr Isberg has been studying the social interactions that take place between commercially-raised crocodiles.

Despite their fearsome reputation, some farmed crocodiles never thrive.

"Under commercial-raising conditions, some animals appear never to adjust and become anorexic which can eventually lead to death," she said.

"We call these animals ‘runts’, and they account for about half of the deaths in commercial operations."

With skins valued at around $500 each, runt mortalities represent a substantial financial loss for crocodile farmers.

It is not clear why ‘runtism’ occurs; however, stress, brought on by crocodile bullies, could be a possible cause.

Dr Isberg will use her award to investigate why some crocodiles cannot adjust to life in a commercial operation.

“We call these animals ‘runts’, and they account for about half of the deaths in commercial operations.’

Dr Sally Isberg

“Two areas of research that have been neglected are the social interactions between crocodiles and also their hormone levels,” she said.

“The Award will enable me to measure the hormone levels related to aggression, growth and stress in farmed crocodiles to determine whether there are any notable differences between normal growing animals (the potential bullies) and runts.”

“If we can find ways to overcome runtism in farmed crocodiles, survival rates will increase, generating greater returns for farmers, and ensuring the economic sustainability of this emerging industry.”
Sponsors

The 2007 Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry were supported by ten industry Research and Development Corporations or Companies which demonstrates their support for, and commitment to, Australia’s young rural scientists and their research.
Award Sponsors

**Australian Pork Limited**

Australian Pork Limited (APL) is the national representative body for Australian pig producers. It is a producer-owned not-for-profit company combining marketing, export development, research, innovation and strategic policy development to assist in securing a profitable and sustainable future for the Australian pork industry.

Commonwealth Government legislation, a contract between the government and APL and the company’s constitution provide the legal framework for our operations. APL’s primary funding is derived from statutory pig slaughter levies.

APL’s purpose is to enhance the viability of Australia’s pig producers:
- by delivering integrated marketing, innovation and policy services through the pork supply chain, and
- in association with key industry and government stakeholders.

**Cotton Research and Development Corporation**

Cotton Research and Development Corporation (CRDC) aims to create a more sustainable, competitive and profitable cotton industry that provides increased economic, environmental and social benefits to rural and regional communities and the nation.

It will achieve this by improving cotton production, processing, storage, transport and marketing, making more effective use of the resources and skills of the community in general and the scientific community in particular, and improving the accountability for expenditure on research and development activities related to the cotton industry.

**Fisheries Research and Development Corporation**

The Fisheries Research and Development Corporation is a statutory authority jointly funded by the Australian Government and the fishing and aquaculture industry. It is responsible to its stakeholders to:
- plan, invest in and manage fisheries research and development throughout Australia, and
- facilitate the dissemination, adoption and commercialisation of research and development results.

**Forest and Wood Products Australia**

Forest and Wood Products Australia (FWPA) is an industry owned company providing an integrated, national research and development focus for the Australian forest and wood products industry and other industry services, including generic promotion of wood products.
For research, FWPA identifies priorities, commissions, administers and evaluates research in a broad range of areas covering wood production, extraction, processing, economics and marketing. Key research areas include:

- increasing domestic secondary processing and further value-adding of Australia’s forest and wood resource
- studying the impacts of disturbance from wood production, silviculture and management of native forests and plantations
- commercial and economic aspects of wood production, and
- research relevant to the continued development and progress of the forest and wood products industry.

FWPA operates under the Corporations Act 2001. It receives matching funding from the Australian Government for expenditure on research and development.

**Grains Research and Development Corporation**

The Grains Research and Development Corporation (GRDC) plans and invests in research and development for Australia’s $7 billion grains industry.

It drives investments worth over $100 million a year that underpin the profitability and environmental sustainability of the industry and its communities.

The GRDC has a worldwide research portfolio and is a global leader in linking industry and community needs with science, technology and effective adoption.

**Grape and Wine Research and Development Corporation**

The Grape and Wine Research and Development Corporation (GWRDC) is the body responsible for investing in grape and wine research and development on behalf of the Australian wine industry and the Australian community.

The mission of the GWRDC is to enable a sustainable, innovative and profitable future for the Australian wine industry through strategic investment in research and development.

**Land & Water Australia**

Land & Water Australia is an Australian Government rural research and development corporation. We strategically invest in knowledge, partnerships, innovation and adoption to underpin sustainable natural resource management within Australia’s agricultural industries.
Meat and Livestock Australia

Meat & Livestock Australia Limited (MLA) is a producer-owned company that provides services to livestock producers, processors, exporters, foodservice operators and retailers.

Our mission is to deliver world-class services and solutions in partnership with industry and government. Our core activities are building demand for Australian red meat, improving market access for our products, conducting research and development (R&D) to provide competitive advantages for the industry, and collaborating with our partners to build capability within the industry.

As part of our goal to develop competitive advantages for the red meat industry, we are involved in a broad range of research and development throughout the supply chain.

Rural Industries Research and Development Corporation

The Rural Industries Research and Development Corporation (RIRDC) is a statutory authority in unique partnership with the Australian Government and rural industries to invest in research and development. Our vision is for a more profitable, dynamic and sustainable rural sector and to achieve this we invest in:

- new industries
- established industries
- national rural issues

RIRDC research and development helps keep industries at the leading edge of profitability and sustainability.

Sugar Research and Development Corporation

The Sugar Research and Development Corporation (SRDC) works in partnership with the Australian sugarcane industry and the Australian Government to foster an innovative and sustainable sugarcane industry, through targeted investment in research and development.

Specifically, SRDC will work with its stakeholders to deliver the following outcomes:

- Implementation of innovative farming, harvesting, transport, milling and marketing systems tailored to meet the needs and opportunity of each region;
- Rapid translation of relevant emerging technologies that will enhance the industry’s competitive edge in the global marketplace; and
- Development of individuals and networks across the sugarcane industry that enhance the capacity for continuous improvement.
The 2008 Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry will be opening early next year.

To find out more, or to join our mailing list, phone the Science Awards Coordinator on (02) 6272 4197 or email scienceawards@brs.gov.au
More information

For further details visit our website: www.daff.gov.au/scienceawards or contact the Science Awards Coordinator: (02) 6272 4197 scienceawards@brs.gov.au