Across Industry

Horticulture Australia

ANNUAL REPORT 2013/14

Overview

The Across Industry program is funded through levy and voluntary contributions from more than 80 horticulture commodities represented by 43 of Horticulture Australia Limited's (HAL) member industries. Across Industry investments in research and development (R&D) are done via two separate programs:

1. Across Industry Program
2. Transformational Investment Fund.

The two programs align with the Australian Government's Rural R&D priorities to address the research, development and extension needs of the Australian horticulture industry. The Across Industry Program focuses on the more immediate needs of horticulture, while the Transformational Investment Fund aims to make a substantial difference to the horticulture sector over the next 10 to 15 years. Funds from both programs are matched by the Australian Government.

Across Industry Program

Investment advice for this program is provided to HAL via the Across Industry Committee (AIC) and is made on behalf of all member industries. The committee's membership consists of the CEOs (or equivalent) of the seven largest HAL member industries (based on R&D levy income), the largest of all other B Class member industries, a representative of all other member industries, and the HAL CEO.

Project investments within the Across Industry Program are currently made based on the following four priority outcomes:

1. Enhance the efficiency, transparency, responsiveness and integrity of the supply chain for the total industry to provide clear market signals
2. Maximise the health benefits of horticulture products in the eyes of consumers, influencers and government
3. Position horticulture to compete in a globalised environment
4. Achieve long-term viability and sustainability for Australian horticulture.

The Across Industry Program in 2013/14 included the funding of 38 current and continuing projects.

Investment in these projects enabled all member industries to have access to important mechanisms or frameworks which would otherwise be difficult to fund at a singular industry level.

Key investment areas of the program include the Office of Horticultural Market Access (OHMA) and the Horticulture Next Generation Leadership and Development Program.

OHMA is a commercially oriented industry-based committee which undertakes the important role of providing advice to government agencies for the negotiation of quarantine and non-quarantine market access.

The Next Generation Leadership and Development Program directly and indirectly equips people with the skills and ability to improve Australia horticulture via a training program that develops business and leadership skills across the supply chain.

Other key highlights of the program include R&D investment in biosecurity, retailer quality assurance harmonisation, robotics and climate change.

In 2013/14, the total income received was $1,711,842 of which the Australian Government provided $961,842 in matched funding to support 38 research and development projects. A total of $1,923,684 was invested into research and development projects.

The projects in this report have been funded by HAL using the R&D levy with matched funding from the Australian Government.

Transformational Investment Fund

The focus of investments through the Transformational Investment Fund is to accelerate the development of transformational research concepts, ideas and technologies that aim to either:

- Improve the ability to open up a new field of technology through applied research
- To lower technology risk to a point where industry can invest in further development and deployment
- In the context of late stage research; the investment must overcome key technical barriers currently preventing wider industry adoption of the transformational technology.

The strategic emphasis of this program is to invest in novel approaches to three core transformational research themes that are deemed critical to the success of the horticultural industry by 2030. These are:

1. Limiting or removing abiotic/biotic stresses on horticultural row and tree crops
2. Reducing the labour component of production/postharvest activity
3. New product development

The program is in its infancy but significant achievements and momentum have already occurred. Specifically, the level of collaboration and commitment to advancing Australian Horticulture's competitive capacity, such as the development and implementation of new biotechnologies through SITplus and the identification and invention of value-added products.

The transformational program will continue to strive to addresses the critical long-term needs of horticulture across the supply chain.

This report

This report provides a snapshot of project activities in the 2013/14 year. The report's sections are divided by the Across Industry and Transformational Investment programs to reflect the activities being undertaken that address research gaps and priorities affecting all of horticulture.

For more information contact:
Warwick Scherf, Industry Services General Manager
T 02 8295 2323
E warwick.scherf@horticulture.com.au

ACROSS INDUSTRY PROGRAM PROJECTS

Outcome 1

Enhance the efficiency, transparency, responsiveness and integrity of the supply chain

Retailer in-store training

The objectives of this scoping study were to:

1. Improve in-store understanding and education around how best to handle and display fresh produce in the major grocery retailers in Australia
2. Identify materials that are most useful to individual retailers for in store training
3. Through in-store training materials aimed at store staff, improve the on-shelf quality of fresh produce

Based on discussions that were held with ALDI and Woolworths, a wide reaching national training program across all their stores was desired. Given the large number of employees across Australia, the most appropriate communication method is a DVD – it is relatively cost-efficient, ensures consistency of message delivery and generates reasonable levels of retention with a store-based audience.

The content of the in-store training materials:

- Explain and show supply chain activities for each product from paddock to plate
- Explain and demonstrate merchandising and in-store fixturing information and standards
- Provide hints and tips around product usage that in-store staff can share with customers.

The DVD will be three minutes in length per product category, with four to six categories per DVD, and a single DVD will be issued to retail stores four times a year. The DVD will include a series of photos or simple footage of the supply chain from planting and growing through to arrival at the distribution centre.

The supply chain stages will vary slightly by product category but will include approximately eight to 12 different pictures.

Both ALDI and Woolworths have agreed to split all costs associated with the DVD 50:50. The DVDs will be delivered for ALDI in the first instance followed by Woolworths. ALDI have requested DVDs for a total of 22 fresh produce categories.

Project AH13026

For more information contact:
Tristan Kitchener, Kitchener Partners
T 0407 827 738
E tristan@kitchenerpartners.com.au

Partnering fresh produce with retail – quality assurance harmonisation

The aim of this project has been to leverage the strength, size and positioning of the horticulture industry to make a tangible difference to growers in Australia. Rather than use funds for individual projects where impacts can become diluted, the intention was to harness the scale opportunities that the Across Industry Committee (AIC) can generate through a single project.

Major grocery retailers and Quick Serve Restaurants (QSR) in Australia were engaged to identify and recommend a solution to deliver a harmonised Quality Assurance (QA) standard. A harmonised QA standard will minimise the need for growers to require multiple certifications to satisfy different retailers. Achieving commonality in the certification standards that are required by retailers will reduce the number of audits required by individual growers and provide an immediate cost saving, as well as reduce the significant ongoing indirect costs associated with meeting multiple standards.

The outcomes from this project will particularly benefit the smaller growers that are increasingly struggling to maintain profitable businesses, but ultimately cost savings will flow through the supply chain and also benefit the retailers, QSRs and consumers themselves.

The project included engaging and aligning key stakeholders to support the development of an agreed harmonised QA standard, with the identification and recommendation of the most preferred solution. The stakeholders have included the major grocery retailers, namely Woolworths, Coles, Aldi, Costco and IGA, and QSRs including McDonald's Australia, Hungry Jack's, Yum! Restaurants (KFC, Pizza Hut), QSR Holdings (Red Rooster, Oporto and Chicken Treat), Gloria Jeans Coffee and Subway.

The stakeholder consultation identified two key barriers that must be resolved to maximise the successful introduction of a harmonised standard, which were Auditor Competence and Approval and Certification Body engagement.

To achieve system equivalence and alignment, the recommendation is for the stakeholders to work towards accepting a suite of standards that have been benchmarked to the Global Food Safety Initiative (GSFI) as a framework. To further develop and deliver this solution and resolve the barriers identified above, the proposal is that an 'Implementation Phase' should be supported that will include the further development, agreement and delivery of the agreed solution in order to deliver a single harmonised QA standard.

The annual cost saving to growers through the introduction of a harmonised standard is conservatively estimated at $40.3 million per year, including $27.3 million per year in direct costs and $13 million per year in indirect costs.

To date, it has not been possible to achieve alignment with the major Australian retailers in accepting a harmonised standard and a reduction in the quantity of certifications required. The conversations between Industry and retailers over at least 12 years have failed to gain agreement, and highlight the complexity and potential risk in the successful delivery of the objectives of the implementation phase.

If a harmonised solution can be achieved, it will be a global first. In the words of the Director of Quality Assurance & Compliance from McDonald's Australia, this will "position Horticulture in Australia as a best-practice industry that is actively taking a leadership position that other sectors should follow".

Project AH12009

For more information contact:
Tristan Kitchener, Kitchener Partners
T 02 8295 2340
E tristan@kitchenerpartners.com.au

Outcome 2

Maximise the health benefits of horticultural products in the eyes of consumers, influencers and government

No active projects in 2013/14 to address this objective.

Autonomous perception systems for horticulture tree crops

This project aims to demonstrate ground robots operating among tree crops, and to develop and demonstrate intelligent software that can automatically detect fruit and nuts on trees. If this is successful, then it will translate to autonomous harvesting.

The project has been using the latest technology in sensing, image registration and machine learning algorithms. In 2013/14, field trials were conducted and data was collected in an apple orchard. Further data analysis was conducted on the data collected from almond orchards.

There may be one more trial to be completed but overall the field trials have come to an end and the remainder of the project will focus on data analysis and optimisation of the perception algorithms.

The sensors and algorithms developed provide for unprecedented high spectral and spatial resolution of the crop. This provides very accurate determination of individual crop location and hence the foundation for autonomous harvesting, as well as yield estimates for better farm management.

Project AH11009

For more information contact:
Prof Salah Sukkarieh, The University of Sydney
E salah.sukkarieh@sydney.edu.au

Market Access Manager

The Office of Horticultural Market Access (OHMA) is an industry-based committee which was established to provide industry advice to government agencies for negotiating quarantine and non-quarantine market access. OHMA aims to maximise the opportunities for Australian horticultural market access through involvement under three key pillars:

- Raise the profile of Australian horticulture by developing target market relationships with an industry focus as commercial market access drivers
- Provide strong support to official access negotiations
- Identify, support and guide science inputs (research and development) into market access.

The OHMA Market Access Manager, has worked to develop relationships with key exporting industries and government departments involved in the market access process. The Market Access Manager's role is to:

- Work with industry to identify and set priorities and strategies for market access
- Develop and maintain close working relationships with relevant government bodies involved in market access negotiations in order to effectively represent horticulture industry views to government
- Communicate market access issues and outcomes back to industry.

While there have been some important achievements in the past year, the process of gaining market access for horticulture products remains a slow and difficult one. The usual lengthy process of securing phytosanitary protocols in North-Asian markets was supplemented by a trend toward more restrictive phytosanitary regimes in South-East Asia (Thailand in particular but also Malaysia and Vietnam), as well as import restrictions in Indonesia. The Australian government has had a busy programme of free trade agreement negotiations over a number of years, but actually finalising agreements has proved elusive. The recent conclusion of the agreement with South Korea is a notable exception.

OHMA has held a number of discussions over the last year about how to improve the way it operates, including the possibility of expanding OHMA staff beyond the current one full time position. Industry continued to see an important role for OHMA in prioritisation and coordination of industry market access issues, but industry resources were not available to expand OHMA staffing at this point. This will be considered again when the current OHMA project is due for renewal in September 2015.

Projects MT12028 & MT12029

For more information contact:
Sam Lawrence, Lawrence Consulting
T 0498 723 103
E sam@lawrenceconsulting.co

Across Horticulture Leadership Training Program

The Across Horticulture Leadership Training Program ('Horticulture – the Next Generation') is focused on the developing business and leadership skills of horticultural industry leaders.

Since 2012, the program has directly supported 95 Industry leaders through intensive training workshops the provision of online resources and business coaching support.

In 2013/14, the Next Gen Program delivered the following:

- Intensive training and support to 20 industry leaders
- Online training programs delivered to an additional 78 participants from across the horticultural sector
- 10 webinars with over 1,100 views on a range of business topics
- www.horticulture-nextgeneration.com.au website updated – increased blog articles with 46 matching videos and a growth to 339 subscribers
- LinkedIn, Facebook, Twitter and YouTube platforms with 1,007 members – double the numbers from previous year and still growing.
- 25 program participants for 2014 were selected and inducted. Five additional places were funded at the discretion of the project team.
- The first 2014 Workshop was delivered in July 2014. Overall satisfaction was very high.

Particpants have indicated that the program has provided them with a 'toolkit' of skills for effective planning, problem solving and decision making at business and industry levels.

Project AH12019

For more information contact:
Russell Cummings, Strategic Business Development Pty Ltd
T 0414 929 585
E russell@sbdbusiness.com.au

Outcome 4

Achieve long-term viability and sustainability for Australian horticulture

Industry development forum with the International Horticultural Congress

Evaluation, capacity building and electronic extension activities were all on the agenda at the Industry Development Forum hosted by HAL in August 2014 in the lead up to the International Horticultural Congress in Brisbane.

The Forum brought together over 50 Industry Development professionals from a range of horticultural sectors, providing networking opportunities along with professional development.

Industry Development Officers are a critical link in the delivery of research and development (R&D) as they work directly with Australian growers to encourage the uptake of R&D findings. By providing this group of professionals with ongoing training and development, their work with growers becomes increasingly effective in encouraging changed practices.

Speakers at the forum included Jeff Coutts, who gave an insight into what change looks like and how to develop surveys to obtain feedback on capacity building activities; John James, who spoke on his experience on using e-extension tools in the beef industry; and Ian Plowman, who discussed the art of cooperative conversations. A panel of Industry Development professionals also spoke, sharing their own best practices via a series of short case-studies.

Jay Anderson, the R&D Manager for Australia's banana industry who assisted in developing the agenda for the event and said feedback from the Forum was excellent.

Participants were all asked at the end of the day about what they would take back to their industry. The increased use of electronic communication was a common theme while other Industry Development Officers are now enthused to look closely at how they evaluate the success of their meetings and communication in general.

Project AH13023

For more information contact:
Dr Alison Anderson, HAL
T 02 8295 2316
E alison.anderson@horticulture.com.au

Plant protection: Regulatory support and coordination

The aim of this project is to provide horticultural industries with current information relating to pesticide regulatory activities, both domestic and international, that have the potential to impact on pesticide access (chemical review) and trade (changes in Maximum Residue Limit (MRL) standards in export markets). The project seeks to relay information to industry representatives on pesticide related matters for their consideration and where necessary assist in developing industry responses.

Firstly, through monitoring, then relaying to industry representatives, pesticide-related regulatory actions at Codex Alimentarius Commission, World Trade Organisation (WTO)sanitary and phytosanitary notifications, and determinations by European, US and Australian regulators.

The dissemination of information can occur via industry communication networks, participation in industry meetings, newsletters (AgChem Update), email, face-to-face meetings and telephone contact. Specific issue liaison is done with a range of industry stakeholders including peak industry body representatives, growers and chemical manufacturers.

The main achievements include:

- Responses to the First Principles Review of Cost Recovery at the APVMA Consultation paper
- Senate inquiry into the Agricultural and Veterinary Chemicals Legislation Amendment (Removing Re-approval and Re-registration) Bill 2014
- Senate inquiry into the implications of the use of Fenthion on Australia's horticultural industry
- Responses to the Department of Agriculture on behalf of industry in relation to WTO notifications on MRL changes in Japan, Taiwan, Korea and the European Union
- Participated as a member of the Australian delegation to the Codex Committee on Pesticide Residues
- Participation in the Attorney General's Department National Industry Reference Group on security sensitive chemicals.

By being informed of proposed regulatory changes in industries, researchers are in a position to consider implications and develop strategies and responses where required. This will allow industries better engage in the pesticide regulatory process as well as be better prepared to assess and respond.

Project AH13027

For more information contact
Kevin Bodnaruk, AKC Consulting P/L
T 02 9499 3833
E kevinakc@bigpond.net.au

Funding for the Plant Biosecurity Cooperative Research Centre

The Plant Biosecurity Cooperative Research Centre (PBCRC) was established in recognition of the need to strengthen the plant biosecurity scientific capacity of Australia. The PBCRC will receive $29.7 million over six years from the CRC program and Horticulture Australia Limited (HAL) is providing $3 million over the life of the CRC to support research into key priorities for the horticulture industry.

As of July 2014, the CRC had invested in 13 horticulture research projects with a value of $13.9 million and an in-kind contribution, and 11 horticulture PhD projects. The CRC has also invested in 33 general biosecurity projects ($22.5 million cash and in-kind) and 10 'general' PhDs projects which have application to horticulture production systems.

One of the horticulture highlights of the PBCRC include the project, *Managing Myrtle Rust and its impact in Australia.* This project will deliver a nationally standardised and endorsed method for scoring myrtle rust susceptibility in Australia, either in the glasshouse or in the field. *Puccinia psidii* continues to expand its host and geographic range but has still not been detected in Tasmania, South Australia, Western Australia or the Northern Territory. The host list now exceeds 300 species from 51 genera of *Myrtaceae* based on field surveys. The initial disease rating system was distributed to a core group of ecologists, botanists and pathologists for comment and field testing and improvements have been made following this process. A wider group will now be enlisted to field test the rating system, including the nursery and plantation forest industry.

Project AH11011

For more information contact:
John Austen, PBCRC
T 02 6201 2882
E j.austen@pbcrc.com.au

Managing pesticide access in horticulture

The funds in this project cover the costs for consultants to facilitate and prepare a Strategic Agrichemical Review Process (SARP) for industries and an analysis report of the impact of proposed APVMA cost recovery changes to the Australian Pesticides & Veterinary Medicines Authority (APVMA) minor use programs of Horticulture Australia Limited (HAL) and the Grains Research & Development Corporation (GRDC).

The analysis report was submitted to the Department of Agriculture (DoA) in response to the first principles cost recovery review being undertaken by the DoA, which can be found at www.daff.gov.au/agriculture-food/ag-vet-chemicals/first-principles-review-of-the-apvmas-cost-recovery-arrangements.

A Strategic Agrichemical Review Process (SARP) through the process of a desktop audit and industry liaison assesses the importance of the diseases, insects and weeds (plant pests) that can affect a horticultural industry; evaluates the availability and effectiveness of fungicides, insecticides and herbicides (pesticides) to control plant pests; determines any gaps in the pest control strategy; and identifies suitable new or alternatives pesticides to address the gaps.

The following SARP Reports were updated during 2013/14:

- Beans and peas, beetroot, brassica leafy vegetables, brassicas, carrots, celery, cucumber, eggplant, leeks, lettuce, parsley, peppers, silverbeet and spinach, snow and sugar snap peas, spring onion and shallot, sweet corn, sweet potato, zucchini, pineapple, citrus, papaya and lychee
- Three new SARPs were finalised for chestnut, melon and avocado; the olive SARP is pending a final review.

Reports were produced for each crop/crop group, with a list of pesticide solutions for each problem in the crop. The reports provide each industry commodity with a 'snapshot' of pest importance and pesticide use. It determines the effectiveness of current pest management options, pesticide availability in the future, IPM impact, environmental concerns, domestic and international trade concerns and biosecurity. It also recommended new pest management strategies.

Project MT10029

For more information contact:
Jodie Pedrana, HAL
T 0404 314 751
E jodie.pedrana@horticulture.com.au

Across industry climate research, development and extension activities

This project is a coordinated and national strategic response to the risk of climate change and variability on behalf of the horticulture industry. Funding was allocated by the across industry committee, and sub-projects addressing one of these objectives were commissioned: Planning and Positioning; Research & Development; and Communication.

The final sub-project, *The Impacts of the Proposed Carbon Price Mechanism on Australian Horticulture,* was undertaken by the Centre for International Economics (CIE), and completed in February 2014. The project quantified the potential impacts of the Australian Government's Clean Energy Futures program on the Australian horticulture industries. Using the carbon price trajectory, estimates of the potential impact on input prices outlined in project AH11019, and a lower trajectory modelled by CIE, it was shown that the carbon price would reduce the gross value of production (GVP) by between 0.5 percent and one per cent by 2020.

Project AH09014

For more information contact:
Brenda Kranz, HAL
T 08 8295 2317
E brenda.kranz@horticulture.com.au

Horticulture component of the National Climate Change Research Strategy for Primary Industries

The Climate Change Research Strategy for Primary Industries (CCRSPI) is a collaborative response to the opportunities and challenges posed by climate change for Australia's primary industries. CCRSPI partners include federal, state and territory governments, the rural research and development corporations and CSIRO. This project is the horticulture industry's contribution to the CCRSPI program which will continue to runs until 1 July 2015.

In August 2013, the Rural Industries Research & Development Corporation (RIRDC) took over the CCRSPI management from the University of Melbourne. Current CCRSPI activities include:

- An annual partner forum
- Stocktake of climate change research and development projects
- National conference to be held in 2015
- Theme group discussions.

HAL is involved in four theme groups: Improved forecasting; Effective communication on climate; Annual and perennial crop and forest management in a changing climate; and Farm scale greenhouse gas emissions.

Project AH10003

For more information contact:
Brenda Kranz, HAL
T 08 8295 2317
E brenda.kranz@horticulture.com.au

Horticulture for Tomorrow review and upgrade

This purpose of this project was to update the Horticulture for Tomorrow's Environmental Assurance Guidelines and website. The Environment Assurance Guidelines are an important resource for the entire horticulture industry, and have acted as a foundational guide for Freshcare Environmental, Enviroveg, and the Banana Environmental Best Management Project.

To update the guidelines The Guidelines Net Registry was updated and a new website were designed.

Each of the Guidelines chapters address various management strategies for: soil, water chemicals, nutrients, biodiversity, waste, air and greenhouse gasses. There are also sections on climate adaptation, tools and resources, and a review checklist.

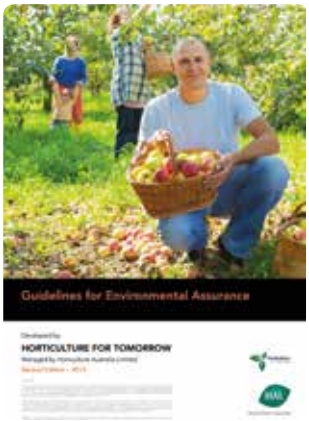
The website and Guidelines can be viewed at http://horticulturefortomorrow.com.au/. The updated Guidelines are a free resource of for any horticulture grower or industry to use as their own.

Project AH13014

For more information contact:
Brenda Kranz, HAL
T 02 8295 2317
E brenda.kranz@horticulture.com.au

A pollinating native blue-banded bee on the first page of Chapter 5 (Biodiversity) of the Environmental Assurance Guidelines

Homepage of the Horticulture for tomorrow website



Front page of the update Environmental Assurance Guidelines

A multi-target approach to fruitspotting bug management

Fruitspotting bug (FSB) is a major native pest in a number of subtropical and tropical horticultural crops in Australia. Using broad-spectrum insecticides has been the only management option for growers, however this approach is not sustainable in the long term.

This project is investigating seven management strategies:

1. Collating research and practices of fruitspotting bug management, related insects and technologies
2. Evaluating integrated pest management (IPM) compatible insecticides
3. A monitoring and trap-cropping program (including trap hedges and pheromone traps)
4. Biological control (mass rearing and evaluation)
5. IPM case studies
6. Area Wide Management (AWM)
7. Industry adoption.

The project had a mid-term review in September 2013. The independent reviewers recommended a number of specific changes to maximise the output for industry stakeholders of their investment by the end of the project.

The key recommendations from the review are to:

1. Reposition project priorities and resources to focus on resolving limitations in FSB management in two core areas:

a) Develop effective recommendations regarding insect thresholds:

- Refine pest and crop monitoring techniques
- Develop pheromone trap crops and strategies for their use

b) Develop suitable chemical control options.

- Three new chemicals will be tested in the laboratory with regards to their effect on FSB eggs, nymphs and adults. Preliminary tests with eggs showed that the chorion (egg shell) is a barrier and none of the chemicals tested prevented nymphs from hatching. This means that also egg parasitoids are protected in the FSB egg.
- Discussions were held with prospective partners and an open expression of interest for the commercialization of the *A.l. lutescens* pheromone trap is currently being undertaken.
- Preliminary field trials with *A. nitida* pheromones are complete for the 2013/14 season and the results are showing a possible pheromone compound has been found. This is a preliminary result based on a limited data set, so caution should be taken and more work is needed to prove its effect.
- There is evidence that trap hedges are effective for monitoring *A. nitida* incidence patterns in northern NSW, but there is not enough data from *A.l. lutescens* areas to make a call on that yet.
- Due to recommendations from the review the biological control component and difficulties with the egg parasitoid *Anastatus sp.*, this part of the project will now refocus and concentrate on investigating biology and ecology questions of the known egg parasitoids and further investigate other biological control options.

Project MT10049

For more information contact:
Dr Ruth Huwer, NSW DPI
T 02 6626 1196
E ruth.huwer@dpi.nsw.gov.au

Developing an LCA database for Australian agriculture

This project developed a life cycle analysis (LCA) database related to the carbon footprint of agricultural commodities and processes from publicly available data within Australia. The inventory enables Australian primary producers to demonstrate that environmental assessment promotes development of their products. This will assist producers to meet marketing requirements and benchmark their production in local and global markets.

The Australian Agricultural Life Cycle Inventory (AusAgLCI) is specific to Australian agricultural production, with inventories for cotton, grains, horticulture and livestock feeds. The final report has been drafted, and the release of the inventory database is waiting on website testing. The publication gives LCA practitioners access to an inventory for assessing supply chains that contain Australian agricultural inputs. Many sectors of the Australian community will benefit from this life cycle inventory, as it will allow more accurate environmental assessment of food and fibre products consumed both domestically and in international markets.

Project AH11007

For more information contact:
Brenda Kranz, HAL
T 08 8295 2317
E brenda.kranz@horticulture.com.au

Biotechnology awareness in horticulture

Biotechnology has been identified as one of the transformational areas that will drive future productivity in horticulture. Until recently, however, very little progress had been made in the deployment of commercial biotech crops in the Australian horticultural sector. In 2011 the Horticulture Australia Limited (HAL) Across-Industry Committee (AIC) and Board endorsed this project to fund an important initiative to increase awareness in the application of biotechnology in horticulture.

The purpose of these workshops was to familiarise industry stakeholders with the various practical aspects about the use of biotechnology in crop improvement. These included:

- Benefits of the technology over conventional methods
- Potential applications such as Genetically Modified Organisms (GMO) marker-assisted breeding, genomics, etc.
- High level of regulations and development costs
- Public perception and acceptance issues.

All set objectives of the project are now complete following the third two-day workshop, hosted at the CSIRO Discovery centre in Canberra. Over fifty levy contributors and horticulture industry stakeholders from different industries have participated in these workshops. The workshops were extremely well received by the attendees. And several articles were published in industry magazines expressing these positive experience.
The workshop also provided information on the benefits, risks and the regulation process of biotechnology in the Australian context.

Each of the workshops were followed by an interactive social evening that provided attendees an opportunity to raise industry-specific issues and ask questions to a panel of experts from Food Standards Australia and New Zealand (FSANZ), Office of the Gene Technology Regulator (OGTR) and industry experts.

This project is now complete with the third and final workshop recently held during 21–22 May with 16 industry IAC members participating.

Project AH11010

For more information contact:
Alok Kumar, HAL
T 0418 322 070
E alok.kumar@horticulture.com.au

Appetite for Excellence

Horticulture Australia Limited (HAL) sponsors the Appetite for Excellence program to encourage stronger working relationships between growers and young hospitality workers.

The sponsorship focuses on an annual produce tour, where finalists visit growers and producers to better understand the start of the supply chain process – seeing the product in the field helps tell the entire story. The 2013 tour, which took place in South Australia in July, provided the opportunity to hear from growers about their business, the science, hardships of production and the passion behind what they do. The tour also offers the opportunity to cross-pollinate professional knowledge, with growers learning about participants' requirements, including produce being sold directly into a restaurant's kitchen. Finalists visited vegetable growers Pitchford Produce at Currency Creek, Longridge Olives at Netherton and Tatiara Olive Processors at Keith.

The partnership provides direct exposure to an association with key industry leaders, the next generation of chefs, waiters and restaurateurs, media and discerning consumers nationally and supports emerging talent within the Australian restaurant industry and its future development.

Through the sponsorship, HAL promoted relevant horticulture news through the program's social media pages. HAL also used the award's chef finalists to create a recipe using a specific ingredient selected by HAL to be featured in print and online. Finalists are also invited to industry specific events.

The 2013 award recipients were:

- Jacob Davey, Marque Restaurant, Sydney – Young Chef
- Sonia Bandera, Rockpool Bar & Grill, Melbourne – Young Waiter
- James Viles, Biota Dining, Bowral – Young Restaurateur

Inspecting olive trees at Longridge Olives during the Produce Tour

Project AH11017

For more information contact:
Melissa Smith, HAL
T 02 8295 2340
E melissa.smith@horticulture.com.au

AFE finalists visit Pritchard Produce in South Australia

The HAL Awards

The annual Horticulture Australia Limited (HAL) Awards aim to recognise and support future leaders in the horticulture sector who demonstrate excellence from any point in the supply chain, including R&D, education, training, advertising and promotion, and technology transfer.

The Graham Gregory Award is the sector's most prestigious accolade, recognising outstanding achievements from all sectors in horticulture. The 2013 winner was Apple and Pear Australia Limited's former Managing Director, Jon Durham, who was awarded for his ongoing commitment.

The Kendle Wilkinson Outstanding Young Horticultural Scientist Award is open to young scientists who have made a valuable contribution to the sector – bridging the gap between science and best farm practice. The 2013 recipient was former Research and Market Development Manager for Nursery & Garden Industry Australia, Dr Anthony Kachenko.

The Young Leader Award is open to all professionals aged 35 and under and recognises and encourages leadership in any horticultural discipline. The 2013 recipient was Australian Macadamia Society's Productivity Development Officer, Robbie Commens.

Project AH11023

For more information contact:
Melissa Smith, HAL
T 02 8295 2340
E melissa.smith@horticulture.com.au

2013 HAL Awards recipients Robbie Commens, Jon Durham and Dr Anthony Kachenko

Transforming subtropical/tropical tree crop productivity

The Small Tree High Productivity Initiative (STHPI) is a long-term collaborative research program being undertaken by the Department of Agriculture Fisheries and Forestry, Queensland (DAFF Qld), DAFF's research alliance with The University of Queensland (Queensland Alliance for Agriculture and Food Innovation, also known as QAAFI), and the New South Wales Department of Primary Industries (NSW DPI). Project AI13004 is the Horticulture Australia Limited (HAL) co-funded component of this program, which has been funded through the inaugural round of the Horticultural Transformational Investment Fund. The primary aim of this research program is to transform the productivity of subtropical and tropical tree crops, with an initial focus on mango, macadamia and avocado.

Jarrad Griffin, Bundaberg Research Facility Experimentalist, digitising a three-year-old 'A4' tree at a Hinkler Park Plantations orchard near Childers

The STHPI was inspired by the large gains in productivity achieved by some temperate tree crops over the last 30 to 40 years. There is an opportunity to adapt relevant concepts of orchard design and management from temperate fruit production systems such as apple to subtropical and tropical tree crops.

For each of the focus crops, research will be undertaken into areas believed to limit their productivity in order to:

- Develop techniques to effectively manage vegetative vigour, including searching for vigour managing rootstocks
- Develop an understanding the orchard light environment and identify orchard configurations and pruning strategies that may optimise the light environment
- Understand the effect of tree architecture on productivity and develop methods to manage tree architecture through pruning and tree training
- Understand the physiology of crop load and begin the development of crop load management strategies that promote regular adequate flowering and fruit set.

A trellised plot of trees in the Macadamia Planting Systems Trial planted at 4.5m x 1.5m spacing with cultivars 'A203' and '741'

Large planting systems trials investigating the effects of planting density, scion variety and tree training have been established for mango and macadamia and investigating the effects of planting density and rootstock vigour for avocado. These trials will be used as a resource to study the areas identified above that limit productivity.

The project team will also be using Functional Structural Plant Modelling as a tool to integrate our understanding of the physiology of these tree crops and to provide a framework to develop and test hypotheses.

A large and diverse team of scientists from disciplines which include plant modelling, plant physiology, plant breeding, quantitative genetics and molecular biology will be working on sites spread from Wollongbar in northern NSW to Brisbane, Nambour, Toowoomba, Bundaberg and Mareeba in Queensland.

Project AI13004

For more information contact:
Dr John Wilkie, DAFF Qld
T 0402 390 885
F john.wilkie@daff.qld.gov.au

A value chain approach to horticultural product innovation

This project will demonstrate the potential to create new postharvest value-adding opportunities to support the development of domestic and export markets for food ingredients and products from Australian producers. The project incorporates an industry level opportunity identification component led by the University of Tasmania (UTAS), and a business level value chain development activity led by Central Queensland University (CQU).

The CQU team are focusing on the translation of opportunities based on product or process innovation into successful commercial value chains. A comprehensive review of recent and pertinent articles examining value chain practices has been completed, identifying key researched elements and outcomes that are similar between research areas around value chains. These elements were then collated and used to define the mechanisms behind value chain processes. Eight key dimensions, ranging from supply chain logistical efficiencies to information transfer strategies within chains, were defined. A case study approach was used to assess the validity of these key dimensions, and will lead to the formulation of tools to assist businesses to address each of the eight areas. The first case study, involving a series of interviews and surveys with chain members linked to a project industry partner, has been completed and a second study focusing on the successful introduction of a novel processed fruit product in the Australian market is currently underway. In addition, tools applicable to businesses adopting a value chain approach to new chain development are being reviewed and assessed for applicability in industry through the case study process.

The UTAS team have developed a comprehensive database of available horticultural biomass from over 20 major crop types detailing: region, production value, waste (type and tonnage) and the potential value-added ingredients, colours, flavours, fibres) from each. The database also lists available extraction and processing technologies and location/capacity of commercial facilities. This is accompanied by a detailed report describing each of the potential value-added ingredients and processing technologies. In addition, a comprehensive, current market report of global trends for value-added ingredients is being developed and will cover market growth, key players and, where available, supply/demand and price information. With this information, a shortlist of recommended opportunities for converting horticultural biomass into innovative, new value-added ingredients for non-traditional markets will be identified. In addition, we will identify the R&D steps required to commercially develop these.

Project AI13012

For more information contact:
Philip Brown, Central Queensland University
T 07 4150 7145
E p.h.brown@cqu.edu.au

Transformational solutions to challenges and issues facing the Australian horticulture industry

As part of the Transformational Fund Initiative, new innovation opportunities are being identified from a much wider base than has been previously used. Intellectual Ventures (IV) is a privately-held fund with over $5 billion under management that invests in invention. It has been in operation for 12 years, has offices globally and owns more than 40,000 Intellectual Property assets. IV uses leading inventors and companies to create new solutions to problems in particular disruptive technological areas.

Beginning with a highly defined problem sets, called Requests for Invention (RFIs), IV sources new technologies from its global network of over 4,000 inventors and 400 university and research partners. IV is actively working with HAL and other industry bodies and companies across Australia to invent and bring new technologies into the market. The purpose for engaging IV was to identify areas for new invention that can add to the Australian horticulture industry's competitive advantage.

With input from thought leaders from across the industry, two topic areas were selected for analysis and invention sourcing. The RFI topics include:

1. Non-destructive sensing for fruit quality
2. Improvements for postharvest preservation and packaging. IV engaged its global network of inventors in March 2014 for these topics.

IV has successfully sourced and reviewed over 40 inventions for the project. Many of the promising technologies have been reviewed with a joint HAL/IV steering committee. The IV team also hosted an invention session. At the end of the invention sourcing, IV will propose technologies for further development. These inventions and development proposal will have the potential to transform Australia's horticulture industry.

Project AI12002

For more information contact:
Paul Levins, Intellectual Ventures
T 0419 239 180
E plevins@intven.com

Direction setting forum for a horticultural education strategy

This project aims to bring together the key stakeholders from the horticultural training and education sector to develop a sector specific education and framework strategy. It is proposed that this strategy will guide investment in training and education until 2030.

Horticulture Australia Limited (HAL) bought together a group of key stakeholders in May 2014 to workshop an education framework strategy to guide future investment focus. Workshop participants included representatives from the Vocational Education and Training (VET) and tertiary sector, selected HAL Members, fellow Research & Development Corporations and employers from large horticultural businesses. Workshop discussions were framed by initial presentations from experts in agricultural education and training. Speakers included Professor Jim Pratley, who conducted the review Agricultural Education and Training in New South Wales; John Taylor, a consultant who worked on the Meat and Livestock Association's Education Pipeline Review; and Kathleen Allen, the Grains Research & Development Corporation's Program Manager for Capacity Building.

The summary paper following the workshop was circulated to all participants asking for feedback. The document was developed into a discussion paper for the HAL Board. Following Board consultation, it is envisioned that a strategy outlining key initial activities will be developed for implementation in the third quarter of 2014.

A more coordinated and strategic approach to the industry's investment in education will reduce duplication, maximise resources and enable HAL to set a clear direction in working with industry, education providers and employers to ensure that current and future employees are well equipped to meet the challenges of the horticulture sector well into the future.

Project AI13013

For more information contact:
Sharyn Casey, HAL
T 02 8295 2379
E sharyn.casey@horticulture.com.au

Dietary sterilisation of male Q-fly

This project, commencing from June 2014, will test whether state-of-the-art RNA interference (RNAi) technology can improve the efficacy of Sterile Insect Technology (SIT) for use in Queensland fruit fly (Q-fly) control.

RNAi is a widely used molecular technique for selectively inactivating genes using double-stranded RNA molecules. Recent studies demonstrate that in some organisms, these molecules can be delivered as food supplements.

Researchers will determine over the next three years whether male Q-fly can be sterilised by feeding them species-specific RNAi molecules that inactivate genes critical for male fertility. While based on knowledge of Q-fly genetics, this project involves no genetic modification of Q-fly. The use of RNAi technology rather than current techniques requiring irradiation to sterilize males in mass rearing could fundamentally change the economics, practice and success of SIT in Q-fly, with no adverse impacts on the environment and social and market acceptability.

Project AI13001

For more information contact:
Dr Christopher Hardy, CSIRO Biosecurity Flagship
T 02 6246 4375
E chris.hardy@csiro.au

A platform for the continuous genetic improvement of accepted cultivars of vegetatively propagated horticultural crops

There are a large number of horticultural cultivars which are highly desirable but extremely difficult to genetically improve by conventional breeding for a range of reasons, including low fertility, long generation time and/or high levels of heterozygosity. An alternative approach is to use genetic modification but in such a way that a cultivar can be serially transformed, that is, new genes can be added sequentially as they become available. The aim of the project therefore is to develop serial transformation technology using two important horticulture crops, potatoes and bananas, focusing on cisgenes, genes that are derived from the genomes of the transformed crop species.

This project commenced at the beginning of 2014. In the first six months, the initial genes and constructs/cassettes were obtained or assembled. Tobacco, for use as a model, and banana transformation are already established at the Queensland University of Technology (QUT). For potatoes, Russet Burbank seed potatoes have been acquired and potato transformation for this cultivar is currently being established. The first transformations of tobacco and banana with the base excisable cassette have been completed. Necessary IP licenses have been obtained.

The major benefit to the horticultural industry will be a technology that can be employed to continuously genetically improve accepted, vegetatively propagated cultivars of horticultural crops. The genomes of most of the world's major crops have been sequenced and genes for a wide range of traits such as disease resistance, nutritional enhancement and drought tolerance are being identified. The technology developed here will allow these genes to be utilised in cultivars where genetic improvement by conventional breeding is difficult to virtually impossible.

Project AI13008

For more information contact:
Prof James Dale, Queensland University of Technology
T 07 3138 2819
E j.dale@qut.edu.au

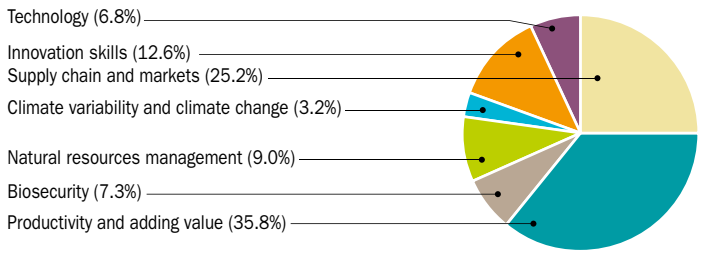
Australian Government priorities

As part of the Australian Government's commitment to rural research and development (R&D), horticulture industries can access matching Commonwealth funding though Horticulture Australia Limited (HAL) for all R&D activities.

The Australian Government's Rural R&D Priorities aim to foster innovation and guide R&D effort in the face of continuing economic, environmental and social change.

HAL's operations are closely aligned with these priorities.

This chart shows the percentage of expenditure in HAL's across industry and transformational investment R&D programs against each of the Australian Government priorities for rural R&D. Full details of expenditure across all industries is available in HAL's annual report at www.horticulture.com.au.



Productivity and adding value

Improve the productivity and profitability of existing industries and support the development of viable new industries.

Supply chain and markets

Better understand and respond to domestic and international markets and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers.

Natural resource management

Support effective management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable.

Climate variability and climate change

Build resilience to climate variability and adapt to and investigate the effects of climate change.

Biosecurity

Protect Australia's community, primary industries and environment from biosecurity threats.

Innovation skills

Improve the skills to undertake research and apply its findings.

Technology

Promote the development of new and existing technologies.

HAL's roles and relationships

Horticulture Australia Limited (HAL) is a not-for-profit industry owned company. Its role is to manage the expenditure of funds collected by the Australian Government on behalf of horticulture industries. In 2013/14 HAL invested more than $100 million in projects to benefit horticulture industries.

An Industry Advisory Committee (IAC) is established for each industry with a statutory levy and annual income exceeding $150,000.

The Prescribed Industry Body (PIB) for an industry is responsible for recommending to HAL the establishment of, and any changes to, statutory levies. The PIB for an industry with a statutory levy recommends membership of the IAC to HAL and must demonstrate how the skills required on an IAC are met by the persons they recommend for appointment to the committee.

For more information please visit www.horticulture.com.au.

ACROSS INDUSTRY PROGRAM

Project no.	Rural R&D priorities	Project title	Levy or VC	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
Objective 1: To enhance the efficiency, transparency, responsiveness and integrity of the supply chain									
AH12009		Partnering fresh produce with retail – Quality Assurance harmonisation	Levy	1/8/12	31/8/13	$143,500	$212	Kitchener Partners	Tristan Kitchener 0407 827 738
AH12010		Partnering fresh produce with retail – Joint working groups	Levy	1/8/12	30/11/14	$305,000	$43,446	Kitchener Partners	Tristan Kitchener 0407 827 738
AH12015		Food Innovation Hub	Levy	9/5/13	31/8/13	$28,166	$5,633	Food Innovation Partners	Russel Rankin 07 3289 4591
AH12016		Partnering fresh produce with retail: Quality Assurance harmonisation	Levy	15/5/13	30/6/15	$337,307	$105,096	Kitchener Partners	Tristan Kitchener 0407 827 738
AH13026		Retailer in-store training	Levy	16/12/13	30/5/14	$20,000	$20,000	Kitchener Partners	Tristan Kitchener 0407 827 738
Objective 2: Maximise the health benefits of horticultural products in the eyes of consumers, influencers and government									
No active project in 2013/14 to report on									
Objective 3: Position horticulture to compete in a globalised environment									
AH09027		Investing in Youth successful scholarship applicant	Levy	31/5/10	31/3/15	$80,000	$10,000	Rural Industries R&D Corporation	Margo Andrae 02 6271 4132
AH11009		Autonomous perception systems for horticulture tree crops	Levy	1/5/12	27/11/15	$120,000	$40,000	The University of Sydney	Prof Salah Sukkarieh 02 9351 8154
AH12018		Export symposium 2013	Levy	12/4/13	31/12/13	$34,188	$22,931	Oliver & Doam	Agnes Barnard 02 8011 4743
AH12019		Horticulture Leaders – Across Horticulture Leadership Training – 2013 and 2014 programs	Levy	3/6/13	31/5/15	$184,323	$50,000	Strategic Business Development Pty Ltd	Russell Cummings 0414 929 585
AH13018		Horticulture R&D showcase	Levy	1/8/13	30/6/14	$46,889	$35,680	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH13020		Horticulture information unit	Levy	1/8/13	28/2/16	$250,000	$31,000	Horticulture Australia Limited	Pat Abraham 0438 474 758
AH13028		Australia Fresh – across industry initiative	Levy	16/12/13	30/12/14	$50,000	$44,789	Oliver & Doam	Agnes Barnard 02 8011 4743
MT12029		Horticultural Market Access Manager 2012–2015	VC/ Levy	1/10/12	30/9/15	$613,500	$74,839	Lawrence Consulting	Sam Lawrence
Objective 4: Achieve long term viability and sustainability for Australian horticulture									
AH09003		Plant protection: Regulatory support and coordination	Levy	1/7/09	30/5/14	$995,061	$243,225	AKC Consulting Pty Ltd	Kevin Bodnaruk 02 9499 3833
AH09014		Across industry climate research, development and extension (RD&E) activities	Levy	13/4/10	28/2/14	$60,264	$12,000	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH10003		Horticulture component of the National Climate Change Research Strategy for Primary Industries	Levy	30/11/11	1/7/15	$157,500	$0	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH10006		Pesticide spray drift in horticulture – a response to new guidelines from the APVMA	Levy	1/7/10	30/6/14	$20,000	$4,676	Horticulture Australia Limited	Jodie Pedrana 0404 314 751
AH11007		Developing an LCI database for Australian agriculture	Levy	2/1/12	1/10/13	$20,000	$10,000	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH11029		Provision of independent technical and secretarial services to the National Working Party for Pesticide Application	Levy	20/12/11	31/5/15	$100,000	$25,000	Plant Health Australia	Nicholas Woods 02 6215 7704
AH11010		Biotechnology awareness in horticulture	Levy	10/10/11	30/6/14	$102,177	$9,941	Horticulture Australia Limited	Alok Kumar 0418 322 070
AH11011		Horticulture funding of the CRC for Plant Biosecurity	Levy	30/6/12	30/5/18	$3,000,000	$500,000	Plant Biosecurity CRC	John Austen 02 6201 2882
AH13014		Horticulture for Tomorrow review and upgrade	Levy	5/8/13	23/6/14	$43,228	$43,196	Horticulture Australia Limited	Brenda Kranz 02 8295 2317

Project no.	Rural R&D priorities	Project title	Levy or VC	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
AH13023		Industry Development Forum with International Horticulture Congress	Levy	17/2/14	30/6/15	$45,100	$2,923	Horticulture Australia Limited	Dr Alison Anderson 02 8295 2316
AH13025		Research to support HAL Member input to the HAL review	Levy	18/11/13	28/2/14	$43,399	$43,647	Horticulture Australia Limited	John Madden 0421 274 076
AH13027		Plant protection: Regulatory support and coordination – continuation of AH09003	Levy	31/5/14	1/7/18	$892,748	$25,000	AKC Consulting Pty Ltd	Kevin Bodnaruk 02 9499 3833
AH13032		Response to Agricultural Competitiveness white paper	Levy	1/4/14	30/4/14	$31,500	$31,500	KPMG	Michelle Pawley 02 6248 1141
MT10029		Managing pesticide access in horticulture (cont from AH04009 and MT07029)	Levy	1/7/10	2/7/15	$1,261,460	$67,398	Horticulture Australia Limited	Jodie Pedrana 0404 314 751
MT10049		A multi target approach to fruitspotting bug management	Levy	1/3/11	1/4/16	$1,353,016	$40,741	Department of Primary Industries NSW	Dr Ruth Huwer 02 6626 1196
MT10066		Project coordination for MT10049	Levy	14/3/11	31/5/14	$42,984	$1,214	RCR Agri Pty Ltd	Chaseley Ross 0409 707 806
Objective 5: Other									
AH11003		Support function for AIC	Levy	15/9/11	30/8/13	$84,187	$35,000	Horticulture Australia Limited	Warwick Scherf 02 8295 2323
AH11017		Sponsorship of Appetite for Excellence Awards	Levy	1/7/11	22/6/14	$70,500	$20,000	Horticulture Australia Limited	Melissa Smith 02 8295 2340
AH11023		Graham Gregory Award and function	Levy	1/7/11	30/6/16	$151,500	$30,000	Horticulture Australia Limited	Melissa Smith 02 8295 2340
AH11026		Across Industry program administration	Levy	1/7/11	30/6/14	$31,800	$6,332	Horticulture Australia Limited	Warwick Scherf 02 8295 2323
AH13800		Across Industry Annual Report 2012/13	Levy	1/7/13	30/6/14	$15,000	$9,688	Horticulture Australia Limited	Barbara Knezevic-Marinos 02 8295 2318
MT12028		OHMA operational support 2012–2015	VC/ Levy	1/10/12	31/5/15	$91,500	$19,832	Horticulture Australia Limited	Peter Whittle 0409 578 937
Horticulture Australia Transformational Fund projects									
AI12002		Transformational solutions to challenges and issues facing the Australian horticulture industry	Levy	9/9/13	1/10/14	$500,000	$250,000	Intellectual Ventures	Paul Levins 0419 239 180
AI13001		Dietary sterilisation of male Queensland Fruit Fly	Levy	1/5/14	28/2/18	$1,253,316	$0	CSIRO Biosecurity Flagship	Dr Christopher Hardy 02 6246 4375
AI13004		Transforming subtropical/tropical tree crop productivity	Levy	5/11/13	31/5/17	$3,089,012	$652,026	The Department of Agriculture, Fisheries and Forestry, Qld	Dr John Wilkie 0402 390 885
AI13008		A platform for the continuous genetic improvement of accepted cultivars of vegetatively propagated horticultural crops	Levy	14/11/13	31/1/17	$2,025,439	$354,981	Queensland University of Technology	Prof James Dale 07 3138 2819
AI13011		Transformational Innovation Performance Analysis	Levy	1/10/13	31/12/14	$147,385	$117,308	The University of Queensland	A/Prof Damian Hine 07 3346 8162
AI13012		A value chain approach to horticultural product innovation	Levy	20/12/13	31/12/14	$265,430	$112,544	Central Queensland University (CQU)	Philip Brown 07 4150 7145
AI13013		Direction setting forum for a horticultural education strategy	Levy	24/2/14	30/7/15	$15,000	$7,967	Horticulture Australia Limited	Sharyn Casey 02 8295 2379
AI13014		Advancing Post Doctorates in horticulture	Levy	1/6/14	30/4/18	$800,000	$0	Horticulture Australia Limited	Sharyn Casey 02 8295 2379

Australian Government Rural R&D Priorities: Productivity and adding value; Supply chain and markets; Natural resource management; Climate change and climate variability; Biosecurity; Innovation skills; Technology

ACROSS INDUSTRY INVESTMENT SUMMARY

Year ended 30 June 2014	Marketing 2013/14 $	R&D 2013/14 $	Combined 2013/14 $
Funds available 1 July 2013		**237,782**	**237,782**
Income			
Contributions received		750,000	750,000
Commonwealth contributions		961,842	961,842
Total income		**1,711,842**	**1,711,842**
Budget		*1,651,234*	*1,651,234*
Variance to budget		*60,608*	*60,608*
Program investment			
Levy programs		1,760,995	1,760,995
Service delivery programs by HAL		162,689	162,689
Total investment		**1,923,684**	**1,923,684**
Budget		*1,802,468*	*1,802,468*
Variance to budget		*(121,216)*	*(121,216)*
Annual surplus/deficit		(211,842)	(211,842)
Closing balance 30 June 2014		**25,940**	**25,940**

CLIMATE CHANGE RD&E

Throughout 2013/14, the Australian horticulture industry invested in a range of research, development and extension (RD&E) projects to better understand, adapt to and mitigate the impacts of climate change.

Horticulture Australia Limited (HAL) has invested in cross-collaborative programs, such as the Climate Change Research Strategy for Primary Industries (CCRSPI) and Agricultural Lifecycle Inventory (AusAgLCI), and projects within or across industries, such as on crop phenology, nitrogen and plant-waste management, regulated deficit irrigation, carbon and soil, urban forestry and environmental auditing.

HAL's RD&E investment is obtained through industry levies, voluntary contributions and matched funds by the Australian Government.

TRANSFORMATIONAL FUND INVESTMENT SUMMARY

Year ended 30 June 2014	Marketing 2013/14 $	R&D 2013/14 $	Combined 2013/14 $
Funds available 1 July 2013		**623,650**	**623,650**
Income			
Contributions received		985,976	985,976
Commonwealth contributions		841,427	841,427
Total income		**1,827,403**	**1,827,403**
Budget		*2,297,875*	*2,297,875*
Variance to budget		*(470,472)*	*(470,472)*
Program investment			
Levy programs		1,479,534	1,479,534
Service delivery programs by HAL		188,027	188,027
Total investment		**1,667,561**	**1,667,561**
Budget		*2,805,750*	*2,805,750*
Variance to budget		*1,138,189*	*1,138,189*
Annual surplus/deficit		159,842	159,842
Closing balance 30 June 2014		**783,492**	**783,492**

Across Industry Committee

Bob Granger (Chair)
Jolyon Burnett
Judith Damiani
John Dollisson
Alex Livingstone
John Lloyd
Richard Mulcahy
Jim Pekin
Trevor Ranford
Greg Seymour
John Tyas

Investment Committee

David Cliffe (Chair)
Rob Clark
Dianne Davidson
Craig Musson
John Lloyd (Observer)
Selwyn Snell (Observer)

For more information contact:

Warwick Scherf
Industry Services General Manager
Horticulture Australia Limited

Level 7, 179 Elizabeth Street
Sydney NSW 2000

T 02 8295 2333
E warwick.scherf@horticulture.com.au