



Primary Industries
Education Foundation



Primary Industries Education Foundation

**The peak body for primary industries
education in Australian schools**

AEE Conference
29th September 2010
Beth Welden, Director



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Overview

Background to PIEF

Using Primary Industries as a context for
learning K-12

Resource examples in Australia – to take home
or order





My Background



Class learns about agriculture

STUTTERS at St. Kevin's College, West Wyalong, incorporated last week with a goal from rural jobs group officers.

AgForce spokesman Graham McIndoe said the "new" initiative was growing rapidly, with St. Kevin's College, West Wyalong, as a key partner.

With the current agricultural sector in a state of flux, it is critical to reach children about where food and fibre originates and where the wide array of career options in agriculture, the said.

St. Kevin's school Deans, Westwaller said people were learning about agriculture as part of their jobs in the community and that the initiative would reach children that were usually excluded from the industry.

"When you first think of farmers you think of growing grain or raising an animal, so it's crucial to help them learn how that value comes into the food we eat."

Get more news every day.



PULLING WOOL: St. Kevin's pupils Cooper Turner, Ruby Zeller, Jessica Pina and Matthew Croshaw check the core, hairy fleece of a sheep.

Origins of the Foundation:

- **2004-2005** - Conversations between state-based groups.
- **2005** - National stock take and meeting.
- **2007** - Federal minister convenes roundtable.
- **Late 2007** - constitution written for national body
- **2007-2008** - Representative working party formed.
- **2008**- Not for Profit Company Established.
- **Founding members:** MLA, NFF, Aust Council of Deans, Natn'l Assoc Ag Educators and CB Alexander foundation (Tocal college).
- **2009** - Skills based board appointed by independent process
- **2009** - PIEF officially announced by Hon. Tony Burke.
- **2010 (April)** - Interim Chief Executive appointed.



PIEF Vision (Where to)

An Australian community which understands and values its primary industries.

PIEF Mission (What)

The Primary Industries Education Foundation (PIEF) provides national leadership and facilitation of initiatives to encourage the teaching and learning of primary industries education in Australian schools.



PIEF's role

Primary Industries Sector :

- Better informed community.
- Reduced country/city divide
- Reversal of skills shortage



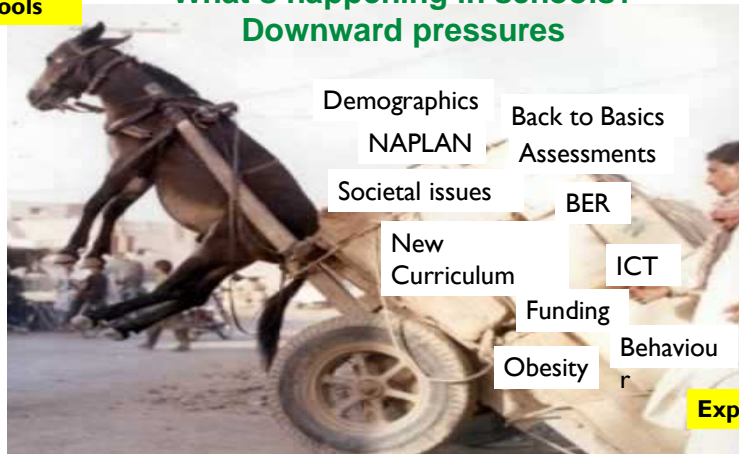
Education Sector:

- Access to engaging context.
- Support for Australian Curriculum
- Quality information
- Teacher professional learning
- Easily accessed resources at low/no cost
- Make a difference



Schools

What's happening in schools? Downward pressures



PIEF – A trustworthy one-stop-shop for primary industries' educational and resource needs for teachers, by teachers!

- Would you rather spend more time teaching and less time preparing?
- PIEF will allow teachers access to **high quality, low cost** and **practical resources** that are **engaging** and **aligned to the Australian curriculum**.
- Website live by Easter 2011 pending membership; All resources aligned within 3 years through Education Services Australia.



Drivers of Success

- The Strategic Plan assists to focus efforts and resources and implement actions in four key areas :
 - A. Strong Membership
 - B. Extensive Tripartite Membership
 - C. Sought After Services
 - D. Informed Policy



B. Extensive Tripartite Networks (Industry, Education & Government)

- Establish education networks.
- Grow tripartite network groups.
- Grow and maintain industry network involvement.





C. Sought After Services

- Produce and promote of primary industries resources to Australian schools.
- Align primary industries resources to the Australian curriculum
- Promote primary industries career opportunities and pathways in Australian schools.
- Broker quality teacher professional development.



Broad Points of Leverage:

- ✓ Access
- ✓ Credibility
- ✓ Alignment
- ✓ Collaboration





Key Activities – time line

- National Stock take of Initiatives
- National Conference – March 2010
- Appointment of Interim Chief Executive
- Completion of Strategic Plan
- ACARA-inclusion of Primary Industries in Curriculum.
- ACER benchmarking survey of student teacher knowledge
- Branding
- Currently securing funding base to develop web site and aggregate content.



Resources for your classroom –

- A. LandLearn resources and classroom activities
- B. Meat and Livestock Australia – industry and the environment related resources
- C. CRC National Plant Biosecurity – primary and secondary school resources
- D. AgAware modules – Help Farmer Sustain

National Competitions to get involved in!

- E. DPI&F Plant Science Competition



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A. LandLearn

Apples and the Earth demonstration available at:

http://www.landlearn.net.au/print/apple_earth.htm



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LandLearn Resources

www.landlearn.net.au

A screenshot of the LandLearn website homepage. At the top, there is a navigation bar with the text "supporting environmental education in Victorian schools" and a menu with items: "career info", "curriculum activities", "resources", "teacher support & PD", "fieldwork", "newsletter", and "home". Below the navigation bar is a "welcome" message. The main content area features three highlighted boxes: "new resources" with a "Young Scientists Booklet" description, "current newsletter" for "Term 3 2010" listing "Biodiversity and Agriculture", "Biodiversity on a Plate - 1", "Biodiversity on a Plate - 2", "Workshops", "Career Profile", and "Professional Development Update"; and "professional development" with a "Professional Development calendar" and a link to "teacher support and PD". On the left, there is a "LandLearn search" box and a sidebar with links: "HOME", "The LandLearn team", "About LandLearn", "Advanced LandLearn site SEARCH", and "Site map". The LandLearn logo is also present in the sidebar. At the bottom, a footer states: "LandLearn provides a structure and support for schools to incorporate studies of sustainable agriculture and natural resource management into the curriculum in the context of...".



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Resources available online:

Young Scientists - Activities to engage students and school communities in real science and sustainable agriculture activities to build skills and knowledge.

Turning Grain into Gold - Activities comparing different foods and grains, following their growth from seed through to final product.

Chemical Safety Booklet - Activities to raise awareness of the risks associated with chemical use.

Biodiversity Up Close - An audit tool for measuring biodiversity in the school ground and bushland areas.



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Resources available on CD (order form):

Water and Food: futures thinking

- » Water and Food: futures thinking
- » Water use and management in Shepparton Irrigation Region – fieldwork
- » Teaching Resources

LandLearning

- » Biodiversity in Balance
- » Fact and Fiction 2
- » Fruit Fly Frenzy
- » Learning in the Garden

LandLearn Resource Booklets

Super Seeds!

Super Seeds is a teaching and learning resource that is mapped to the Victorian Essential Learning Standards. This LandLearn resource contains activities based on Cereals, Pulses and Oilseeds.



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B. Learning about the environment with animals in agriculture

– Meat and Livestock Australia (MLA)

The beef cattle and sheep producers in Australia are custodians of around half of our land mass, illustrating the importance of learning about what the industry is doing to ensure good stewardship while producing an important source of human nutrition



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For younger students :

- Cattle and the environment brochure (on display for you to take)
- Fun on the farm – interactive web based game that helps children understand some of the activities that happen on farm to care for environment and animals – go to www.mla.com.au/General/Fun-on-the-farm

Cattle and the Environment

To produce the best beef in the world, Australia's cattle producers use the latest technology along with over 200 years of experience as caretakers of the land.



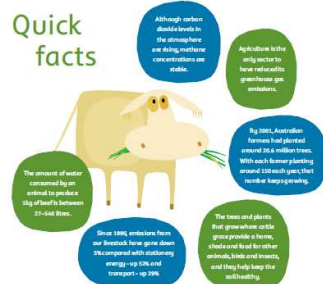
What are we doing to be even better?

Although carbon dioxide levels in the atmosphere are rising, methane concentrations are stable. However, cattle producers will still look for ways to reduce methane emissions.

Using genetics and science, farmers are breeding cattle that process their food more efficiently and so produce less gas, and scientists have developed feed additives that can help too.

Our scientists are working to find new ways to further reduce methane emissions, and our cattle producers will continue to improve their breeding programs and welcome planting trees and pastures that help look after the soil, the air and their cattle.

Quick facts



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Meat & Livestock Australia
MLA is an OF 501(c)(3)
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Road, Sydney, NSW 2000
Tel: +61 2 9439 3333
Fax: +61 2 9439 3333
www.mla.com.au

Printed on recycled paper

For older students :

- AFR business case studies – developed for secondary Business Studies students but content has wider application (see 2 environment case studies on display)
- Red Meat Green Facts website – go to www.redmeatgreenfacts.com.au
- Red Meat Green Facts brochure to go <http://www.redmeatgreenfacts.com.au/News-Resources/Environment-brochure>



Minimising the beef industry's impact on climate change

FINANCIAL REVIEW
Case Studies
WITH BUSINESS NEWS



1 Introduction
Meat and livestock Australia (MLA) is a producer-owned company working in partnership with industry and government to achieve a profitable and sustainable beef and lamb industry. It provides marketing and research services to support the 40,000 producers who produce beef, lamb, sheep and goat products.
Our business activities include:
- Increasing the demand for Australian red meat
- Improving market access to products
- Improving the long efficiency, sustainability and innovation capability of the beef and lamb industry
The Australian community is increasingly conscious of the need for industry to adopt the goals of social responsibility and ethical practices. Social responsibility is an expectation that an industry will take into account factors beyond its own profitability and consider the impact of its activities on the wider community and environment. An ethical organisation will consider social, environmental and community aspects in addition to its own profit.

2. Ethical practices are now broader than strict compliance with legal obligations. For the Australian beef industry, the most significant issue is the production of methane, a potent greenhouse gas produced by ruminants during the digestion process. It has the highest potential to contribute to global warming.
Climate change is one of the greatest risks currently and anticipated challenges of our time. Higher sea levels, and more extreme weather events, are likely to affect the climate. These factors and other variables that result of the warming over the last 50 years is attributed to human activities.
Some numbers illustrate the scale of these issues:
- **Table 1: Global climate warming.**
The process of global warming, sometimes referred to as climate change is predicted to result in:
- Higher maximum temperatures
- Higher maximum humidity
- More intense and varied weather patterns
- Increased summer rainfall during and associated risk of drought in the mid latitudes
- More intense tropical systems with high peak winds and rainfall
- Rising sea levels

Table 2: Climate change facts.
- Australian temperature has increased by approximately 0.4°C since 1970, nearly since 1950
- Global has increased substantially since 1950 on the east coast, and in Victoria
- Some numbers illustrate the scale of these issues:
- **Table 3: Creating a climate change strategy**
Starting in the early 2000s, a number of red meat carers both in Australia and worldwide, in particular, have focused on reducing greenhouse gas emissions to reduce their carbon footprint. The beef industry has a major responsibility to ensure it adopts environmentally sustainable production processes. This includes working to reduce community concerns and address related and sustainable activities but also reduce carbon emissions and reduce carbon costs.

The federal and state governments and red meat industry are developing a primary industries national research strategy to address climate change related to the production of methane, a potent greenhouse gas produced by ruminants during the digestion process. It has the highest potential to contribute to global warming. It will focus on:
- Conducting research into methane energy losses
- Converting the outcomes of research
- Establishing the relevance of practical solutions
- Improving productivity
- Ensuring the average and maximum properties of red meat and the environmental costs of alternative protein sources are compared

Table 3: Creating a climate change fact.
75 percent of Australia's land mass is rangelands – lands that are not suitable for cropping.
Rangelands are used with various types of production systems, including extensive beef production, intensive beef production, sheep production and mixed production systems.
A comprehensive 10 issues area within each of the rangelands, to help an improved understanding of the issues and the range of solutions available to producers and consumers.
The Australian beef industry produces 4.7 billion tonnes of beef per year.
The amount of water that is used to produce beef is predicted to be between 110-220 litres per kilogram of wet weight of beef.
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3 Responding to stakeholder and community needs
Stakeholders are people who are affected, directly or indirectly, by the performance and activity of the company. Major stakeholders of the red meat and livestock industry are:
- Related industries
- External government, processors, exporters and the wholesale and retail food industry
- Environmental groups and scientists
There is a significant interdependence between many stakeholders and the industry. An understanding of the needs of these stakeholders and the industry are of significant importance and effectively need to be supported by the industry in an understanding and responding to the needs of external stakeholders.
Community concerns over an increasing demand and increasing supply of meat products, including ethical, welfare, production, quality, safety, health, animal and environmental management. The industry must demonstrate social compliance and ethical practices in its research, development and adoption. These issues and environmental industry requirements to meet community concerns. All components of the beef supply chain need to be able to respond to increasing demand in a way that is consistent with the industry's commitment to a range of environmental considerations.
The beef industry is working with the community on these issues. Data of industry issues are being used to inform management to minimise the industry's impact on the environment and climate change.

Table 4: Initiatives to environmental management.

Figure 1: One cow produces 10 tonnes of methane over its one lifespan.

C. CRC National Plant Biosecurity Resources

<http://www.crplantbiosecurity.com.au/education-and-training/school-education-program>

CRC PLANT biosecurity

- ABOUT US
- RESEARCH PROGRAMS
- EDUCATION AND TRAINING
- Postgraduate student research projects
- Scholarships
- Courses and workshops
- Postgraduate coursework in plant biosecurity
- School education program
- DELIVERY AND ADOPTION
- PUBLICATIONS
- NEWS
- LINKS

You are here: [Home](#) > [EDUCATION AND TRAINING](#) > School education program

School education program

Investigating plant pests just got fun!

As part of our school education strategy, we are focusing on educating the next generation of scientists and science users. By portraying plant biosecurity and science in a positive and exciting manner to students from a young age, it is hoped that more students will be encouraged to pursue science as a career and, in the long-term, fill some of the science, engineering and technology skills gaps.

Plant biosecurity for pre-primary/primary schools

Plant Pest Investigation with Lily and Sam

Plant Pest Investigators

Plant biosecurity for secondary schools

Plant Pest Investigations

Plants in the news

Professional development for teachers



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D. AgAware modules – Queensland curriculum alignment



HELPING “FARMER SUSTAIN”

**A multiple-outcome module across key learning areas
For lower primary students (level 1)**

Length : A half-term

Prepared by AgAware in consultation with the Office of the
Queensland School Curriculum Council (now the Queensland
Studies Authority)



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**AgAware Modules are available
to download free online at:**

<http://www.staq.qld.edu.au/item.asp?pid=1153>

Or google “agaware and farmer sustain”

Hermitage Research Station Schools' Plant Science Competition

Coordinated by Kerrie Rubie

Competition Organising Committee

Kerrie Rubie¹, Philip Burrill¹, Barbara George-Jaeggli¹, Terry Usher¹, Ann Starasts¹, Simon Hamlet¹, Col Douglas¹, Scott Young², Lyn Duncan²

¹DEEDI Hermitage Research Station, Yangan Road, Warwick Q 4370

²Education Queensland, Palmerin Street, Warwick Q 4370



What does the competition offer?

Since 1997, the Hermitage Research Station Schools' Plant Science Competition has helped thousands of students to gain hands-on experience and improved understanding of agricultural science. Through this competition, we hope to inspire young people towards science studies and promote agricultural science as an exciting and rewarding long-term career choice.

- ✓ Relevant to school's science curriculum – "Life and Living" with links to maths, English and technology
- ✓ Different competition topics chosen each year, related to research projects carried out by Hermitage Research Station scientists and staff
- ✓ Step-by-step guidance (full instructions provided)
- ✓ Support offered, upon request, through school visits
- ✓ Open to all students (years prep to twelve)
- ✓ Win great prizes and be a part of a special awards day at Hermitage Research Station, Warwick
- ✓ Student's develop skills in:
 - scientific method, knowledge and understanding
 - scientific report writing
 - agricultural practices
 - statistics and maths
 - English and communication
 - team work
 - technology



Past competition topics

Year	Topic	Focus of study
2010	Does Climate Impact Crop Growth?	Discovering how different crops cope in various environmental conditions and climates
2009	There's a Grain in my Food!	Focussing on grain identification, germination, food processing and research into breakfast cereals
2008	Sums on Seeding a Super Crop	Germination test and plant populations using sorghum
2007	What's Bugging Your Grain?	Focus on stored grain pests (pests in whole wheat and flour)
2006	How Much Water Do Plants Use?	Mungbean and sorghum (basic lysimeter experiments)
2005	Insects & Crops	Mungbeans and the insects they attract
2004	Why Grow Hybrid Crops?	Focus on sorghum (growth of hybrid plants v's parent plants)
2003	Healthy Soils...Healthy Plants	Chickpeas (inoculated v's uninoculated chickpea seeds)
2002	Salinity...A Big Problem	Chickpeas and barley (grown in various salt rates)
2001	Problem Plants...Are They Weeds?	Weed identification at school
2000	Influence of Planting Depth on Seedling Emergence	Ability of 6 cereal varieties to emerge from different planting depths
1999	Study the Effect of Netblotch Disease in Barley	Barley (healthy barley v's diseased barley)
1998	How Does the Use of Fertiliser Influence Crop Growth?	Chickpeas & barley (compare growth with various rates of fertiliser)
1997	Plant Science - Identification of Crops; Mystery - Uses of Crops in 1906; Glasshouse Technology	Build a Glasshouse Model; Social Science/English - Life and Farming on the Downs in 1897.

Copies of instruction documents for each topic are available by contacting Kerrie Rubie, competition coordinator

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Interested in participating?

For further information and to register your school in the next competition, please contact:

Kerrie Rubie

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Full details on the 2011 competition will be available in November/December 2010 (via email and website)

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More Information

- chair@primaryindustrieseducation.com.au
- info@primaryindustrieseducation.com.au
- www.primaryindustrieseducation.com.au

